File No. EA2022-101

CITY OF RICHLAND
Determination of Non-Significance

Description of Proposal: Decommission an unused irrigation pond approximately 3.1 acres in size with a maximum storage capacity of 32 acre-feet and convert it into a stormwater retention swale. The total excavation for this project is anticipated to be approximately 25,100 cubic yards and total fill is anticipated to be approximately 20,750 cubic yards.

Proponent: Anderson Perry & Associates, Inc. on behalf of Washington State Dept. of Natural Resources
Attn: Dana Kurtz
1901 N Fir Street/P.O. Box 1107
La Grande, OR 97850

Location of Proposal: The project will occur at the Chiawana Richland Ranch, Richland Washington. The address is 695 Truman Avenue, within the City of Richland, Washington.

Lead Agency: City of Richland

The lead agency for this proposal has determined that it does 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). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

( ) There is no comment for the DNS.

(**X**) This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for fourteen days from the date of issuance.

( ) This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

Responsible Official: Mike Stevens
Position/Title: Planning Manager
Address: 625 Swift Blvd., MS #35, Richland, WA 99352
Date: February 3, 2022

Signature _____

COMMUNITY DEVELOPMENT DEPARTMENT
625 Swift Blvd, Richland, WA 99352
Phone: 509-942-7794 Fax: 509-942-7764

GRADING PERMITS

Grading permits are regulated by Appendix J of the 2018 IBC. Fees are according to the fee schedule of the 1997 UBC Appendix Chapter 33, Table A-33-A (plan review fee) and Table A-33-B (grading permit).

SUBMITTAL REQUIREMENTS:

1. **Application for Grading Permit**
2. **Affidavit for Grading Operations**
3. **Site Plan** - A site plan showing existing grade and finished grade in contour intervals of sufficient clarity to indicate the nature and extent of the work shall be submitted. The grades must also show in detail that it complies with all the requirements for slopes and setbacks in Appendix J. The site plan must also show the existing grades on adjoining properties in sufficient detail to identify how grade changes will conform to the requirements of Appendix J. The City requires 6 sets of the site plan to be submitted.
4. **Geotechnical Report** - A soils report prepared by a registered design professional shall be provided. It must contain the minimum following information:
   a. Existing soils types and distribution of existing soils.
   b. Conclusions and recommendations for grading procedures, specifically describing that all Appendix J requirements are being met.
   c. Soil design criteria for any structures (walls, etc.) or embankments, required to accomplish the proposed grading.
   d. Slope stability studies and recommendations, specifically describing that all Appendix J requirements are being met, including recommendations and conclusions regarding site geology.
   e. Liquefaction study (required only where mapped maximum earthquake Ss is greater than 0.5g).
5. **SEPA required if more than 500 CY being moved.**

Inspection Process after Permit Issuance

In addition to periodic inspections by the City (pre-fill placement, all buried items—such as filter fabrics, etc.—prior to burial, and at least one inspection of one layer of fill placement during compaction), the owner shall hire either a certified special inspector or a registered design professional to inspect all work in accordance with Section 1705.6 of the 2015 IBC (site preparation, during fill placement, in-place density evaluations). Written field reports and density test reports by either the special inspector or by the registered design professional shall be submitted to the City following each site visit. A final inspection by the City will occur when all the work is done, all written reports have been submitted, AND written final letter from the special inspector or registered design professional is received. Final letter shall document compliance with the Geotechnical Report.

Please read and have your professionals read and apply each section of Appendix J concerning excavations, fills, and especially SETBACKS and drainage, terracing, and erosion. The plans and reports submitted before permit issuance must clearly show how each of these sections is being addressed in your proposal.

CITY OF RICHLAND

www.ci.richland.wa.us

Application for Grading Permit

PROJECT NAME / OWNER NAME Chiawana Richland Ranch Dam / Washington State Department of Natural Resources			
Owner's or Tenant's Mailing Address / City / State / Zip 713 E. Bowers Road / Ellensburg / Washington / 98926			Phone Number 509-925-8510
Fax Number	Cell Number		EMail kathryn.mink@dnr.wa.gov
Property Owner (if different from Project Owner)			Phone Number
Property Owner's current Address / City / State / Zip			
Project Contact Name & Company John Wells, P.E., Anderson Perry & Associates, Inc.	Contact Number 509-529-9260		EMail jwells@andersonperry.com
ADDRESS OF PROPERTY			
Tax Parcel # 116983000001009	Subdivision	Lot	Block
Lender Information – required for projects over $5000 in valuation per RCW 19.27.095 If a lender or bond company is not loaning monies on this project, please check here: ☐			
LENDING INSTITUTION – Name/Address			Phone Number
Description of project: (fully describe the type of grading to be done, fill to be used, wetlands, etc.)			
Decommission irrigation pond by reducing size and storage capacity. Convert pond to swale by reducing embankment height to less than 6 feet.			
ESTIMATED # OF CUBIC YARDS OF EARTH TO BE MOVED, FILLED, AND/OR GRADED: Cut: 25,100 cubic yards; Fill: 21,720 cubic yards **CUBIC YARDS**			
CONTRACTOR FOR PROJECT (please note that all sub-contractors also must have a City of Richland business license)			
Name			City Business License **Required prior to permit issuance** ☐ Yes ☐ No
Address/City/State/Zip			Phone
Fax Number	Cell Number		EMail
CIVIL ENGINEER (required for certain grading permits, see Appendix J of the 2015 IBC)			
Name John Wells, P.E.	St License # 40142	Phone Number 509-529-9260	Fax Number 509-529-8102
Address/City/State/Zip 214 E. Birch Street / PO Box 1687 / Walla Walla / Washington / 99362			EMail jwells@andersonperry.com
SOILS ENGINEER (required for certain grading permits, see Appendix J of the 2015 IBC)			
Name Andrew Robinson, P.E.	St License # 41752	Phone Number 509-529-9260	Fax Number 509-529-8102
Address/City/State/Zip 214 E. Birch Street / PO Box 1687 / Walla Walla / Washington / 99362			EMail arobinson@andersonperry.com
Billing Account: - check party responsible for fees: ☐ Owner ☐ Contractor ☒ Applicant			**FOR OFFICE USE ONLY** **PERMIT#** **INITIALS**

☒ I understand that this permit application is valid for 180 days. If the permit is not obtained within 180 days, all submittal documents will be discarded.

Signature of Owner or Authorized Agent

1/12/2022
Date

COMMUNITY DEVELOPMENT DEPARTMENT
625 Swift Blvd., Richland, WA 99352
Phone: 509-942-7794 Fax: 509-942-7764

AFFIDAVIT FOR GRADING OPERATIONS

REQUIREMENTS FOR CITY INSPECTION OF GRADING

See attached.
Address or legal description of property where project is being proposed

Convert existing pond to stormwater retention swale.
Description of project (i.e., new commercial building, addition, new residence, etc.)

EXPLANATION OF CITY INSPECTION REQUIREMENTS

In accordance with the Appendix J of the IBC, it is the City's policy that grading operations shall require a permit. "Grading" is the movement of soil in the form of excavation and/or placement of fill. The City recognizes that grading is a necessary and beneficial activity when appropriately managed to reduce harmful effects to the community and the environment. Under an issued grading permit, multiple inspections will be specified. These City inspections are in addition to the required on-site observation and written field reports by the soils engineer AND are in addition to any required soils compaction testing by third-party testing agencies. To verify that you understand the requirements to receive a grading permit and to have the grading work inspected by the City, we are requiring the contractor, owner, or owner's agent who picks up the grading permit to sign this affidavit attesting that they understand the potential penalties allowed by law for failure to call for City inspection of the grading work.

The preliminary meeting noted in item #1 on the "green" permit sign-off card is ***MANDATORY.*** This meeting helps establish with the City inspector what the parameters of the grading operations will be, what kind of inspections will be needed, and how often.

As allowed by law in RMC Title 21 and building code Section 109, failure to call for inspections may result in fines of up to $5000/day and other legal penalties to be levied against the owner of the property, as well as notices to "stop work".

The City does not want to hinder development work, but serious grading problems have occurred because of failure to follow permit requirements. The City does not want to delay your project, so please follow these inspection requirements.

AFFIDAVIT

By signing below, I hereby affirm that I have read and understand the inspection requirements. I further attest and affirm that I understand the legal ramifications, including penalties as noted by law, for failure to call for City inspection of the grading work for which this permit is being issued. My signature below represents a good faith effort to ensure that the grading contractor will call for City inspection of the grading work as noted on the permit sign-off card ("green card"). I will keep this sign-off card and the field set of approved plans on the job site for the City inspector to use during inspections. If a sub-contractor is hired to accomplish the grading work, I hereby affirm that all information relating to City inspections as noted herein and as noted on the permit sign-off card will be given to the sub-contractor. If I am not the owner of the property for which this permit is being issued, then by my signature, I attest that I am an authorized agent of the owner and have authority to sign this affidavit on behalf of the owner.

Signature of owner (or authorized representative of owner or corporation) — Date: 1/11/2022

PORTIONS OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 9 NORTH RANGE 28 EAST, W.M., BENTON COUNTY, WASHINGTON MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 16; THENCE NORTH 89°19'51" EAST ALONG THE NORTH LINE OF SAID SECTION 16 1,590.09 FEET; THENCE SOUTH 11°49'33" EAST 969.54 FEET; THENCE SOUTH 0°00'12" WEST 1668.99 FEET TO THE EAST-WEST CENTERLINE OF SAID SECTION 16 AND THE TRUE POINT OF BEGINNING; THENCE SOUTH 0°00'12" WEST 4040.66 FEET; THENCE ALONG A CURVE TO THE LEFT WITH A RADIUS OF 817.89 FEET ALONG AN ARC LENGTH OF 1,294.29 FEET TO A POINT ON THE NORTH-SOUTH CENTERLINE OF SAID SECTION 16 FROM WHICH THE QUARTER CORNER COMMON TO SECTIONS 16 AND 21 BEARS SOUTH 0°14'44" EAST 1,396.80 FEET AS SHOWN ON THE PLAT OF CITY VIEW PHASE 1, AS RECORDED IN VOLUME 15 OF PLATS AT PAGE 67, RECORDS OF BENTON COUNTY, WASHINGTON; THENCE NORTH 0°14'44" WEST ALONG SAID CENTERLINE 1227.70 FEET TO THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 16; THENCE ALONG SAID NORTH LINE SOUTH 89°38'20" WEST 822.13 FEET TO THE TRUE POINT OF BEGINNING. SUBJECT TO EASEMENTS & RESTRICTION OF RECORD. (BOUNDARY LINE ADJUSTMENT AF#2019-033492 10/28/2019)

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:

Dam Decommissioning Plan

2. Name of applicant:

Washington State Department of Natural Resources (DNR)

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

Applicant: **Kathryn Mink**
Department of Natural Resources
713 E. Bowers Rd.
Ellensburg, WA 98926-9301
(509) 925-8510
kathryn.mink@dnr.wa.gov

Contact: **Dana Kurtz**
Anderson Perry & Associates, Inc.
1901 N Fir Street/P.O. Box 1107
La Grande, OR 97850
(541) 963-8309
dkurtz@andersonperry.com

4. Date checklist prepared:

November 19, 2021

5. Agency requesting checklist:

Washington State Department of Ecology (Ecology)

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

Construction is anticipated to begin in April/May 2022.

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

The proposed Dam Decommissioning Plan is being completed in preparation for further future development of this property that is anticipated to be subdivided. The existing irrigation pond is anticipated to be converted into a stormwater retention swale.

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

A Hydrology and Hydaulics Assessment, Construction Stormwater General Permit (CSWGP), and Stormwater Pollution Prevention Plan (SWPPP) will be prepared by the consultant.

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.

No approvals are pending at this time.

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

Permit	Approving Agency
County/City Permits	
SEPA Checklist	City of Richland
Site Plan Review	City of Richland
State Permits/Consultation	
Stormwater Pollution and Prevention Plan	Ecology
Construction Stormwater General Permit	Ecology
Hydology and Hydaulics Assessment	Ecology/Dam Safety Office (DSO)
Federal Permits/Consultation	
None	None

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.)

DNR proposes to decommission an unused irrigation pond located at the Chiawana Richland Ranch in Richland, Washington. The irrigation pond is approximately 3.1 acres in size and has a maximum storage capacity of 32 acre-feet (ac-ft). The intent of this project is to decommission the pond and convert it into a stormwater retention swale by reducing the pond embankment height while making the final stored volume above natural ground less than 10 ac-ft. The project construction work is anticipated to include removal of the high-density polyethylene (HDPE) liner to provide in-place sediment storage, earthwork to lower the embankment and irrigation pond storage volume, and surface restoration by hydroseeding to stabilize the embankment and all disturbed areas (see Figure 1, Vicinity Map, and Figure 2, Proposed Site Plan).

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 proposed improvements will occur at the Chiawana Richland Ranch irrigation pond, located in Richland, Washington. Follow I-182 to Exit 3, Queensgate Drive, continue on Queensgate Drive through the traffic circle, turn right on Duportail Street, continue for 0.2 mile, turn left onto City View Drive, continue 0.3 mile to Chiawana Richland Ranch, turn left into the orchard for 0.15 mile, and the irrigation pond is located on the left.

The proposed project site is located on land zoned R-3 Multiple Family Residential. The legal description is Township 9 North, Range 28 East, Section 16, Willamette Meridian.

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

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

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

According to the Natural Resources Conservation Service (NRCS) Soil Resource report, the proposed project site is located in an area with 0 to 15 percent slopes.

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.

The NRCS Soil Resource report map shows the soils within the proposed project area are Quincy loamy sand, 0 to 2 percent slopes, and Quincy loamy sand, 2 to 15 percent slopes. The soil is rated as "Farmland of Statewide Importance" and is non-hydric. Most project work will occur within the footprint of the existing irrigation pond, which is not suitable for farming; therefore, no agricultural land of long-term commercial significance will be permanently impacted. The proposed improvements will require temporary disturbance of soils to complete the dam decommissioning.

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

The proposed project site has previously been disturbed and stabilized to form the existing irrigation pond. There are no indications of unstable soils.

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 existing irrigation pond is approximately 3.1 acres and ground disturbance is not anticipated to extend beyond this area. The total excavation for this proposed project is anticipated to be approximately 25,100 cubic yards and total fill is anticipated to be approximately 20,750 cubic yards.

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

Short-term erosion may occur during the construction of the proposed project. However, once the proposed project is complete, no long-term erosion is anticipated to occur. Erosion control measures will significantly reduce or eliminate the potential for construction related erosion. Best management practices (BMP) will be used to ensure the proposed project design requirements are met, and erosion is minimized. An SWPPP will be prepared by the consultant prior to construction to detail erosion prevention measures.

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

No new impervious surfaces will result from the proposed project.

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

BMPs consistent with the Stormwater Management Manual for Eastern Washington will be used to minimize the risk of erosion. Once construction is completed within the proposed project area, disturbed areas will be restored, if required. During construction, BMPs and other requirements imposed by the local jurisdiction (City of Richland) and state regulations (Ecology) will be used to the extent required to control erosion. These practices may include, but are not limited to, using silt fencing, wattles, and hay bales to slow and/or filter runoff.

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.

Air emissions will be limited to dust from construction equipment and mobilization of equipment on and off site during construction. Construction equipment, vehicles, and construction workers' personal vehicles will generate minor amounts of short-term, localized carbon monoxide and particulate emissions. If necessary, dust abatement, including watering, will be implemented to control dust.

There will be no permanent impacts to air quality because the proposed project will not include any new emission sources.

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

No off-site sources of emissions or odor have been identified that will affect the proposed project.

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

Construction equipment will be well-maintained, and equipment will be turned off when not in use to reduce carbon monoxide and particulate emissions from gasoline and diesel engines. Dust abatement will be implemented as needed.

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.

The proposed project site consists of a 3.1 acre artificially constructed irrigation pond. The decommissioning of this pond is the primary component of this improvement project. This is an

isolated irrigation pond, that does not flow to other waterbodies and is not considered a water of the state.

The proposed project site is located approximately 0.3 mile southwest of the Yakima River, a tributary of the Columbia River that is located approximately 5 miles downstream. The Yakima River is a year-round river that originates in the Cascade Mountains and flows 214 miles downstream to its confluence with the Columbia River. The Yakima River is confined by levees that were constructed by the U.S. Army Corps of Engineers to control flooding and protect properties adjacent to the river.

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map shows no natural or artificial wetlands at the proposed project site.

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.

No. The proposed project is not anticipated to impact any natural waterbodies due to distance.

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.

There are no natural surface waters or wetlands that will be affected by the proposed project. The irrigation pond is isolated, artificially created, and not considered a water of the state. It is anticipated that there will be no water in the pond when construction occurs.

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

The proposed project may require surface water withdrawl of the irrigation pond to perform necessary earthwork for the proposed improvements. It is anticipated that the pond will be mostly dry prior to construction; therefore, dewatering is not anticipated to be needed but may be conducted if any additional water remains in the pond.

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

According to the Federal Emergency Management Agency Map Service Center, Map No. 5355330010E, the proposed project area is located within Zone C, Area of Minimal Flooding.

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.

The proposed project is not anticipated to involve discharges of waste material to surface waters.

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 groundwater is anticipated to be withdrawn as a result of the proposed project. It is anticipated the irrigation pond will be mostly dry prior to construction; however, if any water remains in the pond it will be discharged to perform necessary earthwork for the proposed improvements.

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.

Waste material is not anticipated to be discharged into the ground from septic tanks or other sources.

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.

The only permanent runoff from this proposed project would be stormwater runoff from the site's existing impervious surfaces. Following decommissioning of the existing irrigation pond, any stormwater runoff will be collected by the proposed stormwater swale being constructed in place of the irrigation pond.

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

Waste materials are not expected to enter ground or surface waters. Waste material is not anticipated to be stored within the project area. Release of waste material could potentially occur from accidental fuel leaks or spills during construction; however, this would be contained on site using spill kits and other BMPs.

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

Drainage patterns within the footprint of the proposesd project site are anticipated to be affected following completion of the proposed improvements. Removal of the HDPE liner in the irrigation pond during dam decommissioning and subsequent construction of the proposed stormwater swale is anticipated to improve drainage within the project footprint. Drainage patterns outside of the footprint, in the vicinity of the project site, are not anticipated to be affected by the proposed project.

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

Standard BMPs will be incorporated into the contract documents and may include temporary sediment and erosion control measures such as berms, wattles, straw bale check dams, straw mulching, and/or plastic covering, as well as other requirements imposed by the City of Richland and state regulations and permits.

4. Plants [help]

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

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

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

Some limited and incidental amounts of vegetation may be removed or altered as a result of the completion of improvements proposed in the Dam Decommissioning Plan. The specific kind and amount of vegetation would be determined during project design.

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

No threatened or endangered plant species are known to be on or near the site.

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

BMPs will be utilized to preserve existing vegetation at the proposed project site.

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

No noxious weeds or invasive species are known to exist on or near the proposed project site.

