

# **Final Interim Removal Action Preliminary Design Report**

Saddle Rock Park  
Wenatchee, Washington

for  
**City of Wenatchee**

April 30, 2019



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Preliminary Design Report**

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**File No. 4296-008-00**

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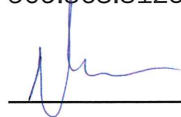
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## 1.0 INTRODUCTION

The City of Wenatchee (City) has retained GeoEngineers, Inc. (GeoEngineers) to complete the design for an Interim Removal Action (IRA) at the Saddle Rock Park (Site) located in Wenatchee, Washington. The Site was documented to have several mining claims, where waste rock was generated during previous mining explorations. Since 2011, the Washington State Department of Ecology (Ecology) and others have performed multiple investigations including a Remedial Investigation (RI) and Feasibility Study (FS). The work proposed in this Preliminary IRA Design Report (Report) is aimed at utilizing the information from these previous reports to design plans and specifications for the removal of select waste rock piles containing metals concentrations greater than respective cleanup criteria. It is expected that traditional design and construction means and methods will be employed for Phase 1 work elements; however, steep slope means and methods will likely be required during Phase 2 IRA activities.

We understand that Ecology has indicated the cleanup is to be divided between Phase 1 (lower four waste rock areas) and Phase 2 (upper two to three waste rock piles), as shown on Drawing 3, Existing Conditions. The phasing is occurring due to funding considerations and since the lower four waste rock piles contain approximately 87 percent of the contaminated materials and are significantly easier to reach than the Phase 2 area. A schedule for preliminary design, IRA-related sampling, final design and proposed construction implementation is shown in Appendix A, Revised Agreed Order Schedule.

As part of this Report, additional data collection is needed to establish pile-specific background arsenic concentrations and to determine downslope areas requiring cleanup. Recent data collection activities and future sampling parameters are detailed in Technical Memorandum, “Gold Knob Prospect (aka Saddle Rock Park), Establishing Site Cleanup Levels and Areas,” (Ecology 2018a). An Agreed Order (AO) (Ecology 2018b) between the City and Ecology has been established and outlines the following IRA objectives for the Site:

- **Task 1—IRA Preliminary Design and Cost Estimate.** This task has multiple components with two main purposes: (1) document that the IRA proposed is consistent with the City and Ecology expectation outlined in the AO; and (2) provide sufficient detail for developing a detailed cost estimate for implementation. One important component of this Task 1 is to perform a validation assessment of the existing trail system and proposed haul routes to document that construction can be safely performed at the existing slopes within the working parameters of the proposed construction equipment. We have begun to work with the City and Chelan-Douglas Land Trust (CDLT) representatives to perform this assessment and have included our preliminary design and findings in this Report; however, the final detailed engineering plans and specifications (Task 3) for the proposed existing and new haul roads will not be prepared for Phase 2 at this time. As part of the preliminary design approach, we have also begun to evaluate problematic areas where excessive erosion is occurring and are looking for ways to improve conditions as part of the project by incorporating the considerations into the preliminary design.
- **Task 2—IRA Design Sampling and Analysis.** Task 2 will assess and address the primary data gaps identified from Ecology’s (2018) Technical Memorandum, Gold Knob Prospect (aka Saddle Rock Park), Establishing Site Cleanup Levels and Areas. Our field screening program will be specific to arsenic, since this is the primary constituent of concern for the Site. As part of this task, we developed a Sampling and Analysis Plan (SAP), under separate cover, for the background/downslope soils

assessment, for further downslope characterization, waste rock pile delineation and procedures for confirmation sampling during the IRA implementation. The results of the field screening, laboratory data, follow-up assessment (if needed), and overall source pile delineation into an IRA Design SAP Report to be submitted to Ecology and the City.

- **Task 3—IRA Final Design.** Task 3 will build on the foundation of the IRA Preliminary Design in Task 1 and 2 and prepare an IRA Design Report for the project. The IRA Design Report will include drawings and specifications appropriate for construction of Phase 1.
- **Task 4—IRA Implementation.** We understand the City may amend this task to the current project contract and request the support of GeoEngineers in the implementation and oversight of the final IRA design.
- **Task 5—State Environmental Policy Act (SEPA) Compliance Support.** The City will be preparing SEPA documentation and certain SEPA work elements may need the assistance of GeoEngineers. If SEPA support by GeoEngineers is required by the City, we can assist the City in completing the SEPA permit package including the permit conditions in the final design package.

The elements presented in this Report cover both the completion of the Phase 1 and 2 IRA preliminary design and construction work activities. Final design and construction of Phase 2 IRA work activities will be completed at a later time and with alternate funding.

This Report also provides guidance for the City and the City's selected Contractor(s) for managing contaminated soil that may be encountered during any earthwork activities on the project. Soil excavated for this project is subject to special handling and/or disposal requirements as discussed in this Report. The procedures outlined in this document are based on guidance provided by Ecology (Ecology 2012); the Model Toxics Control Act ([MTCA] Chapter 70.105D RCW); Washington Administrative Code (WAC) Chapter 173-340; and our experience on similar projects. We understand that the City's contractor(s) working on this project will be responsible for complying with the final design report and specifications, as well as all applicable local, state and federal regulations during construction activities.

In addition, the City-selected Contractor(s) personnel responsible for any earthwork activities shall be 40-hour hazardous waste operations and emergency response (HAZWOPER) trained and certified (in compliance with (Occupational Safety and Health Act) OSHA standard 29 CFR Part 1910.120) and Chapter 296-843 WAC and meet the regulatory requirements identified in Section 2.2 below.

### **1.1. Site Description and Background**

The Saddle Rock Regional Park is a local landmark in the Wenatchee Valley and has been a popular destination for hikers, bicyclists and horseback riders for decades. In 2011, the City completed the purchase of the property with the assistance and support of the CDLT, Washington State Recreation Conservation Office and local citizens. The City dedicated the property as the Saddle Rock Regional Park on July 16, 2011.

The 325-acre property was previously owned by the Washington Department of Natural Resources (DNR) for over 100 years. Based on DNR records, it received small mining lease payments from 1891 to 1989. In connection with due diligence by others, a Phase I Environmental Assessment (ESA) indicated possible mining waste rock sites created during DNR ownership and total arsenic concentrations exceeding MTCA standards. Decades of public use has also led to severe erosion problems, and habitat deterioration.

Ecology conducted an initial investigation of the Site in the Spring of 2011. Waste rock samples from six sites along with soil samples from surrounding areas were collected to compare the concentration of metals in waste rock to background concentrations. Analysis identified elevated total arsenic concentrations in the indigenous materials and two additional areas were identified for further testing. Laboratory analysis of the materials confirmed total arsenic concentrations exceeding the MTCA standards.

In 2012, the City received an integrated planning grant from Ecology through which a RI, cultural resources and FS reports were prepared. The RI and FS reports identified and estimated 6,045 cubic yards of waste rock that were impacted above MTCA standards. The constituents of concern included arsenic, mercury, selenium, silver, and barium. Total arsenic was detected above the screening level of 14.4 milligrams per kilogram (mg/kg) in all waste rock samples, whereas the other constituents of concern were not always present at concentrations above their respective screening criteria.

