STATE ENVIRONMENTAL POLICY ACT

Determination of NonSignificance

Date of issuance: 8/1/2020

Lead agency: Kittitas Reclamation District

Agency Contact: Urban Eberhart
krdoffice@fairpoint.net
(509) 925-6158

Description of proposal: The Kittitas Reclamation District (KRD) proposes to undertake a conservation project on the South Branch Canal in 2020. The South Branch Canal Piping – Robinson Creek Siphon to Manastash Siphon includes replacing approximately 4.3 of miles currently earthen canal with piping on the same general alignment within the existing right-of-way. The project will occur on lands owned by the USBR as part of transferred works managed by the KRD.

The Project is a 4.3-mile-long water conservation project that will replace the existing South Branch earthen canal with buried pipe beginning at the Robinson Creek Siphon and extending to the Manastash Creek Siphon. Also, KRD is proposing to incorporate sufficient capacity to provide turnout and pipeline off the South Branch Canal at milepost (MP) 10.4. This turnout will initially be used for the existing SB 10.41 and SB10.42 deliveries and have expansion capacity for a third control gate that would replace the existing MP 9.9 Lateral. Additional elements for the project include the repair of undershots for proper bedding of pipelines across them, improvement of five areas for staging, and the replacement of the Robinson Creek culvert beneath the KRD access road with a larger structure.

The Project is in support of the KRD Tributary Supplementation Project, which provides benefits for fish, wildlife, and the environment through a water conservation program that restores instream flows in over-appropriated or flow-impaired tributaries to the upper Yakima River. Implementing measures designed to reduce canal seepage allows 100 percent of the previously lost water to be delivered to flow-impaired streams through an allocation, management, and protection agreement.

Location of proposal: The South Branch Canal is located along the western side of the Kittitas Valley, approximately 4 miles west of the City of Ellensburg, WA. The project is located in Sections 26, 27, 34 and 35 of Township 18 North, Range 17 East Willamette Meridian and Sections 2, 11 and 14 of T 17 N, R 17 EWM. The SBC piping will follow the existing canal alignment for a distance of approximately 4.3 miles from the Robinson Creek Siphon inlet (MP 9.97) at approximately 47.01525° N latitude and 120.6952° W longitude to the Manastash Creek Siphon outlet and Lateral SB 14.3 turnout (MP 14.3) at approximately 46.96968° N latitude and 120.67241° W longitude. The width of the Project limits will encompass the entire South Branch Canal ROW.

Project Proponent: Kittitas Reclamation District
Urban Eberhart. SEPA Responsible Official
315 N Water St.
Ellensburg, WA 98926
(509) 925-6158

The Kittitas Reclamation District has determined that this proposal will not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). We have reviewed the SEPA Environmental Checklist, drawings, and cultural resource findings. This information is available for review online at www.krdistrict.org and at the Ellensburg Public Library.

This determination is based on the following findings and conclusions:

- This project retrofits existing delivery systems with more efficient infrastructure in the same footprint.
- Long-term maintenance requirements will decrease significantly as a result of the action.
- Best Management Practices will be used to prevent impacts to the natural environment during construction.
- The purpose of these projects is to implement the goals and objectives of the YBIP by providing water conservation through prevention of infiltration loss.
- After completion, 100% of the saved water that would have been lost to seepage will be delivered to the Yakima River and through tributary supplementation to creeks, providing immediate instream benefits to the Yakima River basin and downstream water users.

This DNS is issued under WAC 197-11-340(2). The lead agency will not act on this proposal for 14 days from August 1, 2020. Written comments must be submitted no later than 5:00 PM on August 14, 2020, to the Kittitas Reclamation District c/o Urban Eberhart, PO Box 276, Ellensburg, WA 98926 or via email to krdoffice@fairpoint.net.

Signature Urban Eberhart Date August 1, 2020
(electronic signature or name of signor is sufficient)

SEPA ENVIRONMENTAL CHECKLIST

A. Background [HELP]

1. Name of proposed project, if applicable:

   Kittitas Reclamation District Tributary Supplementation Program - South Branch Canal Piping Project - Robinson Creek Siphon to Manastash Creek Siphon

2. Name of applicant:

   Kittitas Reclamation District

3. Address and phone number of applicant and contact person:

   Kittitas Reclamation District
   Contact: Urban Eberhart
   315 N Water St.
   Ellensburg, WA 98926
   (509) 925-6158

4. Date checklist prepared:
   July 28, 2020

5. Agency requesting checklist:

   Kittitas Reclamation District

6. Proposed timing or schedule (including phasing, if applicable):

   Work for this project will occur in phases as funded, with work beginning around October 15, 2020 and extending through March 2026. Work will occur during the October – March timeframe during any given year, while irrigation water is off, and the canals are dry.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Improvements to the South Branch Canal are in support of the larger KRD Tributary Supplementation Project. There is the potential for other segments of similar South Branch Canal improvements if funding allows. If funded, these projects will undergo separate SEPA review and approvals.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

   This project is directly related to the conservation objectives of the Yakima Basin Integrated Water Resources Management Plan (YBIP) as outlined in the US Bureau of Reclamation (USBR) Department of Ecology (Ecology) 2012 Final Programmatic

Environmental Impact Statement. The project meets the objectives of the YBIP for Enhanced Water Conservation.

Documentation that has been prepared directly related to this proposal includes:

- Section 106 Cultural Resources Assessment Memo and DAHP Concurrence Letter (Section 13 and Attachment B)
- March 2015 Final Report for KRD Feasibility Investigation

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

Joint Aquatic Resource Permit Application (JARPA) will be submitted to the US Army Corp of Engineers and Washington Department of Fish and Wildlife for permitting specific to work at Robinson Creek.

10. List any government approvals or permits that will be needed for your proposal, if known.

Hydraulic Project Approval (Robinson Creek Culvert only))
USACE Section 404 permit (Robinson Creek Culvert only)
US Bureau of Reclamation Categorical Exclusion Checklist
DAHP Memorandum of Agreement for 106 Mitigation

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The Kittitas Reclamation District (KRD) proposes to undertake a conservation project on the South Branch Canal in 2020. The South Branch Canal Piping – Robinson Creek Siphon to Manastash Siphon includes replacing approximately 4.3 of miles currently earthen canal with piping on the same general alignment within the existing right-of-way. The project will occur on lands owned by the USBR as part of transferred works managed by the KRD.

The purpose of this project is to implement the goals and objectives of the Yakima Basin Integrated Plan (YBIP) by providing water conservation through prevention of infiltration loss within the project reach. Savings from this project will also contribute to more efficient irrigation water delivery. This project is beneficial for fish and other aquatic resources within the Yakima River, resulting in increased Title 12 flows and the reallocation of saved water at targeted locations through tributary supplementation. Currently, infiltration loss may create shallow groundwater recharge immediately adjacent to the canal systems. The piping project will decrease the shallow groundwater recharge immediately adjacent to the canal. With existing shallow groundwater recharge, any possible returns to the Yakima River associated with this recharge would occur months later and be minimal. After completion, 100% of the saved water that would have been lost to seepage will be delivered to the Yakima River and through tributary supplementation to creeks, providing immediate instream benefits to the Yakima River basin and downstream water users.

The Project is a 4.3-mile-long water conservation project that will replace the existing South Branch earthen canal with buried pipe beginning at the Robinson Creek Siphon

and extending to the Manastash Creek Siphon (Attachment A). A single trash rack screen will be installed at the headworks of the pipeline and will provide emergency overflow and each turnout or lateral will be tapped into the pipeline. Also, KRD is proposing to incorporate sufficient capacity to provide turnout and pipeline off the South Branch Canal at milepost (MP) 10.4. This turnout will initially be used for the existing SB 10.41 and SB10.42 deliveries and have expansion capacity for a third control gate that would replace the existing MP 9.9 Lateral. The 9.9 lateral currently crosses Robinson Creek and this replacement will eliminate that crossing.

Installing pipeline within the canal prism will require construction activities such as excavation, backfilling, grading, placing base-course, repairing access roads, and relocation of right-of-way (ROW) fences and vegetation removal.

Additional elements for the project include the repair of undershots for proper bedding of pipelines across them, improvement of five areas for staging, and the replacement of the Robinson Creek culvert beneath the KRD access road with a larger structure.

Robinson Creek currently crosses under the KRD access road in a 36-inch concrete pipe that is undersized and requires maintenance. In addition the KRD access road will require slight modifications to allow enhanced heavy equipment access. The culvert will be replaced with a new, larger structure that will provide adequate passage for higher flows and allow equipment access for the completion of the project.

The Project is in support of the KRD Tributary Supplementation Project, which provides benefits for fish, wildlife, and the environment through a water conservation program that restores instream flows in over-appropriated or flow-impaired tributaries to the upper Yakima River. Implementing measures designed to reduce canal seepage allows 100 percent of the previously lost water to be delivered to flow-impaired streams through an allocation, management, and protection agreement. When the entire Project is funded and completed, it will eliminate water loss in the 4.3-mile section of KRD's South Branch Canal, resulting in supplemental instream flow estimated at 2,476 acre-feet/year (6.93 cubic feet per second [cfs]), the entirety of which will be delivered for instream flow. These streams are home to listed salmonids and other riparian and aquatic species that are at risk due to low flows caused in part by rapid urbanization and changes to snowpack and other meteorological processes.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The South Branch Canal is located along the western side of the Kittitas Valley, approximately 4 miles west of the City of Ellensburg, WA. The project is located in Sections 26, 27, 34 and 35 of Township 18 North, Range 17 East Willamette Meridian and Sections 2, 11 and 14 of T 17 N, R 17 EWM. The SBC piping will follow the existing canal alignment for a distance of approximately 4.3 miles from the Robinson Creek Siphon inlet (MP 9.97) at approximately 47.01525° N latitude and 120.6952° W longitude to the Manastash Creek Siphon outlet and Lateral SB 14.3 turnout (MP 14.3)

at approximately 46.96968° N latitude and 120.67241° W longitude. The width of the Project limits will encompass the entire South Branch Canal ROW.

The new 10.4 lateral pipeline will extend northeast from SBC MP 10.4, paralleling a private driveway for approximately 1,300 feet before crossing Robinson Canyon Road and connecting to the existing SB 9.9 lateral.

To access the project area from Ellensburg, follow W. 5th Ave. west toward N. Railroad Ave, turn right on N. Railroad Ave. and continue on to N. Dolarway Rd. Take the third exit at the roundabout and head west on US Hwy 97. Turn Left on Thorp Hwy S. and continue for 1.6 miles. Turn left onto Robinson Canyon Rd and continue for 3.6 miles. After approximately 2 miles, turn left onto the KRD access road and arrive at the project area.

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

The project footprint is relatively flat within the canal, but the project corridor crosses through hilly terrain, canyons, and rolling slopes.

b. What is the steepest slope on the site (approximate percent slope)?

5 percent.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

As mapped by the Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS), soils in the South Branch Canal project area are:

Argixerolls-Durixerolls complex (587), Reeser ashy clay loam (603 and 604), Pachneum ashy loam (557, 824 and 825), Millhouse cobbly ashy loam (819 and 823), Shinn-Pachneum-Nint complex (858), Weirman-Kayak complex (882), Patron Complex (879) and Nanum Ashy loam (897).

Of these soils, Argixerolls (587), Reeser ashy clay loam (604), and Pachneum ashy loam (557, 824, and 825) are listed as farmland of statewide importance. Reeser ashy clay loam (603) Millhouse cobbly ashy loam (819 and 823) and Nanum Ashy loam (897) are listed as prime farmland if irrigated.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

The project will require approximately 99,900 cubic yards (cy) of excavation and 71,400 cy of fill, for a net difference of 26,500 cubic yards of excavation – mostly volume displaced by the buried pipelines. The finish grade will be a net filling of the existing trapezoidal channel so that the finish grade is to roughly the existing canal bank grades.

Bedding materials will be obtained from nearby commercially-available and permitted gravel pits or screened on site. Excavated material that cannot be incorporated into the project will be hauled offsite to an approved location. Material quantities are approximate and subject to change based on conditions encountered during construction.

Five locations will be used as staging areas to support construction. There is potential for limited filling and grading to adequately prepare the five staging areas.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Minimal erosion is possible for the project after clearing and grubbing work commences; however, best management practices (BMPs) for erosion/sediment control will be in place to mitigate any possible erosion during construction. After construction, all slopes and the canal prism will be revegetated with native grass mix or covered in rock. There will be no increase in erosion from the long-term use of the system.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

No new impervious surface will be created by the project. The new pipe will be buried and the area re-seeded with native seed mix.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Project specific Water Quality and Erosion and Sediment Control Plan will be written and required for the project. Disturbed areas will be replanted with native vegetation or approved species. Project-specific BMPs will be implemented to avoid and prevent any erosion associated with construction.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Typical construction activities are expected to cause minor increases in fugitive dust and exhaust. The completed projects will not result in increased traffic volumes or air emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Dust control measures during construction, such as watering of exposed soil or road surfaces, placement of clean rock on road surfaces, or other commercial dust abatement applications to road surfaces will be implemented as needed. Machinery, equipment, and support vehicles used for the project will be maintained in proper working order to keep emissions within applicable air quality guidelines.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Robinson Creek, a named perennial stream, is in the project area. The National Hydrography Dataset also indicates 15 unnamed drainages cross the South Branch Canal in the project area. One of these drainages is perennial; four are ephemeral and only convey water following precipitation events; five are intermittent and convey water seasonally, and; five are non-KRD created canals or ditches. When conveying water, the ephemeral and intermittent drainages flow down gradient from the project area where some drainage features enter into non-jurisdictional irrigation ditches or infiltrate prior to reaching a stream or water body. Of these drainages, only Robinson Creek will be impacted (temporarily) to replace the undersized culvert.

The South Branch Canal was constructed in uplands for the purpose of irrigation water conveyance. The National Wetland Inventory (NWI) maps six wetlands located within 1,000 feet and down gradient of the project area. These wetlands are artificially created due to seepage loss from the existing unlined South Branch Canal and are not hydrologically connected to a jurisdictional waterbody, therefore the wetlands are not jurisdictional. Additionally, NWI maps riverine wetlands associated with Robinson Creek and several of the unnamed drainages.

This project will improve the efficiency of the South Branch Canal and may result in loss of hydrology to adjacent wetlands. Artificially irrigated areas that would revert to dryland should application of water to that area cease are not considered Waters of the United States. These wetlands may experience reduced groundwater due to reduced infiltration loss from the canal system; however, no mitigation is required per the Army Corps of Engineers and Ecology's guidance pertaining to loss of wetlands due to improved water conservation.

This canal piping project will allow more instream flows within the Yakima River during the irrigation season when they are most beneficial to ESA-listed species and other water users. These conservation measures are also in line with the goals of the YBIP and KRD tributary supplementation program which was spearheaded by the KRD in partnership with the Yakama Nation, State, and Federal agencies to use KRD infrastructure to help threatened fish during periods of drought. Increasing efficiency within the canals will allow for a greater amount of tributary supplementation if necessary during future drought years, and immediate instream benefits in the Yakima River basin.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Work will occur below the Ordinary High-Water Mark (OHWM) of Robinson Creek in order to replace the existing undersized culvert beneath the KRD access road. Work will include stream isolation so the work can be completed in the dry; removal of the culvert and roadway to install the new structure; replacement of the 36-inch culvert with a much larger (not known at this time but likely a 16 foot wide) culvert; replacement of the temporarily impacted streambed, and; removal of isolation components. Attachment C provides a plan drawing of the proposed work.

Other project will occur within the non-jurisdictional, existing canal when irrigation is turned off and there is no water within the canal. Because the work will occur in the dry, there will be no impacts to drainages and wetlands within 200 feet of the project; however, appropriate BMPs will be implemented to avoid unanticipated impacts to these aquatic resources. This project will include repair undershots for proper bedding of pipelines across them, which will benefit the adjacent drainages when water is present.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No filling or dredging will occur within any wetlands or adjacent aquatic resources. Outside of Robinson Creek, all excavation and placement of material will occur within the existing alignments of the South Branch Canal. The project will excavate the Robinson Creek channel to replace the culvert, but this material will be replaced in-kind after the new structure is placed. The project will not result in a net increase in the fill placed in Robinson Creek. The new culvert will have natural stream bottom material added which will result in a net increase in the size and function of Robinson Creek.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

FEMA maps indicate Zone A of the 100-year floodplain occurs just downstream of the existing Robinson Creek culvert. Minimal work will occur within the mapped floodplain, consisting only of excavation and replacement of native material. There will be no impacts to the floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

No.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities

withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

N/A.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff during construction will be managed by using approved BMPs to contain all sedimentation and prevent discharge to adjacent drainages and wetlands. After construction, all disturbed areas and roadsides will be reseeded to prevent any long-term impacts.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

Piping this section of the South Branch Canal will reduce infiltration loss from the existing KRD canal system. Under existing conditions, the currently- open canal in this reach has an estimated infiltration loss of 6.93 cubic feet per second (CFS) per irrigation season. Based on the location of these canals on elevated slopes above the Kittitas Valley floor, it is likely this infiltration loss has historically provided surface water to down-gradient wetlands where at least some of the hydrology was lost through evapotranspiration. The remaining water associated with infiltration loss would have historically been infiltrating and providing recharge benefit to shallow groundwater. There is the potential that some of this groundwater recharge would eventually reach the Yakima River; however, this return of hydrology to the system would be less than what was lost through infiltration and it would also be “retimed” such that discharge to the river would be months after it was lost from the canal systems.

Based on the annual average length of the KRD irrigation operation season, completing this project will result in an annual water savings of 2,476 acre feet. This will allow more instream flows within the Yakima River during the irrigation season when they are most beneficial to Endangered Species Act (ESA)-listed species and other water users downstream of the KRD system. These conservation measures are also in line with the goals of the YBIP and KRD tributary supplementation program which was spearheaded by the KRD in partnership with the Yakama Nation, State, and Federal agencies to use KRD infrastructure to help threatened fish during periods of drought. Increasing

efficiency within the canals will allow for a greater amount of tributary supplementation if necessary during future drought years, and immediate instream benefits in the Yakima River basin.

Water from natural drainages is conveyed underneath the South Branch Canal thru undershots and underdrains.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

The project will positively impact drainage patterns in Robinson Creek by increasing the size of the current culvert. Any Improvements to undershots and underdrains on the South Branch Canal will occur when ephemeral drainages are dry to limit impacts to surface water. Approved BMPs will be in place in the event a precipitation event results in short duration runoff of surface water while these improvements are underway. Runoff during construction will be managed by using approved BMPs to contain all sediments and prevent discharge to adjacent drainages and wetlands along both projects. After construction, all disturbed areas and roadsides will be reseeded to prevent any long-term impacts.

4. Plants [help]

a. Check the types of vegetation found on the site:

_X__deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
_X__shrubs
_X__grass
__X__pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
_X__ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
_X__other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Grass, weeds, and shrubs surrounding the canal and roadside pasture grasses will be removed during the project . Replanting will occur in disturbed areas after construction is complete.

c. List threatened and endangered species known to be on or near the site.

None.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Disturbed areas will be reseeded with an approved native seed mix.

e. List all noxious weeds and invasive species known to be on or near the site.

Canada thistle, diffuse knapweed, and kochia.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other: ducks
mammals: deer, bear, elk, beaver, other: muskrats, marmots
fish: bass, salmon, trout, herring, shellfish, other: crayfish

b. List any threatened and endangered species known to be on or near the site.

None.

c. Is the site part of a migration route? If so, explain.

No.

d. Proposed measures to preserve or enhance wildlife, if any:

This water conservation project meets objectives of the Yakima River Basin Integrated Plan by enhancing the instream flow of the Yakima River and improving the quality of the water that is discharged from the irrigation system into the Yakima River. This will lead to improved aquatic habitat.