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:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

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

Listed species in the vicinity of the proposed project site were obtained from the USFWS and the National Marine Fisheries Service (NMFS) databases. The USFWS list indicates that two threatened species may occur in the vicinity of the proposed project site. Bull Trout (*Salvelinus confluentus*) conterminous U.S.A. Distinct Population Segment (DPS) is listed as threatened and should be anticipated to occur in the Yakima River, which is 0.3 mile from the proposed project site. The western U.S. yellow-billed cuckoo (*Coccyzus americanus*) DPS is listed as threatened; however, the preferred habitat of this species is dense riparian forests, which are not present at the proposed project site. Additionally, the Monarch butterfly (*Danaus plexippus*), which is listed as a candidate species for federal protection, may also occur in the proposed project site.

The NMFS lists Middle Columbia River DPS steelhead as potentially occurring in the Yakima River, which is 0.3 mile from the proposed project site.

The Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) website identifies the potential for Townsend's Ground Squirrel (*Urocitellus townsendii townsendii*), which is listed as a candidate species for federal protection, to occur in the vicinity of the proposed project site.

Given the mobile nature of these species and distance of the proposed project site to the Yakima River (0.3 mile), it is unlikely any of these species will be impacted by the proposed action.

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

The proposed project lies within the Pacific Flyway for migratory birds; however, the proposed project is not anticipated to have an impact on migratory birds.

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

The proposed Dam Decommissioning Plan does not degrade wildlife or wildlife habitat.

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

No invasive animal species are known to exist on or near the site.

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.

The proposed project does not require any additional energy for its operation.

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

The proposed project will not shade adjacent properties and will not affect the potential use of solar energy by nearby properties.

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:

No energy conservation features are included in this proposal.

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.

No specific environmental health hazards are anticipated to be associated with the completed project.

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

The Ecology Facility/Site Database (https://apps.ecology.wa.gov/facilitysite/MapData/MapSearch.aspx) and What's In My Neighborhood Database (https://apps.ecology.wa.gov/neighborhood) list no sites of concern at the proposed project site. Ecology lists four Facility/Sites within 0.5 mile from the proposed project site. Petco (ID No. 97257) is listed as a hazardous waste generator; Target (ID No. 1574215) is listed as a hazardous waste generator, hazardous waste planner, and listed for hazardous waste management activity; Richland Vactor Waste Facility (ID No. 6164975) is listed for solid waste storage and handling; and Copeland Lumber Yards Richland (ID No. 33461447) is listed for an underground storage tank (UST). There is no history of contamination at these sites and none are anticipated to impact the proposed project.

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.

According to Ecology and the national pipeline mapping system, there are no known underground liquid or gas transmission pipelines or other potential hazards in the proposed project area.

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.

Fuel, oils, and lubricants will be used in motorized vehicles and equipment during construction. It is not anticipated that any toxic or hazardous chemicals will be stored, used, or produced at the proposed project location. In the event hazardous or toxic chemicals are used or stored at the site, they will be handled and disposed of in accordance with federal and state solid and hazardous waste regulations (40 Code of Federal Regulations 261 and Washington Administrative Code (WAC) 173-303).

4) Describe special emergency services that might be required.

No new special emergency services are anticipated to be required.

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

Ecology will be notified if visible petroleum or hazardous materials are encountered during construction. There are no known environmental health hazards associated with the proposed project; therefore, there are no proposed measures to reduce or control risks.

b. Noise

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

There are no known sources of noise in the area that would affect the proposed project.

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.

During construction, noise will be generated from vehicles and equipment. This noise will be temporary and will occur within normal hours of operation.

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

Construction will take place during normal hours of operation. No other measures are proposed to reduce noise impacts.

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.

The property is currently used as an orchard, the project site is used as an irrigation storage pond, and adjoining properties are residential and commercial. The proposed project is not anticipated to affect land uses on adjacent properties.

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?

The land adjoining the proposed project site has been used as working farmland/orchard, and the irrigation pond at the proposed project site has been a component of orchard operations. After the dam is decommissioned, there is potential for the property to be subdivided and utilized for residential purposes. This could convert farmland to nonfarm use; however, that action is not certain and would be covered under a separate SEPA Checklist.

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:

The proposed project will not affect or be affected by normal business operations of working farms or forest lands.

c. Describe any structures on the site.

Structures on the site include various irrigation system components associated with the irrigation pond.

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

No structures will be demolished as a result of the proposed project.

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

The site is currently zoned R-3 Multiple Family Residential.

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

The current comprehensive plan designation is High Density Residential.

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

Not applicable.

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

According to the City of Richland Comprehensive Plan 2017 and Benton County Critical Areas Ordinance, no part of the proposed project site has been classified as a critical area.

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

People will not reside or work in the completed proposed project area.

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

People will not be displaced as a result of the proposed project.

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

People will not be displaced as a result of the proposed project; therefore, no measures are proposed.

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

None. The land use will not change as a result of the proposed project.

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

There are no anticipated impacts to nearby agricultural or forest lands. No measures to ensure compatibility have been proposed. After the dam is decommissioned, there is potential for the property to be subdivided and utilized for residential purposes. This could have potential traffic related impacts on surrounding agricultural lands, however; that action is not certain and would be covered under a separate SEPA Checklist.

9. Housing [help]

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

No housing is proposed.

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

No housing will be eliminated.

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

Since the proposed project will not result in housing impacts, none are proposed.

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?

No structures will be built as part of the proposed project.

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

No views in the immediate vicinity will be altered or obstructed as part of the proposed project.

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

No views are anticipated to be altered by the proposed project; therefore, no mitigation measures are proposed.

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 will be associated with the proposed project.

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

No light or glare will be associated with the proposed project.

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

No off-site sources of light or glare will affect the proposed project.

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

No measures to reduce or control light and/or glare are proposed.

12. Recreation [help]

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

No designated or informal recreational opportunities exist in the immediate vicinity.

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

The proposed project will not displace any recreational use.

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

Not applicable.

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.

No buildings or structures known to be older than 45 years exist on the property. Three historic properties are located within 1 mile of the project area; two (373 Cottonwood and Benton Water Company Canal bench) are determined not eligible. Columbia Canal twin bridges, located approximately 0.35 mile east of the project area, have been determined eligible.

According to the Washington Information System for Archaeological and Architectural Records Data (WISAARD) database, 15 previous cultural resource surveys, resulting in the identification of five cultural resources, are located within 1 mile of the proposed project area. These surveys have been conducted for power line installation, road widening, cell tower installation, bridge construction, and public access projects. None of the surveys overlap the project area.

Five cultural resources have been previously identified within 1 mile of the project area and are all located within close proximity to the Yakima River, north and east of the project area. Site types include several precontact lithic isolates and two precontact stone tool sites.

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.

An 1865 General Land Office (GLO) survey map indicates the project area and surrounding area are vacant and undeveloped, though land along the Yakima River (approximately 0.25 mile northeast of the project area) has been divided into parcels (GLO, 1865). GLO patent records indicate the project area was patented by the state of Washington in 1975.

U.S. Geological Survey (USGS) topographic maps indicate the project area and vicinity were generally undeveloped in 1917, though two-track roads and irrigation canals are present between the project area and Yakima River. An Oregon-Washington Railroad and Navigation Company railroad line is present 0.5 mile southwest of the project area (USGS, 1917). Overhead power was installed just south of the project area by 1951, and a borrow pit, water tanks, and aqueduct have been installed within 1 mile of the project area by 1978 (USGS, 1951, 1978).

A 1976 Metsker map of Benton County shows the project area owned by the state. The immediate vicinity of the project area has been included in Richland city limits, and a network of roads is proposed but did not come to fruition. The project area remains undeveloped (Metsker, 1976).

Historical USGS aerial imagery corroborates the vacancy of the area until the late twentieth century. According to Google Earth imagery, the existing pond in the project area was constructed between 1985 and 1996.

Historical, archaeological, and ethnographic evidence indicates that the vicinity of the current project area occurs within a region attributed to the Walla Walla, Yakama, and Wanapum groups. The project area is in proximity to *Tamákpikus*, a camp site on the Yakima River where two canoes would float downstream with nets fishing for silver salmon, and *Čamná*, a fishing and gathering ground near a village at the mouth of the Yakima River (Hunn et. al, 2015). The

Washington State Department of Archaeology and Historic Preservation (DAHP) Statewide Predictive Model indicates the project area is high risk for encountering cultural resources.

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.

The WISAARD was accessed on October 19, 2021, by Stephanie O'Brien, M.A., RPA, to determine the presence of previously recorded historic properties or archaeological sites within or near the project vicinity, as well as to determine the potential for cultural and historic resources in or near the area of potential effect. Available historic GLO maps (1865), historical topographic maps (1917, 1951, 1978) Metsker maps (Benton County 1976) and various ethnographic sources were reviewed prior to fieldwork for evidence of pre-contact or historic sites in the vicinity of the project area.

Fieldwork, including shovel test probe (STP) excavation at dam removal location and pedestrian survey of the property, will be conducted prior to project work in spring 2022.

Confederated Bands and Tribes of the Yakama Nation, Confederated Tribes of the Warm Springs Reservation, and Confederated Tribes of the Umatilla Reservation have all been contacted regarding this project.

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.

The project proponent is anticipated to conduct cultural resource investigation work if requested by DAHP or Native American tribes. In the event of an unanticipated discovery of cultural resources, the property owner and construction contractor, as well as any subsequent tenant or owner, will be governed by the statutory provisions protecting cultural resources in Chapter 27.53 Revised Code of Washington.

References

General Land Office (1865). Cadastral survey map for Township 9 North, Range 28 East, Willamette Meridian. Electronic document, glorecords.blm.gov, accessed October 19, 2021.

Hunn, Eugene S., E. Thomas Morning Owl, Phillip E. Cash Cash, and Jennifer Karson Engum (2015). *Čáw Pawá Láakni, They Are Not Forgotten: Sahaptian Place Names Atlas of the Cayuse, Umatilla, and Walla Walla*. Tamástslikt Cultural Institute, Pendleton, Oregon.

Metsker, Charles (1976). Township 9 N., Range 28 E., Richland, Ledbeder. In the atlas *Benton County 1976*. Metsker Map Company.

U.S. Geological Survey

1917 Topographic Map. Pasco, Washington 1:125,000 scale.

1951 Topographic Map. Richland, Washington 1:62,500 scale.

1978 Topographic Map. Richland, Washington 7.5' series.

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.

Follow I-182 to Exit 3, Queensgate Drive, continue on Queensgate Drive through the traffic circle, turn right on Duportail Street, follow for 0.2 mile, turn left onto City View Drive, continue 0.3 mile to Chiawana Richland Ranch, left into the orchard for 0.15 mile, and the irrigation pond is located on the left (see Figure 1 for location of the proposed project).

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?

The immediate geographic area is served by Ben Franklin Transit; the nearest route (Route 170) is approximately 0.8 mile from the proposed project site, and the nearest transit center is the Knight Street Transit Center, which is approximately 2.6 miles from the proposed project site.

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

No additional parking spaces will be provided by this proposed project. This project will utilize the existing parking on site.

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).

No other road or street improvements are anticipated to be part of this proposed project.

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

The proposed project is not anticipated to use or affect water, rail, or air transportation.

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?

A trip generation report was not completed for this proposed project; however, the vehicular trips per day are not anticipated to change significantly in relation to the proposed project. During construction there may be an increase in construction vehicles that could cause congestion; however, this is expected to be temporary.

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.

The proposed project is not anticipated to affect or be affected by the movement of agricultural or forest products in the proposed project area.

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

No measures to reduce or control transportation impacts are proposed.

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.

Existing services provided in the City of Richland are anticipated to be sufficient to manage any potential emergencies.

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

Not applicable.

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 proposed project would not require any utilities to be completed.

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: Kathryn Mink

Name of signee Kathryn Mink

Position and Agency/Organization Assistant Region Manager, WA DNR

Date Submitted: 1/6/2022

D. Supplemental sheet for nonproject actions [HELP]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

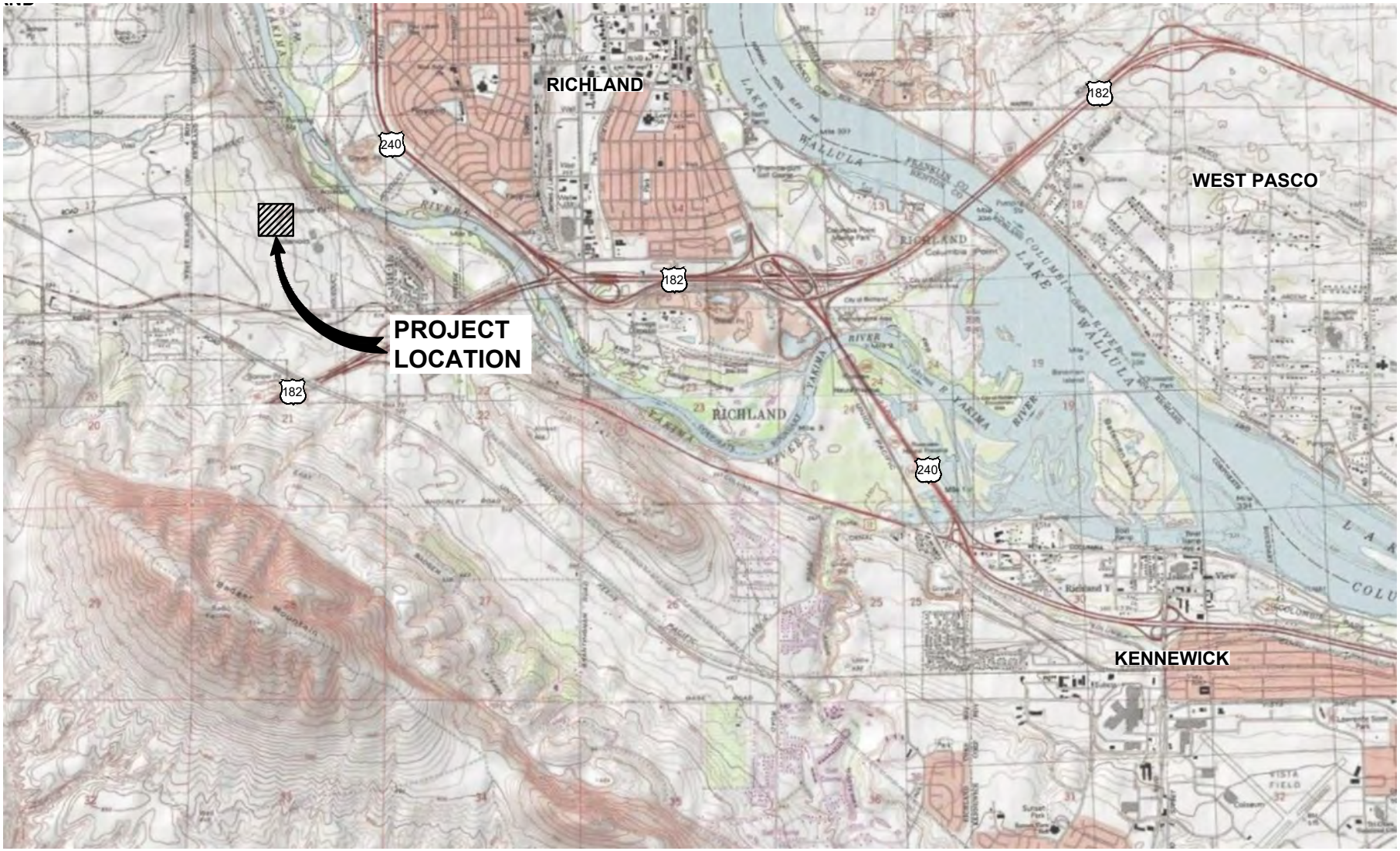
5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.



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WILLAMETTE MERIDIAN

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anderson perry & associates, inc.

WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSION PLAN

SEPA CHECKLIST
VICINITY MAP

FIGURE
1

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WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSION PLAN

SEPA CHECKLIST
SITE PLAN

FIGURE

2

R:\Clients\WA DNR\7008-761 Dam Decomm Plan\060 Design\Exhibits\708-761-SEPA FIG 2.dwg, 10/27/2021 12:16:56 PM

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

DAM DECOMMISSIONING PLAN

MEMBERS

HILARY S. FRANZ - Commissioner of Public Lands
KATHRYN MINK - Assistant Regional Manager
GEMMA BARO-MONTES - Contracts Engineer

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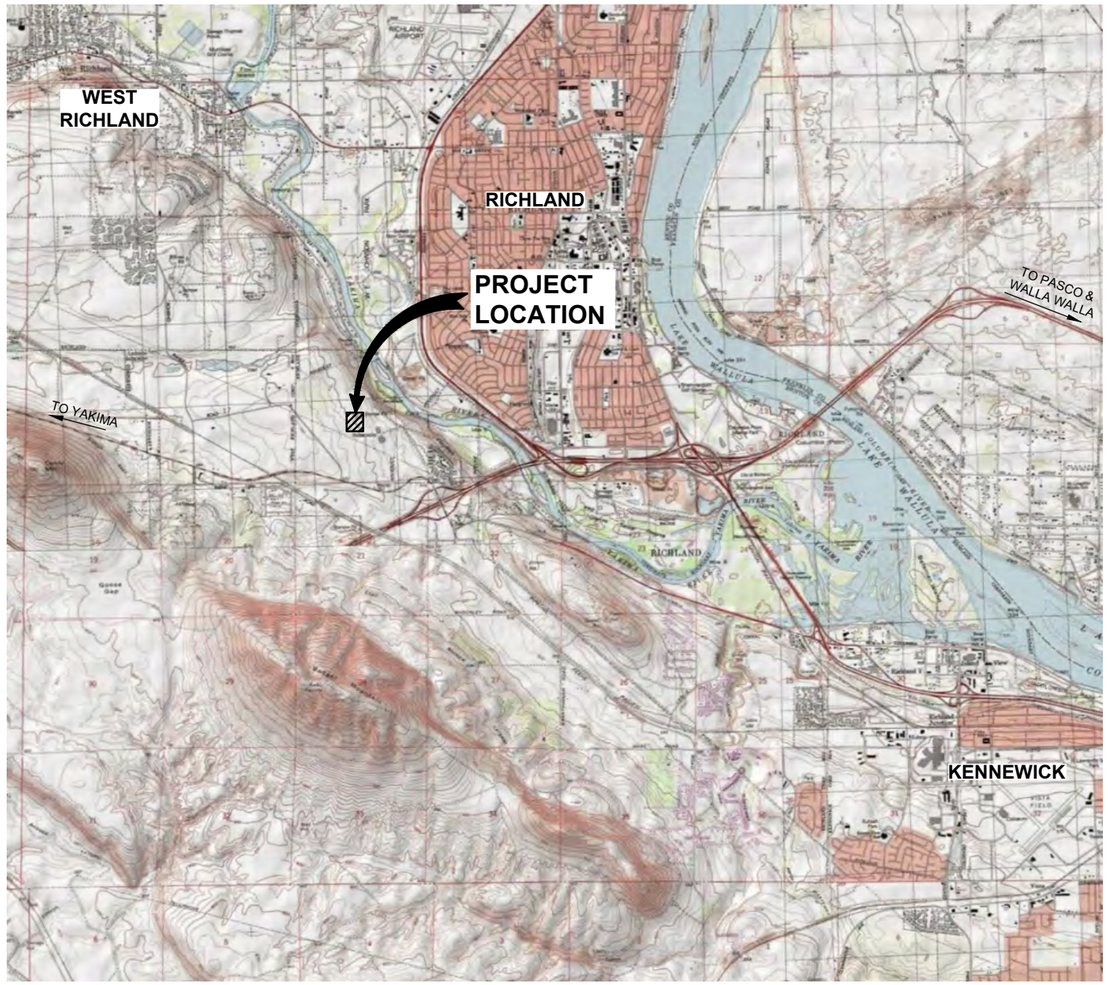
JOHN H WELLS
STATE OF WASHINGTON
40142
REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

FINAL ELECTRONIC DOCUMENTS AVAILABLE UPON REQUEST



VICINITY MAP

NTS

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GENERAL CONSTRUCTION NOTES

1. THESE PLANS, SPECIFICATIONS, AND REFERENCED DOCUMENTS SHALL BE USED TO CONSTRUCT THE IMPROVEMENTS SHOWN. REFERENCED DOCUMENTS INCLUDE THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (CURRENT EDITION), WSDOT STANDARD PLANS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

2. ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE SHOWN WITH AS MUCH ACCURACY AS POSSIBLE, BASED ON AVAILABLE INFORMATION. SOME DISCREPANCIES AND OMISSIONS IN LOCATION, TYPE, AND SIZE SHOULD BE EXPECTED TO OCCUR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES IN AND AROUND THE WORK AREAS. BOTH PRIVATE AND PUBLIC POWER, WATER, IRRIGATION, TELEPHONE, GAS, CABLE, AND SANITARY SEWER SHALL BE INCLUDED. ANY DISCREPANCIES BETWEEN THE DESIGN SHEETS AND EXISTING CONDITIONS SHALL BE REPORTED TO THE ENGINEER.