Contaminated shallow soils were identified downslope of the waste rock piles; however, the amount of contaminated downslope soils has not yet been determined. The FS outlined a preferred alternative that included excavation, transportation and disposal of waste materials at a permitted, lined and monitored landfill and sealing any existing open former mining adits. New temporary haul roads, in certain areas of the Site, may be constructed and existing roads improved for equipment access. Disturbed surface soil areas, former waste rock pile locations and portions of existing haul roads will be reclaimed and restored via the final design restoration plans and specifications. The remaining new or existing haul roads will be restored to include drainage and surface improvements.

## 1.2. Key Personnel

The field team scheduled to perform work during field operations include:

- Dustin Wasley, PE    Principal-in-Charge
- Nick Rohrbach        Senior Environmental Scientist / Project Manager
- JR Sugalski, PE      Project Engineer / Field Inspector
- Ryan Tobias            Senior Biologist / Field Inspector
- TBD                     Staff Engineer / Field Inspector

All personnel who will be performing invasive activities (i.e., sampling, construction oversight, construction excavation and grading, etc.) during the Phase 1 and 2 IRA construction implementation will be trained in accordance with the HAZWOPER standards, as defined by the OSHA standard 29 CFR Part 1910.120 and Chapter 296-843 WAC.

Other personnel who will periodically be on site are listed below. The City's Capital Project Manager, for Parks, Recreation and Cultural Services, will be kept informed regarding project activities, plans, schedules, budget/invoicing, and other issues through direct communications and meetings by GeoEngineers. Ecology's Project Manager will be kept informed of project progress and information by the City's Capital Project Manager.



- Charlotte Mitchell – City of Wenatchee      Capital Project Manager
- Frank Winslow – Ecology                              Project Manager
- CDLT representatives                                  Authorized personnel

### 1.3. Logistics

Due to the lack of facilities at the Site, a project office building is not currently available for the IRA implementation. Temporary facilities may be brought onto the Site, by the Contractor, and will include a minimum of a personnel decontamination area and sanitary facilities (porta potties) in the staging area. Care will be taken to avoid any significant impacts to all nearby natural and existing habitat and to reduce the potential for non-work-related exposure to potentially hazardous materials known to be present at the Site.

All food, equipment, and other supplies will be packed in and out. All refuse will be stored in animal-proof containers, and routinely packed out of the Site and properly disposed at an approved solid waste facility. The staging/lay down area will be cleaned up and left in good condition prior to departure, and if needed graded and revegetated in accordance with this Report. All-terrain vehicles (ATVs) will likely be used as part of the IRA activities, which will require that a small supply of fuel be kept available at the Site. Small quantities of diesel and gasoline fuel for trucks and equipment may also be stored off site. To control potential spill or release problems, the following fuel handling procedures will be employed:

- Only containers approved for gasoline/diesel will be used.
- A storage area, within the Contractor staging area, with secondary containment (with a spill/release volume 110 percent of the stored fuel volume) will be established at the Site.
- Care will be taken to avoid spills during refueling.
- Refueling will be done near the fuel storage area, to the greatest practical degree.
- There will be no open flames or other sources of ignition allowed in the vicinity of the fuel storage area or during refueling operations.

## 2.0 IRA ACTIVITIES

### 2.1. Summary of IRA Activities

All work shall be conducted in a safe manner, so as to not endanger Contractor personnel or other key personnel on the Site. The work will consist of, but not be limited to, providing all labor, materials, earthwork and incidentals necessary to excavate and transport waste rock piles from the Phase 1 work area (consisting of SR-01 through -03, and SR-08) and the Phase 2 work area (SR 04 and 05). Related mobilization and demobilization, clearing and grubbing, erosion and stormwater control, haul road/trail abandonment/obliteration, and post-excavation waste rock pile area restoration grading will also be performed.

Logistical difficulties associated with the performance of this project include generally steep slopes located throughout the area, which will require special handling. The steep slopes may cause mobilization difficulties, cause difficulties in moving around the Site, and also could contribute to erosion and may complicate delivery of the required materials to complete the project.

Portions of the Saddle Rock Park will close for public use for the construction period of the Phase 1 and 2 IRA implementation, which will be generally limited to only the areas required to complete construction in the park. Signs will also be posted by the Contractor to inform the public of the general hazards (both chemical and physical) associated with the waste rock piles and construction activities. Allowable work hours for the Contractor to complete construction activities in a safe manner will be 7 am to 7 pm, Monday through Sunday. If the Contractor wishes to deviate from established working hours, the Contractor shall submit a written request to the Capital Projects Manager for consideration. The Contractor is not allowed to access or utilize the Saddle Rock Regional Park trailhead parking lot and vicinity. All Site access shall be routed through the one gated entrance at the dead end of Circle Street.

The Contractor shall utilize existing trail/haul road(s) to the extent practicable, as shown on Drawing 6, Proposed Haul Road Alignment, to complete the IRA excavation and transportation of waste rock on- and off-property. Sections of new haul road alignments will be required to be constructed and established by the Contractor during Phase 2 IRA work. Excavation and grading activities for Phase 1 and 2 IRA work will be primarily focused around each waste rock pile. Some surface grading may be required in the vicinity of the laydown/staging area developed by the Contractor. The Contractor shall use care in moving and transporting waste rock material during excavation activities.

The Contractor shall use care to minimize vegetative disturbances outside of the areas to be remediated. The vehicle staging area south of SR-02 should be made only as large as necessary to fit equipment. Note that if SR-02 is first removed, it could become the staging area prior to revegetation.

Former mining adits will be closed as part of this project. The adits and other openings at the Site will be inspected during Task 2 activities to assess suitability for the installation of bat gates or culverts with fixed bars to retain potential bat habitat or whether the adits will be closed via a permanent rebar and concrete 'plug' in the adit opening. The decision for whether or not bat gates will be installed will be made after consultation with the City Parks Department.

Excavation and other disturbed areas (including the laydown/staging area developed by the Contractor) will be graded to match surrounding existing conditions after waste rock is removed. Revegetation activities, such as planting native trees/shrubs/bushes, are planned to be conducted by CDLT representatives using Contractor-provided plantings. Further details are presented in Section 2.9.

Preliminary drawings depicting general construction information are attached; the final layout and IRA activities will be included under separate cover. All "field engineering or field adjustment" procedures, plans and designs will be discussed with and approved by the City prior to implementation. Drawings and specifications (in Washington State Department of Transportation [WSDOT] format) and the Construction Quality Assurance (CQA) Plan will be submitted under separate cover in the final design report.

#### **2.1.1. Cultural and Historical Monitoring**

A cultural resource and historical assessment were conducted for the City in 2013 (Reiss-Landreau Research (RLR) 2013). While there were no cultural artifacts discovered specifically within the Phase 1 and 2 waste rock pile areas, an "Inadvertent Discovery Procedure (IDP)" has been identified to be utilized by the Contractor during construction activities. These procedures shall be followed by the Contractor at all times and when archaeological significant material is discovered during excavation work. Inadvertent

discoveries shall be limited to native American artifacts, including human bones or a buried major deposit that may be present (City 2018).

A copy of the IDP is provided in Appendix B of this Report. A qualified cultural resource company will be subcontracted during the Phase 1 and 2 construction work, in the event a significant find is discovered. Ecology will also be added to the notified parties if the IDP is triggered during construction.