The Washington Department of Fish and Wildlife has existing elk fence adjacent to the South Branch Canal Project. In addition, KRD will provide enhanced protection through adding additional livestock fencing around the perimeter of the canals where necessary.

e. List any invasive animal species known to be on or near the site.

None.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

None.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, the project will occur within the KRD right-of-way.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

As a component of the greater water conservation project, these projects will ultimately contribute to significant energy savings by increasing irrigation water deliverance efficiency and reducing inadvertent loss of water throughout the system.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

1) Describe any known or possible contamination at the site from present or past uses.

None.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

None.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

Equipment staging and fueling will occur more than 50 feet from wetlands and the OHWM of adjacent drainages.

4) Describe special emergency services that might be required.

It is not anticipated that special emergency services will be required.

5) Proposed measures to reduce or control environmental health hazards, if any:

These actions are not anticipated to create an environmental health hazard. Appropriate spill prevention and clean up measures will be taken if necessary.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Equipment associated with construction such as backhoes, bulldozers, and excavators will raise noise levels during construction. Construction will take place from

approximately 8 am to 5 pm on weekdays. Following construction, normal background noise levels will occur.

3) Proposed measures to reduce or control noise impacts, if any:

None proposed.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Currently the site is used for the KRD South Branch Canal. Adjacent properties are used for agriculture, rural residences, and a state-owned wildlife area.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No, the project improvements will take place within the existing KRD right-of-way.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

Structures on the site include the Robinson Creek Siphon, Robinson Creek culvert, turnout boxes, and drop chutes. Roads within the project areas are KRD access roads within the existing right-of-way.

d. Will any structures be demolished? If so, what?

The 36-inch Robinson Creek culvert will be removed and replaced with a larger structure.

e. What is the current zoning classification of the site?

The South Branch Canal serves as the boundary between what is zoned as Forest and Range (west of the canal) and Agriculture 20 (east of the canal). The 10.4 lateral piping location is east of the canal and is zoned as Agriculture 20.

f. What is the current comprehensive plan designation of the site?

The project area is within the Rural Working land use designation.

g. If applicable, what is the current shoreline master program designation of the site?

There are no designated shorelines within the project area.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The FEMA 100-year floodplain is just within the area of the Robinson Creek culvert.

The South Branch Canal was constructed in uplands for the purpose of irrigation water conveyance. The National Wetland Inventory maps nine wetlands (Freshwater Forested/Shrub Wetland [PSSB]) located down gradient of the South Branch Canal project area. These wetlands are artificially created due to infiltration loss from the canal and no dredge or fill activities are proposed to wetlands or jurisdictional Waters of the State. This project will improve the efficiency of the canal and may result in loss of hydrology to these wetlands. These wetlands may experience reduced groundwater due to reduced infiltration loss from the canal systems, and no mitigation is required per Ecology's guidance pertaining to loss of wetlands due to improved water conservation.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

N/A.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This area is primarily used for agriculture and the project will enhance the continuation of this land use.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

N/A.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

N/A.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

N/A.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

N/A.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No light or glare producing activity is proposed.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

The LT Murray Wildlife Area lies immediately west of the South Branch Canal project and provides opportunities for hunting, fishing, and wildlife viewing.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No, the project will not displace recreational uses.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

N/A.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

There is one historic site that is eligible within the project area (See Cultural Resources Memo, Attachment B). The 14.2-mile-long South Branch Canal was previously inventoried and evaluated by USBR and determined eligible for listing on the National Register of Historic Places in 2017.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

No archaeological resources were identified in the Area of Potential Effect (APE). Based on the steepness of much of the terrain, the extensive disturbance from canal construction, and the associated agricultural activities, the APE has limited potential for containing intact archaeological deposits.

Jacobs archaeologists and historians conducted background research and field survey, recorded and evaluated cultural resources older than 50 years of age for listing on the NRHP, and authored the report. Kelsey Doncaster, Senior Historian, MS, served as principal investigator and meets the Secretary of Interior's Standards for a professional historian.

In 2019 a desktop records search was conducted by Michael Farrell, MSc, who conducted the research to determine if previously recorded archaeological and historic resources are located within the APE. This was followed by a pedestrian survey, with shovel tests and assessment of canal features, that was conducted by Jacobs archaeologists in 2019 and 2020, to assess the potential of the proposed APE to contain any intact subsurface archaeology.

In 2017, Jacobs was contracted by KRD to focus on the approximately 2.8-mile-long segment of the South Branch Canal from Tunnel No. 2 (also known as Swede Tunnel) outlet (Sta. 379+40, MP [Milepost] 7.19) to the Robinson Creek Siphon inlet (Sta. 528+27, MP 10.01). While not labeled as such in Jacobs' report (Bumback and Gray 2017) or in Reclamation's NHPA Section 106 reporting, this was KRD's Phase 1 of planned improvements on the South Branch Canal for water savings. This report is meant to be a supplement to Jacobs' 2017 Cultural Resources Assessment (Bumback and Gray 2017) and to present the results of the field survey done for Phase 2. Phase 2 focuses on a segment of the South Branch Canal immediately south of the Phase 1 segment, starting at the outlet of Robinson Creek Siphon.

There was also a Historic Resources Survey in 2017 conducted by Kelsey Doncaster: Yakima Project Farm Bridges Disposal near Cle Elum, Thorp, Kittitas and Sunnyside, Washington. Submitted to the U.S. Department of the Interior, USBR, Pacific Northwest Region.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Methods are described in the Section 106 Cultural Resources Assessment Memo (Attachment B) and the Historic Resources Surveys (Doncaster 2017).

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

Reclamation will provide a mitigation Memorandum of Agreement to DAHP to mitigate project impacts to historic resources.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

Access to the site will be from the existing KRD access road that parallels the project area to the east. Access to this KRD road is via Robinson Canyon Road. Work for this project will occur off of the KRD access road and will not impact public streets.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

None.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

The project will require slight modifications to the KRD access road to allow large equipment access. This is a private road that will not affect public use.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

There will be no increase in vehicular trips per day.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No.

h. Proposed measures to reduce or control transportation impacts, if any:

N/A.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities [help]

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The only utility needed for the projects is electricity. Electrical power will be necessary for construction and for Contractor's and Construction Manager's trailers, and potentially pumps.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

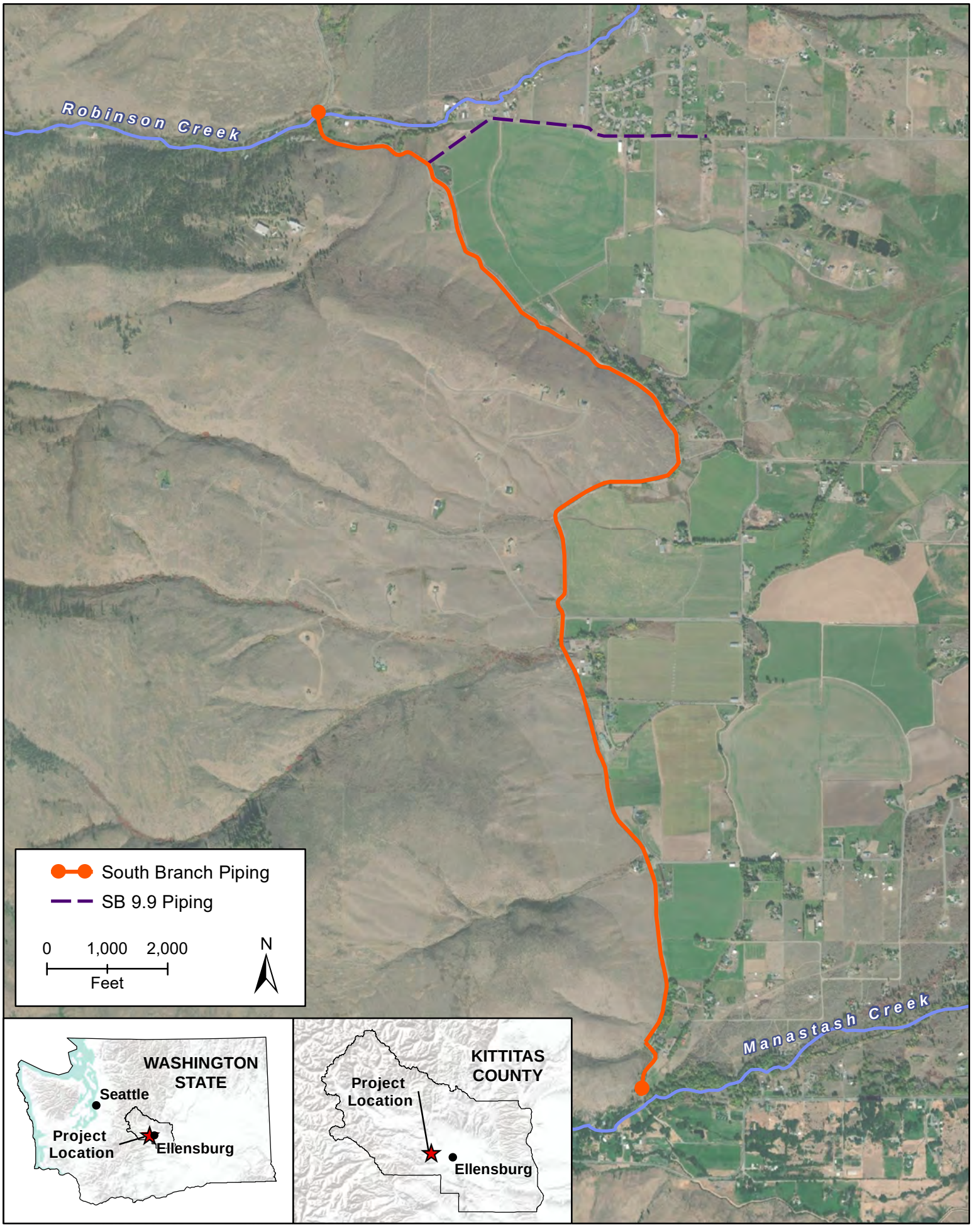
Name of signee: Urban Eberhart

Position and Agency/Organization: Secretary Manager; Kittitas Reclamation District

Date Submitted: 8/01/2020

ATTACHMENT A: PROJECT MAPS

VICINITY


Robinson Creek
South Branch Piping
SB 9.9 Piping
0
1,000
2,000
Feet
N
Manastash Creek
WASHINGTON STATE
Seattle
Project Location
Ellensburg
KITTITAS COUNTY
Project Location
Ellensburg

ATTACHMENT B: CULTURAL RESOURCES MEMO AND DAHP CONCURRENCE

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number: 2020-03-02222 (Please contact the lead agency for the project number. If associated to SEPA, please contact SEPA@dahp.wa.gov to obtain the project number before creating a new project.)

Author: Kelsey Doncaster, Jessica Jones, Michelle Yellin, Michael Farrell, Michael Chidley, and Jane Weigand

Title of Report: Cultural Resources Assessment South Branch Canal Improvement Project, Phase 2

Date of Report: 5/14/2020

County(ies): Kittitas

Section: 2 Township: 17N Range: 17E

Quad: Manastash Creek Acres: 13.5

Section: 11 Township: 17N Range: 17E

Quad: Manastash Creek Acres: 10

Section: 14 Township: 17N Range: 17E

Quad: Manastash Creek Acres: 0.6

Section: 26 Township: 18N Range: 17E

Quad: Thorp Acres: 3

Section: 27 Township: 18N Range: 17E

Quad: Thorp Acres: 1.5

Section: 34 Township: 18N Range: 17E

Quad: Thorp Acres: 3

Section: 35 Township: 18N Range: 17E

Quad: Thorp Acres: 12.8

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☒ Yes ☐ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

_____
_____
_____
_____
_____
_____
_____

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

Jacobs

Cultural Resources Assessment

South Branch Canal Improvement Project, Phase 2

Prepared for:

Kittitas Reclamation District and U.S. Bureau of Reclamation

Final May 2020

South Branch Canal Improvement Project, Phase 2

Project No.:	W3X78409
Date:	March 2020
Client Name:	Kittitas Reclamation District and U.S. Bureau of Reclamation
Authors(s):	Kelsey Doncaster, MS
	Jessica Jones, BA
	Michelle Yellin, MS
	Michael Farrell, MSc
	Michael Chidley, MS
	Jane Weigand, BA

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1100 112th Avenue NE, Suite 500
Bellevue, Washington 98004
425.453.5000
www.jacobs.com

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FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

APE	Area of Potential Effects
C.F.R.	Code of Federal Regulations
cfs	cubic feet per second
DAHP	Department of Archaeology and Historic Preservation
HPI	Historic Property Inventory
Jacobs	Jacobs Engineering Group Inc.
KRD	Kittitas Reclamation District
LND	Land Management and Development
MP	milepost
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operation and maintenance
Project	South Branch Canal Improvement Project
Reclamation	U.S. Bureau of Reclamation
RCW	Revised Code of Washington
ROW	right-of-way
ST	shovel test
WISAARD	Washington Information System for Architectural and Archaeological Records Data

1 INTRODUCTION

The Kittitas Reclamation District (KRD) is proposing improvements to the South Branch Canal in support of the KRD Tributary Supplementation Project located approximately 4 miles west of Ellensburg, Washington (**Figure 1**). KRD performs the operation and maintenance (O&M) of the Kittitas Division for the U.S. Bureau of Reclamation (Reclamation). As per the Reclamation Manual Directive and Standards Land Management and Development (LND) 02-03, "Reclamation is responsible for ensuring compliance with historic property management requirements for all project works, even when O&M has been transferred to a project beneficiary"; so, while a project is not funded by Reclamation but is on a Reclamation-owned facility, then it is considered a federal undertaking (Doncaster 2016:1).

As a federal undertaking, the South Branch Canal Improvement Project (Project) must be conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA), which requires that the effects of the Project on historic properties be taken into account. KRD retained Jacobs Engineering Group Inc. (Jacobs) to conduct cultural resources investigations to support compliance with Section 106 of the NHPA for this Project. Jacobs archaeologists and historians conducted background research and a pedestrian survey and recorded cultural resources older than 50 years of age.

In 2017, Jacobs was contracted by KRD to focus on the approximately 2.8-mile-long segment of the South Branch Canal from Tunnel No. 2 (also known as Swede Tunnel) outlet (Sta. 379+40, MP [Milepost] 7.19) to the Robinson Creek Siphon inlet (Sta. 528+27, MP 10.01). While not labeled as such in Jacobs' report (Bumback and Gray 2017) or in Reclamation's NHPA Section 106 reporting, this was KRD's Phase 1 of planned improvements on the South Branch Canal for water savings. This report is meant to be a supplement to Jacobs' 2017 Cultural Resources Assessment (Bumback and Gray 2017) and to present the results of the field survey done for Phase 2. Phase 2 focuses on a segment of the South Branch Canal immediately south of the Phase 1 segment, starting at the outlet of Robinson Creek Siphon.

This survey only identified one historic property in the Area of Potential Effects (APE). The 14.2-mile-long South Branch Canal was previously inventoried and evaluated by Reclamation and determined eligible for listing on the National Register of Historic Places (NRHP) in 2017. A 4.3-mile segment of the South Branch Canal from Sta. 526+76.09 (MP 9.97) to Sta. 754+75 (MP 14.3) is located within the APE. The portion of the South Branch Canal within the APE is recommended as a contributing element to the NRHP-eligible South Branch Canal (Property ID 708748). The proposed undertaking would *adversely affect* this property.

No archaeological resources were identified within the APE. Based on the steepness of much of the terrain, the extensive disturbance from canal construction, and the associated agricultural activities, the APE has limited potential for containing intact archaeological deposits.

LEGEND

- Proposed Staging Areas
- South Branch Canal
- Proposed Buried Lateral Pipeline
- KRD Right-of-Way
- Area of Potential Effects / Survey Area

N

0 1,250 2,500

APPROXIMATE SCALE IN FEET

SOUTH BRANCH IMPROVEMENTS
ROBINSON CREEK SIPHON TO
MANASTASH CREEK SIPHON

JACOBS

Figure 1: Overview of the South Branch Canal Improvement Project (Phase 2)

1.1 PROJECT DESCRIPTION AND LOCATION

The Project is a water conservation project that will propose to pipe the South Branch Canal from the Robinson Creek Siphon to the Manastash Creek Siphon. The Project is in support of the KRD Tributary Supplementation Project, which provides benefits for fish, wildlife, and the environment through a water conservation program that restores instream flows in over-appropriated or flow-impaired tributaries to the upper Yakima River. Implementing measures designed to reduce canal seepage allows 100 percent of the previously lost water to be delivered to flow-impaired streams through an allocation, management, and protection agreement. When the entire Project is funded and completed, it will eliminate water loss in a 4.3-mile section of KRD's South Branch Canal, resulting in supplemental instream flow estimated at 2,476 acre-feet/year (6.93 cubic feet per second [cfs]), the entirety of which will be delivered for instream flow. These streams are home to listed salmonids and other riparian and aquatic species that are at risk due to low flows caused in part by rapid urbanization and changes to snowpack and other meteorological processes.

The Project limits will follow the existing South Branch Canal alignment for a distance of approximately 4.3 miles from the Robinson Creek Siphon inlet (Sta. 526+76.09, MP 9.97) at approximately N47.01525° latitude and W120.6952° longitude to the Manastash Creek Siphon outlet and Lateral SB14.3 turnout (Sta. 754+75, MP14.3) at approximately N46.96968° latitude and W120.67241° longitude. The width of the Project limits will encompass the entire South Branch Canal right-of-way (ROW). Canal stationing is assumed to be that listed on the original canal design documents (Reclamation 1927), with the stationing in feet divisible by 5,280 for conversion to common MP referencing utilized for lateral and turnout identification.

1.2 REGULATORY CONTEXT

The Project is a federal undertaking because it is regulated by Reclamation and is therefore subject to Section 106 of the NHPA. Section 106 of the NHPA (Section 106) requires that, before beginning any undertaking, a federal agency must take into account the effects of the undertaking on historic properties and afford the Advisory Council on Historic Preservation an opportunity to comment on these actions. The Section 106 process is presented in Part 800 of Title 36 of the *Code of Federal Regulations* (36 C.F.R. pt. 800) and consists of five basic steps:

1. Initiate process by coordinating with other environmental reviews, consulting with the State Historic Preservation Officer, identifying and consulting with interested parties, and identifying points in the process to seek input from the public and to notify the public of proposed actions (36 C.F.R. § 800.3).
2. Identify cultural resources and evaluate them for NRHP eligibility, resulting in the identification of Historic Properties (36 C.F.R. § 800.4).
3. Assess effects of the project on historic properties (36 C.F.R. § 800.4/36 C.F.R. § 800.5).

4. Consult with the State Historic Preservation Officer and interested parties regarding effects on historic properties, and if adverse effects are found then they would be resolved with a Memorandum of Agreement (36 C.F.R. § 800.6).
5. Proceed in accordance with the Memorandum of Agreement.

1.2.1 National Register of Historic Places

The NRHP recognizes properties that are significant at the national, state, and local levels. According to the NRHP (36 C.F.R. pt. 60), the quality of significance in American history, architecture, archaeology, engineering, and culture exists in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association. Properties that are eligible for listing on the NRHP are properties that retain their integrity and meet one or more of the four criteria listed below. In addition, unless a property possesses exceptional significance, it must also be at least 50 years old.

A resource can be considered for inclusion on the NRHP if it meets at least one of the following criteria (36 C.F.R. § 60.4):

A. Is associated with events that have made a significant contribution to the broad patterns of our history.
B. Is associated with the lives of persons significant in our past.
C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represents a significant and distinguishable entity whose components might lack individual distinction.
D. Has yielded, or might be likely to yield, information important in prehistory or history.