3. MONUMENTS AND PROPERTY CORNERS NOT SHOWN FOR REPLACEMENT SHALL BE PROTECTED.

4. THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL. CONTRACTOR SHALL COORDINATE WITH THE CITY TO ENSURE TRAFFIC CONTROL IS MODIFIED AS THE WORK PROGRESSES.

LEGEND

WATER

	EXISTING	PROPOSED
WATER LINE W/ SERVICE CONNECTION	W	W
VALVE		
CAP		
COUPLING		
REDUCER		
WATER METER		
FIRE HYDRANT		
AIR RELIEF		
BLOWOFF		

SEWER/STORM DRAIN

	EXISTING	PROPOSED
SANITARY SEWER LINE W/ SERVICE	SS	SS
PRESSURE SEWER LINE	PS	PS
STORM DRAIN LINE	SD	SD
STORM DRAIN CULVERT		
SANITARY SEWER MANHOLE		
CLEANOUT		
STORM DRAIN MANHOLE		
STORM DRAIN CATCH BASIN		

MISC. UTILITIES

	EXISTING	PROPOSED
BURIED POWER	P	P
OVERHEAD POWER	OHP	OHP
BURIED TELEPHONE	T	T
OVERHEAD TELEPHONE	OHT	OHT
BURIED TV	TV	TV
GAS	G	G
IRRIGATION	IRR	IRR
SPRINKLER		
UTILITY POLE		
UTILITY POLE ANCHOR		
ELECTRICAL JUNCTION BOX		
POWER VAULT	P	P
TELEPHONE RISER/VAULT		
FIBER OPTIC VAULT	F	F
GAS METER	G	
STREETLIGHT		
GUARD POST/BOLLARD		

SURVEY

	EXISTING	PROPOSED
ANGLE POINT		
BENCHMARK		
BLOCK CORNER		
IRON PIPE		
MONUMENT (IN CASE)		
MONUMENT (SURFACE)		
SOIL BORING/TEST PIT		
CENTERLINE		
RIGHT-OF-WAY		
PROPERTY LINE		
EASEMENT LINE		
SECTION LINE		

SURFACE FEATURES

	EXISTING	PROPOSED
INDEX CONTOUR	740	740
INTERMEDIATE CONTOUR	740	740
CREEK/DITCH CENTERLINE		
RETAINING WALL		
SIDEWALK CURB & GUTTER		
DRIVEWAY/ACCESS RAMP W/ WARNING STRIP		
EDGE ASPHALT/CONCRETE		
EDGE GRAVEL		
FENCE LINE/GATE	X X	X X
CHAIN-LINK FENCE		
WOOD FENCE		
GUARDRAIL		
RAILROAD		
DAYLIGHT/CATCH POINT		
TREE, CONIFER		
TREE, DECIDUOUS		
SHRUB/BRUSH		
SIGN		
ASPHALT PAVEMENT		
GRAVEL		
CONCRETE		
LANDSCAPE		

ABBREVIATIONS

AC	ASBESTOS-CEMENT
BOC	BACK OF CURB
CB	CATCH BASIN
CDF	CONTROL DENSITY FILL
℄	CENTERLINE
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DNR	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
ECOLOGY	DEPARTMENT OF ECOLOGY
ELEV	ELEVATION
EOP	END OF PAVING
ESCP	EROSION AND SEDIMENT CONTROL PLAN
EST	ESTIMATED
EVCE	END VERTICAL CURVE ELEVATION
EXTG	EXISTING
FDC	FIRE DEPARTMENT CONNECTION
FG	FINISH GRADE
FIP	FEMALE IRON PIPE
FL	FLOW LINE
FLG	FLANGE
FOC	FACE OF CURB
GALV	GALVANIZED
GB	GRADE BREAK
GSP	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
IE	INVERT ELEVATION
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
ME	MATCH EXISTING
MIN	MINIMUM
MJ	MECHANICAL JOINT
MSC	MISCELLANEOUS
MSL	MEAN SEA LEVEL
NE	NORTHEAST
NW	NORTHWEST
OC	ON CENTER
PC	POINT OF CURVE
℄	PROPERTY LINE
PROJ	PROJECTED
PT	POINT OF TANGENT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
RT	RIGHT
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SE	SOUTHEAST
SR	STATE ROUTE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
SW	SOUTHWEST
TBC	TOP BACK OF CURB
TBDC	TOP BACK OF DEPRESSED CURB
TC	TOP OF CURB
TOF	TOP OF FOOTING
TOW	TOP OF WALL
TP	TOP OF PAVEMENT
TYP	TYPICAL
VC	VERTICAL CURVE
WM	WATER MAIN
WSDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION

SECTION DESIGNATION — A / 2
SHEET WHERE SECTION IS SHOWN

SHEET BREAK — # #

DETAIL NUMBER — 1 / - — TITLE — NTS
PAGE WHERE DETAIL IS FROM

SECTION DESIGNATION — A / - — TITLE — NTS
SHEET WHERE SECTION IS FROM

JOHN H WELLS
STATE OF WASHINGTON
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REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

REVISION	BY	DATE

DESIGNED BY A. JAIMES
DRAWN BY J. CHAPMAN
REVIEWED BY J. WELLS

JOB NUMBER 7008-761 | DATE December 16, 2021
ACAD FILE: 7008-761-G002-LEG_NOTE.DWG

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WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

GENERAL NOTES, LEGEND AND ABBREVIATIONS

SHEET
G-002
2 OF ----

LEGEND

WORK AREA

CONSTRUCTION ENTRANCE

INSTALL SILT FENCE

SITE ACCESS

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL BEST MANAGEMENT PRACTICES (BMP'S) AS APPLICABLE TO PREVENT DEBRIS, OILS, SEDIMENTS, ETC. FROM ENTERING SURFACE AND/OR GROUNDWATER. BMP'S NOT LISTED CAN BE FOUND IN THE "STORMWATER MANAGEMENT MANUAL FOR EASTERN WASHINGTON" PREPARED BY THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, LATEST EDITION.

2. CONTRACTOR SHALL INSTALL SILT FENCE PER WSDOT STD PLAN I-30.15-02.

3. DUST CONTROL SHALL BE ONGOING THROUGH THE DURATION OF THE PROJECT UNTIL THE SITE HAS BEEN PAVED OR STABILIZED WITH PERMANENT VEGETATION. THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO CONTROL DUST CAUSED BY THEIR OPERATIONS. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, WATERING OF EXPOSED AREAS.

4. CONTRACTOR SHALL INSTALL AN APPROVED CONSTRUCTION SITE ENTRANCE INTO THE WORK ZONE, PER WSDOT STD PLAN 1-80.10-01, TO PREVENT ANY TRACK-OUT OF MATERIAL ONTO STREET SURFACES. ANY TRACK-OUT SHALL BE CLEANED UP BY THE CONTRACTOR DAILY AT THE CONTRACTOR'S COST. TRACK-OUT MATERIAL ON PAVED SURFACES MUST BE SWEPT BEFORE FLUSHING WITH WATER. LOCATION OF THE CONSTRUCTION ENTRANCE SHALL BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT OUT OF THE WORK ZONE ONTO ADJACENT ROADWAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

5. TO PREVENT TRACK-OUT, CONSTRUCTION EQUIPMENT TO BE OPERATED ON DISTURBED GROUND AREAS SHOULD NOT BE DRIVEN ON ADJACENT PAVED STREETS TO THE MAXIMUM EXTENT POSSIBLE.

6. IF TRACK-OUT OCCURS WITH A PROPERLY MAINTAINED ENTRANCE IN PLACE, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO STREETS OUTSIDE THE WORK ZONE.

7. SHOULD TIRE WASHING BE REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

8. THE CONTRACTING AGENCY HAS OBTAINED COVERAGE UNDER THE DEPARTMENT OF ECOLOGY'S CONSTRUCTION STORMWATER GENERAL PERMIT. PRIOR TO STARTING WORK, THE CONTRACTOR SHALL TRANSFER THE PERMIT TO THEIR NAME AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN AND COMPLY WITH ALL CONDITIONS OF THE PERMIT. THIS INCLUDES BUT IS NOT LIMITED TO SITE MONITORING, PERMIT FEES, PERMIT TERMINATION, AND COMPLIANCE AS WELL AS FILING REQUIRED REPORTS.

9. THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL A SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS SECTION 1-07.15(1) AND A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH WASHINGTON STATE DEPARTMENT OF ECOLOGY GUIDELINES. ON-SITE CONSTRUCTION ACTIVITIES MAY NOT COMMENCE UNTIL THE CITY OF RICHLAND ACCEPTS THE SPCC AND SWPPP PLAN.

10. PROTECTION OF THE ENVIRONMENT: NO CONSTRUCTION-RELATED ACTIVITY SHALL CONTRIBUTE TO THE DEGRADATION OF THE ENVIRONMENT, ALLOW MATERIAL TO ENTER SURFACE OR GROUND WATERS, OR ALLOW PARTICULATE EMISSIONS TO THE ATMOSPHERE WHICH EXCEED STATE OR FEDERAL STANDARDS. ANY ACTIONS THAT POTENTIALLY ALLOW A DISCHARGE TO STATE WATERS MUST HAVE PRIOR APPROVAL OF THE WASHINGTON STATE DEPARTMENT OF ECOLOGY.

JOHN H WELLS
STATE OF WASHINGTON
40142
REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

REVISION	BY	DATE

80 0 80 160 240
SCALE IN FEET

DESIGNED BY A. JAIMES	
DRAWN BY J. CHAPMAN	
REVIEWED BY J. WELLS	

JOB NUMBER 7008-761 DATE December 16, 2021
ACAD FILE: 7008-761-G101-TESCP.DWG

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DAM DECOMMISSIONING PLAN

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

SHEET
G-101
3 OF ---

R:\Clients\WA DNR\7008-761 Dam Decomm Plan\060 Design\7008-761-G101-TESCP.dwg, 12/16/2021 10:40:06 AM

SHEET KEY NOTES

1. ALL LINER MATERIAL TO BE REMOVED AND RECYCLED, OR DISPOSED OF AT AN APPROVED LANDFILL.
2. REMOVE ALL POWER AND UTILITIES AT GROUND SURFACE. ALL PIPES AND CONDUITS SHALL BE CAPPED WATERTIGHT.
3. REMOVE AND DISPOSE OF ALL FENCE AND POSTS.
4. RETAIN AND PROTECT EXTG POWER POLE
5. AL IRRIGATION PIPE TO BE ABANDONED IN PLACE, CAP PIPE ENDS AT EDGE OF EXPOSED AREAS.
6. LAGOON SOLIDS TO BE REMOVED AND STOCKPILED ON-SITE. LAGOON SOLIDS TO BE PLACED ON FINAL GRADE LAGOON INTERIOR SLOPES AND FLOOR AS ORGANIC MATTER.

GENERAL NOTES

1. CLEAR AND GRUB ALL AREA WITHIN THE SILT FENCE BOUNDARY FOR REGRADING. REMOVE AND STOCKPILE THE TOP 6" OF TOPSOIL, SEPARATE FROM THE LAGOON SOLIDS. UPON COMPLETION OF THE PROJECT, THE TOPSOIL SHALL BE REPLACED PRIOR TO HYDROSEEDING.
2. SOLIDS FROM BOTTOM OF EXTG POND SHALL BE STOCKPILED, SEPARATE FROM TOPSOIL, AND THEN MIXED WITH SOIL WITHIN POND FOOTPRINT AS A SOIL AMENDMENT.

DEMOLITION LEGEND

- X X X X REMOVE FENCE OR STRUCTURE
- REMOVE LAGOON SOLIDS AND HDPE LINER
- REMOVE CEMENT CONCRETE
- REMOVE EXISTING TREE AND STUMP

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STATE OF WASHINGTON
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40142
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PROFESSIONAL ENGINEER

REVISION	BY	DATE

DESIGNED BY A. JAIMES
DRAWN BY J. CHAPMAN
REVIEWED BY J. WELLS

40 0 40 80 120
SCALE IN FEET

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ACAD FILE: 7008-761-D101_DEMO.DWG

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DAM DECOMMISSIONING PLAN

SITE PREPARATION PLAN

SHEET
D-101
4 OF ---

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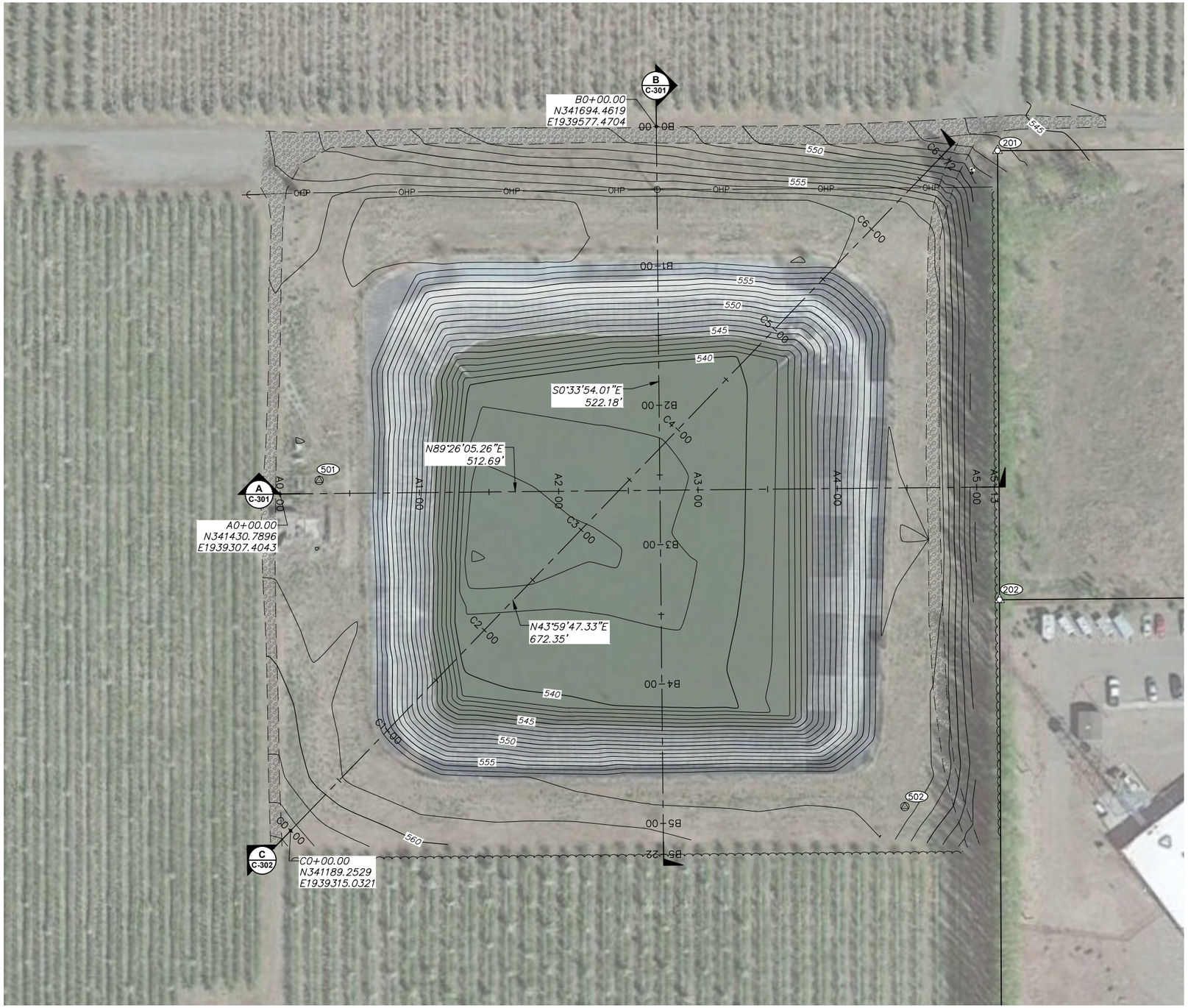
SURVEY DATUM

HORIZONTAL
WASHINGTON STATE PLAN COORDINATES – SOUTH ZONE, NAD83–2011, EPOCH 2010.00 (US SURVEY FEET)

VERTICAL
NAVD88
ALL BASED ON GPS TIES TO WASHINGTON STATE REFERENCE NETWORK (WSRN).