## **2.2. Worker Health and Safety Requirements**

The following worker health and safety protocols shall be implemented by the Contractor during all excavation/soil disturbing activities:

- Personnel involved in excavation and/or handling of any soil and waste rock during Phase 1 or 2 IRA activities shall conduct their work in accordance with applicable health and safety regulations and the Contractor's Site safety and health plan.
- Personnel working on the property shall comply with provisions of WAC 173 340-810 (MTCA Cleanup Regulation, Worker Safety and Health).
- Personnel involved with invasive construction activities (including waste rock excavation and transport) shall be in compliance with HAZWOPER training in accordance with Chapter 296-843 WAC and OSHA standard 29 CFR Part 1910.120.
- For occasional workers, such as professional surveyors, a 24-hour HAZWOPER training course will be completed along with one supervised on-site fieldwork day.

## **2.3. Mobilization**

Mobilization will be performed in accordance with the final drawings and specifications (under separate cover). The final initial mobilization date will be determined in the future. Select equipment identified below, with the ability to safely navigate steep slopes, is recommended to be used when completing certain work elements. Equipment and vehicles operated by the Contractor shall be in accordance with the manufacturers suggested slope rating(s). The following general equipment is likely to be used during Phase 1 and 2 IRA activities, based on experience, technical, safety and cost considerations:

- Several pickup trucks/ATVs;
- Several highway-rated dump trucks;
- Several Kamatsu CD110R-1 mini tracked spin/dump machines or equivalent (recommended steep slope equipment);
- One wheeled loader;
- One Caterpillar D6 bulldozers or equivalent (recommended steep slope equipment);
- One Caterpillar 330 Excavators or equivalent (recommended steep slope equipment);
- One small backhoe/excavator for haul road and staging area maintenance or difficult excavation areas (recommended steep slope equipment); and
- One water truck (to actively control fugitive emissions during construction work and on standby for potential fire control). The Contractor shall also mobilize additional water storage equipment and

devices, to be utilized for potential dust suppression control for waste rock piles above SR 02 and for potential wildfire risk within the work zone.

It will be the Contractor's responsibility to verify what kind of equipment can complete the project safely, including the recommended list described above. Highway rated dump trucks are not planned to be driven above the SR 02 waste rock pile/staging area location, but this will be at the discretion of the selected Contractor to determine the means and methods to execute the project in a safe and efficient manner.

Equipment will be thoroughly pressure washed and cleaned to remove dirt/weeds prior to arrival on site and prior to leaving the site; the equipment will be made available for inspection prior to mobilization to the Site. The Contractor shall remove all residual contaminated soil (in waste rock pile zones) via physical methods and containing those spoils for transport to the landfill. Soil acquired onto equipment elsewhere on Site will be removed via physical methods and will be left on Site, also prior to leaving the Site. All equipment will be utilized so as to not cause cross contamination or track contamination beyond the limits of each identified waste rock pile. All equipment shall be thoroughly decontaminated by the Contractor prior to demobilization.

An equipment and materials staging areas is planned to be sited near waste rock pile SR-02 (Drawing 4). This staging area will be utilized during both the Phase 1 and 2 construction seasons. Equipment will also be staged to not block access to and from the Site. A temporary field office trailer or tent may also be used by the Contractor, to be located near waste rock pile SR-02, if necessary.

#### **2.4. Surface Water Control / Erosion Control Measures**

Prior to waste rock removal activities, permanent and temporary sediment and erosion control devices must be installed to control the migration of stormwater and sediment. Erosion control measure installation will also occur prior to establishing and installing new haul roads for either Phase 1 or 2 work activities. Sediment control devices will be installed in accordance with manufacturer details and specifications and at the direction of City. Erosion measures shall be 'field adjusted' by the Contractor, if the final drawings are incomplete or indicate an erosion measure that is not functional for the intended purpose.

The Contractor shall divert stormwater away from each waste rock pile and trails/haul roads within the Phase 1 and 2 project areas. The Contractor shall install erosion and sediment features, as shown on Drawing 4, Erosion and Sediment Control Plan, and Drawing 5, Erosion and Sediment Control Details, to control and contain stormwater runoff from leaving the property. Stormwater will be controlled in such a manner that no stormwater discharges will occur off property or into Circle Street drainage structures. Typical erosion and stormwater control details will be shown on the final drawings; including a sediment trap feature to be installed near the base of the haul road and capture stormwater runoff from leaving the project Site. This feature is planned to be designed to meet best management practice (BMP) C200, of Ecology's, "Eastern Washington Stormwater Manual."

The Contractor shall install erosion control measures surrounding the staging area, in accordance with the final plans. This staging area will remain in place between Phase 1 and 2 construction seasons, with final stabilization and reclamation after Phase 2 is complete.

A project Storm Water Pollution Prevention Plan (SWPPP) will be generated by the Contractor in accordance with City ordinance and the final design plans and specifications, which will include provision for managing

stormwater at the Site. All erosion and sediment control design and implementation will be in accordance with Ecology's, "Eastern Washington Stormwater Manual."

#### **2.4.1. Fugitive Emission Control**

Fugitive emission control will be implemented during the removal, staging, loading and transport of all waste rock from the Site. If water truck(s) cannot safely mobilize to work areas above waste rock pile SR 02, alternative water storage and water application devices will be required during construction work. The Contractor shall not discharge dust or any other air contaminants into the atmosphere in such quantity as will violate the regulations of any legally constituted authority. At the first sign of fugitive emissions, water will be applied using an atomized spray until visually damp. Special consideration will be given not to over water the waste rock. No ponding or runoff from the waste rock will be allowed. Dump trucks leaving the project site will be covered during transport at all times. Construction procedures employed by the Contractor shall reduce the potential for cross contamination of known contaminated soil. The approach is as follows:

- The loading area should be lined with impervious material to capture any spilled material. Any spilled material, or tracked out, will be removed immediately.
- Visible dust should be mitigated by the Contractor, using a water truck and appropriate hoses/spray nozzles, to control offsite air migration.
- Mitigation and control of potential exposure to fugitive dust during dump truck offloading at the permitted disposal facility will be the sole responsibility of the transport contractor. It will be the transport contractor's responsibility for coordinating with the landfill on their fugitive dust control requirements.
- The Contractor shall be prepared to elevate personal protective equipment (PPE) requirements (in accordance with their project Health and Safety Plan [HASp]) to Level C, if dust suppression activities are not actively controlled to control air emissions discharges and creating a potential exposure inhalation hazard for on-site personnel. No off-site fugitive dust migration will be allowed.

#### **2.5. Clearing and Grubbing**

Clearing and grubbing, performed at the direction of the City and in accordance with the final drawings and specifications, will be kept to a minimum. Grubbed material and slash will be stockpiled on-site for shredding as mulch to be used during Site restoration or for erosion control on exposed slopes.

#### **2.6. Existing Haul Road/Trail Use and Maintenance**

It has been determined by GeoEngineers that most of the existing trail/haul road(s) can be feasibly utilized to complete the IRA activities described in this Report. Traditional construction equipment can also likely be used to complete the majority of Phase 1 and 2 construction work, including haul road maintenance. Because steep slopes exist across the Site, certain sections of new haul road(s) will be required to be installed to safely complete work by the Contractor. Further details are described in Section 2.6.1.