Individually eligible properties and historic districts must retain key character-defining features, or integrity, to convey the significance of a resource. Integrity specifically refers to the ability of a property to convey its significance. In other words, a historic property must have enough intact physical characteristics or features to communicate its significance under one or more of the NRHP criteria.

For a historic built environment resource to be eligible for the NRHP, it needs to possess several of the seven aspects of integrity to convey its significance for the NRHP criteria that it is eligible under, which can vary; for archaeological sites, integrity of location, materials, and association are generally most crucial. To address important research topics, archaeological deposits usually must be in their original location, retain depositional integrity, contain adequate quantities and types of materials in suitable condition to address important research topics, and have a clear association. Associations may be defined at different social scales (e.g., an activity area, a household, or institution) and across various temporal spans (e.g., brief or longer term).

1.2.2 Area of Potential Effects Description

The Project APE includes the horizontal and vertical extent of all proposed Project activities. The APE includes the geographic areas where the Project may directly or indirectly cause change of character or use of historic properties (e.g., archaeological sites, traditional cultural properties, or built environment resources).

The APE includes the existing South Branch Canal alignment for a distance of approximately 4.3 miles from the Robinson Creek Siphon inlet (Sta. 526+76.09, MP 9.97) to the Manastash Creek Siphon outlet and Lateral SB14.3 turnout (Sta. 754+75, MP14.3) along with the new lateral pipeline route from the South Branch Canal at MP 10.4 to Robinson Canyon Road where it would connect with the existing Lateral SB9.9 which is 0.47 of a mile. **Figure 2** depicts the proposed APE. The limits of horizontal disturbance include the ROW on either side of the canal centerline (varying from 40 to 75 feet from centerline). Most of the ground disturbance is limited to work within the canal, on the right downstream (west) bank for the rock fall bench and associated features. If the canal is lined instead of piped there would be work on the left downstream (east) bank for the construction of the wildlife egress ramps and access road improvements. Work will also be restricted to occur within the apparent limits set by any existing landowner fences.

The vertical APE extends up to 4 feet below the existing surface in some places and includes the following anticipated depths of disturbance (piping or canal lining):

Canal Piping

- *Canal Piping*: approximately 3 feet deep excavation for bedding and backfill of up to 60-inch diameter pipelines in the original canal footprint
- *Rock Fall Bench*: up to 12 inches deep for excavation of a shallow bench or nominal curb to reduce the potential for introduction of upslope rock and debris into the canal
- *Access Road:*1-foot-deep to 1-foot high regrading access road improvements
- *Turnouts/Laterals*: Excavation up to 4 feet deep at replacement structure boxes for existing ditch laterals and field turnouts

Canal Lining

- *Canal Lining*: approximately 8 inches deep
- *Wildlife Egress Ramps*, *Check Structures*, *and Access Road Improvements*: 1 to 4 feet deep
- *Underdrains*: up to 2 feet below the existing canal where a 2- by 2-foot trench will be excavated to install the underdrains
- *Rock Fall Bench*: up to 12 inches deep for excavation of a shallow bench or nominal curb to reduce the potential for introduction of upslope rock and debris into the canal

Modification of Siphons.

- *Robinson Creek Siphon;* its inlet and outlet structures will remain, but the central invert will be removed/replaced and intercepted by a vertical overflow riser discharging to the creek.
- *Manastash Creek Siphon*: A new, higher pressure, smaller diameter pipeline will be grouted in place on the inside of the siphon. The inlet and outlet will be modified to prevent creation of a potential safety hazard with backfilling of the original structure.

The pipeline route for Lateral 10.4 will be in farmland adjacent to an existing private and then county road to connect to Lateral 9.9 in a 40-foot easement. The 24-inch diameter polyvinyl chloride pipe will be installed in a trench approximately 4 feet wide by 5-6 feet deep and buried.

Five locations will be used as staging areas to support construction. There is potential for limited filling and grading to occur to adequately prepare the five staging area locations. The vertical APE ranges between 6 and 12 inches deep for these staging areas.

1.3 KEY PERSONNEL

Jacobs archaeologists and historians conducted background research and field survey, recorded and evaluated cultural resources older than 50 years of age for listing on the NRHP, and authored the report. Kelsey Doncaster, Senior Historian, MS, served as principal investigator and meets the Secretary of Interior's Standards for a professional historian.

A desktop records search was conducted by Michael Farrell, MSc, who conducted the research to determine if previously recorded archaeological and historic resources are located within the APE. Michael also coauthored the report.

The pedestrian survey, with shovel tests and assessment of canal features, was conducted by Jacobs archaeologists Michael Farrell; Michael Chidley, MS; and Jessica Jones, BA, to assess the potential of the proposed APE to contain any intact subsurface archaeology.

Jacobs historian Kelsey Doncaster conducted research, contributed to the report, and evaluated this section of the South Branch Canal to determine if it was a contributing or non-contributing section of the eligible historic property.

Two historic-era bridges were evaluated in the APE, one of which was previously inventoried. As the South Branch Canal was previously recorded in 2017 on a Historic Property inventory (HPI) form, the form was updated to the current status. HPIs are provided in **Appendix A**.

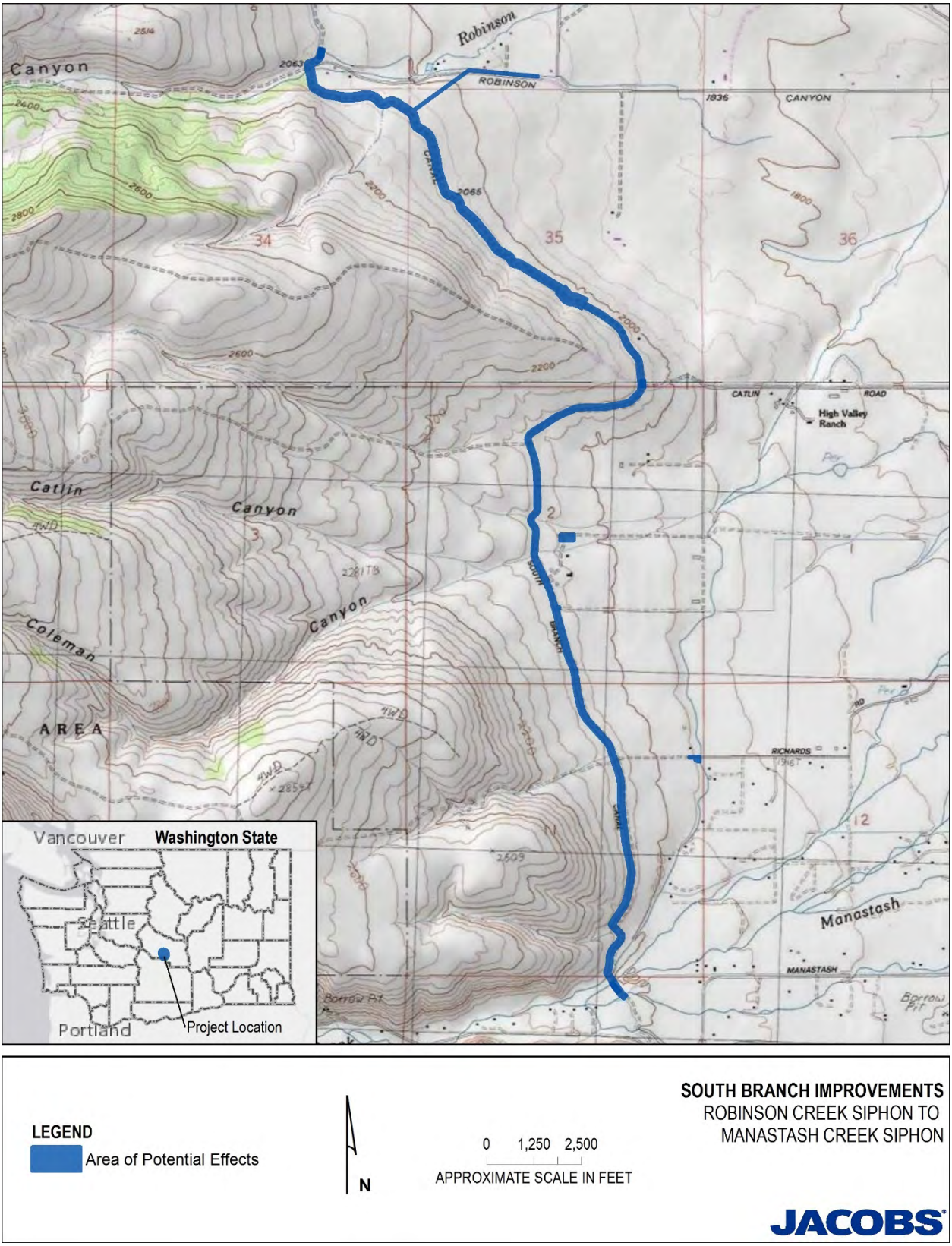

Figure 2: Area of Potential Effects

2 CULTURAL SETTING

2.1 PLATEAU CULTURE AREA AND ETHNOGRAPHIC CULTURES

The Columbia Plateau is a broad physiographic region formed of a large trough, underlain by deep basaltic bedrock, drained by the Columbia River and its major tributaries, such as the Okanogan, Spokane, Yakima, Snake, John Day, and Deschutes Rivers. The Middle Columbia River region encompasses the Yakima River and the Snake River to the Okanogan River. The Middle Columbia region was traditionally occupied by several cultural groups, some of whose descendants are now represented by the Confederated Tribes and Bands of the Yakama Nation, the Confederated Tribes of the Colville Reservation, the Wanapum Band, and other smaller tribes of the Plateau region. The project area lies within the ceded lands of the Yakama Nation as a result of the Treaty of 1855.

The Plateau cultures have been recognized as complexes of deeply-rooted cohesive cultural traits well-adapted to the semi-arid climate of the region, focused on subsistence strategies exploiting edible roots and anadromous fish, and deeply involved in a cross-regional trade and travel network that included the surrounding regions (Ray 1936, 1939; Schalk and Cleveland 1983; Walker 1998).

During the early historic period, speakers of the Sahaptian and Interior Salishan languages were predominant in the Middle Columbia region. Ethnographic data indicates that the geographic division between these language groups was roughly coincident with the upper Yakima River drainages (Walker 1998). The area of this survey was the ethnographically known domain of the Kittitas (Schuster 1998:327-328). The largest villages in the area were “about two miles below the present town of Ellensburg on the west side of the Yakima River” and “one mile above Thorp, opposite the mouth of Taneum creek” (Ray 1936:143).

Ethnographic and early historic peoples of the Middle Columbia were known to be mobile hunter-fisher-gatherers, moving from winter villages to other seasonally productive resource bases. Each group worked cooperatively with their neighbors to accommodate and gain access to environmentally variable plant and animal resources. Hunting and fishing both were important subsistence systems, substantially supplemented by vital root and plant gathering and processing. Trade with neighboring groups and neighboring regions was facilitated by a complex and productive trade system centered upon the Columbia River with inter- and intra-regional routes and centers. Ethnographic material culture has been documented as earthlodge and mat lodge structures with increasing use of skin lodges and tents though time, dugout canoes of cottonwood, pine, and driftwood cedar, well-crafted basketry intensively used for cooking, processing, storage and transport of food and trade items, and a complex of lithic and other tool systems (knapped stone, groundstone, bone, wood, and shell implements). Offensive weaponry is known to have included the bow and arrow, thrusting spears, clubs, and knives (Chidley 2009).

2.2 PRECONTACT ARCHAEOLOGICAL CONTEXT

2.2.1 Paleoarchaic (pre-11,000 - 8000 BP)

The Paleoarchaic period includes the period of earliest recognized occupation of the Columbia Plateau, including the two earliest artifactual cultures - the fluted point and western stemmed-point traditions. Andrefsky (2004) combines these type traditions into the Paleoarchaic. The Paleoarchaic includes Ames et al.'s (1998) Period 1A (11,500 - 11,000 BP) and Period 1B (11,000 BP - 7000/6400 BP), and King and Putnam's (1994) Clovis period and Windust Phase. The fluted point tradition, defined by the presence of large spear points exhibiting basally-originating long flaked flutes, encompasses the commonly known Clovis and Folsom traditions, Fluted points in the region are most notably known from the East Wenatchee cache site (Mehringer and Foit 1990) and other isolated contexts. The fluted point tradition is indicative of the earliest recognized culture in North America (and the Plateau), and although there is increasing argument for a pre-fluted point occupation, it is typically dated to the 1000-year period beginning 11,500 BP.

The western stemmed-point occupation of the Columbia Plateau, which in some instances appears to pre-date fluted point types, is comprised generally of the Windust, Lind Coulee, early Cascade, and similar type artifacts. The western stemmed-point tradition occurs coincident and/or continues later than the fluted point traditions, with dated contexts as late as 8000 BP or later. Western stemmed-point assemblages have been found throughout the Plateau and Middle Columbia reach, including an early occurrence on the Yakima Training Center at the Sentinel Gap site (10,100 - 10,600 BP) (Galm and Gough 2005). The Paleoarchaic cultures are interpreted as mobile broad-spectrum hunters and foragers, with what appears to be a common use of pluvial lake margins and rockshelters (Andrefsky 2004).

2.2.2 Early Archaic (8000 - 5000 BP)

The Early Archaic roughly coincides with increasing warmth and dryness during the Anithermal environmental conditions. Material culture of this period exhibits a continuation and/or alteration of Paleoarchaic characteristics and subsistence. While several Paleoarchaic adaptations persist into the Early Archaic period, regionally specific patterns develop in the area in response to local adaptations and activities. In the Middle Columbia, these are recognized as two somewhat contemporaneous and overlapping phases - the Cascade and Vantage Phases. Noted projectile point types include: the shouldered lanceolate Mahkin Shouldered point/knife (8000 - 5000 BP); the large triangular Cold Springs Side-notched type (6000 - 4000 BP); the Cascade projectile type group, consisting of three variants of a small lenticular, lanceolate point (8000 - 5000 BP) (Lohse and Schou 2008); and other non-specific stemmed shouldered lanceolates (Herbel and Bowden 2005).

This period is characterized by small, low-density sites interpreted as being occupied by small highly-mobile opportunistic foragers, with a broadening base of subsistence and greater inclusion of plan foods. Microblade technology also appears in the artifact assemblages during

this period (Andrefsky 2004). A high frequency of salmon bones at Fivemile Rapids (Ames et al. 1998), one of the earliest known intensive fishery sites, represents the emergence and exploitation of that important resource.

2.2.3 Middle Archaic (5000 - 2000 BP)

In the Middle Columbia region, this period is also known as the very late Vantage phase and Frenchman Springs phase. Diagnostic point types of the period and Middle Columbia are: non-Cascade willow leaf-shaped projectile points; Rabbit Island Stemmed, defined as stemmed triangular points with squared shoulders; the Quilomene Bar Corner-Notched, a distinctive triangular point with broad corner notches; and the Columbia Corner-Notched Type A, a large corner notched triangular point with a straight to expanding stem (Herbel and Bowden 2005; Lohse and Schou 2008). Additional technological developments during the Middle Archaic include net sinkers, hopper mortar and pestles, cobble spall tools, and a variety of ground stone implements. The addition of these tools and materials indicates an increase in root crop exploitation around 4000 BP and a shift toward intensive salmon fishing around 3300 and 2200 BP (Andrefsky 2004).

Settlement patterns of the period include the continued use of open campsites and rockshelters, as well as the developing use of semi-subterranean pithouses. Though occurring sporadically very early in the period, pithouses become more common across the region by 4500 BP and appear to be associated with seasonal foragers focused on exploiting local subsistence resources (Ames 1991; Andrefsky 2004; Kimball 2005).

2.2.4 Late Archaic (2000 BP - A.D. 1720)

The Late Archaic period saw the intensification of patterns developed in the Middle Archaic and the emergence of ethnographic characteristics. All available resource niches were intensively occupied and utilized. During this period, regional trade networks involving lithic and other non-local materials developed. Large semi-subterranean pithouse villages were occupied on the primary watercourses and are typically interpreted as indicative of the development of the ethnographically known Plateau hunter-fisher-gatherer adaptations of intensive fishing, lager winter village settlements, and intensive use of communally processed and stored resources (Andrefsky 2004; Browman and Munsell 1969: 260-262; Chatters 2004). On the Middle Columbia, this period is associated with the Cayuse Phase.

Distinctive artifact types of the Cayuse Phase are net weights, adzes, shell beads and jewelry, and small projectile points. Temporally diagnostic point types for the Late Archaic include: the Quilomene Bar Basal-Notched, a stemmed basal-notched point with square to tapering barbs; the Columbia Corner-Notched B, a small corner-notched triangular point with straight to expanding stems; the Columbia Stemmed, a basal-notched triangular point with sharp, blunt, or square barbs; the Wallula Rectangular Stemmed, a small corner-notched triangular point with long straight stems; and Plateau Side Notched, a small side-notched triangular point with a base (Andrefsky 2004; Herbel and Bowden 2005; Lohse and Schou 2008).

2.3 HISTORIC CONTEXT

2.3.1 Early Settlement and Industries

The first documented exploration of the Columbia Plateau was in 1805 by Meriwether Lewis and William Clark, who reported extensive salmon fishing economies of indigenous groups settled along the Columbia and Snake rivers. According to Splawn (1917), the territory of the people Lewis and Clark encountered was vast, spanning both banks of the Columbia River from the mouth of the Yakima River to the Saddle Mountains. The Yakima River drainage was occupied by the Kittitas and Yakama bands. The APE is within the area occupied by the Kittitas, who were the uppermost of two bands. The Kittitas are thought to be related linguistically to the Yakama. Both speak dialects of Ichi Skin Sinwit (what ethnographers and linguists refer to as Sahaptin). The Kittitas maintained ties with Salish-speaking tribes like the Wenatchi to the north (Schuster 1998).

Further European contact with Native Americans came with increased competition between fur trading companies navigating the Columbia River. Along this route, fur traders from the Northwest and Pacific Fur companies sought camp at areas occupied by Kittitas and Yakama groups. During an 1813 expedition, Alexander Ross of the Pacific Fur Company documented the indigenous council grounds in the Kittitas Valley. He observed the expansive gathering, which stretched across the landscape for great distances and included activities such as horse- and foot-racing, dancing, gambling, singing, hunting, and root gathering (Ross 1855).

As western ideologies proliferated across North America, the period of extensive European exploration and trade followed with the Euro-American settlement of the Kittitas Valley in 1848 through the establishment of Catholic missions. The influx of Catholicism to the region is thought to be the impetus for settler conflicts with both indigenous peoples and an emigrant population that was predominately of the Protestant faith (Ricard 1976). Perhaps realizing the potential mutualistic benefits, some tribal leaders requested the construction of Catholic missions on their traditional lands. A mission was constructed on the Simcoe River in 1848 at the request of Ka-mi-akin of the Yakamas (Glauert and Kinz 1976). Around the same period, a Catholic priest named Father Pandosy resided at a temporary mission with a Kittitas band living in the Selah Valley (Splawn 1917).

One mission, Holy Cross, is of particular significance in terms of inter-cultural conflict at the onset of the Historic period. Holy Cross was established in 1852 on Ahtanum Creek and was later burned to the ground by Washington Territorial volunteer troops upset with the mission's intervening on behalf of Yakama during a conflict known as the Yakama Wars (Glauert and Kunz 1976). The conflict began in the midst of treaty negotiations between the US government and tribal leaders in 1855. The dialogs were interrupted due to increased trespassing by gold prospectors across Yakama lands, which was met with vehement aggression from Native Americans.