POINT TABLE

POINT #	FULL DESCRIPTION	ELEVATION	NORTHING	EASTING
501	APA–SSC–WSRN	558.191	341440.5520	1939335.4810
201	MON–ALCAP	546.148	341677.1680	1939822.3730
202	MON–RPC	546.603	341354.9750	1939823.8330
502	APA–SSC–WSRN	557.816	341206.5960	1939755.8300



REVISION	BY	DATE

DESIGNED BY A. JAIMES
DRAWN BY J. CHAPMAN
REVIEWED BY J. WELLS

SCALE IN FEET: 40 0 40 80 120

JOB NUMBER 7008–761 DATE December 16, 2021
ACAD FILE: 7008–761–C101_SP.DWG

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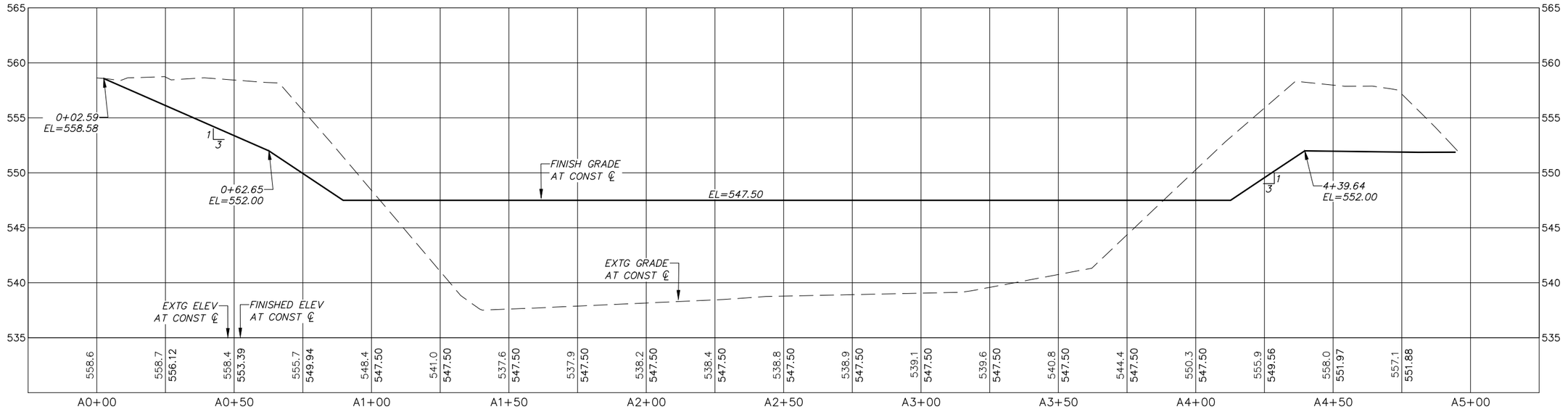
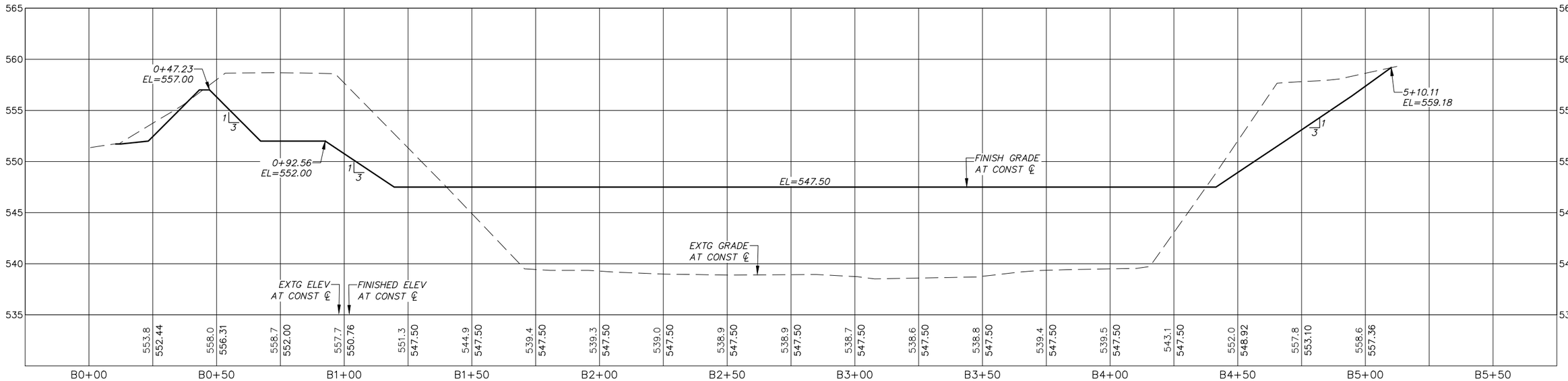
DAM DECOMMISSIONING PLAN

SITE PLAN

SHEET
C-101
5 OF ---



A C-101 **A ALIGNMENT - PROFILE**



B C-101 **B ALIGNMENT - PROFILE**

JOHN H WELLS
STATE OF WASHINGTON
40142
REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

REVISION	BY	DATE

20 0 20 40 60
HORIZONTAL SCALE IN FEET
5 0 5 10 15
VERTICAL SCALE IN FEET

DESIGNED BY	A. JAIMES
DRAWN BY	J. CHAPMAN
REVIEWED BY	J. WELLS
JOB NUMBER	7008–761
DATE	December 16, 2021
ACAD FILE:	7008–761–C101_SP.DWG

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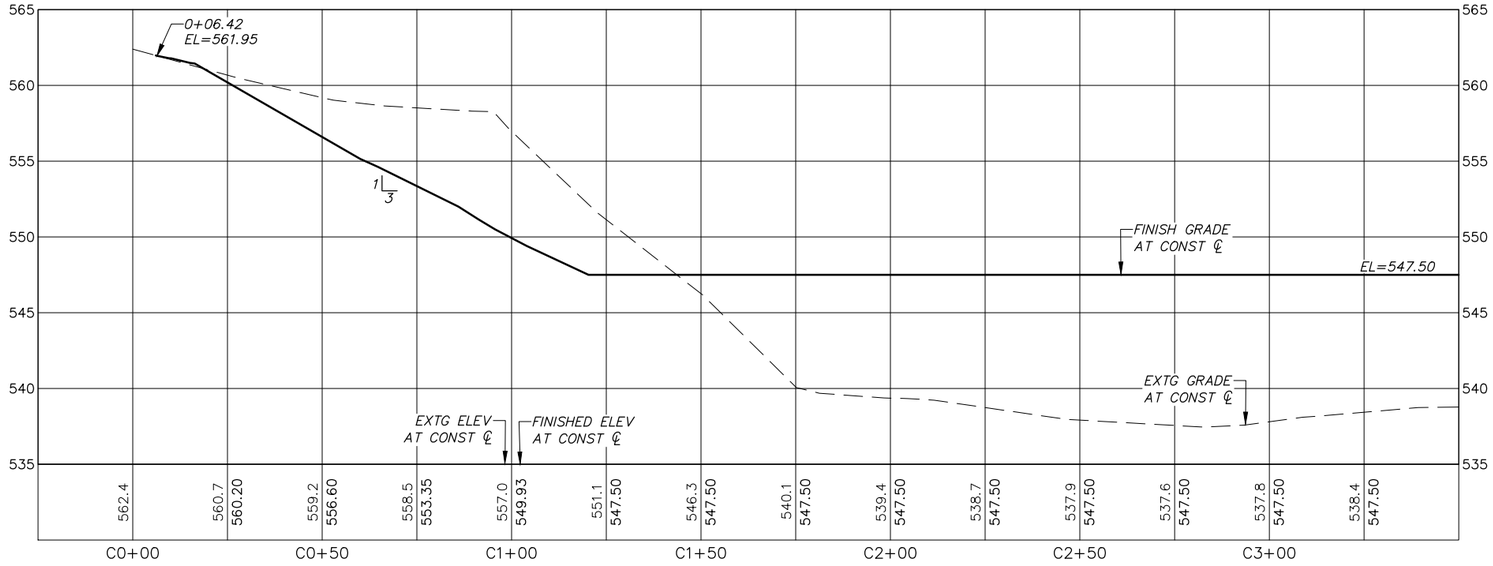
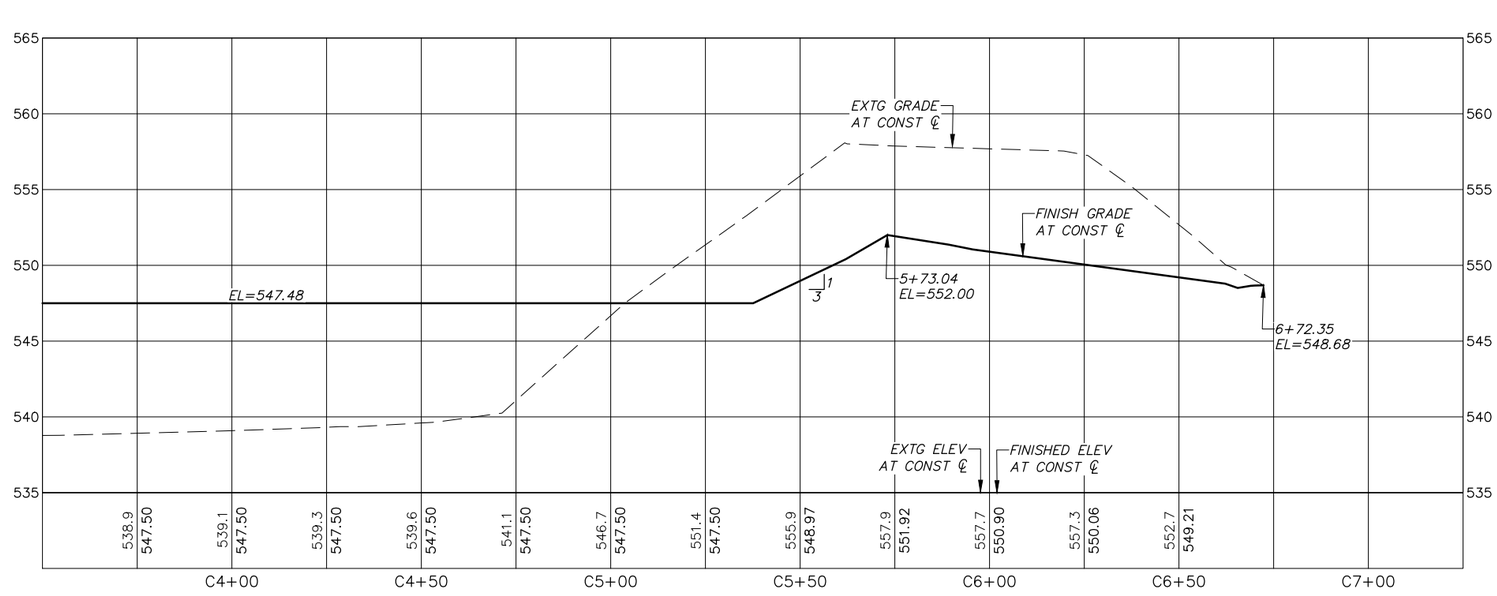
DAM DECOMMISSIONING PLAN

A ALIGNMENT AND B ALIGNMENT PROFILES

SHEET
C-301
6 OF ---





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STATE OF WASHINGTON
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PROFESSIONAL ENGINEER

C-ALIGNMENT - PROFILES

C
C-101

REVISION	BY	DATE

20 0 20 40 60
HORIZONTAL SCALE IN FEET
5 0 5 10 15
VERTICAL SCALE IN FEET

DESIGNED BY A. JAIMES
DRAWN BY J. CHAPMAN
REVIEWED BY J. WELLS

JOB NUMBER 7008-761 DATE December 16, 2021
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C ALIGNMENT PROFILES

SHEET
C-302
7 OF ----

RADIUS POINT TABLE						
NO.	STATION	OFFSET	RADIUS	LENGTH	NORTHING	EASTING
RP1	A0+82.66	128.44 LT	40.00'	62.83'	341560.24	1939408.79
RP2	A3+79.65	128.44 LT	40.00'	62.83'	341563.17	1939705.76
RP3	A3+79.65	167.49 RT	40.00'	62.83'	341267.25	1939708.68
RP4	A0+82.66	167.49 RT	40.00'	62.83'	341264.32	1939411.71

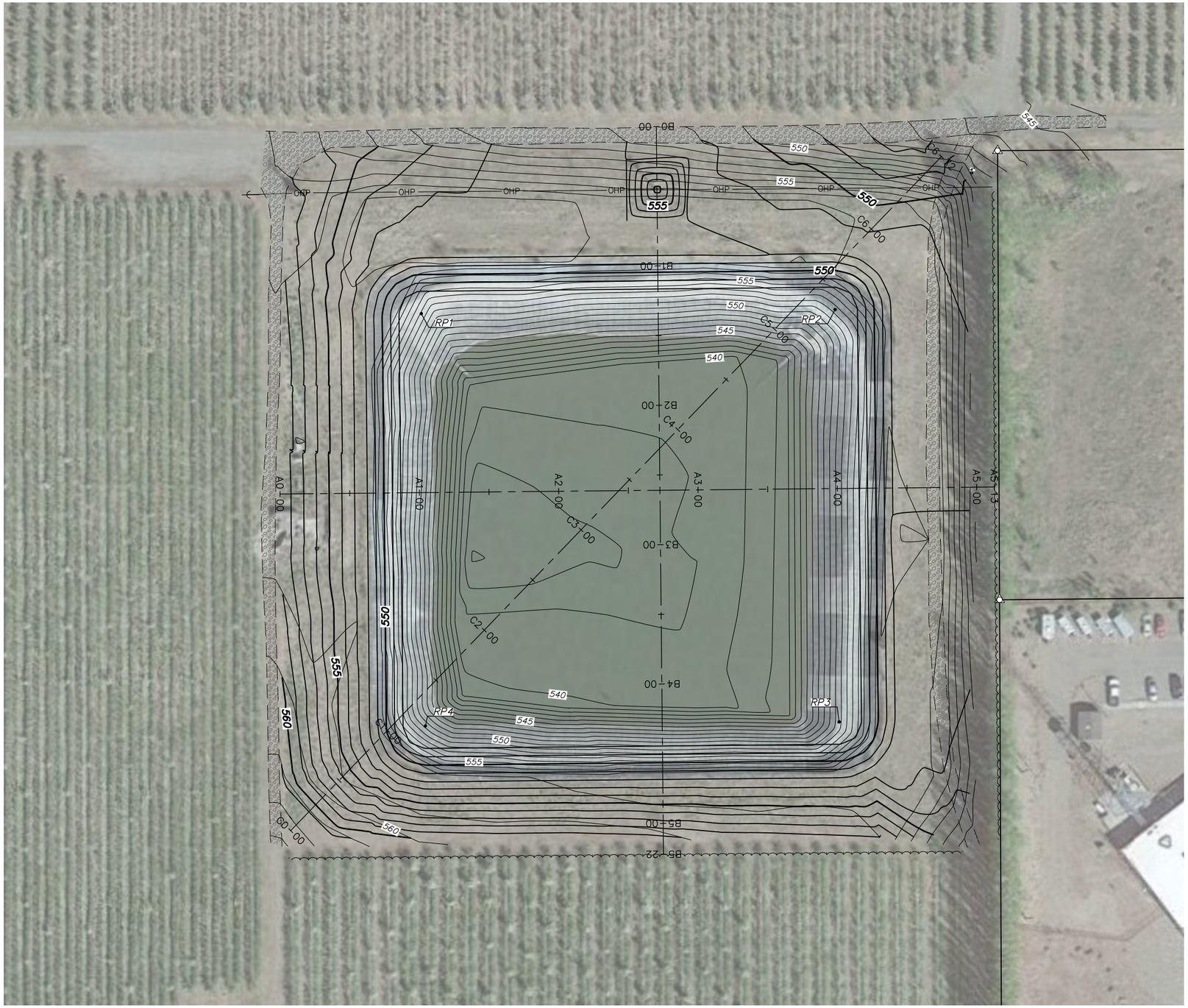
NOTE
ALL RADIUS POINTS ARE AT TOP OF LAGOON UNLESS OTHERWISE NOTED.

GENERAL NOTES

1. SEE SHEETS C-301 AND C-302 FOR ALIGNMENT PROFILES.

EARTHWORK NOTES

1. THE NATIVE SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698/AASHTO T99.
2. SUBGRADE SHALL BE PROOF-ROLLED, INSPECTED, AND TESTED BY A QUALIFIED MATERIALS TESTING LABORATORY TO VERIFY THAT THE SPECIFIED COMPACTION REQUIREMENTS ARE ACHIEVED, PRIOR TO PLACEMENT OF THE STRUCTURAL FILL.
3. STRUCTURAL FILL MATERIAL, USED IN PROPOSED IMPROVEMENT AREA, SHALL BE PLACED IN 9" LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698/AASHTO T99.
4. ALL STRUCTURAL FILL PLACED ON SITE SHALL BE INSPECTED AND TESTED BY A QUALIFIED MATERIALS TESTING LABORATORY TO VERIFY THAT THE SPECIFIED COMPACTION REQUIREMENTS ARE ACHIEVED.



EARTHWORK CALCULATIONS

ALL EARTHWORK SHALL BE BASED ON A LUMP SUM ALL REQUIRED BID ITEM. QUATITIES ARE ACCORDING TO ENGINEERS ESTIMATES AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CALCULATIONS.

CUT 25,100 CY
FILL 20,720 CY
NET 4,380 CY CUT

SOLIDS 1,000 CY

JOHN H WELLS
STATE OF WASHINGTON
40142
REGISTERED
PROFESSIONAL ENGINEER
PRELIMINARY

REVISION	BY	DATE

40 0 40 80 120
SCALE IN FEET

DESIGNED BY A. JAIMES
DRAWN BY J. CHAPMAN
REVIEWED BY J. WELLS

JOB NUMBER 7008-761 DATE December 16, 2021
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DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

GRADING PLAN

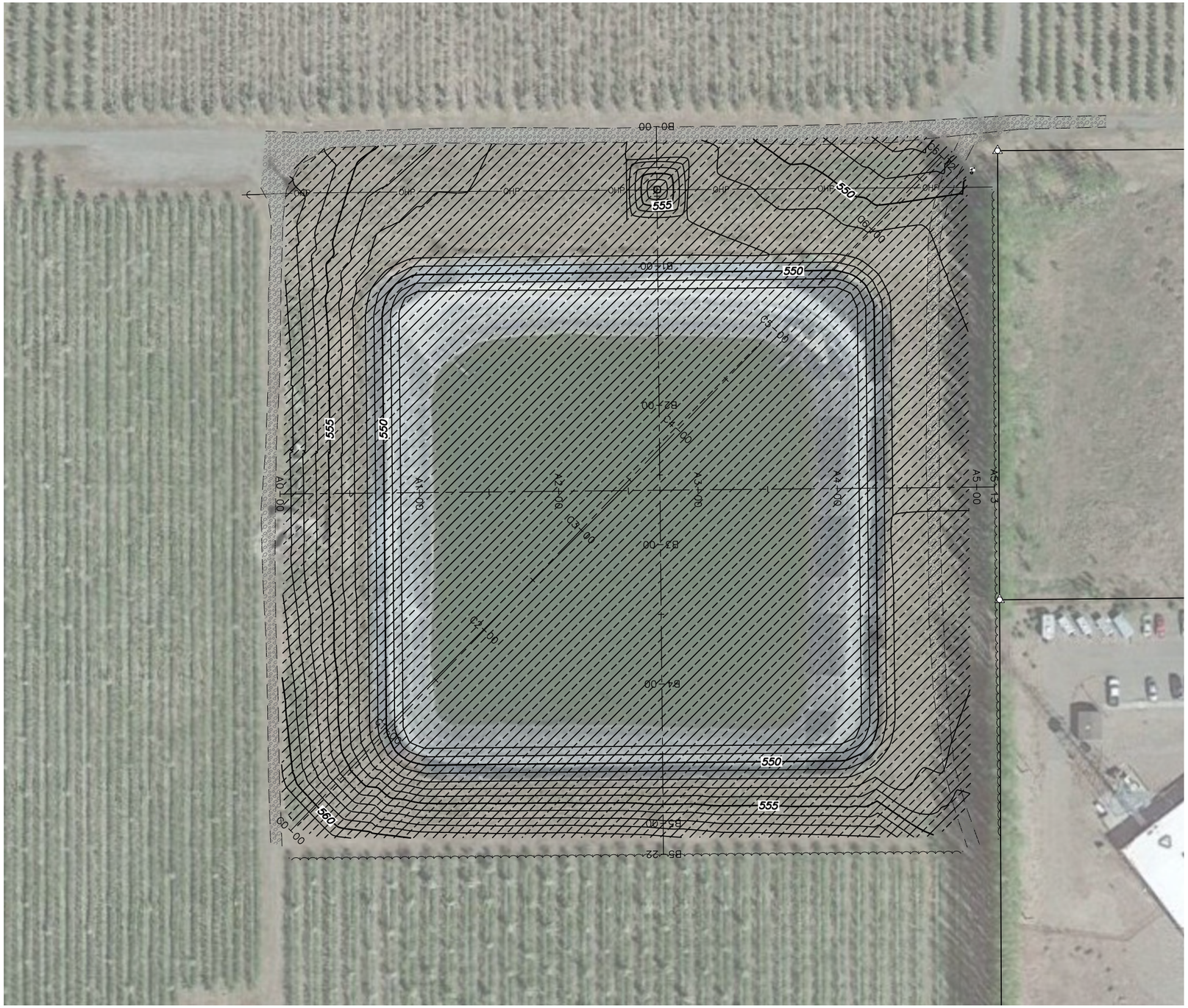
SHEET
C-401
8 OF ---

LEGEND

REPLACE STOCKPILED TOPSOIL AND HYDROSEED ALL DISTURBED AREAS

RESTORATION NOTES

1. PERMANENT SEEDING WINDOW IS SEPTEMBER 1 THROUGH APRIL 30.
2. IF SEEDING OCCURS BETWEEN MAY 1 AND AUGUST 31, SEEDING MUST BE WATERED TO PROTECT FROM HEAT.