Portions of the Saddle Rock Park will close for public use for the construction period of the Phase 1 and 2 IRA implementation, which will be generally limited to only the areas required to complete construction in the park. Signs will be posted by the Contractor at the beginning of the road/trail (near the Saddle Rock parking lot entrance and trailhead, as well as, the north side of Saddle Rock Park where Jacobsen trail connects) advising the public that the trails are not open for public use and warning of construction

equipment usage. Flaggers will not be needed because the public will not be allowed in the construction area of Phase 1 nor Phase 2.

The existing trail/haul road has been improved by the City or the CDLT in some areas, but additional improvements are needed to be performed by the Contractor for mobilization and construction implementation purposes for the Phase 1 and Phase 2 IRA. Segments of the haul roads/trails are as steep as 22 percent in some areas and existing stormwater runoff damage within certain sections of haul roads will need to be repaired/re-graded for construction use. These existing trail/haul road(s) shall be improved, by importing, placing and compacting appropriate gravel material to allow trucks and equipment to safely move around the Site. Work will also consist of maintaining the trail/haul road gravel material for truck/equipment traffic during the course of the Phase 1 and Phase 2 IRA.

The existing trail/haul roads (currently portions are existing Saddle Rock park trails) from the waste rock piles to the gated entrance to the Site will need to be improved, in certain areas, to allow dump trucks to transport waste rock to the approved permitted landfill. Improvements will consist of haul road widening (in certain sections), surface grading and placement of gravel road material, and installation of erosion control devices (see Section 2.4).

#### **2.6.1. New Haul Road**

New sections of haul road tentatively planned to be constructed by the Contractor, are shown on Drawing 6. These new sections are planned to be constructed during Phase 2 IRA work only. These new sections are being installed to reduce the steepness in slope grade in certain areas.

The Contractor shall be prepared to install temporary and permanent erosion and sediment control measures prior to constructing any new haul roads, as described in Section 2.4. The new haul roads will be maintained for use during construction and will be left in good order after construction is complete.

### **2.7. Waste Rock Excavation and Disposal**

#### **2.7.1. Waste Rock Excavation**

The SR-01 through -05, and SR-08 waste rock piles will be excavated to the limits shown on the final drawings and specifications. The approximate existing limits (as defined by others in the RI/FS documents) without downslope extents are shown on Drawings 9 through 12, the extent and depth of the removal will be based on field observations, the results of x-ray fluorescence (XRF) in-situ field screening and the final removal action cleanup level(s) that will be outlined in the final design report. The estimated current total volume of waste rock to be removed in the Phase 1 IRA is 5,295 cubic yards (cy) and 750 cy in Phase 2, based on the RI information completed by others (Hart Crowser 2013a). These waste rock volumes may be adjusted up or down after further sampling work to address Ecology-identified data gaps. Final volumes will be provided in the final design report (Task 3).

The Contractor will provide access to the excavation areas and shall sequence excavation and other activities to accommodate sampling and analysis work by the City and its consultant.

In order to control the release of waste rock and sediments from each area, excavation and transport of the waste rock will proceed in a careful manner working from the top of the slope downwards. Haul dump trucks, utilized both on-site and off-site, will not be overfilled in order to minimize spillage of waste rock. If spillage occurs, the City may require the trucks to be covered during transport on-site. Loading areas

(nearest each waste rock pile) and haul roads shall remain free of spilled material to avoid tracking of waste rock and contaminated soil along the haul routes. Spilled waste rock will be immediately removed via hand tools and loaded back into transport equipment.

### **2.7.2. Off-Site Disposal**

The following procedures shall be implemented by the Contractor when transporting and disposing of waste rock from the project Site to the permitted disposal facility:

- The Contractor will be responsible for the transportation of excavated waste rock soil on and off property, which include transportation to the City-selected and -approved permitted disposal facility (Waste Management's (WM) Subtitle D landfill located in East Wenatchee, Washington).
- The City will setup an account with WM, so that a disposal profile can be setup and all invoices are direct billed to the City.
- Labeling, packaging, transport, disposal, and record keeping will occur in general accordance with requirements outlined in WAC 173-303.
- In accordance with WAC 173-350-300, loaded trucks or containers with Subtitle D materials will be covered before leaving the project Site.
- The Contractor will coordinate with the disposal facility regarding acceptance of any waste rock being disposed. Mitigation and control of potential exposure to fugitive dust during dump truck offloading at the permitted disposal facility will be the sole responsibility of the transport contractor. It will be the transport contractor's responsibility for coordinating with the landfill on their fugitive dust control requirements.

It is the City's responsibility to obtain approval for disposal at the permitted facility. It was identified the FS document that the WM Subtitle D landfill located in East Wenatchee, Washington, would be suitable for disposing the waste rock material. The City is beginning the process of profiling the waste material with WM. WM has requested additional sample characterization of certain waste rock piles. A copy of this documentation will be provided in the draft Final Design Report, after additional waste characterization is completed. It is the Contractor's responsibility to coordinate the transportation of contaminated soil and obtain and maintain all disposal records from the selected disposal facility for future reference. Disposal records will be provided to the City within 30 days after "Substantial Completion" is obtained by Contractor from the City.

### **2.8. Material and Miscellaneous Debris Removal and Disposal**

All non-Native American, man-made wood and metal material and miscellaneous nuisance debris (estimated at less than 1 ton) within Phase 1 and Phase 2 work areas that pose a potential physical hazard or is considered to be garbage (within the waste rock pile[s]) will be removed, after review and approval by the City.

Material(s) will be transported and disposed at the landfill described in the above Section 2.7.2.

## **2.9. Restoration**

### **2.9.1. Final Grading and Confirmation Sampling**

Once waste rock piles are excavated to the limits as shown on Drawings 9 through 12, each area will be final graded to match surrounding surface conditions. Prior to final acceptance by the City and Ecology of the waste rock pile areas, each former waste rock pile footprint area will be screened with an XRF and confirmation soil samples will be collected and analyzed to document that metals concentrations are below the cleanup goals. It is expected that the final confirmation sampling results could take up to 2 to 3 weeks; however, other Site work shall be completed concurrently so that work can be completed in the scheduled timeframe (see Appendix A). Once final acceptance has been provided by the City and Ecology, all silt fence shall be removed by the Contractor and disposed at the permitted landfill discussed in Section 2.7.2. All other erosion and sediment features installed by the Contractor shall remain on site. All haul road gravel material imported and placed by the Contractor shall also remain on site.

All disturbed areas at each waste rock pile location and the planned Contractor laydown/staging area (near the existing SR 02 waste rock pile location) will be recontoured to match existing and surrounding conditions, in preparation for the Contractor to final stabilize these areas with mulch and/or a hydroseed mix in accordance with the final design report.

### **2.9.2. Reclamation/Revegetation**

Organic material recovered during clearing and grubbing, that was generated into mulch by the Contractor, shall be placed over the final graded areas as much as feasible by the Contractor.

Additional mulch and/or a hydroseed mix, as determined by the City and CDLT in the final design report, will be added where disturbed area coverage is inadequate. This determination will be based on observations in the field, and concurrence with the City.

All revegetation work related to replanting vegetation and/or trees, with plants and trees procured and mobilized to the Site by the Contractor in accordance with final design report, will be implemented by CDLT representatives.