Following the end of the war, the Yakama Treaty of 1855 was eventually signed; and the Yakama Nation, composed of 14 formerly independent bands (including the Kittitas Band), was created (Woody 2009). Provisions of the treaty called for the tribes to cede approximately 29,000 square miles of land, from which 1,875 square miles would be reserved for the sole use of the Yakama (Schuster 1990). These lands today are known as the Ceded Lands and the Yakama Nation Reservation. The Ceded Lands, to which the Yakama Nation maintains legal rights to resource procurement within, encompass the whole of the Kittitas Valley (Woody 2009).

The discovery of gold in portions of the Kittitas Valley in 1873 brought an influx of mining companies who hired Chinese laborers to work deposits along the Columbia River (Camuso and Lally 2012). White cattlemen also flocked to the region during the mid to late nineteenth century, given the suitability of the lush grasslands for ranching. By the 1880s, cattle overgrazing had decimated the landscape in the Yakima and Kittitas valleys. This, along with severe winters that killed large herds of cattle, resulted in setbacks for early ranchers, leaving only enough grassland to support seasonal rounds of grazing sheep (Herbal and Bowden 2005). Sheep herders in the region would winter their flocks near the Columbia River, herd them through the North Cascades to graze in the summer months, and then return to the Kittitas Valley for fall grazing (Shaw 1941).

The utilization of local waterways by Euro-American fur traders also proved viable for the growing logging industry of the late 1870s. The Kittitas Valley afforded this industry large supplies of timber; and, by 1880, several thousand feet of lumber was floated down the Yakima River to the Columbia River (Holstine 1994). The success of the local lumber industry led to numerous sawmills and the construction of railroads, which were used to transport timber by land when river routes were closed by dam and irrigation projects. The Columbia River ferry system was also significant in facilitating the movement of people and goods across the Columbia Plateau from the mid-nineteenth century into the early twentieth century. This form of transportation set the stage for the development of additional land transportation means via the railroad and automobile industries.

In addition to supplying lumber and a means of transporting goods and people, Kittitas Valley river systems played an important role in agriculture, which prospered during the late nineteenth century. The construction of water diversions such as Manastash Canal in 1872, Taneum Ditch in 1873-1874, Ellensburg Town Canal in 1885-1889, Olson Ditch in 1870, Bull Ditch in 1886, and the Cascade Canal in 1903-1904 brought approximately 47,373 acres of Kittitas Valley land under irrigation before 1904 (Woody 2009; Doncaster 2016:7). The federally sponsored irrigation projects that followed during the early twentieth century would lead to improved farming conditions in notoriously arid portions of the Columbia Plateau.

Construction of the first major railroad through the region, the Northern Pacific Railway (NPR), was completed in 1884. Land along the right-of-way was granted to NPR by the federal government as payment for completing the transcontinental railroad; NPR then leased that land

to newly arriving settlers and prospectors, while all surrounding area remained open for homesteading (Meinig 1968). Although many settlers wagered heavily that an economic boom would follow completion of the railroad, this did not occur. Prolonged periods of severe drought at the turn of the century along with the hardships of the Great Depression forced many homesteaders to sell their land, which was purchased by a few successful ranching families (Owens 2005; Doncaster 2016).

The city of Ellensburg was first settled by William Bud Wilson in 1868 and the first store "Robbers Roost" was opened by AJ Splawn and Ben Burch in 1870 to facilitate the trade of furs, supplies, and horses between the settlers and the local Kittitas band and Yakama Nation (City of Ellensburg 2017). Trade and commerce throughout the region flourished during the early part of the 1880s, and the city of Ellensburg was incorporated in 1883, becoming the county seat for Kittitas County that same year (ellensburgdowntown.org). The first election to form the city government was held in 1886 and soon after the North Pacific Railroad reached the city (ellensburgdowntown.org). As the population and commerce of the region expanded and prospered, Central Washington University was founded as the Washington State Normal School at Ellensburg in 1891 (Mohler 1967). Closely following the commercial success and population in the Yakima Valley, the Town of Kittitas was platted in 1908 and eventually incorporated in 1931 (Becker 2005).

2.3.2 The Yakima Project

The Yakima Project underlies a substantial element of the region's history, given its association with the Reclamation Act of 1902, which created the U.S. Reclamation Service. The Yakima Project, approved in 1905, was developed to irrigate the Yakima Valley. The Yakima Project took more than 50 years to construct, included six divisions: Tieton, Sunnyside, Kittitas, Roza, Kennewick, and a Storage division comprising six dams and reservoirs (Doncaster 2016). According to Doncaster (2017:11), "the Yakima Valley is a model of intensive irrigated farming and its success is tied directly to the Yakima Project where hundreds of thousands of acres were brought into agricultural production."

Approved in 1926, the Kittitas Division consists of a 26.2-mile-long Main Canal with two branches: a 36-mile-long North Branch and a 14.2-mile-long South Branch. Features vary between canals: the Main Canal has one tunnel, ten siphons, and a capacity of 1,320 cfs; the North Branch Canal has five tunnels, six siphons, and a capacity of 925 cfs; and the South Branch Canal has two tunnels, five siphons, and a capacity of 220 cfs. Other major features of the Kittitas Division include the Manastash/South Branch Canal Extension, located at the terminus of the South Branch Canal; the Wippel Pumping Plant, located at the downstream terminus of the Main Canal; the Badger Creek Wasteway, located upstream of the Wippel Pumping Plant; and numerous laterals (Doncaster 2016).

Construction of the Kittitas Division took place between 1926 and 1931. The Kittitas Division became operational in 1930, and in 1934, Reclamation turned over operations and

management of the Kittitas Division to the KRD but retained several reserved works until1960 (Doncaster 2017). **Figure 3** is a historic construction photograph of the chute within this APE.

Figure 3: Concrete operations on Stilling pool and Chute, Station 837+55 - South Branch Canal, September 28, 1929. (Reclamation photograph 1774 by Norval Enger.)

3 RECORDS AND LITERATURE REVIEW

The records review was originally done by Jacobs for Phase 1 of the Project. For Phase 2 of the Project, the review was updated for the current APE and the surrounding area using the Washington Information System for Architectural and Archaeological Records Data (WISAARD). WISAARD contains all cultural resource documents submitted to the Washington State Department of Archaeology and Historic Preservation (DAHP) since 1995. The records search included the APE and a surrounding 1-mile radius area. The DAHP predictive model indicates the majority of the Project location is very high risk for encountering archaeological resources. Based on review of the actual setting, landforms, and previous disturbance, the Project location was judged to have a low to moderate potential for archaeological resources.

Additional sources of background research and information included historic maps and General Land Office records, NRHP-listed properties, historic U.S. Geological Survey topographic maps, and modern aerial photographs and topographic maps.

The records search identified six previously recorded historic resources within the proposed APE (**Table 1**); of the six, only two have been determined eligible for listing in the NRHP. Two previous cultural resource studies have been completed within the APE (**Table 2**). Five previously recorded historic resources are located within 1-mile of the APE (**Table 3**); thirteen previous cultural resource studies have been completed within 1-mile of the APE (**Table 4**). The NRHP-eligible resources recorded within the APE are described below.

Table 1: Previously Recorded Cultural Resources within the APE

Resource #	Description	NRHP Eligibility
209511	Kittitas Division Manastash Creek Timber Farm Operating Bridge	Determined Not Eligible (2012)
669407	U.S. Bureau of Reclamation Kittitas Reclamation District 13.8 Lateral and Sublaterals	Determined Eligible (2013)
708305	Kittitas Division South Branch Canal Lateral 9.9	Determined Not Eligible (2017)
708746	Kittitas Division South Branch Canal Farm Bridge at approximately Station No. 666	Determined Not Eligible (2017)
708747	Kittitas Division South Branch Canal Farm Bridge at Station No. 647+35	Determined Not Eligible (2017)
708748	Kittitas Division South Branch Canal	Determined Eligible (2017)

Source: Washington Information System for Architectural and Archaeological Records Data 2019.

Table 2: Previous Cultural/Historical Resource Studies within the APE

Report #	Year	Author	Title	Description
1683028	2012	Schroeder, William	A Section 106 Archaeological Review and Inventory of the Manastash Water Ditch Association/Consolidated Pipeline Project	Survey Report
1688096	2017	Doncaster, Kelsey	Yakima Project Farm Bridges Disposal near Cle Elum, Thorp, Kittitas and Sunnyside	Historic Structures Survey Report

Source: Washington Information System for Architectural and Archaeological Records Data 2019.

Table 3: Previously Recorded Cultural Resources within 1 Mile of the APE

Resource #	Distance from APE	Description	NRHP Eligibility
45KT2744	0.2 mile	Precontact Lithic Flake, Isolate	Not Evaluated
45KT2745	0.15 mile	Keach/Jensen Diversion, historic agricultural feature, ca. 1940s-50s	Recommended Not Eligible
45KT3095	Less than 1 mile	Human Skeletal Remains	Not Evaluated
634526	0.25 mile	Manastash Ditch	Determined Eligible (2012)
48615	0.15 mile	Cherry Creek Diversion	Recommended Not Eligible

Source: Washington Information System for Architectural and Archaeological Records Data 2019.

3.1 KITTITAS DIVISION SOUTH BRANCH CANAL (#708748)

The 14.2-mile-long South Branch Canal was previously inventoried and evaluated by Reclamation and determined eligible for listing on the NRHP in 2017. The canal was found eligible under Criterion A and C of the NRHP for its association with the irrigation and development of the highlands of Kittitas Valley, its association with the broader Yakima Project, as well as its unique types and forms of siphons and tunnels to irrigate the Kittitas Valley (Gray 2017). Known features of this canal segment in the APE include Robinson Creek Siphon, Manastash Creek Siphon, new and original turnouts, new and old bridges, and non-contributing check structures.

3.2 U.S. BUREAU OF RECLAMATION KITTITAS RECLAMATION DISTRICT 13.8 LATERAL AND SUBLATERALS (#669407)

The 13.8 Lateral, a typical Kittitas Division unlined earthen canal, was constructed in 1929 and was determined eligible in 2013 for the NRHP (Shroeder and Landreau 2012; Schroeder 2012). This report and HPI is not explicit about the resource's criteria of eligibility except that it was a contributing lateral to the South Branch Canal. The whole lateral from the original turnout in the South Branch Canal to all of the other features in the canal was removed/obliterated and the structure was completely piped with the adverse effect being mitigated by the *Memorandum of Agreement Between the Columbia-Cascades Area Office Bureau of Reclamation and the Washington State Historic Preservation Officer Regarding the Piping of Kittitas Reclamation District 13.8 Lateral Yakima Project, Kittitas County, Washington* in 2013 (memorandum on file at DAHP).

Table 4: Previous Cultural Studies within 1 Mile of the APE

Report #	Year	Author	Title	Description
1689579	2017	Bumback, Stacy	South Branch Canal Lining Project, South Branch Canal Extension Piping Project, and the North Branch Staging Areas Project	Survey Report
1686548	2015	Landreau, Christopher	A 05-05 Archaeological Review and Inventory of the Mt. Spring – Richards Sprinkler Conversion Project	Survey Report
1685647	2014	Landreau, Christopher	A 05-05 Archaeological Review and Inventory of the Bart Bland Farm Sprinkler Conversion Project	Survey Report
1683336	2013	Schroeder, William	A Section 106 Archaeological Review and Inventory of the KRD 13.8 Lateral Improvement Project	Survey Report
1683028	2012	Schroeder, William	A Section 106 Archaeological Review and Inventory of the Manastash Water Ditch Association/Consolidated Pipeline Project	Survey Report
1352382	2009	Landreau, Christopher	A Section 106 Archaeological Review and Inventory of Six Proposed Installation/Upgrade Irrigation Sites Along the Manastash Ditch	Survey Report
1351729	2008	Landreau, Christopher	Letter to Sherry Swanson Re: Manastash/Keach/Jensen Diversion Buried Power Lines and Facility Access Addendum	Survey Report
1351595	2008	Landreau, Christopher	An Archaeological Review and Inventory of the Proposed Reed Ditch Diversion Removal Project	Survey Report
1349269	2004	Middleton, Jessica	Cultural Resource Pedestrian Survey for Manastash Diversion Replacement/Redesign, Manastash Creek Project	Survey Report
1349267	2004	Middleton, Jessica	Cultural Resources Pedestrian Survey for Keach/Joshnson Diversion Replacement/Redesign, Manastash Creek Project	Survey Report
1345281	2005	Amara, Mark	NRCS Rafter B. Inc. EQIP 2005 Site Identification Survey	Survey Report
134565	2004	Amara, Mark	EQIP Projects in Kittitas County, Katzele, Laub Farm, Jack Wheatley/Level Best Farms, Cooke Coleman LLC, Gardinier, Kayser, and Morgan, David, Duncan, Hunter, Titus, Anderson, Edwards, Gregerich, Mason, Mihelich and Poulsens	Survey Report
1340871	1999	Schablitsky, Julie	Cultural Resources Survey of Route Modifications and Shovel Testing of Sites for Level 3's Proposed Fiber Optic Line from Seattle to Boise: Washington Segment, Non-Federal Lands Addendum	Survey Report

Source: Washington Information System for Architectural and Archaeological Records Data 2019.

4 RESEARCH DESIGN

The following section provides an outline of the proposed objectives, expectations, and methods for the cultural resources assessment. This research design has been developed based upon the previous Phase I inventory, the preceding information regarding the Project setting, and review of previous work and documentation.

4.1 OBJECTIVES AND EXPECTATIONS

Expectations for where archaeological sites could be potentially located are based upon environmental data and the relationship of that data to our understanding of human behavior. Precontact human habitation was dependent on the availability of water and the ease with which resources could be transported. Consequently, many habitation areas were likely located along river, creek, and lake margins. Landscape modification methods, including the removal of sediment and filling of topographical depressions, have a unique effect on archaeological site preservation and visibility. By understanding these effects, expectations about archaeological potential can be generated and then used to inform archaeological investigation strategies to identify where intact archaeological deposits are most likely to be present.

The APE is located in a diverse and rich environment with an abundance of resources, but much of it is steeply sloped. The landforms located in the APE were less than ideal locations for resource procurement. Many of the slopes on the western portion of the APE are steeper than 25 percent and have limited potential to contain intact archaeological sites because the steepness was not suitable for habitation or travel; however, isolated artifacts may be possible. The eastern portion of the APE largely consists of the canal maintenance/access road.

Background research indicated that the APE has been heavily modified by the construction and maintenance of the South Branch Canal since 1927 to1929, when the canal was constructed. Accounts of substantial filling events are also associated with land reclamation activities within drainages (Natural Resources Conservation Service 2003). Removal of sediment and earlier surfaces to construct the canal through several hillsides and topographical features resulted in the removal of surfaces and deposits that might have had the potential to contain intact archaeological deposits. The addition of fill to portions of the APE to create the access road and construct the canal features raised the elevation of the ground surface and influenced the viability of encountering intact cultural remains, both precontact and historical.

Based on the known disturbance, isolated precontact and historic artifacts may be identified throughout the APE. The greatest potential for archaeological resources was anticipated in the vanity of Manastash Creek, since it would have been resource-rich with relatively flatter terrain and could also have served as a travel corridor and habitation zone. However, removal and/or disturbance to the ground surface throughout the APE resulting from the construction of the canal and associated access road would have removed or substantially altered precontact and historical archaeological deposits that may have been present.

Built environment resources in the APE were expected to be predictable as the South Branch Canal is maintained by KRD under their O&M contract with Reclamation for the Kittitas Division. Additional potentially eligible built environment historic properties at this location are not anticipated.

4.2 NATIVE AMERICAN AND OTHER CONSULTATION

Consultation with affected tribes remains under the purview of Reclamation. No additional consultation was conducted by Jacobs for this assessment.

4.3 BUILT ENVIRONMENT METHODS

The research phase for the built environment portion in the APE involved standard techniques of locating primary and secondary documents. As the South Branch Canal was already determined eligible by Reclamation in 2017, and had been completely surveyed in the process, additional research on the structure was not needed. The objectives of this evaluation were to denote if the current condition of the canal in the APE had changed, determine if this section of the canal was a contributing or non-contributing portion, and, if contributing, what would be the mitigation for an adverse effect to this structure. Fieldwork was also undertaken to document existing conditions and resources.

4.4 ARCHAEOLOGICAL FIELD AND LABORATORY METHODS

4.4.1 Pedestrian Survey

The primary field methods consisted of a pedestrian survey of the APE on transects spaced approximately 5 meters apart. Transect survey was completed across 100 percent of the proposed APE. Indications of historical and modern development were noted and documented. In areas of poor visibility, surveyors examined all exposed ground surfaces, including erosional features, rodent backdirt piles, and animal paths. Field conditions were noted, and photographs taken to document the encountered conditions.

4.4.2 Subsurface Investigations

All excavated shovel tests (ST) were approximately 35 centimeters (13.7 inches) in diameter and targeted a depth of approximately 100 centimeters below surface (0 to 40 inches below surface). Excavation was terminated at impenetrable, very dense fill and rocks. All excavated sediment was screened through 0.6-centimeter (0.25-inch) mesh hardware cloth. Upon completion, representative ST profiles were photographed with a digital camera and backfilled.

Observed field conditions dictated actual ST locations as described below in Section 5. The intent of ST excavation was to investigate areas of greater relative archaeological probability based upon proposed construction locations, areas of proposed deep construction excavation, observed surface conditions, prior construction impacts and existing infrastructure, and expected landform integrity. As noted above, the greatest archaeological potential was anticipated to be

the Manastash Creek vicinity due to proximity to water and flatter terrain, coupled with possible deep construction excavation.

4.4.3 Artifact Recovery

Excavations were conducted using hand shovels and trowel. Artifacts collected from each level were to be analyzed in the field. Any and all artifacts identified during survey or during subsurface testing would have been temporarily reserved through the unit excavation and returned to the base of the hole prior to backfilling. Artifacts would have been returned in their natural state, and not bagged, tagged, or otherwise modified.

4.4.4 Discovery of Human Remains Protocol

The discovery of human remains did not occur during the cultural resource investigation. However, in the event of such occurrence, the DAHP policy regarding the Inadvertent Discovery of Human Skeletal Remains on Non-Federal and Non-Tribal Land in the State of Washington (Revised Code of Washington [RCW] 68.50.645, RCW 27.44.055, and RCW 68.60.055) is to be followed.

5 FIELD INVESTIGATION RESULTS

This section presents the results of field survey, including a discussion of the previously recorded cultural resources. The results are divided into separate sections for investigation of archaeological and historic resources. The entire APE was subject to pedestrian survey, including subsurface tests at Manastash Creek. **Figures 4** through **10** illustrate specific improvement locations, staging areas, and subsurface testing location.

5.1 ARCHAEOLOGICAL INVESTIGATIONS

On October 15 and 16, 2019, pedestrian survey was completed along the entire proposed APE by Jacobs archaeologists Michael Farrell, MSc and Jessica Jones, BA using transects spaced no wider than 5 meters apart to examine the exposed surface for artifacts. The pedestrian survey also involved inspection of the local topography to identify areas that have been subject to modern anthropogenic landscape alterations within the area of proposed ground disturbance and identify any unmodified landforms suitable for subsurface testing. Additionally, all structural elements of the existing canal and bridges were photographed and recorded. Additional pedestrian survey, with subsurface testing, was completed by Michael Chidley, MA, RPA on February 13, 2020 (**Figures 11** through **14**).

Analysis of the local topography during the pedestrian survey confirmed that most of the Project area within 75 feet of the canal had been significantly disturbed by construction and canal maintenance, cutting and grading access roads, associated infrastructure, and road crossings. Furthermore, throughout the majority of the APE, long-term encroachment by the adjacent landowners was evident; this was demonstrated by fencing placement well within the canal ROW. Due to the steep topography and property fence lines within the western section of the APE, the pedestrian survey focused on the eastern section.