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REVISION	BY	DATE

40 0 40 80 120
SCALE IN FEET

DESIGNED BY A. JAIMES	
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REVIEWED BY J. WELLS	

JOB NUMBER 7008-761 DATE December 16, 2021
ACAD FILE: 7008-761-C402_REST-PLAN.DWG

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WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

SITE RESTORATION PLAN

SHEET
C-402
9 OF ---

DAM DECOMMISSIONING PLAN
STORMWATER REPORT

DECEMBER 2021

Prepared for
Washington State
Department of Natural Resources

anderson perry

214 E. Birch Street, Walla Walla, Washington
1901 N. Fir Street, La Grande, Oregon
2659 SW 4th Street, Suite 200, Redmond, Oregon
243 E. Main Street, Suite C, Hermiston, Oregon

DAM DECOMMISSIONING PLAN
STORMWATER REPORT

FOR

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

DECEMBER 2021

ANDERSON PERRY & ASSOCIATES, INC.

Walla Walla, Washington
La Grande, Redmond, and Hermiston, Oregon

 Job No. 7008-761

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Chapter 8 - Erosion Control Plan Considerations 8-1

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Chapter 10 - Summary and Conclusions 10-1

FIGURES

Figure 1 - Vicinity Map
Figure 2 - Site Plan
Figure 3 - Watershed Area

APPENDICES

Appendix A - SWMMEW Infiltration BMPs
Appendix B - Well Logs
Appendix C - Stormwater Analysis
Appendix D - Maintenance Checklists for On-Site Stormwater Facilities

Chapter 1 - Introduction

This Stormwater Report has been prepared under the authorization of Kathryn Mink, Assistant Region Manager for the Washington State Department of Natural Resources (DNR). The intent of the project is to reduce the irrigation pond embankment height while making the final stored volume above natural ground less than 10 acre-feet (ac-ft) and less than 6 feet tall embankment. The purpose of this report is to show how the decommissioning of the existing pond will provide adequate storage volume for stormwater runoff while complying with the Washington State Department of Ecology (Ecology), Dam Safety Office (DSO) jurisdictional thresholds for the Washington State Safety of Dams requirements. This report identifies the existing stormwater areas that could potentially runoff into the existing pond.

For the purposes of the stormwater management strategy, the watershed surface area is approximately 52.5 acres.

This plan has been prepared for the exclusive use of DNR and their design team on the proposed decommissioning project. The information has been prepared in accordance with generally accepted engineering practices. No other warranty, expressed or implied, is made.

The recommendations presented are based on observed conditions in the field and are in general compliance with the Stormwater Management Manual for Eastern Washington (SWMMEW) guidelines and City of Richland requirements. The project is considered new development. This plan addresses the applicable core elements in the SWMMEW and shows how 100 percent of all runoff generated from the design storm (25-year, 24-hour Natural Resources Conservation Service [NRCS] Type 1A storm) will be stored and/or infiltrated on site with additional remaining capacity of almost five times the 100-year storm volume.

Chapter 2 - Existing Site Conditions

DNR owns Chiawana Richland Ranch Dam in Richland, Washington. The site consists of 312 acres of orchard that is to be subdivided in the future with an existing irrigation pond to be decommissioned. The irrigation pond is approximately 3.1 acres in size and has a maximum storage capacity of 32 acre-feet (ac-ft). The orchard generally slopes toward the northeast with approximately 52.5 acres potentially contributing runoff toward the irrigation pond.

The irrigation pond is lined with 40 mil high-density polyethylene (HDPE) liner and is approximately 20 feet deep. The earth embankment is composed of native silty sand (USCS Classification SM) and has approximate side slopes of 4 horizontal:1 vertical (4H:1V). An existing 21-inch polyvinyl chloride (PVC) conduit is the pond's principal outlet for the overflow spillway. The pipe is located through the northeast corner of the irrigation pond and discharges to a buried spillway.

Chiawana Richland Ranch Dam is located in the northwest portion of the City of Richland, Benton County, Washington, Township 9 North, Range 28 East, Section 16, at approximate Latitude 46.2634 and Longitude -119.3165, Willamette Meridian. The irrigation pond is located west of the Yakima River. Zoning for the site is R-3 Multiple Family Residential (see Figure 1).

Access to the site from Interstate I-182 west is as follows: Take exit 3B, Queensgate Drive North, continue north on Queensgate Drive through the intersection of Duportail Street and Queensgate Drive for approximately 0.4 mile, turn right (north) on Truman Avenue, continue to City View Drive, turn left (west), continue for approximately 0.2 mile, and irrigation pond is to the left.

Chapter 3 - General Site Improvements

The irrigation pond is approximately 3.1 ac in size and has a maximum storage capacity of 32 ac-ft. The intent of the project is to decommission the irrigation pond and potentially convert it into a stormwater infiltration swale by reducing the pond embankment height while making the final stored volume above natural ground less than 10 ac-ft and less than 6 feet tall embankment. The project work will occur within the footprint of the existing irrigation pond and the areas adjacent to the pond where earthwork will take place (see Figure 2). No groundwater anticipated to be encountered during the earthwork excavation and the pond is expected to be dry prior to construction; therefore, no dewatering measures are put in place prior to construction.

The anticipated construction work consists of, but not limited to, all HDPE liner material in the pond will be removed and recycled or disposed of at an approved location. All power and utilities at the site will be removed at ground surface and any remaining pipes and conduits are to be capped watertight. The irrigation pipe will be abandoned in place and pipe ends will be capped at edge of exposed areas. The existing fence, fence posts and concrete will also be removed and disposed of offsite.

Short term erosion may occur during the construction of the stormwater retention swale. Erosion control measures will significantly reduce or eliminate the potential for construction related erosion. Best Management Practices (BMPs) will be used to ensure the project requirements are met and erosion is minimized. Permanent restoration of the site will include hydroseeding to stabilize the embankment and all disturbed areas.

Chapter 4 - Characteristics of Subsurface Materials

A geotechnical investigation was not required for this proposed project; therefore, a formal Geotechnical Report was not prepared. The following information has been gathered using well logs provided by Ecology (see Appendix B).

The well logs used are from 625 and 642 Truman Avenue located 650 feet east of the irrigation pond. The soil profile consists of fine to coarse sandy silt with small gravel to a depth of 15 feet. Deeper exploration shows that the soil continues to be sandy silt, but with larger rounded river cobbles to an approximate depth of 44 feet. The material changes to a mixture of clay and sand to a depth of 76 feet. There is no mention of groundwater in the well logs.

A percolation test in the subsurface material was not conducted; however, based on a review of percolation tests from past projects in similar soil types, we estimate an average coefficient of percolation, K, for the sandy gravels ranging from 0.0007 cubic feet per minute per square foot of bottom area, which equals approximately 1 inch per hour. A degradation/safety factor of two is suggested.

Chapter 5 - Nearby Wells and Surface Waters

The proposed project site is located near several wells and the Yakima River. At 625 Truman Avenue there are several types of wells such as resource protection, decommissioned, and water. There are a total of seven wells at the above-mentioned address, but none are located within a 500-foot radius of the irrigation pond. An approximate 53 feet deep water well is located approximately 300 feet northeast of the irrigation pond.

The nearest surface water to the site is the Yakima River located approximately 1,700 feet (0.3 mile) east of the irrigation pond. The Yakima River is a tributary of the Columbia River that is located approximately 5 miles downstream. The Yakima River is a year-round river that originates in the Cascade Mountains and flows 214 miles downstream to its confluence with the Columbia River. The Yakima River is confined by levees that were constructed by the U.S. Army Corps of Engineers to control flooding and protect properties adjacent to the river.

Groundwater is not anticipated during the construction of the stormwater retention swale.

Chapter 6 - Conceptual Design and Stormwater Calculations

Stormwater Requirements

The City of Richland requires new stormwater disposal systems to retain and dispose of all runoff generated from the design storm (25-year, 24-hour NRCS Type 1A storm) on site. The type of system that can be utilized is governed by the site's classification, groundwater levels, elevations, runoff volumes, and other factors.

The proposed improvements will consist of lowering the embankment height of the existing irrigation pond. The irrigation pond will be regraded using the earthwork in the pond and adjacent areas to the pond. The stormwater retention swale will be a grass-lined swale and no impervious surfaces will be added to the swale. No groundwater is anticipated at the project site.

Stormwater Calculations

Stormwater runoff calculations were prepared using the SWMMEW as a guide. Since the stormwater management plan is to store and/or infiltrate 100 percent of the runoff generated during the design storm, only post-developed conditions were calculated.

The Santa Barbara Urban Hydrograph method was used to analyze the 25- and 100-year, 24-hour Natural Resources Conservation Service (NRCS) Type 1A storms to determine minimum sizing for swales. The total 25-year, 24-hour precipitation is 1.60 inches and the total 100-year, 24-hour precipitation is 1.80 inches.

The results of the initial stormwater runoff calculations are included in the Stormwater Analysis in Appendix C and are summarized in Table 6-1. The runoff values were calculated using 99 percent of the runoff from the surface area.

The design analysis includes estimating the minimum bottom area for a swale, runoff flow rates, percolation rates, times to percolate the 25- and 100-year, 24-hour storms, storage volumes, potential overflow volumes during the 100-year storm event, and other data. Concentration times were calculated based on a minimum concentration time of five minutes to calculate runoff quantities as a function of time.

TABLE 6-1
Stormwater Runoff Summary

Tributary Area	Pervious Area (square feet)	Peak Runoff Flow Rate (cubic feet per second)		Total Runoff (cubic feet)		Ponding Depth (feet)	
		25-year, 24-hour	100-year, 24-hour	25-year, 24-hour	100-year, 24-hour	25-year, 24-hour	100-year, 24-hour
	2,286,900	1.082	2.162	53,029	71,761	0.589	0

Conceptual Stormwater Design

Stormwater runoff areas to the proposed stormwater retention swale remain the same as areas to the irrigation pond. The pond footprint and adjacent areas are the only areas impacted by construction and minimal changes to the stormwater runoff are expected. The stormwater runoff area will continue to be impervious with the addition of the impervious retention swale. (See Appendix A for Infiltration Swale)

The pond with the liner removed will function as an infiltration swale with an approximate bottom length of 300 feet by a width of 300 feet. The proposed side slopes are 3H:1V and a new depth of 4.5 feet. The retention swale depth meets the DSO threshold of less than 6 feet deep. The revised pond will have a storage capacity of 9.39 ac-ft (409,050 cubic feet). After lowering the pond embankment to less than 6 feet of embankment height and removing the bottom liner, there is an excess of 356,021 cubic feet above the 25-year storm, almost five times more capacity than all the stormwater anticipated from the 100-year storm. The surrounding areas contributing to stormwater runoff will eventually be reduced due to future developments adjacent to the retention swale. Any future developments will be required to maintain and treat all stormwater runoff on site; therefore, reducing runoff to the proposed stormwater retention swale.

Chapter 7 - Stormwater Management Core Elements

The design of the improvements and the information presented are intended to be consistent with the requirements and guidelines presented in the SWMMEW. The eight core elements identified in Table 2.1.1 of the SWMMEW are addressed below.

Core Element 1 - Preparation of a Stormwater Site Plan

A Stormwater Site Plan will be prepared as part of the design drawings. This plan will show the proposed stormwater management infrastructure for post-development stormwater runoff.

Core Element 2 - Construction Stormwater Pollution Prevention

A Temporary Erosion and Sediment Control Plan (TESCP) shall be included in the design drawings to show how stormwater runoff shall be managed during construction. The TESCP will outline the general requirements and responsibilities for erosion control and stormwater pollution prevention, including the specific requirements for sediment control described in this plan. The TESCP should be followed from the start of construction until the site is fully stabilized with permanent vegetation. A Stormwater Pollution Prevention Plan should be prepared for each phase of construction. Specific requirements for construction stormwater pollution prevention to be shown on the TESCP are discussed in Chapter 8 - Erosion Control Plan Considerations.

Core Element 3 - Source Control of Pollution

The intent of utilizing best management practices (BMP) for source control is to prevent pollutants from coming into contact with stormwater. DNR will be responsible for implementing post-construction source control practices.

For this proposed project, the sources of pollution will be during the construction phase and include vehicle traffic and construction equipment. Potential pollutants from these sources include hydrocarbons, oils, greases, suspended solids, vegetative debris, paper, tire wear residues, heavy metals (lead and zinc), domestic wastes, lawn chemicals, and vehicle combustion products. The pollutant loading classification for this project is considered low, as defined in Chapter 5 of the SWMMEW.

Core Element 4 - Preservation of Natural Drainage Systems

The intent of this element is to maximize the extent to which stormwater discharge patterns, rates, and outfall locations remain the same after a development project. Currently, stormwater runoff percolates through the surrounding low lying areas.

The stormwater facilities will be sized to treat, store, and percolate the entire 25-year and 100-year, 24-hour NRCS Type 1A storm. In the rare case of a larger storm event, possible overflow from the new storm drain system will pond on the site until the stormwater percolates.

No new, off-site outfalls will be created, and no existing natural drainage systems will knowingly be disturbed as a result of this proposed project.

Core Element 5 - Runoff Treatment

As described in Core Element 3, the pollutant loading classification for this project is considered low, and thus no pretreatment of stormwater runoff is required as outlined in Chapter 5 of the SWMMEW. DNR will be responsible for maintaining the stormwater management system.

Core Element 6 - Flow Control

The intent of this element is to protect stream morphology and habitat by mitigating the impacts of increased stormwater runoff volumes and flow rates to streams. This element applies to sites that discharge to non-exempt surface water bodies. As 100 percent of all runoff generated from the 100-year, 24-hour NRCS Type 1A storm will be stored and/or infiltrated on site, flow control is not applicable to this project during the design storm.

Core Element 7 - Operation and Maintenance

The intent of this element is to prevent failure of stormwater treatment facilities or improper discharges due to inadequate maintenance or improper operation. Ongoing maintenance will be important in keeping the existing and proposed stormwater management system fully operational and effective. The operation and maintenance for the new facilities is addressed in Chapter 9 - Operation and Maintenance.

Core Element 8 - Local Requirements

Local requirements provide additional conditions or measures needed to protect local water bodies. The local agency is the City of Richland. The storm system design and this plan are intended to comply with City requirements. These requirements include the following:

1. Store and percolate 100 percent of all runoff generated from the design storm (25-year, 24-hour NRCS Type 1A storm).
2. Submit civil and related site plans for the project to the City of Richland Engineering and Planning Departments for review and approval.
3. Prepare a project Stormwater Master Plan for review and approval by the City using the following guidelines:
    - Provide an introduction describing the project including on-site uses, water quality treatment requirements per the SWMMEW, and overall stormwater management approach.
    - Address the eight core elements in the SWMMEW.
    - Describe site conditions including slopes, water bodies (if present), site exploration, soil characteristics, seasonal high groundwater levels, infiltration rates (during wetted conditions), and any other geotechnical considerations relevant to the project's stormwater management.
    - Provide a site plan with exploration and testing locations.
    - Provide pre-development stormwater calculations if returning runoff to water body (not applicable).

- Provide post-development stormwater calculations with methodology, results, assumptions, and applied safety factors.
- Include a map of contributory areas, flow-routing with proposed facilities, and drainage patterns (see Figure 3).
- Provide a detailed description of the proposed stormwater management system, including types of facilities, dimensions, volumes, elevations, and slopes.
- Provide an evaluation of compliance with the SWMMEW BMPs design recommendations.
- Provide an evaluation of flood control capacity during the design and larger floods.
- Provide an evaluation of water quality treatment compliance.
- Describe a proposed TESCP.
- Describe a proposed maintenance plan.
- Provide a summary of the plan, including significant conclusions.

Chapter 8 - Erosion Control Plan Considerations

Temporary erosion and sediment control measures should be taken during construction activities. A TESCP should be included in all design drawings. The TESCP shall outline the general requirements and responsibilities for erosion control and stormwater pollution prevention and include the specific requirements listed in this chapter. The TESCP should be followed from the start of construction until the site is fully stabilized.

After installation, the swale should be protected from muddy runoff until construction is complete.

All soil tracked onto streets should be swept off daily to remove all sediment. If sediment is tracked onto City of Richland right-of-way, any catch basins downstream of the tracked sediment should be protected from sediment intrusion with internal storm drain inlet protection devices, or an approved alternate stormwater BMP.

Disturbed topsoil to be reused in earth embankment, areas should be stockpiled and protected from erosion using plastic or an approved alternate construction stormwater BMP. Silt fencing, wattles, or approved alternate stormwater BMPs should be utilized to prevent erosion of all disturbed soil areas or sedimentation being carried by stormwater runoff into the City right-of-way.

Operators of construction activities are required to seek coverage under the Construction Stormwater General Permit (CSWGP) if clearing, grading, and/or excavating will result in the disturbance of 1.0 or more acres and will discharge stormwater to state surface waters. Sites smaller than 1.0 acre may also require coverage if they are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb 1.0 acre or more and will discharge stormwater to state surface waters.

As the anticipated disturbed area of the new development will be greater than 1.0 acre, the contractor will be required to apply for coverage under the CSWGP and prepare a Stormwater Pollution Prevention Plan.

Chapter 9 - Operation and Maintenance

As a minimum during construction, inspections of erosion control measures should be conducted after every major storm, throughout on-site construction, or when debris is visible. Records should be made and kept of all inspections and maintenance. These records will need to be readily available to the City of Richland and Ecology if requested. Operators of construction activities are responsible for implementing erosion and sedimentation control measures during construction.

Post-construction, the stormwater management system should be inspected at least on an annual basis. DNR is responsible for post-construction maintenance of the stormwater management system and will be subject to the current operations and maintenance programs compliant with the SWMMEW.