### **2.9.3. Haul Road Abandonment**

Upon completion of Phase 1 and 2 IRA construction activities, certain sections of existing haul roads within the limits of the Site and other access roads constructed during the IRA will be abandoned. Abandonment will consist of recontouring the road for proper drainage, and mulching as specified in the final plan and specifications. All other trail abandonment (not related to the haul roads) within the Phase 1 and 2 construction zones will be addressed at the discretion of the CDLT.

The roads to be abandoned are presented on Drawing 13, Revegetation Plan.

### **2.9.4. Haul Road Finish Grading and Top Course Gravel Placement**

The Contractor shall be prepared to import and place 5/8-inch-minus gravel on all Phase 1 and 2 haul road alignments. This activity will be completed after both Phase 1 and 2 work is complete and final acceptance from the City has been provided to the Contractor.



The import, placement and compaction of the 5/8-inch-minus material is to be placed at a 2-inch depth, over any existing soil or Contractor-improved haul roads. The total estimated volume is 2,300 cy, as shown in Appendix C, Construction Cost Estimate.

### **2.10. Adit Closures**

The adits and other physical openings at the waste rock piles will be inspected during Task 2 to assess suitability for bat gates/culverts or permanent concrete/rebar 'plugs.' If the adits are determined to be suitable, the appropriate bat structure will be installed by the Contractor. If a particular adit is found to be not suitable for a bat structure, then the adits will be closed by the Contractor via a permanent rebar and concrete 'plug' in the adit opening, so the public can no longer access the adit opening. It is anticipated bat-friendly physical closures will be installed at adit openings to also control human access while allowing for potential bat use. The final layout of the gates and locking mechanism or permanent 'plugs' will be determined following consultation with Ecology and assessment in the field.

The SR 02 adit will require the removal of backfilled soil, prior to the installation of a bat structure or permanent concrete/rebar 'plug'.

To the extent practical, closures will be fabricated at the Site. Access to each adit will be accomplished with the use of ATVs or standard equipment/trucks.

### **2.11. Schedule**

Implementation of the Phase 1 and 2 IRAs is expected to be accomplished in separate individual field seasons, with Phase 1 IRA work expected to be completed in 2019. The field season at the Site is typically between June and early October, depending on rain events and snow levels. The timeframe of the IRA construction activities has been planned to be conducted starting late Summer 2019 and end in early October 2019. It is expected that Phase 2 construction will be implemented the following year, pending grant funding.

The proposed schedule is attached as Appendix A, and assumes an initial mobilization of mid to late August 2019. This schedule is considered preliminary and may change depending on final design considerations and field conditions.

### **2.12. IRA Implementation Cost Estimate**

A revised preliminary Construction Cost Estimate was prepared for both Phase 1 and 2 work and are attached separately as Appendix C.

The following cost estimate assumptions were used in developing each Phase 1 and 2 tables:

- Unit costs are derived from either RS Means, estimates from local vendors, and professional experience. Estimated costs are considered to be within a margin of +/- 20 percent;
- Quantities are estimated and assumed based on the preliminary revised drawings and past work by Hart Crowser;
- Permitted disposal is assumed at the WM Greater Wenatchee Regional Subtitle D Landfill; and
- Waste rock soil volumes assumes 1.5 tons per cubic yard.

### **3.0 SAMPLING AND ANALYSIS PLAN – IRA DESIGN**

This section presents the SAP that will be employed at the Site in accordance with Ecology’s technical memorandum (Ecology 2018a). The SAP was recently created and provides guidance for physically delineating each waste rock pile. Detailed elements of the SAP have been developed under separate cover (GeoEngineers 2019). The current SAP may be updated prior its use for IRA implementation confirmatory sampling.

#### **3.1. Sampling and Analysis Plan**

Our field screening and sampling program is specific to arsenic, since this is the primary constituent of concern for the Site. As part of this task, a SAP has been developed for a series of XRF screening activities and soil sampling assessment needed to further refine and delineate both Phase 1 and 2 waste rock piles. To streamline the process, the SAP also incorporates the confirmation sampling plan that will be completed during the IRA. The SAP includes the following elements for preliminary design and for future construction activities:

- Background/Further Downslope Soils Assessment
- Waste Rock Pile Delineation
- Physical hazard (e.g. adit) assessment
- IRA Implementation Confirmation Sampling

#### **3.2. IRA Design Sampling and Analysis Report**

GeoEngineers will consolidate the results of the field screening, laboratory data, follow-up assessment (if needed), and overall source pile delineation into an IRA Design Sampling and Analysis Report or incorporated into the draft final design report (as an appendix) to be submitted to Ecology and the City. The report will include tabulated results, maps depicting soil concentrations, laboratory analytical reports, Quality Assurance/Quality Control (QA/QC) review of the data, and methods and results of statistical comparisons.

### **4.0 HEALTH AND SAFETY PLAN**

A Site-Specific Health and Safety Plan (HASP) will be prepared under separate cover by the City’s consultant. The HASP will serve as the primary document for key personnel, presented in Section 1.2 above, when entering and working on the project Site. The Contractor will be responsible for preparing and implementing their own HASP, that meets the requirements presented in the Report and with the final plans and specifications.

### **5.0 LIMITATIONS**

This Report has been prepared for use by the City of Wenatchee and City of Wenatchee’s authorized agents and regulatory agencies. This Report is to be used as a guideline during construction activities associated with the improvements at the Saddle Rock, Phase 1 and 2 Interim Remedial Action Project Site. This Report can be provided to third parties for informational purposes only. The information contained herein is not intended for use by others, and it is not applicable to other sites. No other (third) party may rely on the

product of our services unless we agree in advance and in writing to such reliance. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

## **6.0 REFERENCES**

City of Wenatchee, 2018. Email Correspondence between David Erickson and Frank Winslow, Re: Gold Knob Prospect - Saddle Rock Park IRA. June 8, 2018.

Ecology, 2018a. Technical Memorandum, Gold Knob Prospect (aka Saddle Rock Park), Establishing Site Cleanup Levels and Areas. June 14, 2018.

Ecology, 2018b. Agreed Order, Gold Knob Prospect Site (FSID 22496), 1200 Circle Street, Wenatchee, Washington. October 25, 2018.

Ecology, 2012. Tacoma Smelter Plume Model Remedies Guidance: Sampling and Cleanup of Arsenic and Lead Contaminated Soils. Toxics Cleanup Program Publication No. 12-09-086-A.

GeoEngineers, 2019. Sampling and Analysis Plan, Interim Remedial Action Design and Remedial Action, Saddle Rock Natural Area, Wenatchee, Washington. File No. 4296-008-00. February 20, 2019.

Hart Crowser, 2013a. Remedial Investigation, Saddle Rock Park, Wenatchee, Washington. June 19, 2013.

Hart Crowser, 2013b. Feasibility Study, Saddle Rock Park, Wenatchee, Washington. June 28, 2013.

Reiss\_Landreau Research, 2013. An Archaeological Review and inventory of the Saddle Rock Park Development Project, Chelan County Washington. RLR Report 2012-263-28. January 2, 2013.