The area within the APE was typically comprised of engineered or cut roads along the sloping landscape in which the canal was originally constructed. Areas beyond 75 feet of the centerline have experienced fewer impacts, but adjacent landowner improvements and corrals, grazing and trampling, and other disturbances were common throughout the APE. In the southern portion of the APE, the western ROW was not limited by slope or fence lines and an apparent former location of a long unused access road was evident through the level of surface disturbance. Surface visibility was moderate, ranging from 40 to 60 percent of the ground surface across the APE. However, in those areas with locally poor visibility, archaeologists examined all available exposed ground surfaces, including road cuts, erosional features, rodent back-dirt piles, and animal paths.

Four STs (ST1 through ST4) were excavated on the south side of Manastash Creek; north of the creek, the APE consists entirely of access road and the Manastash Creek Siphon inlet (**Figure 10**). The STs encountered 36-centimeter-deep Ap horizon over dense, rocky fill (ST1); 22-centimeter-deep Ap horizon over dense, rocky fill (ST2); 22-centimeter-deep Ap horizon over

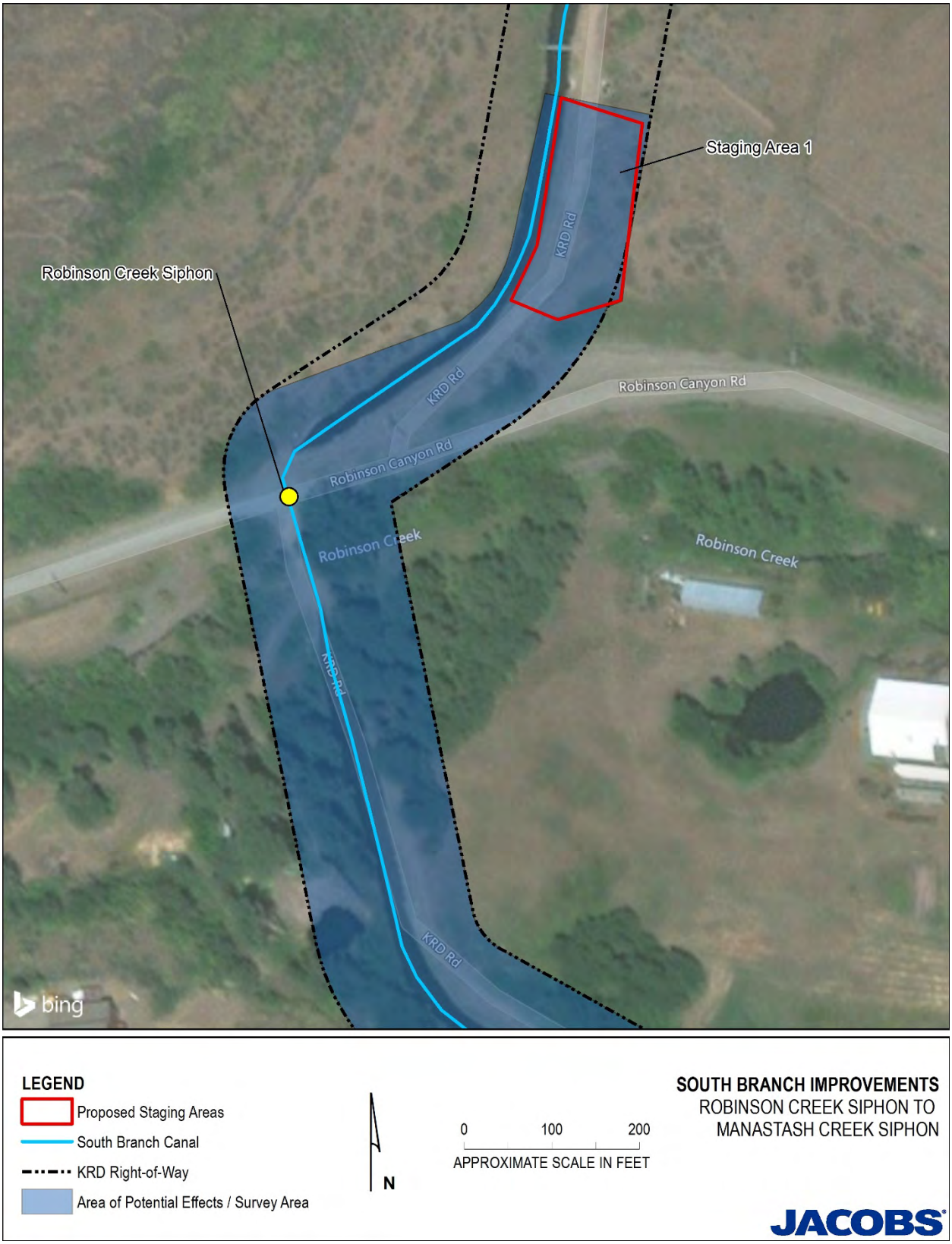

Figure 4: Vicinity of Staging Area 1.

Figure 5: Vicinity of proposed lateral pipeline.

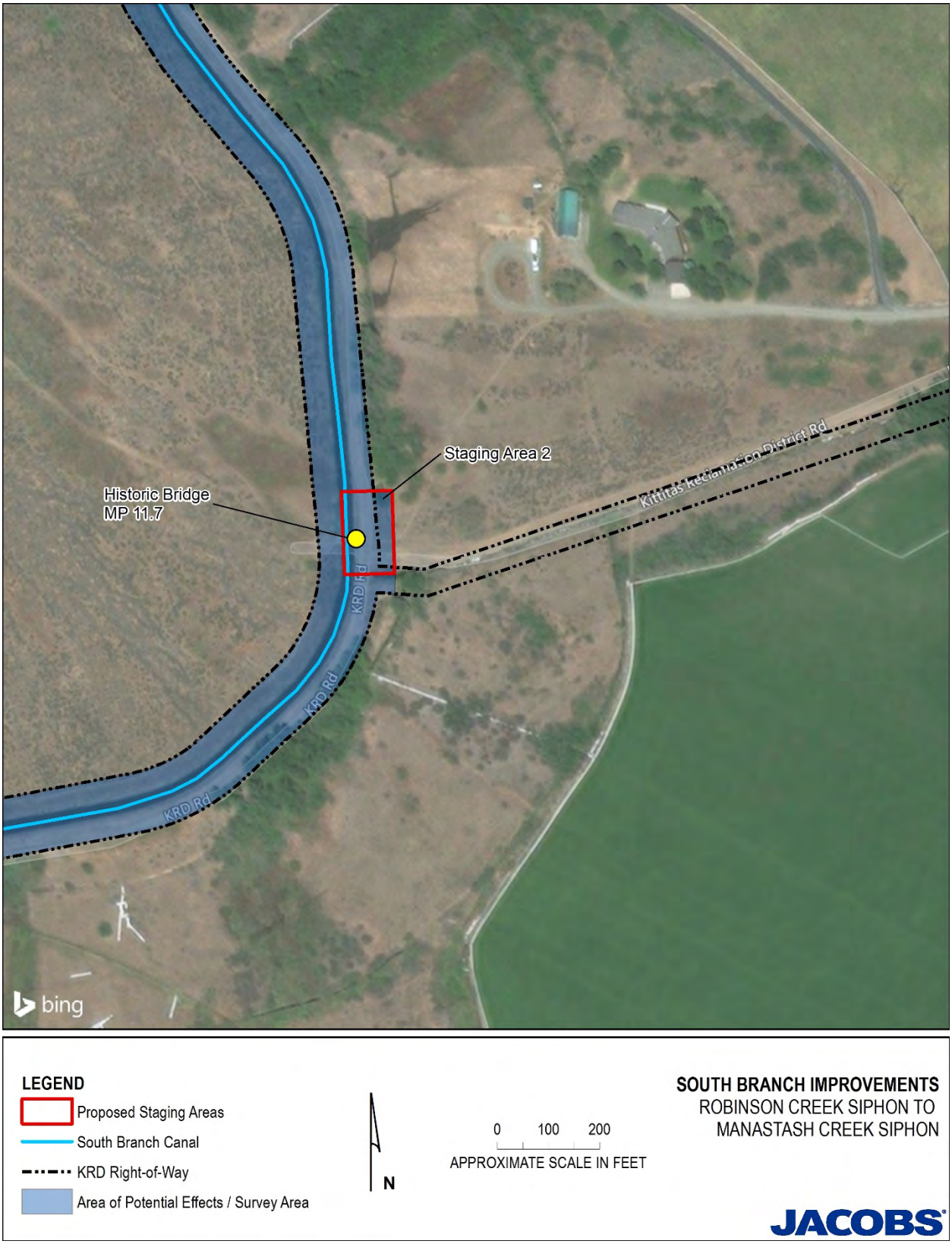

Figure 6: Vicinity of Staging Area 2 and timber bridge at MP 11.7.

Figure 7: Vicinity of Staging Area 3.

Figure 8: Vicinity of Staging Area 4.

Figure 9: Vicinity of Lateral 13.8 and chute inlet at MP 14.

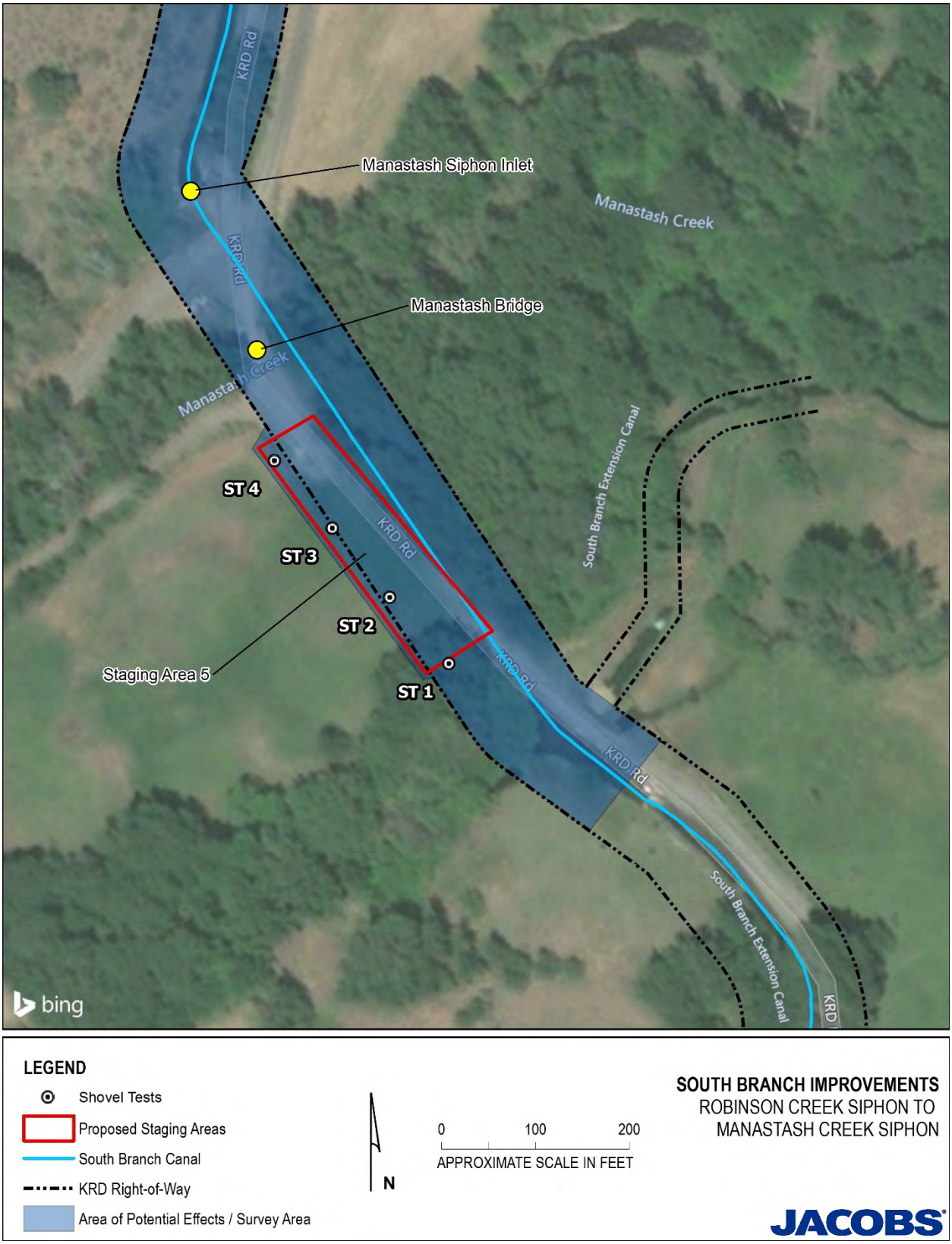

Figure 10: Vicinity of Manastash Creek Bridge and ST locations.

57-centimeter-deep fill over dense, rocky fill (ST3); and surface gravel, rocks, and concrete (ST4). Although this area appeared from background research to have a higher relative potential for archaeological resources, field results indicated otherwise.

Overall, the pedestrian survey revealed the presence of extensive landform modifications, including grading and fill placement (most notably from the western access road construction), which have caused substantial alterations to the area. Throughout the APE, the level of disturbance observed indicates that there is limited potential for intact archaeological deposits within. Substantial fill deposits and rock ballast additions to the landscape were apparent throughout the surface survey. No intact areas of the APE were identified for subsurface testing. No cultural materials were observed on the disturbed surfaces the length of the canal ROW.

Figure 11: View south over Manastash Creek; grassy area with STs in background.

Figure 12: Representative ST profile (ST3); Ap horizon over dense, rocky fill.

Figure 13: View downstream of Manastash Creek; ROW limited by fencing and access road.

Figure 14: Representative staging area; Hanson Road location.

5.2 HISTORIC RESOURCE INVESTIGATIONS

The survey of the APE identified one historic property: the South Branch Canal (**Figures 13, 15** to **21**). A wooden vehicular farm bridge (Timber Farm Bridge), which appeared to be over 50 years old, was identified that crosses the canal at approximately MP 11.7, but it is not associated with the South Branch Canal nor built by Reclamation and is a later addition by a landowner after the canal had been constructed (**Figure 18**). In 2012, the Kittitas Division Manastash Creek Timber Farm Operating Bridge was determined not eligible by Reclamation and, upon review, the original determination of eligibility still holds (**Figure 20**). HPIs with descriptions and evaluations are provided in **Appendix A**.

The features within the South Branch Canal consisted of the Robinson Creek Siphon, Manastash Creek Siphon, four of the original seven turnouts, thirteen new turnouts, and five new structures in the canal; none of the original farm bridges remain. Both the Robinson Creek and Manastash Creek Siphons retain high integrity along with the drop structure near Station No. 837. The remainder of the canal retains limited integrity with the removal of the original bridges and turnouts.

Jacobs recommends that the Kittitas Division Manastash Creek Timber Farm Operating Bridge and the Timber Farm Bridge at approximate MP 11.7 are both not eligible individually nor as contributing elements to the South Branch Canal.

Figure 15: View upstream of South Branch Canal from approximate MP 13.6 with access road on embankment at right.

Figure 16: View upstream at modern non-contributing check structure below MP 13.8 turnout.

Figure 17: View downstream in South Branch Canal with new MP 13.8 turnout at left.

Figure 18: Looking upstream in South Branch Canal at MP 11.7 turnout and non-Reclamation Timber Farm Bridge.

Figure 19: Looking downstream in South Branch Canal at MP 10.4 turnout (foreground) with modern bridge and new/modified turnouts in the background.

Figure 20: Manastash Creek Bridge, view north at Kittitas Division Manastash Creek Timber Farm Operating Bridge toward South Branch Canal.

Figure 21: Looking northwest at the outlet of the South Branch Canal's Manastash Creek Siphon and MP 14.3 turnout (foreground).

6 APPLICATION OF CRITERIA OF ADVERSE EFFECT

Under federal regulations (36 C.F.R. § 800.5[a][1]), a project would have an adverse effect if it would alter, directly or indirectly, any of the characteristics of a historic property that qualifies it for inclusion in the NRHP. These characteristics include the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. All qualifying characteristics of a historic property shall be considered, including those that may have been identified after the original evaluation of the property's NRHP eligibility. Adverse effects could include reasonably foreseeable effects that could occur later in time, be farther removed in distance, or be cumulative. This effects analysis focuses only on historic built environment resources, as there are no known NRHP-listed or eligible archaeological sites that were identified within the APE.

The South Branch Canal's main character-defining features are the complex engineered works such as the numerous tunnels and siphons paired with the open canal used to carry water to irrigate the Kittitas Valley in concert with its association, design, feeling, and location.

The piping or lining of 4.3 miles of the South Branch Canal and modification of the Robinson Creek and Manastash Creek Siphons would be an adverse effect. If piped, the Project would alter the character-defining element of the open canal. If lined, the South Branch Canal would no longer be a majority earthen-lined canal. This Project would make it so there are more miles of the South Branch Canal that are non-contributing (7.73 miles) than contributing (6.47 miles).

Whether lined or piped, the canal's integrity of design, materials, and workmanship would be diminished, and the undertaking would cause the South Branch Canal to no longer be eligible under Criteria A and C. Therefore, the undertaking would be considered an adverse effect as per 36 C.F.R. § 800.5(a)(1).

As stated previously, Jacobs recommends that the Kittitas Division Manastash Creek Timber Farm Operating Bridge and the Timber Farm Bridge at approximate MP 11.7 are not eligible on their own nor contributing elements of the Kittitas Division or its parent Yakima Project. Since they are not historic properties, no further action is required regarding these resources.

7 CONCLUSIONS AND RECOMMENDATIONS

No archaeological resources were identified within the APE. Based on the steepness of much of the terrain, the extensive disturbance from construction of the canal and associated features, and associated agricultural activities, the APE has limited potential for containing intact archaeological deposits. The piping or lining of the South Branch Canal will add to 4.3 miles of canal that have already been modified/changed. The area anticipated to have the greatest potential for archeological resources (i.e., the Manastash Creek vicinity) has been equally disturbed by prior construction and burial of the Manastash Creek Siphon.

The proposed undertaking would diminish the South Branch Canal's integrity of materials, design, and workmanship. Therefore, a finding of ***adverse effect to historic properties*** is recommended for this undertaking. The effect would be resolved by measures outlined in a Memorandum of Agreement, developed between Reclamation, DAHP, KRD, and other consulting parties, if any.

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APPENDIX A
HISTORIC PROPERTY INVENTORY FORMS

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Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Location

Address: Approximately 6 miles northwest of Thorp to 6 miles southwest of Ellensburg.

Geographic Areas: T19R17E19, T19R17E30, T19R17E31, T19R17E32, T18R17E05, T18R17E08, T18R17E09, T18R17E16, T18R17E15, T18R17E21, T18R17E22, T18R17E27, T18R17E34, T18R17E35, T17R17E02, T17R17E11, T17R17E14

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1927	☐
Built Date	1928	☐
Built Date	1929	☐
Remodel	1975	☑
Remodel	2018	☐
Remodel	2019	☐

Historic Use:

Category	Subcategory
Government	Government - Irrigation Water Conveyance
Government	Government - Irrigation Water Conveyance

Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Historic Context:

Category
Politics/Government/Law
Agriculture

Architect/Engineer:

Category	Name or Company
Architect	USDI/USBR
Builder	Debron Construction Company
Builder	Morrison-Knudsen
Engineer	Paul A. Jones

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2016-12-09170, BOR, Yakima Project Bridge Disposal 2017	2/9/2017	Determined Eligible	Russell Holter, 3/6/2017
2017-05-03848, BOR, Kittitas Reclamation Project - South Branch Canal Lining Project, South Branch Canal Extension/MRT Piping, and the North Branch Staging Areas	5/31/2017		
2017-05-03848, BOR, Kittitas Reclamation Project - South Branch Canal Lining Project, South Branch Canal Extension/MRT Piping, and the North Branch Staging Areas	8/10/2017	Determined Eligible	Russell Holter, 8/10/2017
2020-03-02222, BOR, KRD South Branch Phase II	3/18/2020	Survey/Inventory	

Photos

South Branch Canal looking downstream of Taneum Creek Siphon.