The new stormwater facilities will consist of a grass-lined retention swale. In general, all surfaces contributing runoff to the stormwater facilities should be kept as clean as possible by removing all debris and pollutants. Sweeping of the paved surfaces conducted at optimal frequencies will reduce pollutant loading on the stormwater management system. Optimal frequencies are intervals that produce the most cost-effective annual reduction of pollutants and may vary depending on rainfall patterns. Sweeping prior to fall rain events will likely be the most effective. Care should be exercised to not wash debris or sediment into the drainage system. See Appendix D for the Maintenance Checklists for On-Site Stormwater Facilities.

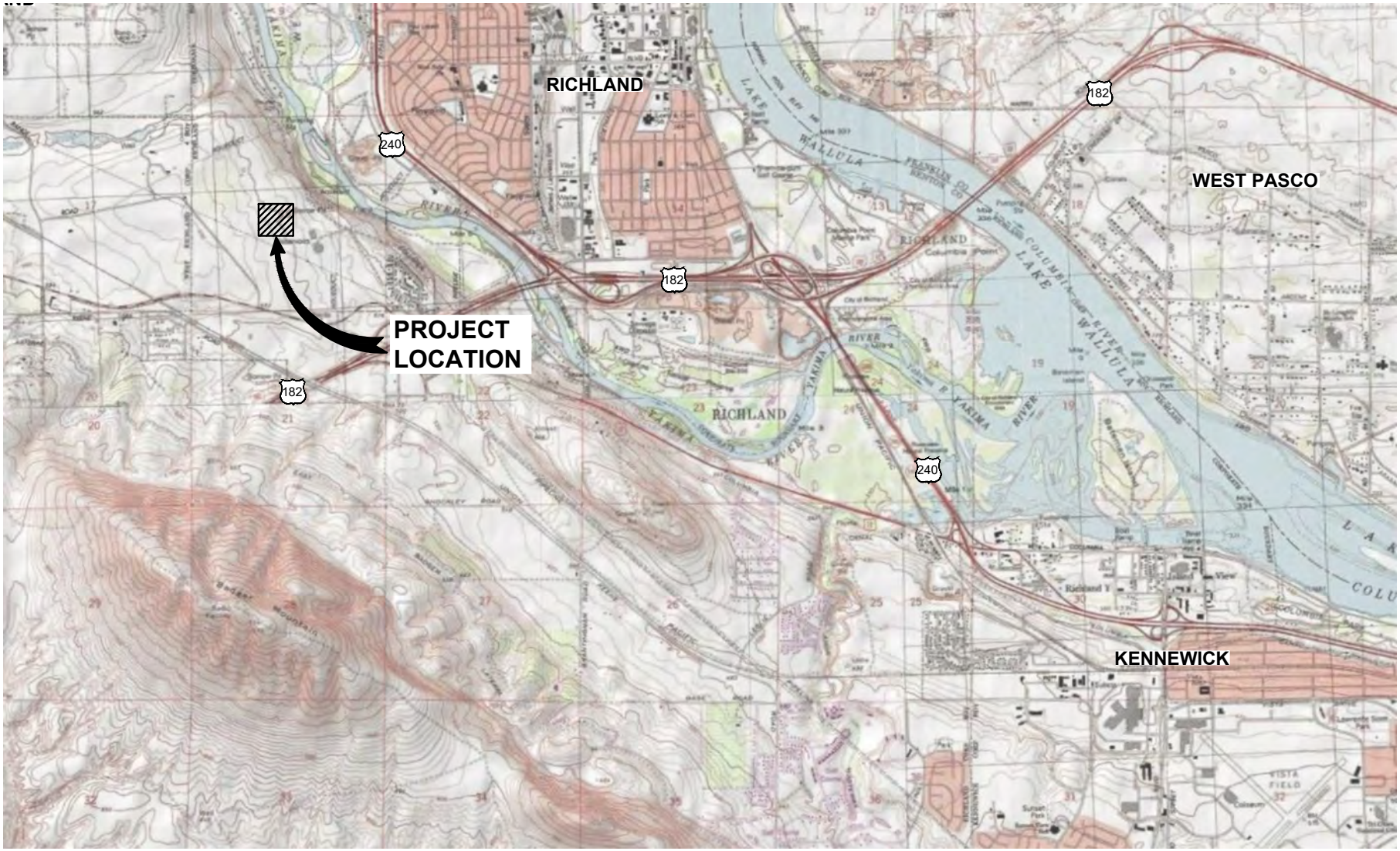
The City of Richland Stormwater Coordinator shall be contacted within 24 hours of any accidental, non-stormwater discharge into the stormwater system.

Chapter 10 - Summary and Conclusions

The information presented has been prepared in a general manner and includes design considerations for collecting, treating, and disposing of stormwater. This plan provides adequate information for the design team to prepare a TESCP and complete the design of the stormwater management system for the TESCP. The stormwater analysis methods used and the facilities designed are in general compliance with the SWMMEW guidelines and City of Richland requirements. Additional information is provided for precautionary measures during construction and maintenance to ensure a reliable system.

Should specific problems arise during the course of the project that may not be covered adequately in this plan, if changes occur in any of the assumptions made, or if the site excavation reveals anything different than what is described herein, we recommend the project engineer be contacted so appropriate action can be taken. Any questions regarding this plan should be directed to John Wells, P.E. with Anderson Perry & Associates, Inc., 214 East Birch Street, Walla Walla, Washington 99362, telephone 509-529-9260.

FIGURES



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WILLAMETTE MERIDIAN

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WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

STORMWATER REPORT
VICINITY MAP

FIGURE
1

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anderson perry & associates, inc.

WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

STORMWATER REPORT
SITE PLAN

FIGURE

2

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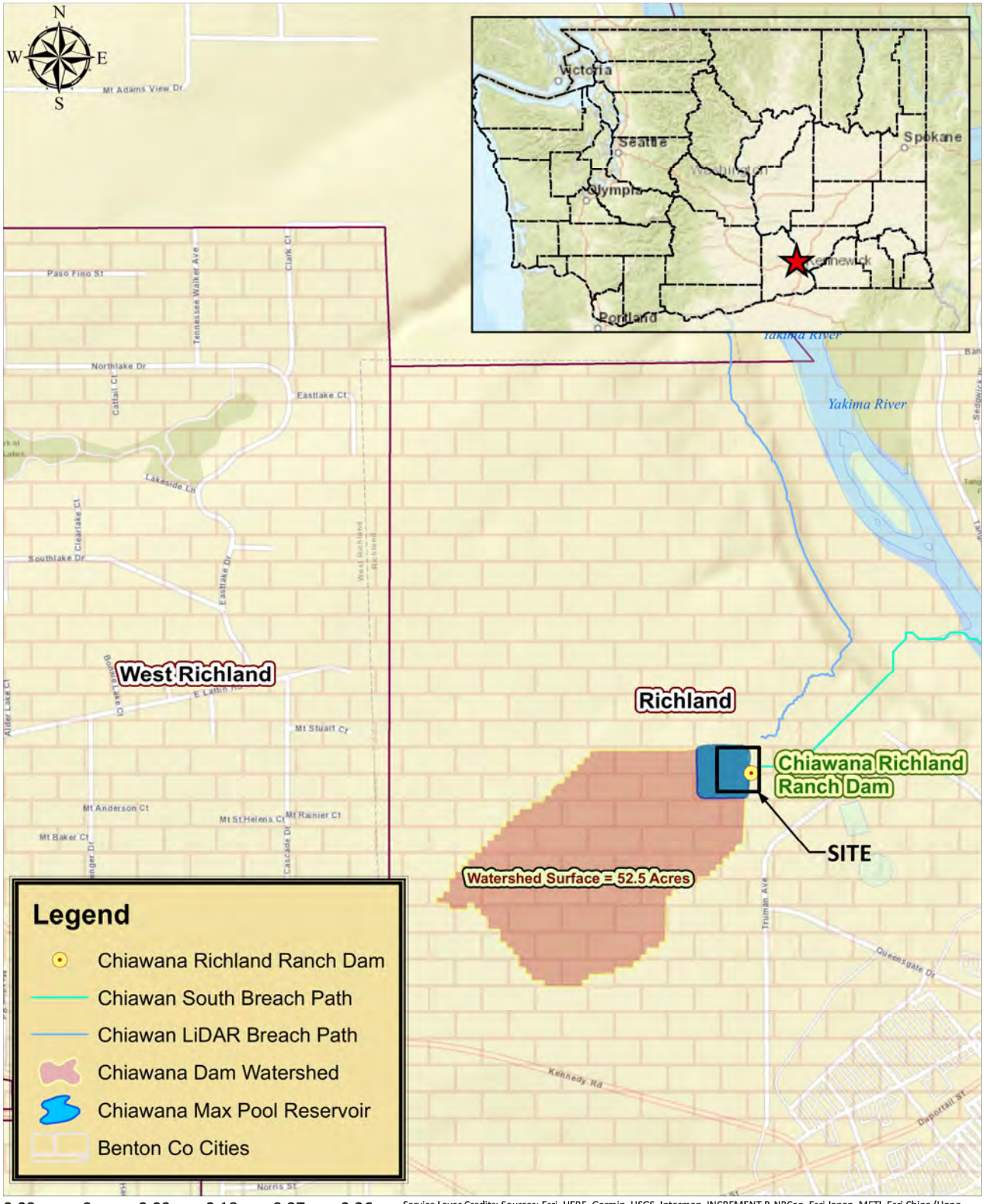

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INFORMATION & IMAGERY COURTESY OF:
DEPARTMENT OF ECOLOGY, STATE OF WASHINGTON, WATER RESOURCES PROGRAM, DAM SAFETY OFFICE
DSO FILE BE37-1973

anderson perry & associates, inc.

WASHINGTON STATE
DEPARTMENT OF NATURAL RESOURCES
DAM DECOMMISSIONING PLAN

STORMWATER REPORT
WATERSHED AREA

FIGURE

3

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APPENDIX A
SWMMEW Infiltration BMPs

5.4.7 BMPs for Surface Infiltration and Bioinfiltration

BMP T5.10: Infiltration Ponds

Infiltration ponds are earthen impoundments used for the collection, temporary storage, and infiltration of incoming stormwater runoff.

Design of infiltration ponds for runoff treatment is identical to the criteria given for BMP F6.21: Infiltration Ponds, except that the allowable infiltration rate is limited to ≤ 9 inches per hour.

Underground Injection Control (UIC) regulations do not apply to infiltration ponds unless the pond is deeper than it is wide at the ground surface, and then—provided that the design, operation, and maintenance criteria in this section are met—only the registration requirement would apply. See 5.6 Subsurface Infiltration (Underground Injection Control Wells).

See the Site Suitability Criteria for all infiltration BMPs in 5.4.3 General Criteria for Infiltration and Bioinfiltration BMPs.

BMP T5.20: Infiltration Trenches

Infiltration trenches are trenches, generally ≥ 24 inches wide, with a perforated pipe and backfilled with a coarse rock aggregate, allowing for temporary storage of stormwater runoff in the voids of the aggregate material. Stored runoff then gradually infiltrates into the surrounding soil. The surface of the trench can be covered with grating and/or consist of stone, gabion, sand, or a grassed or asphalt area with a surface inlet. Perforated rigid pipe of at least 8-inch diameter can also be used to distribute the stormwater in an infiltration trench.

The design of infiltration trenches for runoff treatment is identical to the criteria given for BMP F6.22: Infiltration Trenches, except that the allowable infiltration rate is limited to ≤ 9 inches per hour. Infiltration chambers may be used to augment the available storage in the infiltration trench system, where the perforated pipe and the voids within the coarse rock aggregate backfill layer would not provide sufficient storage to meet flow control requirements for 2.7.7 Core Element #6: Flow Control.

Underground Injection Control (UIC) regulations apply to infiltration trenches when perforated pipe is used, and then—provided that the design, operation, and maintenance criteria in this section are met—only the registration requirement applies. When perforated pipe is not used, the registration requirement does not apply. See 5.6 Subsurface Infiltration (Underground Injection Control Wells).

For more information: See the Site Suitability Criteria for all infiltration BMPs in 5.4.3 General Criteria for Infiltration and Bioinfiltration BMPs.

BMP T5.21: Infiltration Swales

Infiltration swales are vegetated or rock-lined conveyances designed for removal of stormwater pollutants by percolation into the ground.

Underground Injection Control (UIC) regulations do not apply to these Best Management Practices (BMPs) (see 5.6 Subsurface Infiltration (Underground Injection Control Wells)).

General Criteria

Use the general criteria for BMP T5.30: Bioinfiltration Swales, with the following exceptions:

- Amended soil may be required to meet SSC-6: Soil Physical and Chemical Suitability for Treatment.
- For rock-lined infiltration swales, a minimum treatment soil depth of 18 inches is required for runoff treatment because there is no uptake by vegetation.

Infiltration swales should be preceded by a pretreatment BMP, such as a presettling basin or vault, to reduce the occurrence of plugging. Any of the basic treatment BMPs (other than sand filters) designed to meet runoff treatment requirements or detention ponds designed to meet flow control requirements can also be used for pretreatment.

For vegetated infiltration swales in arid or semiarid climate portions of eastern Washington, xeriscape landscaping is strongly encouraged to reduce the need for irrigation and better fit the surrounding site context. See Appendix 5-B: Planting Recommendations for additional information on selecting and installing xeriscape and other plantings.

Select appropriate rock, such as large 3- or 5-inch river rock or crushed basalt, for rock-lined swales to facilitate maintenance and help with dust and erosion control.

Design Procedure

The design of infiltration swales for runoff treatment is identical to that of BMP T5.30: Bioinfiltration Swales with the exceptions noted above in the general criteria for this BMP.

BMP T5.30: Bioinfiltration Swales

Bioinfiltration swales, also known as grassed percolation areas, combine grasses (or other vegetation) and soils to remove stormwater pollutants by percolation into the ground. Their pollutant removal mechanisms include filtration, soil sorption, and uptake by vegetated root zones.

In general, bioinfiltration swales are used for treating stormwater runoff from roofs, roads, and parking lots. For flow control, flows greater than the water quality design flows are typically overflowed to the subsurface through an appropriate conveyance BMP such as a drywell, or to surface water through an overflow channel. Note that although the Underground Injection Control (UIC) regulations do not apply to bioinfiltration swales; however, the UIC regulations do apply to any drywell used in connection with the bioinfiltration swale (see 5.6 Subsurface Infiltration (Underground Injection Control Wells)).

General Criteria

- Use the same sizing guidance, off-line and online guidance, and design procedures as in 6.3.3 General Criteria for Infiltration BMPs.
- The maximum drawdown time for the flooded depth should be within 72 hours after cessation of flow.
- A concrete or riprap apron shall be provided at the curb opening to prevent vegetation from blocking the inlet.

APPENDIX B
Well Logs

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle)
- (x) Construction
- ( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* 147324

CURRENT Notice of Intent No W-176951

Unique Ecology Well ID Tag No AKH-836

Water Right Permit No K

Property Owner Name Desertgreen Lawn Care

Well Street Address 642 Truman St.

City Richland County Benton

Location NW 1/4 1/4 SE 1/4 Sec 16 Twn 9 R 28 EWM or WWM (circle one)

Lat/Long (s t r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No 1-1698-401-2471-004

PROPOSED USE [x] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other ____

TYPE OF WORK Owner s number of well (if more than one) ____
[x] New Well [ ] Reconditioned Method [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS Diameter of well 6" inches drilled 100 ft
Depth of completed well 100' ft

CONSTRUCTION DETAILS
Casing Installed [x] Welded 6 Diam from +2 ft to 98 ft
[ ] Liner installed ____ Diam from ____ ft to ____ ft
[ ] Threaded ____ Diam from ____ ft to ____ ft

Perforations [ ] Yes [x] No
Type of perforator used ____
SIZE of perfs ____ in by ____ in and no of perfs ____ from ____ ft to ____ ft

Screens [x] Yes [ ] No [ ] K Pac Location 92'
Manufacturer s Name Johnson
Type Stainless/Telescoping Model No ____
Diam ____ Slot Size .012 from 95 ft to 100 ft
Diam ____ Slot Size ____ from ____ ft to ____ ft

Gravel/Filter packed [ ] Yes [x] No [ ] Size of gravel/sand ____
Materials placed from ____ ft to ____ ft

Surface Seal [x] Yes [ ] No To what depth? 20 ft
Materials used in seal Bentonite 3/8
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

PUMP Manufacturer s Name ____
Type ____ H P ____

WATER LEVELS Land surface elevation above mean sea level ____ ft
Static level 35 ft below top of well Date 3-1-04
Artesian pressure ____ lbs per square inch Date ____
Artesian water is controlled by ____ (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes by whom? ____
Yield ____ gal /min with ____ ft drawdown after ____ hrs
Yield ____ gal /min with ____ ft drawdown after ____ hrs
Yield ____ gal /min with ____ ft drawdown after ____ hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal /min with ____ ft drawdown after ____ hrs
Airtest 50 gal /min with stem set at 80 ft for 4 hrs
Artesian flow ____ g p m Date ____
Temperature of water ____ Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE
Formation Describe by color character size of material and structure and the kind and nature of the material in each stratum penetrated with at least one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Sand	0	22
Sand & Gravel	22	44
Clay & Sand	44	76
Water Bering Sand & Gravel (50 GPM)	76	100

DEPT OF ECOLOGY Received MAR 29 2004 CENTRAL REGIONAL OFFICE

Start Date 2-28-04 Completed Date 3-1-04

WELL CONSTRUCTION CERTIFICATION I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

[x] Driller [ ] Engineer [ ] Trainee Name (Print) Todd Haney

Driller/Engineer/Trainee Signature ____

Driller or Trainee License No 2343

Drilling Company Statewide Well Drilling

Address 101 Kalt Trail rd

City State Zip Pasco WA 99301

Contractor s Registration No Statewd015LZ Date 4/04

If trainee, licensed driller s Signature and License no ____

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. AF 27209

Construction/Decommission *("x" in box)*
- ☐ Construction
- ☒ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Type of Well *("x in box)*
- ☐ Resource Protection
- ☒ Geotech Soil Boring

Property Owner: City of Richland

Site Address: 625 Truman Avenue

City: Richland County: Benton

Location: NW 1/4-1/4 SE 1/4 Sec 16 Twn 9N R 28E

EWM ☐ or WWM ☒

Lat/Long (s, t, r still REQUIRED) Lat Deg ___ Min ___ Sec ___ Long Deg ___ Min ___ Sec ___

Tax Parcel No. 116984000002004

Cased or Uncased Diameter 5" Static Level ___

Work/Decommission Start Date 6/12/14

Work/Decommission Completed Date 6/12/14

Consulting Firm: PBS Environmental - Richland

Unique Ecology Well IDTag No.: N/A

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee

Name (Print Last, First Name): Van Bergen - Steve

Driller/Engineer /Trainee Signature: [signature]

Driller or Trainee License No. 1686

If trainee, licensed driller's Signature and License Number:

Construction Design	Well Data B-1	Formation Description
0-2' native material 2'-30' Bentonite Hole plug 3/4" 50# bags x 6	5' — 15' — 5" mud R line? BOH 30'	0-5' loose very fine sandy silt 5'-15' dark brown fine to coarse sandy silt w/ small gravels 15'-30' med dense brown course sand w/ large rounded river gravels - cobbles

SCALE: 1"= 10' PAGE 1 OF 1

APPENDIX C
Stormwater Analysis

Stormwater Analysis

Project: Dam Decommissioning Plan **Location:** Richland, WA **Basin:** Chiawana Richland Ranch

anderson perry & associates, inc.