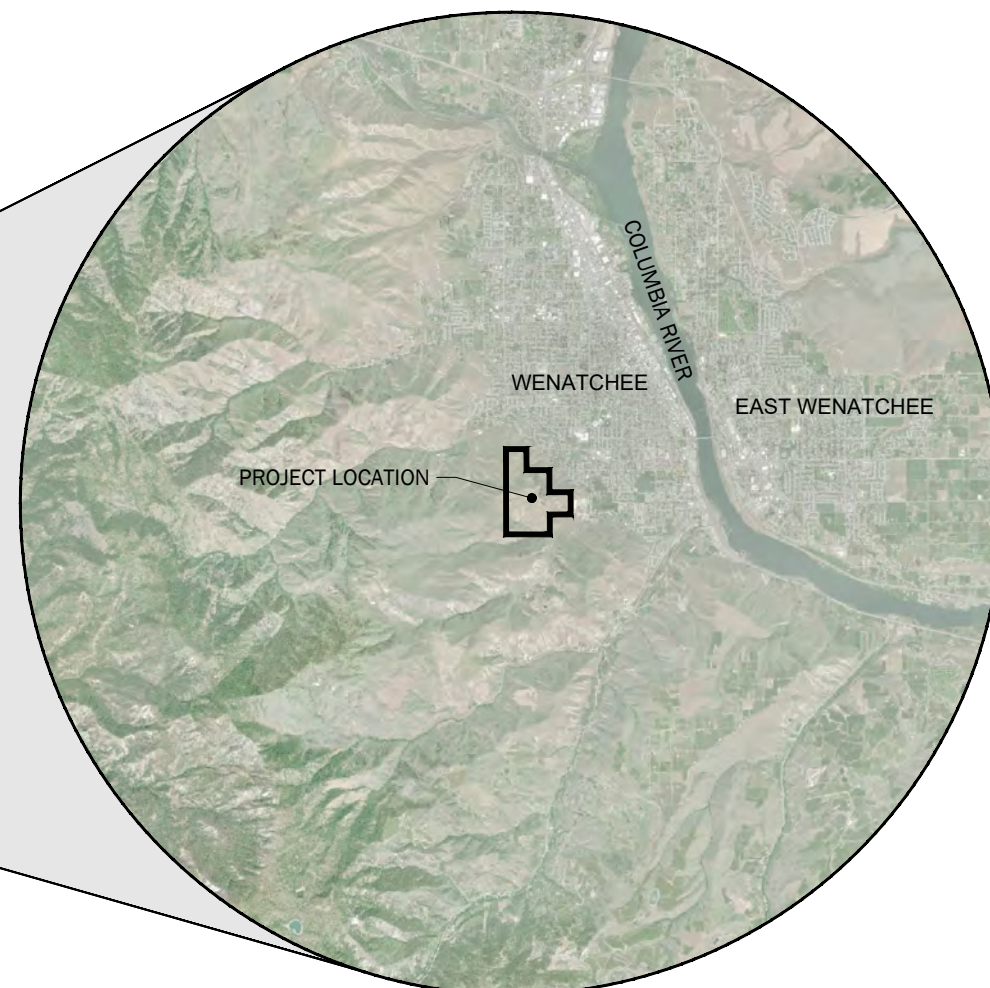
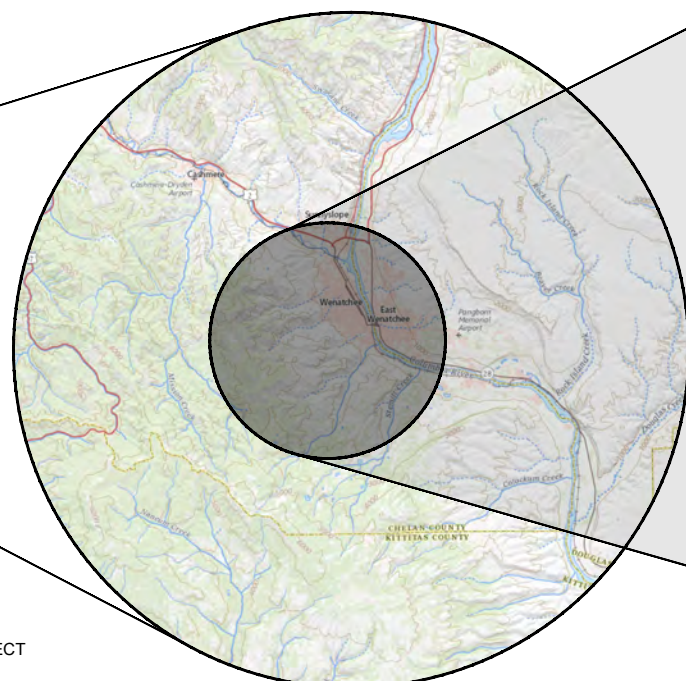


# DRAFT INTERIM REMOVAL ACTION

## SADDLE ROCK PARK

### WENATCHEE, WASHINGTON

### PRELIMINARY DESIGN REPORT



#### PROJECT LOCATION

THE PROJECT SITE IS LOCATED APPROXIMATELY 2.4 MILES WEST OF WENATCHEE, WASHINGTON. TO GET TO THE PROJECT SITE FROM CITY OF WENATCHEE TAKE SOUTHEAST ON ORONDO AVENUE TOWARD S WENATCHEE AVENUE FOR APPROXIMATELY 0.07 MILE. CONTINUE STRAIGHT TO STAY ON ORONDO AVENUE FOR APPROXIMATELY 0.7 MILE. CONTINUE ONTO CHERRY STREET FOR APPROXIMATELY 0.1 MILE. TURN LEFT ONTO S MILLER STREET FOR APPROXIMATELY 1.3 MILES. TURN RIGHT ONTO CIRCLE STREET FOR APPROXIMATELY 0.2 MILE. THE PROJECT WILL BE ON THE RIGHT ONTO SADDLE ROCK TRAIL FOR APPROXIMATELY 0.1 MILE.

#### Sheet Index

Drawing Number	Sheet Title
1	Cover Sheet
2	General Construction Notes
3	Existing Conditions
4	Erosion and Sediment Control Plan
5	Erosion and Sediment Control Details
6	Proposed Haul Road Alignment
7	Access Road Plan and Cross Section A-A'
8	Access Road Plan and Cross Section B-B'
9	Excavation Overview and Grading Plan
10	Waste Rock Pile SR01 and SR02 Existing and Post Excavation Plan and Sections
11	Waste Rock Pile SR03, SR07 and SR08 Existing and Post Excavation Plan and Sections
12	Waste Rock Pile SR04, SR05 and SR06 Existing and Post Excavation Plan and Sections
13	Restoration Plan
14	Details
15	Details

#### CONTACT INFORMATION

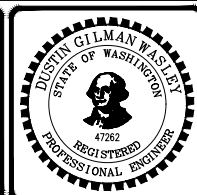
**CITY OF WENATCHEE**  
 CHARLOTTE MITCHELL, PE  
 1350 MCKITTRICK STREET  
 WENATCHEE, WASHINGTON 98807  
 PH: (509) 888-3662