Concrete operations on Stilling pool and Chute, Station 837+55 - South Branch Canal, September 28, 1929.

Looking north at the outlet of the South Branch Canal's Robinson Creek Siphon.

Looking northwest at the outlet of the South Branch Canal's Manastash Creek Siphon and MP 14.3 turnout (foreground).

South Branch Canal looking upstream from MP 12.6 with turnout in foreground.

Original South Branch Canal MP 12.8 Turnout showing USRS stamp.

View downstream in South Branch Canal with new MP 13.8 turnout at left.

Swede tunnel, view to the northwest

Rock retaining wall to west

Rock retaining wall, view to the north

Robinson canyon siphon to SW

Turnout, view to East

Canal overview, view to south

Canal overview, view to North

View to NW

Page Siphon to NW

Page Siphon to NW

Page Siphon outlet closeup

View looking downstream from Station 183, South Branch Canal.

General view of Taneum Creek Wasteway and Siphon [under construction].

View looking upstream from outlet of Taneum Creek Siphon, showing Taneum Creek Wasteway, South Branch Canal.

Placing 54 inch lock joint concrete pipe with 50 B-Bucyrus Dragline.

Siphon at Station No. 91, Kittitas South Branch Canal.

Looking up draw - Monolithic concrete siphon under construction, Station 275, South Branch Canal.

South Branch Canal looking upstream at new check structure below Mile 13.8.

Main Canal with start of South Branch Canal at right looking downstream.

South Branch Canal Tanuem Creek Siphon and wasteway looking north from outlet of siphon.

South Branch Canal Tunnel No. 2 outlet looking upstream.

South Branch Canal looking downstream from new Mile 6.3 turnout.

South Branch Canal looking upstream from newer Mile 13.5 check structure, turnouts and removed Mile 13.5 bridge abutments.

South Branch Canal original Mile 5.7 turnout looking downstream.

South Branch Canal looking upstream at end of original lined section at Station No. 482+11.6.

South Branch Canal looking upstream at Mile 8.2 in newer [non-historic] lined section.

South Branch Canal looking downstream (southeast) at Station No. 91 [Rattlesnake] Siphon inlet and outlet in background.

Looking downstream at South Branch Canal Station No. 416+75 [Mile 7.8] farm bridge.

Looking downstream at South Branch Canal Mile 7.8 original turnout and non-historic partial lining.

South Branch Canal looking downstream at inlet of Manastash Creek Siphon.

South Branch Canal Box Siphon at Station 275+49.8 looking upstream (northwest) at its inlet.

Looking upstream at chute near end of South Branch Canal at Station No. 837.

South Branch Canal Tunnel No.1 looking downstream.

Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Inventory Details - 2/9/2017

Common name: KRD South Branch Canal

Date recorded: 2/9/2017

Field Recorder: Kelsey Doncaster

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Form Type	Utilitarian
Cladding	Concrete - Poured
Structural System	Masonry - Poured Concrete
Plan	U-Shape
Plan	Trapezoid

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: Yes

Property is located in a potential historic district (National and/or local): Yes

Property potentially contributes to a historic district (National and/or local): Yes

Significance narrative: The Yakima Project:

The Yakima Project is significant for its direct association with the Newland Act, also called the Reclamation Act of 1902, and the newly created United States Reclamation Service (USRS), now called Reclamation, and their projects in the West. Washington State Congressman Wesley Jones of North Yakima was a part of 17 western members of Congress who formed a non-partisan organization in 1901 to formulate and pass legislation for Federal irrigation of the West, which became the Newlands Reclamation Act (U.S. Department of the Interior, Bureau of Reclamation, 1952, p. 29). Congressman Wesley Jones was a strong advocate of reclamation and upon the Act's passage he then doggedly pressed the USRS to consider worthwhile projects in Washington. He pushed for the Yakima Valley as it would offer a textbook example of the kind of situation of arid land, private monopolistic irrigation projects, and land speculation that prompted President Roosevelt to create the USRS. Jones believed that the government reclamation of arid lands with the USRS would enable the common man to "own in his own right a plat of ground, however small; to live in his own cottage, however humble, and to sit at his fireside with his wife and children around him" (Pfaff, 2002, p. 22).

The Yakima Project was approved in 1905 as one of nine for that year. The Yakima Project was 1 of 20 approved projects of the USRS since it started reclamation projects in 1903. The first authorized projects built by the USRS in Washington State were the

Yakima Project and Okanogan Project in 1905 (Rowley, 2006, pp. 129-130). Yakima Project was the largest and most extensive of its kind in Washington State until the Columbia Basin Project became operational in the 1950s. The Yakima Project was so large that it was composed of six irrigation projects/divisions that would irrigate almost 500,000 acres. The six projects/divisions were the Tieton, Sunnyside, Kittitas, Roza, Kennewick and a storage division that was composed of five dams and reservoirs. The Wapato Project on the Yakima Indian Reservation is also a part of the Federal irrigated area of the Yakima Project, but it is administered by the Bureau of Indian Affairs. Each project was completed in succession, which took over 50 years, as they were part of the whole plan to irrigate the Yakima Basin. Two of these projects were the first in the nation to pay off their construction costs with the Tieton Division in 1947 and the Sunnyside Division in 1952. They were an example of how the purposes of the Reclamation Act were achieved.

The Yakima Valley is a model of intensive irrigated farming and its success is tied directly to the Yakima Project where hundreds of thousands of acres were brought into agricultural production. When the Yakima Project was just getting started in 1906, Washington ranked 22nd in the United States for apple production and by 1933 it was number one (Merchant, 1935, p. 2). In 1930 the Yakima District (which was composed of Yakima, Kittitas, Franklin and Benton Counties by the Washington State fruit industry) had 41 percent of the bearing apple trees in Washington State with 2.1 million trees (Hampson, 1933, p. 74). In 1936, 99 percent of all fruit and nut crops in the Yakima Valley were grown by irrigation (Overholser, 1936, p. 97). Upon completion in 1958 the Yakima Project today irrigates 474,000 acres in the Yakima and Kittitas Valleys which is the largest number of irrigated acres under one public or private organization in the Yakima Basin's 650,000 total irrigated acres. Reclamation also manages all of the water flow and allocation for the Yakima and Kittitas Valleys for the private and Federal irrigation systems. The Yakima Project which has a significant impact upon the livelihood, agriculture, and the environment of the 175 mile long Yakima Basin and turned it into one of the most productive agricultural areas in the United States.

Kittitas Division of the Yakima Project:

The Kittitas Division was approved in 1926 as the third irrigation division of the Yakima Project which would consist of a 26.2 mile long main canal with two branches, a 36 mile long North Branch and a 14.2 mile long South Branch, to irrigate Kittitas County. It involved "more types and different forms of canal sections than any irrigation plant yet constructed in this county and probably one of the most expensive covering so large and acreage" when it was built (Preston, January 1930, p .9; U.S. Department of the Interior, Bureau of Reclamation, c. 1975, Kittitas Division). The 26.2 mile long main canal has one tunnel and 10 siphons. The northern branch, which is called the North Branch Canal, is 36 miles long with five tunnels and six siphons with has the Yakima River Pressure Tunnel in-between it and the Main Canal. The southern branch, which is called the South Branch Canal, is 14.2 miles long with two tunnels and five siphons. Near the end of the North Branch Canal is the Wippel Pumping Plant which pumps water up to irrigate Badger Pocket southeast of Kittitas. The main canal has a capacity of 1,320 cubic feet per second (c.f.s.) with a majority of the water going down into the 925 c.f.s. capacity North Branch Canal and 220 c.f.s capacity going down the South Branch Canal.

Construction of the canal started in 1926. A. A. Whitmore, division engineer for Reclamation, was in charge of construction of the Main Canal. The Main Canal and South Branch were completed first in 1929, but the North Branch was not finished until 1931.

Construction of the Wippel Pumping Plant and the Badger Creek Wasteway, along with finalization of the lateral system, continued into 1932 and through 1933 (U.S. Department of the Interior, Bureau of Reclamation, c. 1975, Kittitas Division; U.S. Department of the Interior, Bureau of Reclamation, 1932, pp. 32 & 53; U.S. Department of the Interior, Bureau of Reclamation, 1933, pp. 31 & 33). Even though the Kittitas Division was first opened for settlement during the darkest days of the Great Depression (1930-32), when agriculture was particularly hard hit, the area was settled more rapidly than any of the earlier units on the Yakima Project. Today it irrigates approximately 59,000 acres in the Kittitas Valley. In 1934 Reclamation turned over O&M of the Kittitas Division to KRD, but retained several reserved works, namely Easton Diversion Dam, until April 5, 1960 when KRD assumed O&M of the rest of the system (U.S. Department of the Interior, Bureau of Reclamation, 1934, p. 29; U.S. Department of the Interior, Bureau of Reclamation, 1960, p. 1). In 2016 the Kittitas Division Main Canal, North Branch Canal and the Yakima River Pressure Tunnel were all determined eligible for the National Register (Doncaster, 2016a, p. 1; Doncaster, 2016b, p. 1; Doncaster, 2016c, p. 31).

Kittitas Division South Branch Canal:

The 14.2 mile long Kittitas Division South Branch Canal ends at Manastash Creek where the remaining water in the South Branch Canal goes under the creek in a siphon and comes out as the South Branch Canal Extension which travels along Manastash Ridge to the Yakima River. There are two tunnels, six siphons and a chute structure in this earthen canal which has concrete lining in places. The South Branch Canal was built in two parts. The first part was associated with the Main Canal's construction from where it branches off and was built by Rumsey and Jordon under Specification No. 459 Earthwork, Canal Lining, Tunnels, and Structures Kittitas Main Canal and South Branch Canal. Two schedules under this specification covered the canal from its start to Station No. 55. Schedule No. 2 covered the earthwork only from Station No. 0+00 to Station No. 55+00 which was done by Derbon Construction Company during 1928 and Schedule No. 13 which included the South Branch Canal headworks, South Branch Canal Tunnel No. 1 and the concrete lining of the canal from Station No. 0+00 to Station No. 21+88 (U.S. Department of the Interior, Bureau of Reclamation, 1927, pp. 5 & 25). Work on Schedule No. 13 was from July 19, 1927 to December 16, 1928. The second part of the South Branch Canal was built by Morrison-Knudsen from September 22, 1928 to November 23, 1929 under Specification No. 479 Earthwork, Canal Lining, Tunnel, and Structures, South Branch Canal Station No. 53+25 to 756+00 which covered the rest of the South Branch Canal (U.S. Department of the Interior, Bureau of Reclamation, 1928, p. 77; U.S. Department of the Interior, Bureau of Reclamation, 1929, p. 38). The 14 wooden timber farm bridges on this canal were built under this specification in 1929.

Period of Significance:

The period of significance for the South Branch Canal in this evaluation is from its first year of construction (1927) to 1933 as after that date O&M of this canal was turned over to the KRD (Pfaff, 2002, pp. 104 & 107; U.S. Department of the Interior, Bureau of Reclamation, 1934, p. 29).

National Register Criteria:

The Yakima Project is significant under criterion A of the National Register for its direct association with the Newlands Act, also called the Reclamation Act of 1902, and the

newly created USRS now called Reclamation and their projects in the West. The Yakima Project was approved in 1905 as 1 of 9 for that year and 1 of 20 approved projects of the USRS since it started reclamation projects in 1903. It was authorized by the Secretary of the Interior, who at that time directly authorized USRS projects. Those first authorized projects built by the USRS in Washington State were the Yakima Project and Okanogan Project both in 1905 (Rowley, 2006, pp. 111, 129-130). Yakima Project was the largest and most extensive of its kind in Washington State until the Columbia Basin Project became operational in the 1950s. The Yakima Project has the largest number of irrigated acres under one public or private organization in the Yakima Basin's 650,000 total irrigated acres. The Yakima Project is so large that it is composed of six discrete irrigation projects/divisions that would irrigate almost 500,000 acres. One of those divisions was the Kittitas Division. The South Branch Canal is eligible under Criterion A as it is associated with the irrigation/development of the high-lands of the Kittitas Valley along with development of the whole Yakima Project. The South Branch Canal was built by Reclamation in order to irrigate the higher areas of the Kittitas Valley that had not been irrigated by private irrigation companies such as the Westside Canal.

Research has indicated that the South Branch Canal has no association with significant historical persons. Therefore it is not eligible under Criterion B.

The South Branch Canal is eligible under Criterion C for its use of siphons, and tunnels to irrigate the high lands of the Kittitas Valley. At the time of the Kittitas Division's construction it involved "more types and different forms of canal sections than any irrigation plant yet constructed in this county and probably one of the most expensive covering so large and acreage" when it was built (Preston, January 1930, p .9; U.S. Department of the Interior, Bureau of Reclamation, c. 1975, Kittitas Division).

The South Branch Canal does not contain any additional research potential that can contribute to the understanding of these resources beyond this recordation (or documentation) in history. Therefore it is not eligible under Criterion D.

Integrity:

Location and Setting: The South Branch Canal retains its original location. While parts of upper Kittitas County have been developed into subdivisions the immediate area the setting around the canal has changed only slightly.

Design, Materials and Workmanship: The South Branch Canal retains a majority of their original design, materials and workmanship from turnouts to siphons. Although a majority of its original wooden timber bridges were removed decades ago with only the concrete abutments left behind. The only major changes was some modern lining of the canal south of I-90 and in two small and two small half sections between Mile 7.6 and 9.1. Check structures were installed in the 1950s in various locations and the last one was installed downstream of Mile 13.8 in c. 2013.

Feeling and Association: The South Branch Canal feels like it did during its period of significance as except for replacement of an occasional turnout, new cattle guards, or the replacement of bridges which have crossed it the canal is unchanged. The South Branch Canal is still associated with the Kittitas Division of the Yakima Project.

Physical description: The South Branch Canal retains a majority of its original design, materials and workmanship from turnouts to siphons. A majority of it is earthen canal with only four original lined sections - three of them were before Tunnel No. 2. The trapezoidal canal varies from the top width of 14-42 feet and slopes to a bottom width of 4-16 feet and a ditchrider road on the left downstream side which varies from 7-12 feet in width. Although a majority of its 14 original wooden timber bridges were removed decades ago. The only major changes are some modern lining of the canal south of I-90 and in two concrete fully lined and two small half sections between Mile 7.6 and 9.1 that are not historic and would be not contributing sections/features to the canal. Check structures were installed in the 1950s in various locations and the last one was installed downstream of Mile 13.8 in c. 2013 which are all non-contributing structures to the canal.

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U.S. Department of the Interior, Bureau of Reclamation. (1934) "Annual Project History Yakima Project Washington for 1934. "Volume 20. Yakima, WA: Author.

U.S. Department of the Interior, Bureau of Reclamation. (1942) "Final Cost Data, Roza Division." Yakima, WA: Author.

U.S. Department of the Interior, Bureau of Reclamation. (1952) "Reclamation's Golden Jubilee 1902-1952." Denver, CO: Author.

U.S. Department of the Interior, Bureau of Reclamation. (1960) "Amendatory Contract Transferring Diversion Dam and Headworks and Appurtances to Kittitas Reclamation District". Contract No. 14-06-100-1892. Boise, ID: Author.

U.S. Department of the Interior, Bureau of Reclamation. (no date c. 1975) "Miscellaneous Statistical Data". Yakima, WA: Author.

Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Inventory Details - 5/31/2017

Common name: South Branch Canal

Date recorded: 5/31/2017

Field Recorder: Connie Gray

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Form Type	Utilitarian
Cladding	Concrete - Poured
Structural System	Masonry - Poured Concrete
Plan	Trapezoid
Plan	U-Shape

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: Yes

Property is located in a potential historic district (National and/or local): Yes

Property potentially contributes to a historic district (National and/or local): Yes

Significance narrative:

The 5/31/17 inventory supplements, but does not supercede, the 2/9/17 inventory prepared by Kelsey Doncaster from USBOR. The 5/31/17 inventory provides additional data on a portion of the canal within the project APE.

The Kittitas Division South Branch Canal (Property ID 708748) was recorded and determined NRHP eligible by Mr. Doncaster on February 9, 2017. Russell Holter at DAHP concurred with the eligibility determination on March 6, 2017. The 14.2-mile-long Kittitas Division South Branch Canal ends at Manastash Creek where the remaining water crosses under the creek in a siphon and comes out as the South Branch Canal Extension.

The period of significance for the South Branch Canal spans the time period from the first year of construction in 1927 to 1933 when the operations and maintenance of the canal was turned over to the KRD.

The South Branch Canal was determined significant under Criteria A and C of the NRHP for its association with the irrigation and development of the highlands of the Kittitas Valley, its association with the broader Yakima Project, as well as its unique types and forms of siphons and tunnels to irrigate the Kittitas Valley. The South Branch Canal was also found to retain the majority of the canal's original design, materials, workmanship, feeling, and association.

The portion of the South Branch Canal within the project APE was evaluated to see if it contributes to the greater South Branch Canal resource. To be considered eligible, this segment of the canal must contribute to the significance of the South Branch Canal or be eligible for individual listing on the NRHP by meeting at least one of the four significance criteria and retaining sufficient integrity to convey its historic significance.

The portion of the South Branch Canal within the APE contributes to the overall historic property. It contains character-defining elements that contribute to the significance of the broader system, including the original location and alignment of the canal, the original operational structures (Swede Tunnel, Page Siphon, Robinson Canyon Siphon, hydraulic gates), an original section of canal that was lined during construction, and the associated ditchrider access road and rock retaining wall that is located on the left (east) downstream side. The segment of the South Branch Canal within the APE retains sufficient integrity to convey its historic significance. Canals are utilitarian resources that require regular maintenance to sustain their operation, safety, and functionality. Changes to the canal to maintain the system are evident, including: modern lining of approximately 17 percent, the upgrade and installation of several turnout and culverts, the installation of a catwalk and cattle guard, and the removal of several of the original wooden timber bridges. However, as described, these changes have not diminished the canal's overall integrity; the location, setting, feeling, design, and association and, in many areas, workmanship and materials, of the resource are intact.
Therefore, the property is recommended as contributing element to the NRHP-eligible South Branch Canal.

Physical description:

According to the 2/9/17 Historic Property Report, the canal has the following physical description:
The South Branch Canal retains a majority of its original design, materials and workmanship from turnouts to siphons. A majority of it is earthen canal with only four original lined sections - three of them were before Tunnel No. 2. The trapezoidal canal varies from the top width of 14-42 feet and slopes to a bottom width of 4-16 feet and a ditchrider road on the left downstream side which varies from 7-12 feet in width. Although a majority of its 14 original wooden timber bridges were removed decades ago. The only major changes are some modern lining of the canal south of I-90 and in two concrete fully lined and two small half sections between Mile 7.6 and 9.1 that are not historic and would be not contributing sections/features to the canal. Check structures were installed in the 1950s in various locations and the last one was installed downstream of Mile 13.8 in c. 2013 which are all non-contributing structures to the canal. (Doncaster 2017).