STORM CHARACTERISTICS

Design Storm:	Type 1A, 25-yr, 24-hr
25-year isopluvial rainfall depth, P (in):	1.6
Regional factor:	1.0
Regional rainfall depth, P_T (in):	1.6
CN Pervious:	78
Potential max. detention, S_{PERV} (in):	2.82
Actual direct runoff, P < 0.2S, Q_{PERV} (in):	0.28
CN Impervious:	99
Potential max. detention, S_{IMPERV} (in):	0.10
Actual direct runoff, P < 0.2S, Q_{IMPERV} (in):	1.48

Alternative Design Storm:	Type 1A, 100-yr, 24-hr
100-year isopluvial rainfall depth, P (in):	1.80
Regional factor:	1.0
Regional rainfall depth, P_T (in):	1.80
CN Pervious:	78
Potential max. detention, S_{PERV} (in):	2.82
Actual direct runoff, P < 0.2S, Q_{PERV} (in):	0.40
CN Impervious:	99
Potential max. detention, S_{IMPERV} (in):	0.10
Actual direct runoff, P < 0.2S, Q_{IMPERV} (in):	1.68

Flow Routing Information:	
Minimum concentration time, T_C (min):	5
Hyetograph interval time, d_T (min):	6
Routed flow factor, w:	0.375

SITE CHARACTERISTICS

Pervious Area Information	
Total Pervious Area (ft^2):	2,286,900
Total Pervious Area (acres):	52.50

Impervious Area Information	
Roof Area (ft^2)	0
PGIS Area (ft^2)	0
Total Impervious Area (ft^2):	0
Total Impervious Area (acres):	0.00

52.50

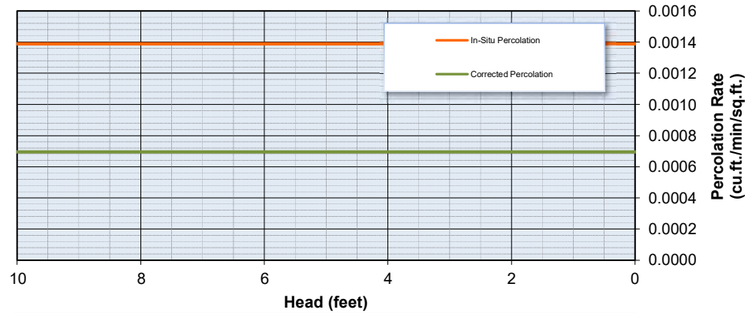
STORM CALCULATIONS

25-Year, 24-Hour Storm	
Peak Runoff Flow Rate (cfs):	1.082
Volume Stored (cf):	389
Time to Percolate Storm (hrs):	24.3
Total Runoff Volume (ft^3):	53,029
Total Overflow Volume (ft^3):	0

100-Year, 24-Hour Storm	
Peak Runoff Flow Rate (cfs):	2.162
Volume Stored (cf):	10,981
Time to Percolate Storm (hrs):	26.8
Total Runoff Volume (ft^3):	71,761
Total Overflow Volume (ft^3):	0

PERCOLATION CALCULATION:

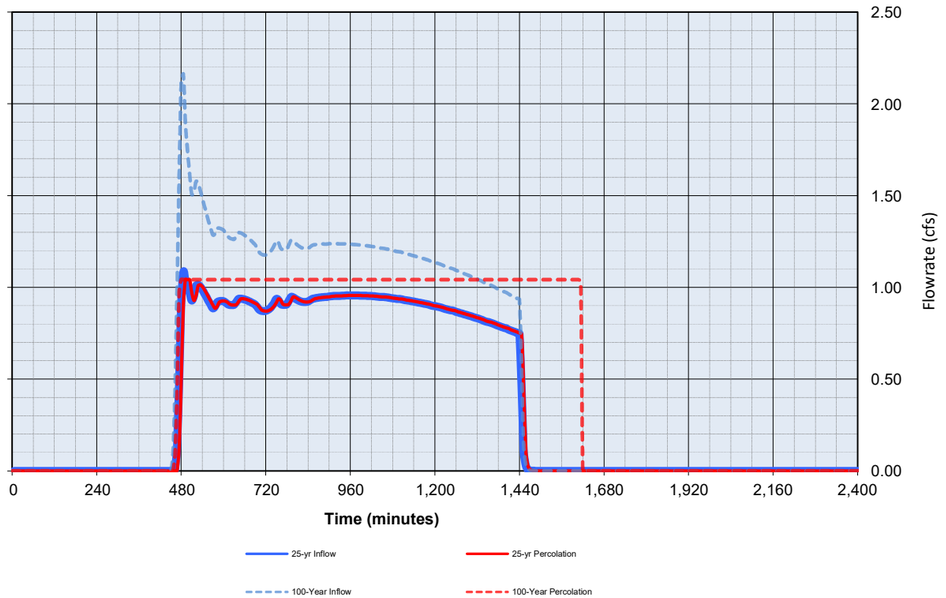
In-Situ Percoloation Rate (in/hr)	1.0
Degradation Factor (Infiltration Gallery):	2.0
Corrected Percoloation Rate (cu. ft./min/sq. ft.)	0.0007

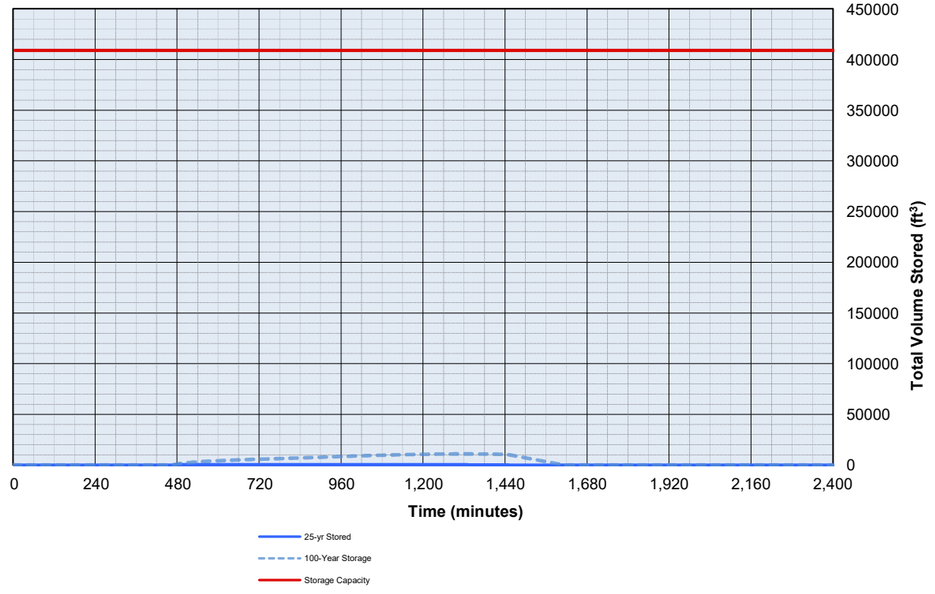


STORMWATER FACILITY CALCULATIONS

Storage Type:	Swale
Bottom Width (ft.):	300
Bottom Length (ft.):	300.0
Depth of Drain Rock (ft.):	0.0
Height from Top of Rock to Grade (ft.):	4.500
Side Slopes (X:1)	3.0
Storage to Volume Ratio, e (%):	45.0
Swale Bottom Area (ft^2):	90,000
Storage Volume in Rock (ft^3):	0.0
Storage Volume Above Rock[1] (ft^3):	409,050.0
Actual Storage Capacity (ft^3):	409,050

1 - Includes 0.5' of freeboard





APPENDIX D
Maintenance Checklists for On-Site Stormwater Facilities

(Adapted from Appendix 5A of the SWMMEW)

The facility-specific maintenance standards contained in this section are intended to be conditions for determining if maintenance actions are required as identified through inspection. They are not intended to be measures of the facility's required condition at all times between inspections. In other words, exceedance of these conditions at any time between inspections and/or maintenance does not automatically constitute a violation of these standards. However, based upon inspection observations, the inspection and maintenance schedules shall be adjusted to minimize the length of time that a facility is in a condition that requires a maintenance action.

5.A.3 Maintenance Criteria for Bioinfiltration/Infiltration Trenches/Basins

Table 5.37: Maintenance Criteria for Bioinfiltration/Infiltration Trenches/Basins

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash and Debris	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
	Poisonous/ Noxious Vegetation	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
	Contaminants and Pollution	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
	Rodent Holes	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
Storage Area	Sediment	Water ponding in infiltration pond after rainfall ceases and appropriate time allowed for infiltration. (A percolation test pit or test of BMP indicates BMP is only working at 90% of its designed capabilities. If ≥ 2 inches of sediment is present, remove).	Sediment is removed and/or BMP is cleaned so that infiltration system works according to design.
Rock Filters	Sediment and Debris	By visual inspection, little or no water flows through filter during heavy rain storms.	Gravel in rock filter is replaced.
Side Slopes of Pond	Erosion	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
Emergency Overflow Spillway and Berms Over 4 Feet in Height	Tree Growth	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
	Piping	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
Emergency Overflow Spillway	Rock Missing	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
	Erosion	See Table 5.36: Maintenance Criteria for Wetponds	See Table 5.36: Maintenance Criteria for Wetponds
Presettling Ponds and Vaults	BMP or Sump Filled With Sediment and/or Debris	6 inches or designed sediment trap depth of sediment.	Sediment is removed.

PROJECT NO. DNR 21-E12
SOUTHEAST REGION
CHIAWANA RICHLAND RANCH DAM

PART 1 -PROJECT DESCRIPTION

1.1 PROJECT DESCRIPTION

The orchard slopes west towards the northeast with approximately 52.5 acres potentially contributing stormwater runoff toward the current irrigation pond. The irrigation pond would potentially become a stormwater infiltration swale.

PART 2 -GENERAL SPECIFICATIONS

2.1 APPLICABLE SPECIFICATIONS AND CODES

A. These Technical Specifications are in conjunction with the indicated section of the following:

- AASHTO - American Association of State Highway and Transportation Officials LRFD Bridge Design Specifications, Current Edition.
- WSDOT - Washington State Department of Transportation Standard Specifications for Road Construction, Current Edition
- ASTM - American Society of Testing and Materials
- MUTCD - Manual on Uniform Traffic Control Devices, current edition

2.2 INDUSTRIAL FIRE PRECAUTION LEVEL

A. Contractor shall comply with applicable Industrial Fire Precaution Level (IFPL) restrictions as defined by WAC 332-24-301. Contractor shall also comply with applicable spark emitting equipment requirements detailed in WAC 332-24-405.

B. This project is located within an area designated, per WAC 332-24-411(3), as having an increase in requirements of WAC 332-24-405 for fire protection. A fully equipped pump truck or pump trailer, as defined in WAC 332-24-005(26) shall be on site at all times during the **Closed Season,** as defined by WAC 332-24-301(3)(b)(v) and RCW 76.04.005(2).

C. Contractor may apply for an IFPL Level III Shutdown Waiver.

2.3 HAZARDOUS MATERIALS

A. Hazardous Materials and Waste - Regulatory Compliance
Contractor is responsible for understanding and complying with all applicable local, state, and federal hazardous material/waste laws and regulations for

operations conducted under this contract. Such regulations pertain to, but may not be limited to, hazardous material storage, handling and transport, personnel protection, release notification and emergency response, cleanup and waste disposal. Contractor shall be responsible for restoring the site in the event of a spill.

B. Hazardous Materials Spill Prevention

All operations shall be conducted in a manner that avoids the release of hazardous materials, including petroleum products, into the environment (water, air, or land).

C. Hazardous Materials Spill Containment, Control and Cleanup

If safe to do so, Contractor shall take immediate action to contain and control all hazardous material spills. Contractor shall ensure that a spill kit is on site. At a minimum, a quick response kit capable of absorbing 4 to 6 gallons of oil, coolant, solvent, or contaminated water shall be available on site. If large quantities of bulk fuel/other hazardous materials are stored on site, Contractor must be able to effectively control a container leak and contain and recover a hazmat spill equal to the largest single on site storage container volume.

D. Hazardous Material Release Reporting

Releases of oil or hazardous materials to the environment must be reported according to the State Department of Ecology. It is the responsibility of the contractor to have all emergency contact information readily available and a means of remote communication for purposes of quick notification. In the event of a spill, the Contractor is responsible for notifying the following: Washington Emergency Management Division, National Response Center (contact information below) and the Project Manager.

Washington Emergency Management Division: 1-800-258-5990 National Response Center: 1-800-424-8802

2.4 SAMPLING AND TESTING

A. Contractor shall retain the services of an independent third party testing and/or laboratory to collect samples and perform the required testing, unless otherwise directed in writing by the Owner. Contractor shall submit the name and qualifications of the company in advance of the Pre-Construction meeting for review and acceptance. Scheduling of the third party testing and/or laboratory shall be the responsibility of the Contractor such that the required tests are reported to the Owner.

B. Testing and/or Laboratory companies shall have performed similar materials testing services for a minimum of 5 years for federal, state or local agencies. Company must not be a subsidiary of the Contractor. All laboratory and field testing shall follow the methods described in the applicable sections of the WSDOT Standard Specifications and WSDOT Materials Manual.

C. Contractor shall sample and test materials for compliance in accordance with these specifications: There shall be no additional cost to the Owner for sampling or testing.
    1. Maximum density and optimum moisture content by AASHTO T99 Method D Standard Proctor for Bin Wall Fill (TS 3.22) and Common Backfill. One (1) test per source or as needed for materials encountered within the Project Limits.

D. Contractor shall provide acceptance testing performed by a certified testing laboratory for Contractor-produced or Contractor-provided aggregates. Testing is not required for Owner-supplied materials. Contractor is responsible for all costs incurred for aggregate testing. Test methods to be used are as follows:

    AASHTO T99 -19 Standard Proctor

The Contractor shall submit a sieve analysis's to the Owner demonstrating compliance with the aggregate gradations for commercial rock products or rock products developed by the Contractor, prior to hauling materials.

There shall be no additional cost to the Owner for sampling or testing.

2.5 WEATHER LIMITATION

When, in the opinion of Owner, the weather is such that satisfactory results cannot be obtained in any place of operation, Contractor shall suspend operations until the weather is favorable. Before and during any suspension, Contractor shall protect the work from damage or deterioration.

2.6 TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC

A. All signs and barricades necessary for the protection of traffic shall be provided by the Contractor. The Contractor shall be responsible for providing adequate safeguards, safety devices, protective equipment, flaggers and any other needed actions to protect the life, health, and safety of the public, and to protect property in connection with the work performed by the Contractor.

B. As a minimum, the Contractor shall erect "TRUCK CROSSING", W8-6, 30 inches X 30 inches at a distance of 500 feet from the entrances to the Copper Pit (MP14) in both direction and a "ROAD WORK AHEAD", W20-1, 30 inches X 30-inches at a distance of 500 feet from the beginning of the project in both directions.

C. Temporary traffic control signs shall be mounted on 4x4 wooden posts by the Contractor. "LOOSE GRAVEL" signs may also be temporarily needed during the work.

D. All temporary traffic control signs shall conform to the requirements of the most current edition of the Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways and meet the requirements of NCHRP Report 350 Category 1, unless otherwise stated in these Contract documents.

2.7 ROAD MAINTENANCE IN PROJECT AREA

In addition to other road maintenance requirements that may be specified in the Plans and Specifications, Contractor shall be responsible for maintaining roads within the project area and on haul routes to the extent that the maintenance is required as a result of the Contractor's operations. Contractor shall maintain roads during operations to prevent damage to roads, and at the completion of operations to restore roads to pre- project conditions. This maintenance obligation extends from the time work starts until Owner issues Final Completion.

Road Maintenance may include, but is not limited to:

- clearing roadway of limbs and fallen trees;
- grading and shaping of the running surface of gravel roads due to wash boarding and rutting;
- spot patching surfacing and potholes caused as a result of the Contractor's operation;
- clearing ditches and culverts of any debris generated by this project to maintain original drainage capacity.

All costs for additional road maintenance, required as a result of the Contractor's operation shall be borne by the Contractor. Metal tracked equipment shall not be used on existing asphalt surfaces at any time. If equipment must be run on the asphalt surface during construction, rubber-tired equipment, or methods effective at preventing damage to asphalt surface shall be used. Any dirt, rock, or other material tracked or spilled on existing asphalt surface shall be removed prior to final completion.

2.8 SUBMITTALS

A. Throughout the execution of the Work, the Contractor is responsible for providing the submittals listed below to the Project Manager. Contractor shall schedule submittals to allow one week for Project Manager to review, comment, or approve, and for revisions to take place without delay to the project.

B. Contractor shall submit one PDF copy (or 2 paper copies) of manufacturer product data sheets and testing results demonstrating technical compliance outlined in the Contract documents for all materials and finished products to be used and incorporated into the work.

C. Specific Submittals include, but are not limited to:
   1. Construction Schedule (GC 4.02 Construction Schedule)
   2. Schedule of Values (GC7.02 Schedule of Values)
   3. Subcontractor or List (GC 6.20 Subcontractors and Suppliers)
   4. Labor and Equipment List (SC 8.01 Minor Change)

5. Disposal tickets
6. SPCC
7. Working Drawings

2.9 WORKING DRAWINGS

A. Type 1 Working Drawings are generally informational in nature and are often used to provide the Project Engineer a description of work to be completed and allow the Project Engineer an opportunity to prepare for the inspection of this work. A Type 1 Working Drawing does not require a response to the Contractor. Should the Project Engineer determine the work proposed by the Contractor does not comply with the contract, a response should be sent to the Contractor.

B. Type 2 Working Drawings are required for work that is more complex or specialized than what would be required for a Type 1 Working Drawing. A Type 2 Working Drawing is submitted to the Project Engineer for review and comment and will often be reviewed by support offices that specializes in the type of work. The Project Engineer is allowed up to 14 calendar days for review and the Contractor is not allowed to begin work until the Project Engineer has provided review comments. It is important that the Project Engineer complete the review and return comments, even if the plan is acceptable, to prevent a delay to the Contractor.

C. The Contractor shall prepare a Type 2 Working Drawing consisting of a project-specific spill prevention, control, and countermeasures (SPCC) Plan and shall implement the plan for the duration of the project. No on-site construction activities may commence until the contracting agency accepts an SPCC Plan for the project per the WSDOT Standard Specification 1-07.15(1).

2.10 ACCESS CONTROL GATES

Access to the site will be off Truman Avenue. There is an existing gate that will need to be unlocked by Washington State Department of Natural Resources for the Contractor. The gate shall be closed and locked at the end of each work shift and remain locked when the yard is not in use.

PART 3 -MATERIALS

Contractor, unless otherwise stated in the plans or these Technical Specifications, shall provide all materials required for this project.

3.1 RECORDS

Contractor shall keep an account of all materials used on this project and shall make such records available to Owner upon request.

3.2 GRASS SEED

Contractor shall evenly spread the seed mixture listed below by hydro seeding on all exposed soils at a rate of 80 pounds per acre of exposed soil.