**GEOENGINEERS INC.**  
 DUSTIN WASLEY, PE  
 523 E. SECOND AVE.  
 SPOKANE, WASHINGTON 99202  
 PH: (509) 209-2842

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DRAFT INTERIM REMOVAL ACTION  
 SADDLE ROCK PARK  
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**COVER SHEET**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 1 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>1</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO THE 2019 EDITION OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AND AMENDMENTS.
2. UNDERGROUND AND OVERHEAD UTILITIES ARE KNOWN TO EXIST IN THE AREA OF CONSTRUCTION. THE LOCATION OF EXISTING UTILITIES SHOWN IS APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITY OWNERS FOR LOCATIONS AND TO FIELD VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE ONE-CALL NUMBER FOR UNDERGROUND UTILITIES IS 1-800-424-5555. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EXISTING UTILITIES THROUGHOUT CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROMPTLY NOTIFY THE ENGINEER OF ANY CONFLICT WITH EXISTING UTILITIES.
3. ALL EXISTING FACILITIES, LANDSCAPE IMPROVEMENTS AND UTILITIES NOT SPECIFICALLY IDENTIFIED FOR REMOVAL SHALL BE PROTECTED THROUGHOUT CONSTRUCTION OR RESTORED AT COMPLETION OF WORK.
4. THE CONTRACTOR SHALL RESTORE ALL PRIVATE AND PUBLIC PROPERTY DISTURBED BY THE PROJECT IMMEDIATELY AFTER CONSTRUCTION.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO EXISTING ROADS, DRIVEWAYS AND FIELD ACCESSES, WITH A MAXIMUM DELAY OF 10 MINUTES.
6. A COPY OF THE APPROVED PLANS AND SPECIFICATIONS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
7. THE INFORMATION SHOWN ON THESE PLANS IS APPROXIMATE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL CONDITIONS IN THE FIELD PRIOR TO BIDDING AND NOTICE TO PROCEED.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ABOVE AND BELOW GROUND UTILITIES DURING ALL CONSTRUCTION WORK. SPECIAL CARE SHALL BE TAKEN BY THE CONTRACTOR WHEN WORKING AROUND AND UNDERNEATH THE ABOVE GROUND ELECTRIC POWER LINES (OWNED AND OPERATED BY CHELAN COUNTY PUD) IN THE PHASE 1 CONSTRUCTION AREA. ANY DAMAGES CAUSED BY THE CONTRACTOR TO ABOVE OR BELOW GROUND UTILITIES WILL BE AT THE EXPENSE OF THE CONTRACTOR.
9. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL UTILITIES IN THE VICINITY OF THE CONSTRUCTION WORK AREAS, IN CASE OF EMERGENCY OR FOR INFRASTRUCTURE MAINTENANCE.

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL IMPLEMENTATION SHALL BE IN ACCORDANCE WITH THE WASHINGTON STATE DEPARTMENT OF ECOLOGY, EASTERN WASHINGTON STORMWATER MANUAL (MOST CURRENT VERSION AVAILABLE).
2. SPCC AND TESC TO BE COMPLETED BY CONTRACTOR.
3. THE TESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATER, DRAINAGE SYSTEMS AND ADJACENT PROPERTIES IS MINIMIZED.
4. THE IMPLEMENTATION OF THESE TESC PLANS AND THE INSTALLATION, MAINTENANCE, REPLACEMENT AND UPGRADING OF THESE TESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
5. THE TESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE TESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS.
6. ALL CLEARING, GRUBBING AND GRADING SHALL BE CONTAINED WITHIN THE LIMITS ESTABLISHED BY THE ENGINEER. ALL VEGETATION OUTSIDE DESIGNATED LIMITS SHALL REMAIN UNDISTURBED.
7. ALL STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND PROTECTED FROM EROSION BY MECHANICAL OR VEGETATIVE MEANS.
8. ALL EXPOSED AND UNWORKED SOILS SHALL BE STABILIZED BY SEEDING, MULCHING, MATTING OR PLASTIC COVERING. FROM OCT. 1 TO APRIL 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPT. 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 7 DAYS.
9. ALL PROPERTIES ADJACENT TO THE PROJECT SHALL BE PROTECTED FROM SEDIMENT DEPOSIT.
10. SEDIMENTS TRANSPORTED ONTO A ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS BID ITEMS.
11. SHOULD TESC MEASURES NOT BE PROPERLY INSTALLED AND MAINTAINED, THE OWNER MAY STOP ALL WORK PERTAINING TO THE CORRECTION OF THE TESC PROBLEMS UNTIL THE TESC MEASURES ARE RETURNED TO PROPER OPERATIONS.
12. PROTECT ALL EXISTING VEGETATION AND TREES, NOT IN IMMEDIATE FOOTPRINT OF EACH WASTE ROCK PILE. VEGETATION AND TREES WITHIN EXCAVATION FOOTPRINT OF EACH WASTE ROCK PILE SHALL BE REMOVED AND GENERATED INTO MULCH FOR FUTURE SITE RESTORATION ACTIVITIES.

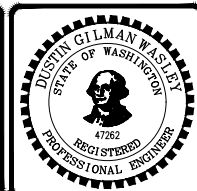
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WENATCHEE, WASHINGTON

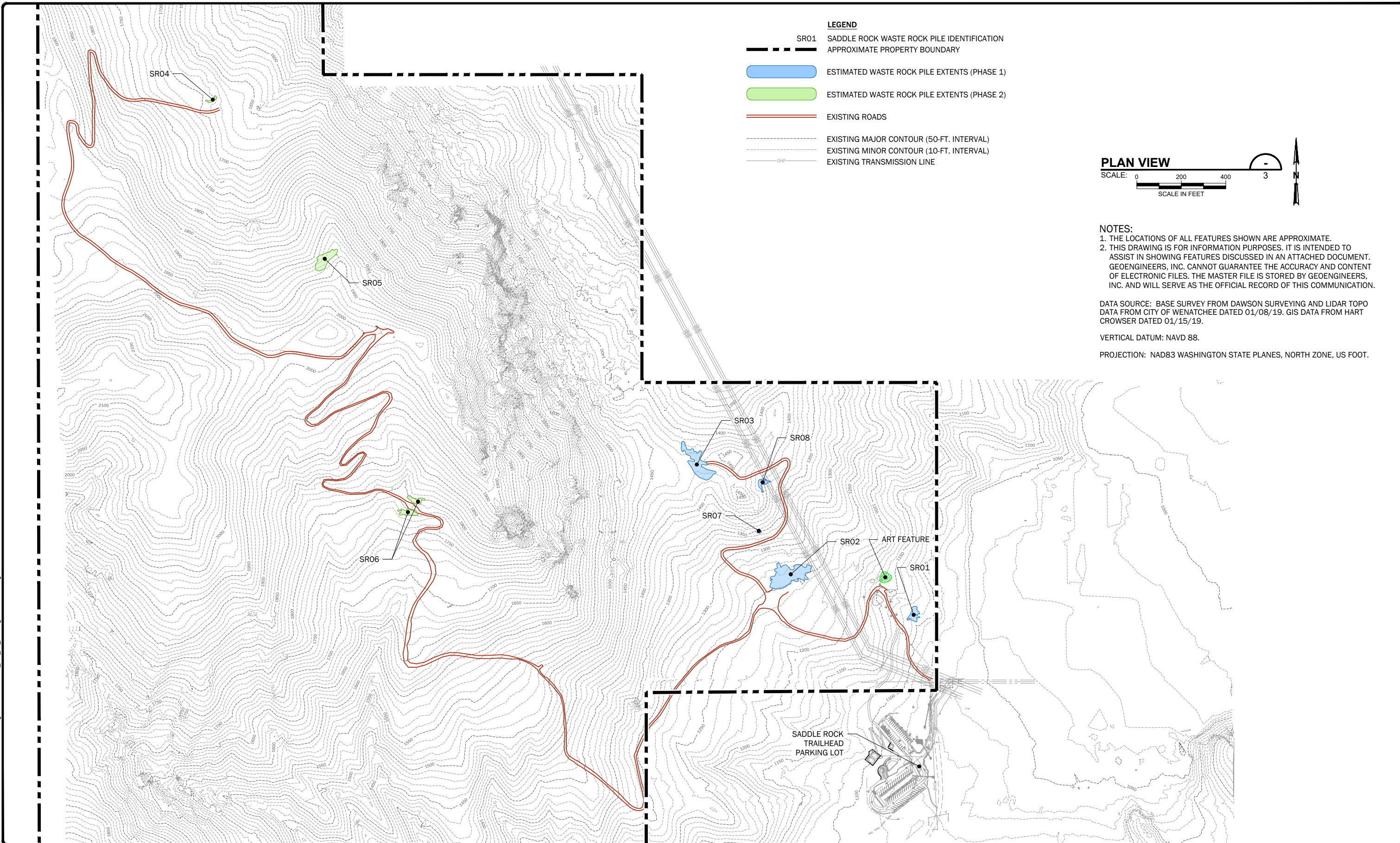
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**GENERAL CONSTRUCTION NOTES**