The portion of the South Branch Canal within the APE includes approximately 2.8 miles of canal from the Swede Tunnel outlet (Sta. 379+00, MP 7.18) to the Robinson Canyon Siphon inlet (Sta. 528+00, MP 10.00). The portion of the South Branch Canal within the APE includes at least 14 features. All of the accessible and visible features were photographed, described, and grouped into the following categories:
Turnouts: nine
Siphons and tunnels: three
Miscellaneous associated features: two (road retaining wall, lined portion of canal)

South Branch Canal Features:
Station # MP # Description Date
* 524+50, MP 9.93 Turnout 1927-1929
* 506+50,MP 9.59 Turnout 1927-1929
* 494+00,MP 9.36 Turnout Unknown, not original
* 486+00,MP 9.20 Turnout 1927-1929
* 472+50.5, MP 8.95 Turnout 1927-1929
* 472+00, MP 8.94 Turnout 2000
* 452+33.90, MP 8.57 Turnout date Unknown
* 433+50, MP 8.21 Turnout 1927-1929
* 416+00 , MP 7.88 Turnout 1927-1929
* 402+00 , MP 7.61 Turnout Frame is original, Bottom rebuilt in 2007
* 410+00 , MP 7.76 Page Siphon 1927-1929
* 379+00, MP 7.18 Swede Tunnel 1927-1929
* 528+00 , MP 10.00 Robinson Canyon Siphon 1927-1929
* 479+00.00, MP 9.07 Dry-laid rock retaining wall adjacent to access road (local field stone) 1927-1929
* 479+00.00 to 483+00.00, MP 9.07 to 9.15 Original lined section of the canal 1927-1929

Bibliography:

Doncaster, Kelsey
2017 Historic Property Report for the Yakima Project Bridge Disposal 2017. Submitted to the Department of Archaeology and Historic Preservation.

Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Inventory Details - 8/10/2017

Common name:

Date recorded: 8/10/2017

Field Recorder: Russell Holter

Field Site number:

SHPO Determination

Historic Property Report

Resource Name: Kittitas Division South Branch Canal Property ID: 708748

Inventory Details - 3/18/2020

Common name: Kittitas Reclamation Division South Branch Canal

Date recorded: 3/18/2020

Field Recorder: Kelsey J. Doncaster

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Foundation	Concrete - Poured
Form Type	Utilitarian
Cladding	Concrete - Poured
Plan	U-Shape
Plan	Trapezoid

Surveyor Opinion

Significance narrative: In 2017 the 14.2-mile-long Kittitas Division South Branch Canal (SBC) was determined eligible to the National Register of Historic Places (NRHP) under NRHP Criteria A and C (Doncaster, 2017, 12). Since then there was approximately 2.8 miles of concrete lining, enlargement, and removal of one original concrete structures in the canal from Station No. 379+40 to 528+27 (Mile 7.19 to 10.01) (Gray and Bumback, 2017, 5). Nonetheless, it still retains a majority of its integrity of location, setting, design, materials, workmanship, feeling and association. Jacobs recommends that the SBC is still eligible under NRHP Criteria A and C.

Physical description: The physical description of the trapezoidal earthen canal is the same as mentioned in prior reports except that now from Mile 7.19 to 10.01 it has been enlarged and lined with concrete (which would be considered a non-contributing section/feature like the other modern lining of the canal south of I-90).

Bibliography:

Bumback, Stacy L. and Connie Walker Gray 2017 South Branch Canal Lining Project, South Branch Canal Extension Piping Project, and the North Branch Staging Areas Project - Cultural Resources Assessment. Prepared for the Kittitas Reclamation District and the U.S. Bureau of Reclamation. Jacobs: Seattle, Washington.

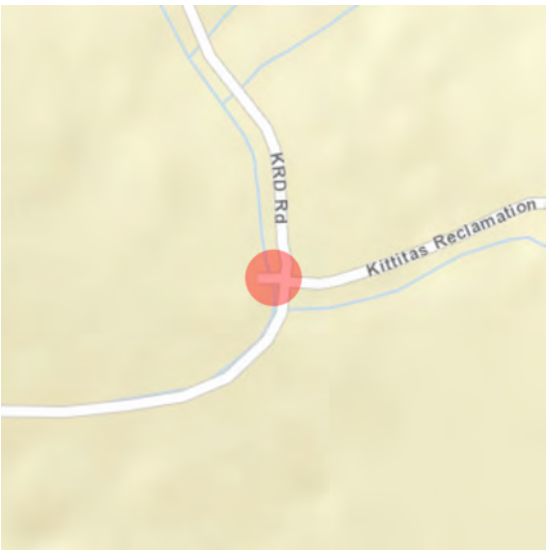
Doncaster, Kelsey 2017 Yakima Project Farm Bridges Disposal near Cle Elum, Thorp, Kittitas and Sunnyside, Washington. U.S. Department of the Interior, Bureau of Reclamation, Pacific Northwest Region: Yakima, Washington.

Historic Property Report

Resource Name: Timber Farm Bridge

Property ID: 721511

Location



Geographic Areas: Kittitas County, T18R17E35, MANASTASH CREEK Quadrangle

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1950	☑

Historic Use:

Category	Subcategory
Transportation	Transportation - Road-Related (vehicular)
Transportation	Transportation - Road-Related (vehicular)

Historic Context:

Category
Transportation

Architect/Engineer:

Category	Name or Company

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Historic Property Report

Resource Name: Timber Farm Bridge

Property ID: 721511

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
2020-03-02222, BOR, KRD South Branch Phase II	3/18/2020	Survey/Inventory	

Photos

Looking west at bridge showing downstream side.

Looking downstream in South Branch Canal at wooden timber farm bridge near Mile 11.7.

Looking southwest at bridge.

Looking across deck of bridge.

Historic Property Report

Resource Name: Timber Farm Bridge

Property ID: 721511

Inventory Details - 3/18/2020

Common name: Bridge

Date recorded: 3/18/2020

Field Recorder: Kelsey J. Doncaster

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Form Type	Bridge
Cladding	Wood
Structural System	Wood - Post and Beam
Plan	Rectangle

Surveyor Opinion

Significance narrative: This typical timber farm bridge crosses over the U.S. Bureau of Reclamation's Kittitas Division South Branch Canal (SBC). Please see Doncaster 2017 for more information about Reclamation's Yakima Project and the Kittitas Division. In 2016 Reclamation did a survey of bridges on the Kittitas Division for future disposal. Kelsey Doncaster, Reclamation Historian, surveyed all bridges along the SBC which were designed by Reclamation and constructed during the SBC's period of significance. This bridge at approximately Mile 11.7 was not in Reclamation's bridge database nor its original designs or specifications for the 14 bridges built on the SBC (Doncaster, 2017, 30). Additionally, all bridges on the SBC built by Reclamation were installed with concrete abutments on either end of the bridge. Since this bridge does not have any abutments and its design is not consistent with Reclamation bridges that indicates that it was not a Reclamation bridge nor built during the period of significance of the SBC at this location, but much later. Kittitas Reclamation District records indicate that it was built by a private landowner to cross the canal at date prior to 1980.

Period of Significance: The period of significance for the SBC is from 1929-1933 as that covers the years it was built and operated by Reclamation (Doncaster, 2017, 34). This bridge is from circa 1950 and its construction date would be its period of significance.

Determination of Eligibility: Criterion A: Current research has indicated that this bridge was not directly associated with important events that occurred along the SBC. Criterion B: The subject farm bridge has no association with significant historical persons. Criterion C: This bridge is not a rare or the best surviving example of a distinctive type of Reclamation Bridge. It does not represent the evolving technology in its design or being a unique design solution developed in response to a difficult engineering challenge. Criterion D: The subject farm bridge does not contain any additional research potential that can contribute to the understanding of these resources beyond this recordation (or documentation) in history. Integrity: Reclamation records never indicated a bridge at this location so it is unknown if it has retained its original location as its age is also unknown it may have very likely been moved in from another location. It has retained its setting in agriculture/shrub steepe. Design of the bridges/farm bridges is simple therefore slight modifications to the design can cause it to lose its integrity. Based on a visual inspection in 2016 and from photographs in 2019 the design of the bridge has had some modifications over the years in the railings and all the bridge decking has been replace with what appears to be salvaged wood from another structure. This bridge is in poor condition, degraded deck, rotten railings and timbers. Additionally, the decking is all irregular which does not reflect its workmanship. It appears to have retained many of its original materials minus the decking. The association of the subject bridge is no longer intact as it is no longer serving agriculture, but the feeling has changed somewhat as the bridge has fallen into disrepair.

Therefore, Jacobs recommends this Timber Farm Bridge to be not eligible on its own under any of the National Register Criteria, nor is it contributing to the SBC as its from outside of the SBCs period of significance.

Physical description: This timber farm bridge at approximately Mile 11.7 of Reclamation's Kittitas Division South Branch Canal and is in the vicinity of Thorp, Washington. It is a simple timber farm bridge which is approximately 30 feet long by approximately 13 feet wide that sits directly on the canal embankment. It is a straight wooden bridge with and irregular deck that appears to be a patchwork irregular length boards, so some are too long for the bridge and support some of the posts and railings along with large sheets of chip board that are covering over holes in the deck. Today it is in poor condition, with rotten railings, decking, and timbers which made it unsafe to survey across its deck.

Bibliography: Doncaster, Kelsey 2017 Yakima Project Farm Bridges Disposal near Cle Elum, Thorp, Kittitas and Sunnyside, Washington. U.S. Department of the Interior, Bureau of Reclamation, Pacific Northwest Region: Yakima, Washington.

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Location

Address: 5 miles SW of Ellensburg on Manastash Rd, Ellensburg, WA

Geographic Areas: Kittitas County, MANASTASH CREEK Quadrangle, T17R17E11

Information

Number of stories: N/A

Construction Dates:

Construction Type	Year	Circa
Built Date	1950	☐

Historic Use:

Category	Subcategory
Transportation	Transportation - Road-Related (vehicular)
Transportation	Transportation - Road-Related (vehicular)

Historic Context:

Category
Agriculture
Transportation
Politics/Government/Law

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Architect/Engineer:

Category	Name or Company
Builder	U.S.D.I./U.S.B.R.
Architect	U.S. Bureau of Reclamation
Engineer	U.S.D.I./U.S.B.R.

Thematics:

Local Registers and Districts

Name	Date Listed	Notes

Project History

Project Number, Organization, Project Name	Resource Inventory	SHPO Determination	SHPO Determined By, Determined Date
080211-06-BOR, BOR, Yakima Project Farm Bridges Transfer	12/29/2008	Determined Not Eligible	, 3/8/2012
2020-03-02222, BOR, KRD South Branch Phase II	3/18/2020	Survey/Inventory	

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Photos

Looking north across KRD Manastash Creek bridge deck.

KRD Manastash Creek Bridge looking northeast.

Manastash Creek Bridge looking NE.

bridge looking north to start of Upper Kittitas Reclamation District Canal.

detail of downstream (east) side.

date inscribed in south abutment.

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Inventory Details - 12/29/2008

Common name: Kittitas Reclamation District Manastash Creek Bridge

Date recorded: 12/29/2008

Field Recorder: Kelsey J. Doncaster

Field Site number:

SHPO Determination 080211-06-BOR determined on 3/8/2012

Detail Information

Characteristics:

Category	Item
Form Type	Bridge
Foundation	Concrete - Poured
Plan	Rectangle
Structural System	Wood - Post and Beam

Styles:

Period	Style Details
Other	Utilitarian

Surveyor Opinion

Property appears to meet criteria for the National Register of Historic Places: No

Property potentially contributes to a historic district (National and/or local): No

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Significance narrative:

The Kittitas Division was approved in 1926 as the third irrigation project of the Yakima Project. It consists of a diversion dam at Easton, a main canal and two canal branches, a North Branch and a South Branch, to irrigate Kittitas County. The Main and South Branch Canals were completed in 1930 and North Branch Canal in 1931. Even though the Kittitas Division was first opened for settlement during the darkest days of the Great Depression (1930-32), when agriculture was particularly hard hit, the area was settled more rapidly than any of the earlier units on the Yakima Project (Pfaff, 2002, pp. 93-100). Today it irrigates 59,582 acres in the Kittitas Valley (U. S. Department of the Interior, U. S. Bureau of Reclamation, 2007, Yakima Project Washington).

This small bridge crosses Manastash Creek below start of Upper Kittitas Reclamation District Canal [originally called the South Branch Canal] for access to the siphon outlet. Records do not indicate that this was a part of the original construction of the South Branch Canal. In Specification No. 479 for construction of the South Branch Canal there is a 1928 plan No. 33-D-363 for 14 farm timber operating bridges from station 53+25 to 706+00. But the Manastash bridge is not in this specication as its past station 706 and no other specifications were issued for Manastash Creek.

Research suggests that this 24 foot long bridge was built in 1950 by either United States Bureau of Reclamation forces or by Kittitas Reclamation District forces. The builder is in question since Kittitas Reclamation District had assumed O & M over the Kittitas Division in 1934 (U. S. Department of the Interior, U. S. Bureau of Reclamation, 1972, p. A-7). While this bridge is over 50 years old it has integrity issues and since it was not built during the original construction of the Kittitas Division in 1926-1932 it is not a contributing bridge to the Kittitas Division or its parent Yakima Project for the National Register of Historic Places.

Physical description:

This small 24 foot long timber farm bridge crosses Manastash Creek below start of upper Kittitas Reclamation District Canal [originally called the South Branch Canal] (U. S. Department of the Interior, U. S. Bureau of Reclamation, Pacific Northwest Region, 2008, p. 2). It is a straight bridge with posts and railings with heavy planks, called running boards, on the decking parallel to its beams for heavy loads. There are two concrete abutments with the south concrete abutment having a date of August 22, 1950 inscribed into it.

This bridge has been modified after its original construction with the addition of the running boards for increasing of weight bearing loads. Reinforcement of this bridge to increase its weight bearing capacity does not reflect the original construction of a timber farm bridge in the Yakima Project. Within the last 5 years or less it appears that the whole bridge deck and the curb timbers were replaced with different sized wood. Additionally steel plates have been used on two stringers after they were cracked (U. S. Department of the Interior, U. S. Bureau of Reclamation, Pacific Northwest Region, 2008, pp. 2 & 7). Today the 2/3rds of the 15 stringers are cracked and needing replacement as they will soon fail (p. 7). Stringers 9-13 are tightly spaced (6 in to center versus 12 in to center) which lends one to believe that they or the other stringers were replaced once in the last 50 years (p. 2)

Therefore this bridge does not convey its original appearance when built and does not have integrity. Therefore it is not a contributing bridge to the Kittitas Division or its parent Yakima Project for the National Register of Historic Places.

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Bibliography:

Pfaff, Christine. "Harvests of Plenty: A History of the Yakima Irrigation Project, Washington." Denver, CO: Department of the Interior United States Bureau of Reclamation Technical Service Center, 2002.

U. S. Department of the Interior, U. S. Bureau of Reclamation. "Earthwork and Structures Lateral System Under South Branch Canal and South Branch Canal Station 756+00 to Station 932+00, Specification 488." 1929.

U. S. Department of the Interior, U. S. Bureau of Reclamation. Yakima Project Washington Retrieved December 28, 2008 from www.usbr.gov. 2007.

U. S. Department of the Interior, U. S. Bureau of Reclamation, Pacific Northwest Region. "Manastash Creek Bridge, Routine Bridge Inspection Report." September 2008.

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Inventory Details - 3/18/2020

Common name: Kittitas Reclamation District Manastash Creek Bridge

Date recorded: 3/18/2020

Field Recorder: Kelsey J. Doncaster

Field Site number:

SHPO Determination

Detail Information

Characteristics:

Category	Item
Form Type	Bridge
Foundation	Concrete - Poured
Plan	Rectangle
Structural System	Wood - Post and Beam

Surveyor Opinion

Significance narrative: In the years since 2008 no research or documents where ever found in the U.S. Bureau of Reclamation or Kittitas Reclamation District's records to change any of the information or determination in the 2008 evaluation. Since that time the Kittitas Division South Branch Canal (SBC) was determined eligible to the National Register of Historic Places (NRHP), but its period of significance is from 1926-1933 and therefore this bridge is outside that period for it to be contributing to this irrigation structure (Doncaster, 2017, 34). Therefore, Jacobs recommends that this bridge is still not eligible to the NRHP on its own or contributing to the SBC under any of the four NRHP Criteria along with still lacking integrity as stated in the 2008 historic property inventory form.

Physical description: Since 2008 when this bridge was first surveyed and evaluated there has been little change to the structure. There has been an addition of a tread support to the center of the bridge deck. As stated in 2008 this is a timber farm bridge is that is 24-foot-long crossing over Manastash Creek "it is a straight bridge with posts and railings with heavy planks, called running boards, on the decking parallel to its beams for heavy loads. There are two concrete abutments with the south concrete abutment having a date of August 22, 1950 inscribed into it. This bridge has been modified after its original construction with the addition of the running boards for increasing of weight bearing loads. Reinforcement of this bridge to increase its weight bearing capacity does not reflect the original construction of a timber farm bridge in the Yakima Project "(Doncaster, 2008, 5). Timbers have been replaced with different sized wood since 2003 and "steel plates have been used on two stringers after they were cracked"(Doncaster, 2008, 5).

Bibliography:

Doncaster, Kelsey 2008 Historic Property Inventory report for Kittitas Division Manastash Creek Timber Farm Operating Bridge. On file at Washington Department of Archeology and Historic Preservation: Olympia, Washington.

Doncaster, Kelsey 2017 Yakima Project Farm Bridges Disposal near Cle Elum, Thorp, Kittitas and Sunnyside, Washington. U.S. Department of the Interior, Bureau of Reclamation, Pacific Northwest Region: Yakima, Washington.

Historic Property Report

Resource Name: Kittitas Division Manastash Creek Timber Farm Operating Bridge

Property ID: 209511

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

June 12, 2020

Talmadge Oxford
Columbia-Cascades Area Manager
Bureau of Reclamation
Columbia-Cascades Area Office
1917 Marsh Road
Yakima, Washington 98901-2058

In future correspondence please refer to:
Project Tracking Code: 2020-03-02222
Property: KRD South Branch Phase II
Re: ADVERSE Effect

Dear Talmadge Oxford:

Thank you for contacting the State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) regarding the above referenced proposal. We have reviewed the materials you provided for this project. As a result of our review, we concur with your determination that the project as proposed will have an Adverse Effect on Property ID: 708748, the Kittitas Division South Branch Canal, which is eligible for listing in the National Register of Historic Places.

In view of our concurrence on the adverse effect determination, we look forward to further consultation and the development of a Memorandum of Agreement (MOA). The MOA shall identify specific measures that when implemented will serve to mitigate the adverse effect on the property.