Seed Species	% by Weight
• Perennial Ryegrass	40.00
• Creeping Red Fescue	40.00
• White Dutch Clover	10.00
• Colonial Bentgrass	10.00

Grass seed shall meet the following specifications:

1. Weed seed may not exceed 0.5% by weight.
2. All seed species must have a minimum 90% germination rate, unless otherwise specified.
3. Seed must be certified.
4. Seed must be furnished in standard containers showing the following information:
    a. Common name of seed
    b. Net weight
    c. Percent of purity
    d. Percentage of germination
    e. Percentage of weed seed and inert material

3.3 HYDROSEED MULCH

Contractor shall evenly spread the hydroseed mulch mixture on all exposed soil inside the grubbing limits at the mix rate below per acre of exposed soil. The hydroseed mulch may not contain resin, tannin, or other compounds in quantities that would be detrimental to plant life. Sawdust may not be used as mulch. The hydroseed slurry must be a homogeneous mix in the following proportions and according to the manufacture's specifications.

Materials	May be any one or combination of: wood, paper, straw, hay, cotton, coconut, jute, or hemp and may contain poly-fibers. Any hay, cotton, or straw must be treated to kill seeds
Solvents	Maximums set, see WSDOT Standard Specification 9-14.4(2)
Heavy Metals	Maximums set, see WSDOT Standard Specification 9-14.4(2)
Water Holding Capacity	900% min.
Organic Matter Content	90% min.
Moisture Content	15% maximum
Tackifier	4000 cPs viscosity minimum
Furnish Premixed	Required
Seed/Acre	See GRASS SEED

Component	Quantity
Water	4000 pounds
Wood cellulose fiber mulch	1800 pounds
16-16-16 Fertilizer mix	400 pounds
Seed mix (Refer to GRASS SEED)	80 pounds
Silvafiber tackifier or equivalent	54 pounds

3.4 EROSION CONTROL – SILT FENCE

Contractor shall furnish and install a silt fence along perimeter of disturbed area. The silt fence shall be installed per BMP C233, the manufacturer's instructions, and as shown on the plans. The Contractor shall maintain and repair any broken or damaged silt fence throughout the duration of the project.

3.5 EROSION CONTROL – STABILIZED CONSTRUCTION ENTRANCE/EXIT

The Contractor shall furnish and install stabilized construction entrance/exit as shown on the plans. Stabilized construction entrance/exit shall be installed per BMP C105. Contractor shall maintain and repair stabilized construction entrance throughout the duration of the project.

PART 4 -CONSTRUCTION REQUIREMENTS

Contractor shall accomplish all work for this project as specified in these Technical Specifications and shown on the Drawings.

4.1 CONSTRUCTION SURVEY

A. The Contractor shall be contractually responsible for all of the project surveying. All project surveying shall be completed by a surveyor, licensed in the state of Washington.

B. Contractor shall establish alignment locations from the control points (CPs) and stakes. Contractor shall use the Owner benchmark elevations. Contractor, if deemed necessary by Owner, shall reset stakes and CPs that are set by Owner and/or Contractor and are disturbed or destroyed during construction.

C. All Work performed shall be in conformity with the lines, grades, slopes, cross-sections, superelevation data, and dimensions as shown in the Plans, or as staked. If the Plans or these Specifications, state specific tolerances, then the Work shall be performed within those limits.

D. The Contractor shall work to preserve RPs, BMs, stakes, and marks set by the Owner. The Owner will deduct from payments due the contractor all costs to replace such RPs, BMs, stakes, and marks carelessly or willfully damaged or destroyed by the Contractor’s operation. The Contractor shall not deviate from the approved Plans and working drawings unless the Project Manager approves in writing.

4.2 WATER

The Contractor shall add water to achieve optimum moisture conditions during compaction of embankment, ballast and surfacing.

The Contractor shall make necessary arrangements and shall bear the cost for power and water necessary for the performance of the work unless the Contract includes power and water as a pay item.

Water for dust control, compaction of embankments, and compaction of fill areas etc., will be available at City of Richland specified fire hydrant location. The Contractor shall be responsible for obtaining a hydrant meter from the City of Richland. Flushing of dirt or debris into the City storm drain system shall be prohibited.

The Contractor shall take appropriate action to control dust caused by its operations. This shall include, but not be limited to, watering of exposed areas daily, cleaning of roadways as required (no less than twice a week), etc. If the Contractor fails to properly control dust, the Engineer may request the Contractor verbally or in writing. If after four hours from this request the Contractor has not corrected the dust problem, the Contracting Agency may elect to have the corrective work performed and withhold the cost from the Contractor's payments.

4.3 EMBANKMENT COMPACTION TEST METHODS

Compaction testing for embankment shall be provided by the Contractor and performed by a certified testing laboratory. All costs incurred for the purpose of testing shall be included in Lump Sum Bid Item *"Earth Embankment Construction"*. Test methods to be used are:

AASHTO T180 Method D- Modified Proctor	Maximum density and optimum moisture content
AASHTO T99 Method D - Standard Proctor	Maximum density and optimum moisture content
AASHTO T310	In-place density and moisture content

1-05 RECORD DRAWINGS

The Contractor shall maintain one set of full-size plans for Record Drawings, updated with clear and accurate, red-lined field revisions daily, and within two business days after receipt of information that a change in Work has occurred. The Contractor shall not conceal any work until the required information is recorded.

This Record Drawing set shall be used for this purpose alone, shall be kept separate from other Plan sheets, and shall be clearly marked as Record Drawings. These Record Drawings shall be kept on site at the Contractor's field office and shall be available for review by the Contracting Agency at all times. The Contractor shall bring the Record Drawings to each progress meeting for review.

The preparation and upkeep of the Record Drawings is to be the assigned responsibility of a single, experienced, and qualified individual. The quality of the Record Drawings, in terms of accuracy, clarity, and completeness, is to be adequate to allow the Contracting Agency to modify the computer-aided drafting (CAD) Contract Drawings to produce a complete set of Record Drawings for the Contracting Agency without further investigative effort by the Contracting Agency.

The Record Drawing markups shall document all changes in the Work, both concealed and visible. Items that must be shown on the markups include but are not limited to:

- Actual dimensions, arrangement, and materials used when different than shown in the Plans.
- Changes made by Change Order or Field Order.
- Changes made by the Contractor.
- Accurate locations of storm sewer, sanitary sewer, water mains and other water appurtenances, structures, conduits, light standards, vaults, width of roadways, sidewalks, landscaping areas, building footprints, channelization and pavement markings, etc. Include pipe invert elevations, top of castings (manholes, inlets, etc.).

If the Contract calls for the Contracting Agency to do all surveying and staking, the Contracting Agency will provide the elevations at the tolerances the Contracting Agency requires for the Record Drawings.

When the Contract calls for the Contractor to do the surveying/staking, the applicable tolerance limits include, but are not limited to the following:

	Vertical	Horizontal
As-built sanitary & storm invert and grate elevations	± 0.01 foot	± 0.01 foot
As-built monumentation	± 0.001 foot	± 0.001 foot
As-built waterlines, inverts, valves, hydrants	± 0.10 foot	± 0.10 foot
As-built ponds/swales/water features	± 0.10 foot	± 0.10 foot
As-built buildings (fin. Floor elev.)	± 0.01 foot	± 0.10 foot
As-built gas lines, power, TV, Tel, Com	± 0.10 foot	± 0.10 foot
As-built signs, signals, etc.	N/A	± 0.10 foot

Making Entries on the Record Drawings:

- Use erasable colored pencil (not ink) for all markings on the Record Drawings, conforming to the following color code:
- Additions - Red
- Deletions - Green
- Comments - Blue
- Dimensions - Graphite
- Provide the applicable reference for all entries, such as the change order number, the request for information (RFI) number, or the approved shop drawing number.

- Date all entries.
- Clearly identify all items in the entry with notes similar to those in the Contract Drawings (such as pipe symbols, centerline elevations, materials, pipe joint abbreviations, etc.).

The Contractor shall certify on the Record Drawings that said drawings are an accurate depiction of built conditions, and in conformance with the requirements detailed above. The Contractor shall submit final Record Drawings to the Contracting Agency. Contracting Agency acceptance of the Record Drawings is one of the requirements for achieving Physical Completion.

Payment will be made for the following bid item:

Record Drawings	Lump Sum

1-07 SPCC PLAN

The contractor shall prepare a Type 2 Working Drawing consisting of a project-specific spill prevention, control and countermeasures plan (SPCC Plan), and shall implement the plan for the duration of the project. No on-site construction activities may commence until the Contracting Agency accepts an SPCC Plan for the project.

1-10 PROJECT TEMPORARY TRAFFIC CONTROL

Temporary traffic control refers to the control of all types of traffic, including vehicles, bicyclists, and pedestrians (including pedestrians with disabilities). The Contractor, utilizing contractor labor and contractor-provided equipment and materials (except when such labor, equipment, or materials are to be provided by the Contracting Agency as specifically identified herein), shall plan, manage, supervise, and perform all temporary traffic control activities needed to support the Work of the Contract.

2-01 CLEARING AND GRUBBING

The Contractor shall clear, grub, and clean up those areas staked or described in the Special Provisions. This Work includes protecting from harm all trees, bushes, shrubs, or other objects selected to remain.

“Clearing” means removing and disposing of all unwanted material from the surface, such as trees, brush, down timber, or other natural material.

“Grubbing” means removing and disposing of all unwanted vegetative matter from underground, such as sod, stumps, roots, buried logs, or other debris.

“Roadside Cleanup” whether inside or outside the staked area, means Work done to give the roadside an attractive, finished appearance.

“Debris” means all unstable natural material produced by clearing, grubbing, or roadside cleanup.

2-02 REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Section 2-02.1 is supplemented with the following:

Removal of Structures and Obstructions shall consist of removing and disposing items that interfere with construction. This includes, but is not limited to, all HDPE liner, concrete, pipes, conduits, fence, fence posts, abandoning pipes, capping pipe ends, saw cutting, vegetation, and other items designated on the Plans for removal.

2-03 EXCAVATION INCL. HAUL

The work described in this section, regardless of the nature or type of the materials encountered, includes excavating and grading the roadway, excavating in the borrow pits, excavating below grade, excavating channels and ditches, removing the slide material, and disposing of all excavated material. These activities may be performed in making cuts, embankments, slopes, roadway ditches, approaches, parking areas, Highway-driveway intersections, and in completing related work. The work includes the removal of pavement, sidewalks, curbs and gutters described in Section 2-02 when these items lie within the excavation area.

The work excludes these items if they are designated as pay items in the contract:

1. Haul
2. Excavation for Structures and ditches
3. Removal of unsuitable materials.

The plans may divide the project into separate areas (Roadway Excavation, Area A, Roadway Excavation, Area B, etc.). Such division does not imply any classification of materials in the areas. The boundaries of the areas shall not be changed regardless of how similar or dissimilar the materials are from one area to another.

“Solids Removal, Handling & Placement” solids from bottom of existing pond shall be mixed in with soil, within pond footprint as a soil amendment.

2-03 EARTH EMBANKMENT CONSTRUCTION

The Contractor shall place earth embankments in the horizontal layers of uniform thickness. These layers shall run full width from the top to the bottom of the embankment. Slopes shall be compacted to the required density as part of embankment compaction.

During grading operations, the contractor shall shape the surfaces of embankments and excavations to uniform cross-sections and eliminate all ruts and low places that could hold water. The contractor shall raise the center of an embankment above the sides. When the surface of an embankment intersects a side hill, the surface shall be sloped away at a rate not to exceed 20:1.

2-11 TRIMMING AND CLEANUP

This work consists of dressing and trimming the entire site improved under the contract, including frontage roads, connecting ramps, auxiliary lanes, and approach roads. The work extends to roadbeds, shoulders, and ditches.

8-01 EROSION CONTROL AND WATER POLLUTION

The work consists of furnishing, installing, maintaining, removing and disposing of best management practices (BMPs), as defined in the Washington Administrative Code (WAC) 173-201A, to manage erosion and water quality in accordance with these specifications and as shown in the plans or as designated by the engineer.

The Contracting Agency may have a National Pollution Discharge Elimination System Construction Stormwater General Permit (CSWGP) as identified in the Contract Special Provisions. The Contracting Agency may or may not transfer coverage of the CSWGP to the Contractor when a CSWGP has been obtained. The Contracting Agency may not have a CSWGP for the project but may have another water quality related permit as identified in the Contract Special Provision or the Contracting Agency may not have water quality related permits, but the project is subject to applicable laws for the work. Section 8-01 covers all of these conditions.

Supplement Section with the following:

> A construction stormwater general permit (CSWGP) will be required for this project. A Full Transfer of coverage from Contracting Agency to Contractor will be required as soon as project begins.

8-02 SEEDING, FERTILIZING, AND MULCHING

All roadway excavation and embankment ground surfaces that are completed to final grades shall be prepared and seeded during the first available seeding window. When environmental conditions are not conductive to satisfactory results, the Engineer may suspend the seeding Work until such time that the desired results are likely to be obtained. If seeding is suspended, temporary erosion control methods according to Section 8-01 shall be used to protect the bare soil until seeding conditions improve.

The Contractor shall prepare the seeding area in accordance with Section 8-02.3(5)A and apply seed at the rate and mix specified in the Special Provisions. The Contractor shall notify the Engineer within 5 days in advance of any seeding operation and shall not begin the Work until areas prepared or designated for seeding have been accepted. Following the Engineer’s acceptance, seeding of the accepted ground surfaces shall begin immediately. Seeding shall not be done during windy weather or when the ground is frozen, or excessively wet. When seeding by hand, the seed shall be incorporated into the top 1/4 inch of soil by hand raking or other method that is allowed by the Engineer. Seed applied as a separate operation using a hydroseeder shall have a tracer added to visibly aid uniform application. The tracer shall be HECP Short-Term Mulch applied at a rate of 200 to 250 pounds per acre and the tracer shall carry the measured specified seeding rate.

PART 5 - MEASUREMENT AND PAYMENT

5.1 MEASUREMENT

A. Quantities included for lump sum bid items are approximate and included for Contractor's convenience only. Measurement of lump sum bid items will be based on the value of work completed relative to the value of work remaining under the bid item Units of measurement shall be identified on the Proposal Form for each item the Owner shall compensate the Contractor. All units of measurement shall be in US Customary Units, unless otherwise specified.

B. Quantities included for lump sum bid items are approximate and included for Contractor's convenience only. There shall be no measurement for Lump Sum (LS) or per Each (EA) items shown in the Form of Proposal. Contractor shall furnish all necessary labor, equipment, tools, materials required to complete the work as specified in the Plans and Specifications.

C. Measurements by weight (Tons, lbs etc.) shall be based on documented or recorded weights on forms provided by the Materials Supplier or Receiving Facility and acceptable to the Owner.
    a. Measurement by "Tons" shall be measured by a Commercial Scale (i.e. scale used to weigh materials or products sold to or disposed by the public on a regular basis). Commercial scales shall be approved under the rules of Weights and Measures Section of the Washington Department of Agriculture.
    b. Contractor shall identify and provide documentation of the proposed Commercial Scales prior to hauling product to the project site.
    c. Upon the Owners request, the Contractor shall furnish additional documentation that may verify, demonstrate, or otherwise satisfy the Owner of the commercial scale's accuracy. This may include Scale daily reports, check weights on another certified scale, or service records of the scale. Failure to provide documentation prior to hauling may result in rejection of the materials or withholding payment to the Contractor until such time as to the scale's accuracy or performance is verified to the Owner's satisfaction.
    d. Contractor shall furnish weight and load tickets from the Commercial Scale operator. The following information shall be required on the weigh ticket:
        i. Date of Haul
        ii. DNR Project Number (Contract Number) or Project Name.
        iii. Contract item as indicated on the Proposal Form
        iv. Units of measure
        v. Unique identification number for the truck and name of the driver
        vi. Gross weight of vehicle (loaded)
        vii. Tare weight of vehicle (empty)
        viii. Net Weight of materials delivered to the project site.

e. Contractor (i.e. operator of each haul vehicle) shall deliver the weight ticket in legible condition to the Owner at the project site on a daily basis, or mutually agreed site and frequency. Failure to provide may result in no measurement and thus there will be no compensation to the Contractor if this occurred.

D. Measurement by linear foot and square yard shall be done at the site using a tape or measuring wheel. Measurements shall be for the placed materials that are accepted by the Owner has conforming to the Plans and Specifications.

E. Measurement by cubic yard shall be by truck measurements and truck counts of materials hauled and placed on the project and accepted by the Owner has conforming to the Plans and Specifications. Truck measurement will be done at the beginning by measuring the length, width, and height of the truck box.

5.2 PAYMENT OF BID ITEMS

1. *Mobilization and Demobilization, per lump sum*, shall cover the costs of moving all equipment to the project site; traffic control; cleaning up and removing any refuse; moving all equipment from the site; inspections and testing; acquisition and payment for permits, fees, bonds and insurance.

2. *Erosion Control and Water Pollution Prevention per lump sum*, shall include all equipment, labor and materials to furnish, apply, and maintain erosion control for temporary and permanent seeding and stabilizing excavation and embankment slopes.

3. *Project Temporary Traffic Control per lump sum,* shall all equipment, labor and materials for the TPDT for the project including signage, flaggers, and temporary lighting. The provisions of Section 1-10.4(1) shall apply.

4. *Clearing and Grubbing per lump sum* shall cover the cost of all equipment, labor and materials required to clear and grub within the project limits including the waste areas.

5. *Solids Removal, Handling & Placement, per cubic yard*, shall include compensation for producing, hauling, spreading, and compacting the excavated material in accordance with the plans and specifications

6. *Excavation Including Haul, per cubic yard,* shall constitute full compensation for producing, hauling, spreading, and compacting the excavated material in accordance with the plans and specifications.

7. *Covid 19 Safety Job Site Plan, per Lump Sum*, shall include the cost of all labor and materials to meet Governor's addendum to Proclamation 20-05.

8. *Record Drawings, per lump sum*. Payment for this item will be made on a prorated monthly basis for work completed in accordance with this section up to 75% of the lump sum bid. The final 25% of the lump sum item will be paid upon submittal and

approval of the completed Record Drawings set prepared in conformance with these Special Provisions.

9. SPCC Plan, per Lump Sum, will be made per the Bid Item “SPCC Plan”

10. *“Removal of Structures and Obstructions” per lump sum,* shall include removal of all items shown or necessary for project Improvements that are not specifically covered by other bid items.

11. *Earth Embankment Construction, per cubic yard,* shall include compensation for producing, hauling, spreading, and compacting the excavated material in accordance with the plans and specifications. Compaction and Moisture Control Testing is incidental to Bid Item Earth Embankment Construction and no extra payment will be made for any and all density testing.

12. *Trimming and Cleanup, per lump sum,* will be made per the Bid Item “Trimming and Cleanup”

13. *Seeding, Fertilizing and Mulching, per acre,* will be made per the Bid Item “Seeding, Fertilizing, and Mulching”

5.4 PAYMENT OF MINOR CHANGES

Minor Changes shall consist of payments or credits for changes in labor, materials, or equipment costs in accordance with the Supplemental condition 8.01. For purposes of providing a common proposal for all bidders, the Owner has entered an amount for “Minor Change.” The contractor acknowledges all work for which compensation will be made under “Minor Changes” shall be subject to advance approval by the Owner.

END OF TECHNICAL SPECIFICATIONS