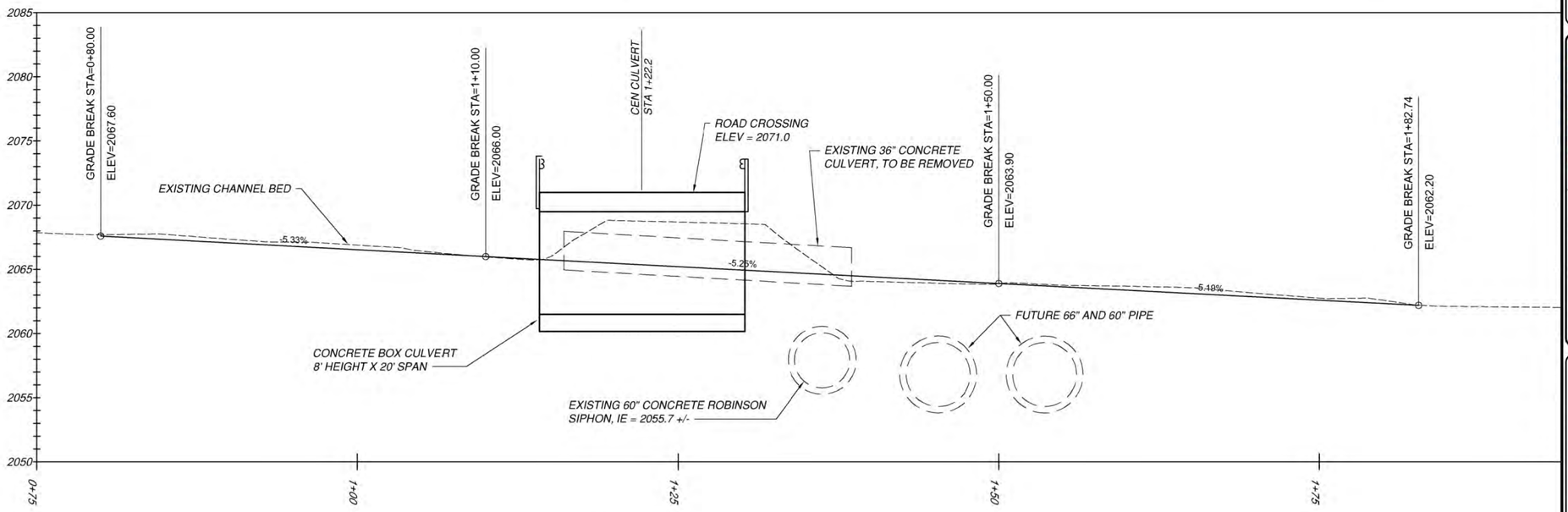
Also, we appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36 CFR 800.4(a)(4). These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations 36 CFR 800.

Thank you for the opportunity to review and comment. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.

Sincerely,

Holly Borth
Project Compliance Reviewer
(360) 586-3533
holly.borth@dahp.wa.gov

ATTACHEMENT C: ROBINSON CREEK CULVERT REPLACEMENT PLANS



CHANNEL PROFILE

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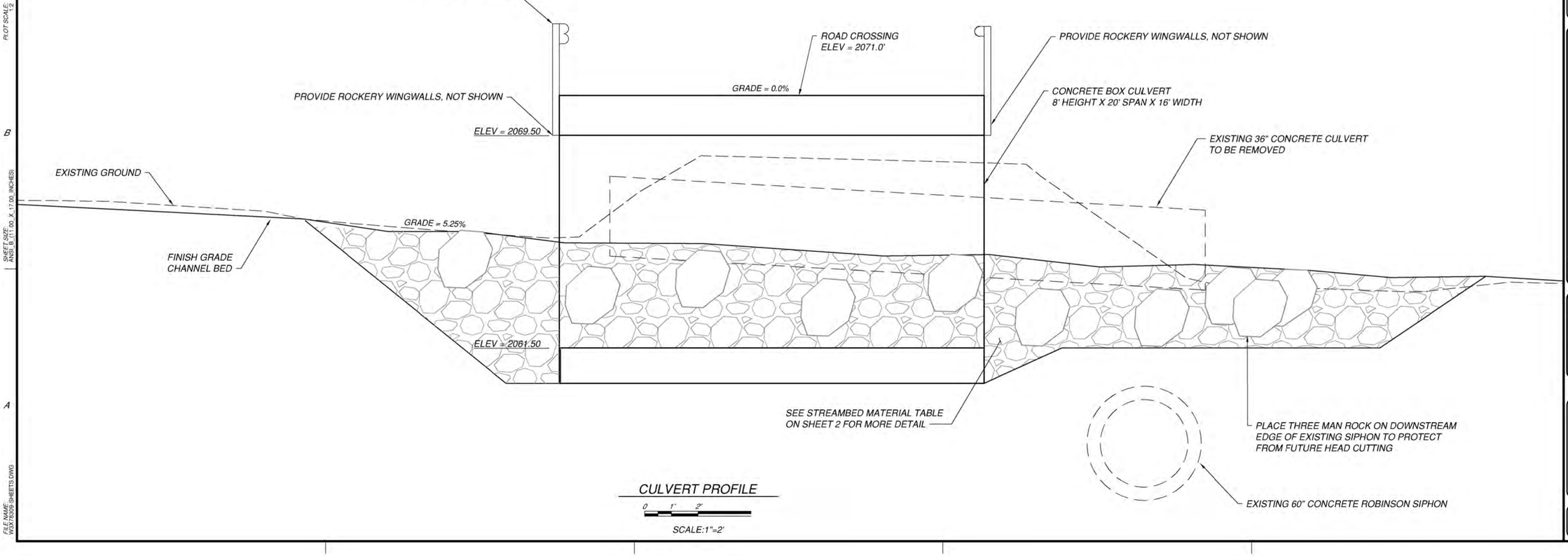
SCALE:1"=5'



CULVERT PROFILE

0 1' 2'

SCALE:1"=2'

Kittitas Reclamation District

JACOBS
1100 112TH AVE. N.E., SUITE 500
BELLEVUE, WA 98004
(425) 453-5000 / www.JACOBS.com

DRAWN BY: REILLY A. HOLLAND
CHECKED BY:
APPROVED BY:
CONTRACT / PROJECT NO.: W3X78309
FILE NUMBER: W3X78309-SHEETS
DATE: 2020.09
DESIGNED BY: CAM M. ETHLAN

DRAFT DOCUMENT

Conserving water, promoting local agriculture, and enhancing the environment . . .

KITTITAS RECLAMATION DISTRICT
KITTITAS VALLEY
ELLENSBURG, WASHINGTON
SOUTH BRANCH IMPROVEMENTS
PACKAGE MP 10.0 - MP 10.4

SOUTH BRANCH CANAL
ROBINSON CREEK TO MANASTASH CREEK IMPROVEMENTS

REV NO / REV NO / REV NO / REV NO / REV NO

CONSULTANT PRODUCED BY

X
ACCEPTANCE
KRD ADMINISTRATOR TITLE

ELLENSBURG, WA
LOCATION

2020-09
DATE

ROBINSON CULVERT CROSSING

CHANNEL PROFILE

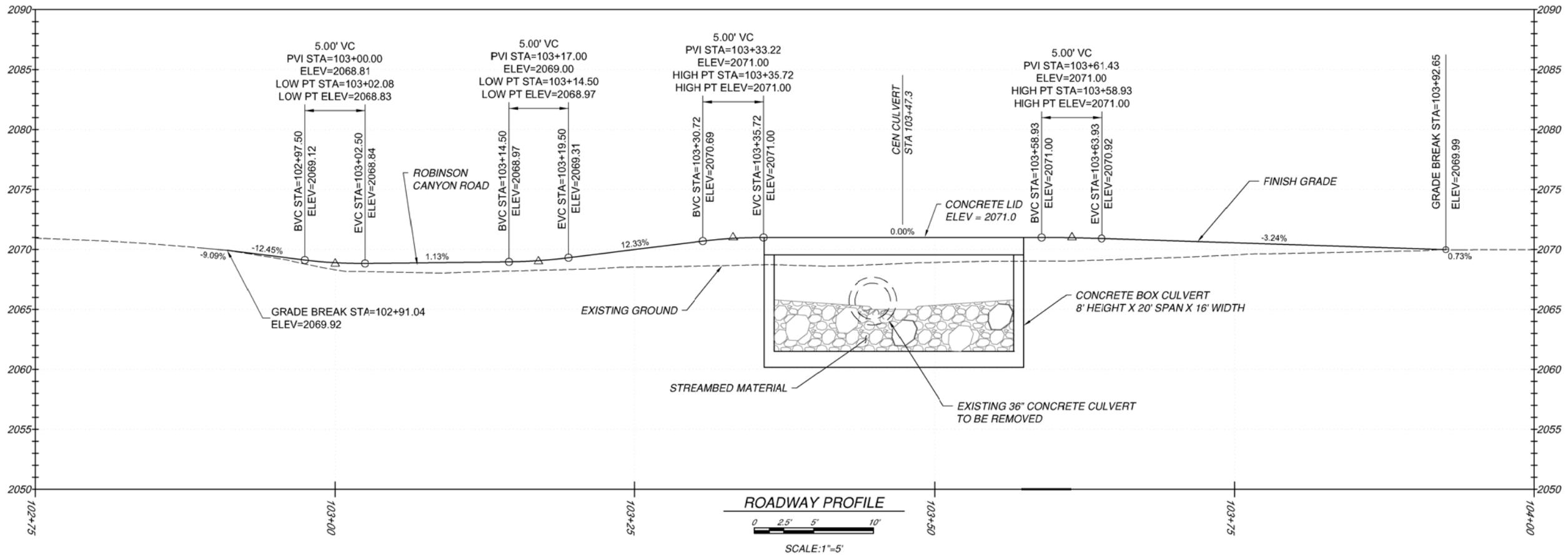
003
SHEET 03 OF 03

SOLICITATION NO.:
33-SBC-1004

PLOT SCALE: 1:2 | PLOT DATE: 2020.07.01

SHEET SIZE: ANSI_B (11.00_X_17.00_INCHES)

FILE NAME: W3X78309-SHEETS.DWG



ROADWAY PROFILE

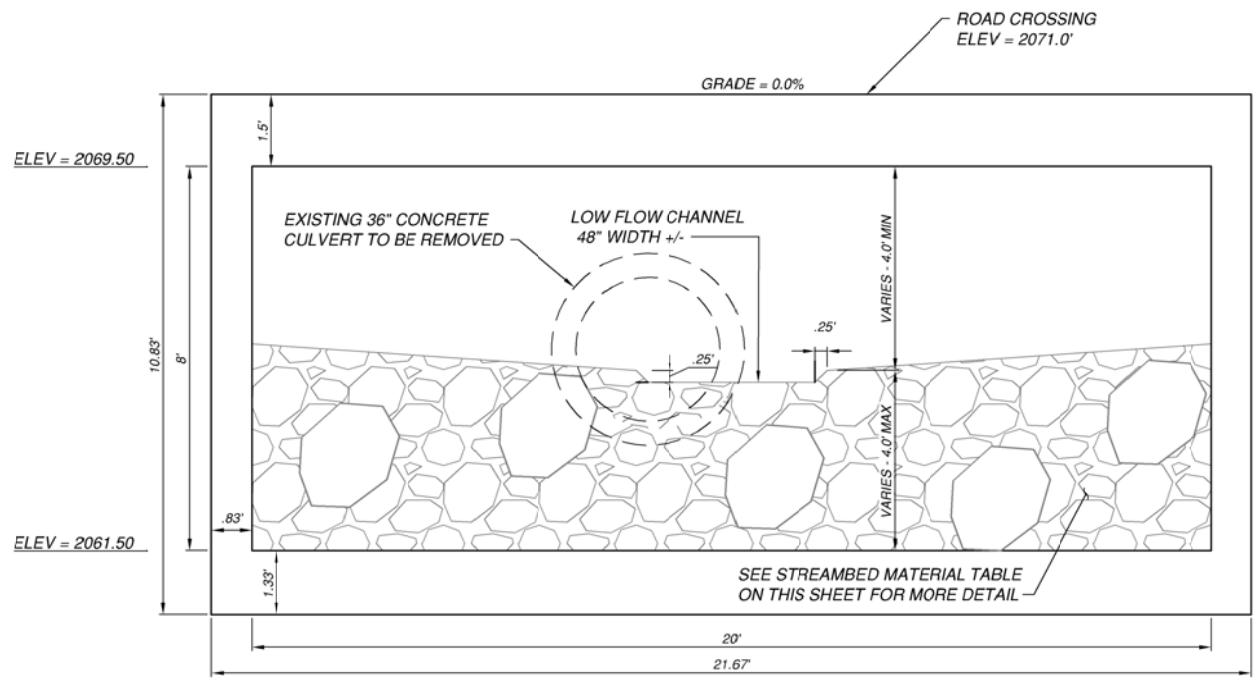
0 2.5' 5' 10'

SCALE:1"=5'

STREAMBED MATERIAL TABLE:
PERCENTAGES ARE BY WEIGHT OF TOTAL MIX.PIECE SHAPE SHALL BE ANGULAR OR SUBANGULAR (NOT ROUNDED) FOR ITEMS 1 AND 2.

FOR MATERIAL GRADATION, SEE STANDARD SPECIFICATIONS FOR ROAD BRIDGE, AND MUNICIPAL CONSTRUCTION 2016, AVAILABLE AT www.wsdot.wa.gov/Publications/Manuals/M41-10.htm.

1. *20% ONE-MAN ROCK PER WA DOT 9-03.11(3)*
2. *30% 12-INCH COBBLES PER WA DOT 9-03.11(2)*
3. *50% STREAMBED SEDIMENT PER WAS DOT 9-03.11(1)*



CULVERT SECTION

0 1' 2' 4'

SCALE:1"=2'

Kittitas Reclamation District

JACOBS
1100 112TH AVE. N.E., SUITE 500
BELLEVUE, WA 98004
(425) 453-5000 / www.JACOBS.com

DRAWN BY: REILLY A. HOLLAND
CHECKED BY:
APPROVED BY:
CONTRACT / PROJECT NO.: W9X78309
DATE:
FILE NUMBER: W9X78309-SHEETS

DESIGNED BY: JOHN M. STULHOFER

Conserving water, promoting local agriculture, and enhancing the environment

KITTITAS RECLAMATION DISTRICT
KITTITAS VALLEY
ELLENSBURG, WASHINGTON
SOUTH BRANCH IMPROVEMENTS
PACKAGE MP 10.0 - MP 10.4

SOUTH BRANCH CANAL
ROBINSON CREEK TO MANASTASH CREEK IMPROVEMENTS

MARK	REVISIONS	BY	DATE

CONSULTANT PRODUCED BY:

ACCEPTANCE
KRD ADMINISTRATOR

ELLENSBURG, WA
LOCATION

DATE

ROBINSON CULVERT CROSSING

ROADWAY PROFILE

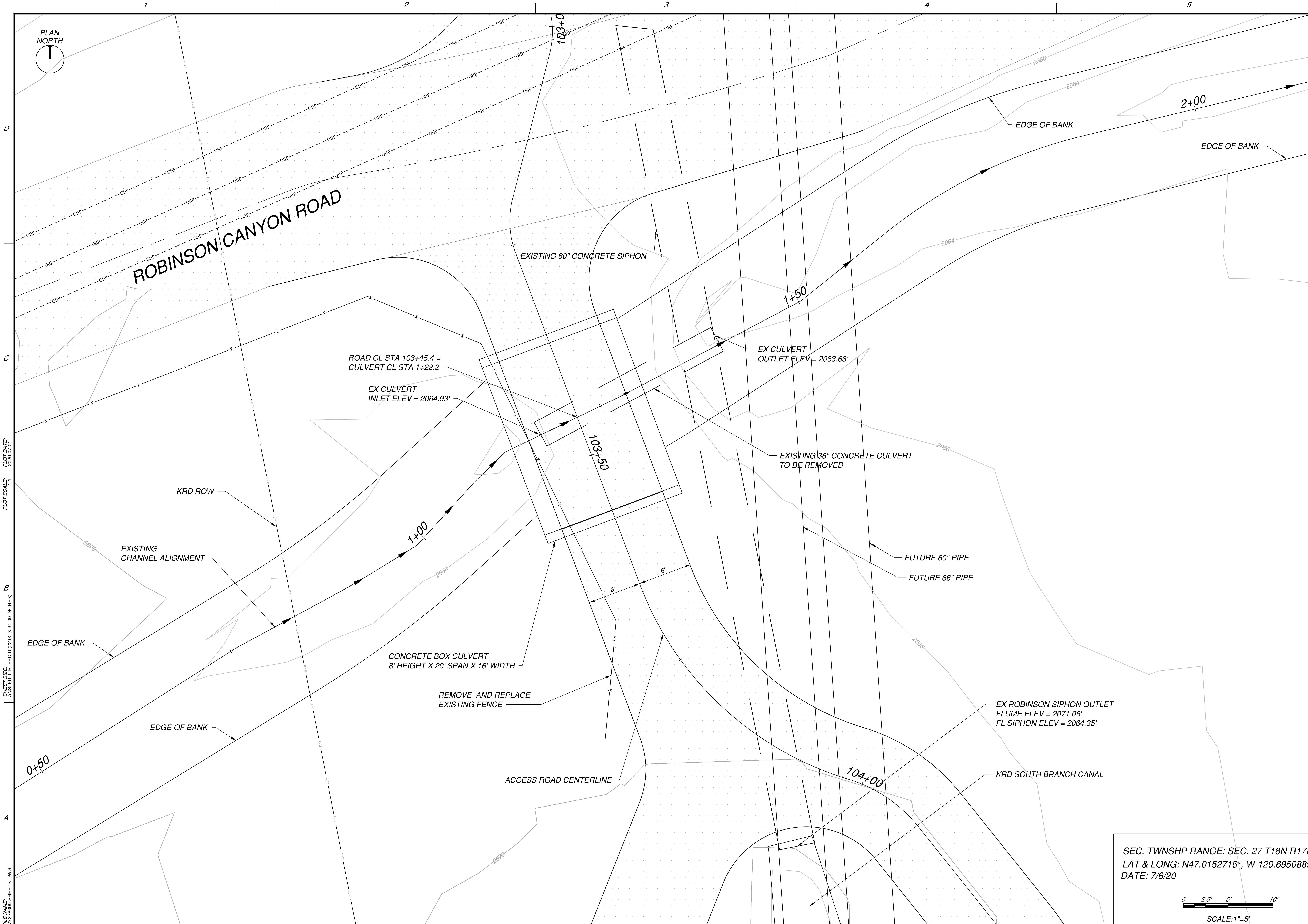
002
SHEET 02 OF 03

SOLICITATION NO.
33-SBC-1004

PLOT SCALE: 1:2 | PLOT DATE: 2020.07.01

SHEET SIZE: ANSI_B_11.00_X_17.00_INCHES)

FILE NAME: W9X78309-SHEETS.DWG



SEC. TWNSHP RANGE: SEC. 27 T18N R17E
LAT & LONG: N47.0152716°, W-120.6950889°
DATE: 7/6/20

0 2.5' 5' 10'
SCALE:1"=5'

Kittitas Reclamation District

JACOBS
1100 112TH AVE. N.E., SUITE 500
BELLEVUE, WA 98004
(425) 453-5000 / www.JACOBS.com

DRAWN BY: REILLY A. HOLLAND
CHECKED BY:
APPROVED BY:
CONTRACT / PROJECT NO.: W3X78309
FILE NUMBER: W3X78309-SHEETS
DATE: 2020-05
DESIGNED BY: JOHN M. ETULAIN

TEMP. PLACEHOLDER STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER #####
DRAFT DOCUMENT

Conserving water, promoting local agriculture, and enhancing the environment . . .

KITTITAS RECLAMATION DISTRICT
KITTITAS VALLEY
ELLENSBURG, WASHINGTON
SOUTH BRANCH IMPROVEMENTS
PACKAGE MP 10.0 - MP 10.4

SOUTH BRANCH CANAL
ROBINSON CREEK TO MANASTASH CREEK IMPROVEMENTS

REV NO | REV NO | REV NO | REV NO | REV NO

CONSULTANT
PRODUCED BY

X
ACCEPTANCE
KRD ADMINISTRATOR TITLE

ELLENSBURG, WA — LOCATION
2020-05 — DATE

ROBINSON CULVERT CROSSING
PLAN VIEW

001
SHEET 01 OF 03

SOLICITATION NO.: 33-SBC-1004

FILE NAME: W3X78309-SHEETS.DWG
SHEET SIZE: ANSI FULL BLEED D (22.00 X 34.00 INCHES)
PLOT SCALE: 1:1
PLOT DATE: 2020-07-01