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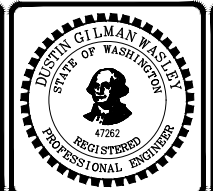
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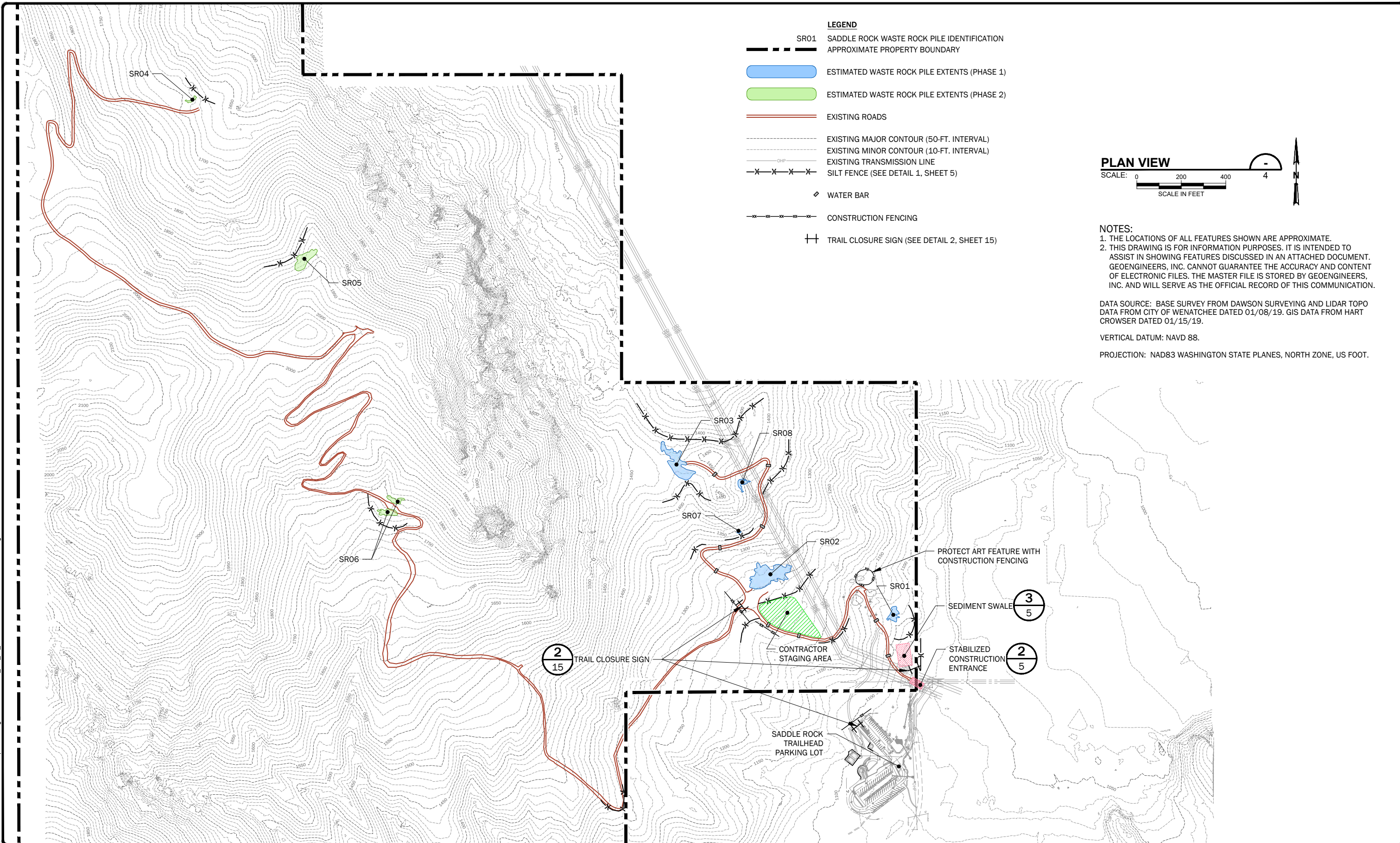
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 WENATCHEE, WASHINGTON

**EXISTING CONDITIONS**

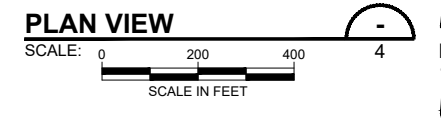
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- LEGEND**
- SR01 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION
  - APPROXIMATE PROPERTY BOUNDARY
  - ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
  - ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 2)
  - EXISTING ROADS
  - EXISTING MAJOR CONTOUR (50-FT. INTERVAL)
  - EXISTING MINOR CONTOUR (10-FT. INTERVAL)
  - EXISTING TRANSMISSION LINE
  - SILT FENCE (SEE DETAIL 1, SHEET 5)
  - WATER BAR
  - CONSTRUCTION FENCING
  - TRAIL CLOSURE SIGN (SEE DETAIL 2, SHEET 15)



**NOTES:**

- THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE.
- THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT. GEOENGINEERS, INC. CANNOT GUARANTEE THE ACCURACY AND CONTENT OF ELECTRONIC FILES. THE MASTER FILE IS STORED BY GEOENGINEERS, INC. AND WILL SERVE AS THE OFFICIAL RECORD OF THIS COMMUNICATION.

DATA SOURCE: BASE SURVEY FROM DAWSON SURVEYING AND LIDAR TOPO DATA FROM CITY OF WENATCHEE DATED 01/08/19. GIS DATA FROM HART CROWSER DATED 01/15/19.

VERTICAL DATUM: NAVD 88.

PROJECTION: NAD83 WASHINGTON STATE PLANES, NORTH ZONE, US FOOT.

2  
15 TRAIL CLOSURE SIGN

PROTECT ART FEATURE WITH CONSTRUCTION FENCING

SEDIMENT SWALE 3  
5

CONTRACTOR STAGING AREA

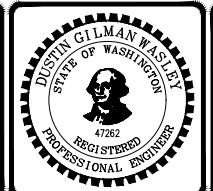
STABILIZED CONSTRUCTION ENTRANCE 2  
5

SADDLE ROCK TRAILHEAD PARKING LOT

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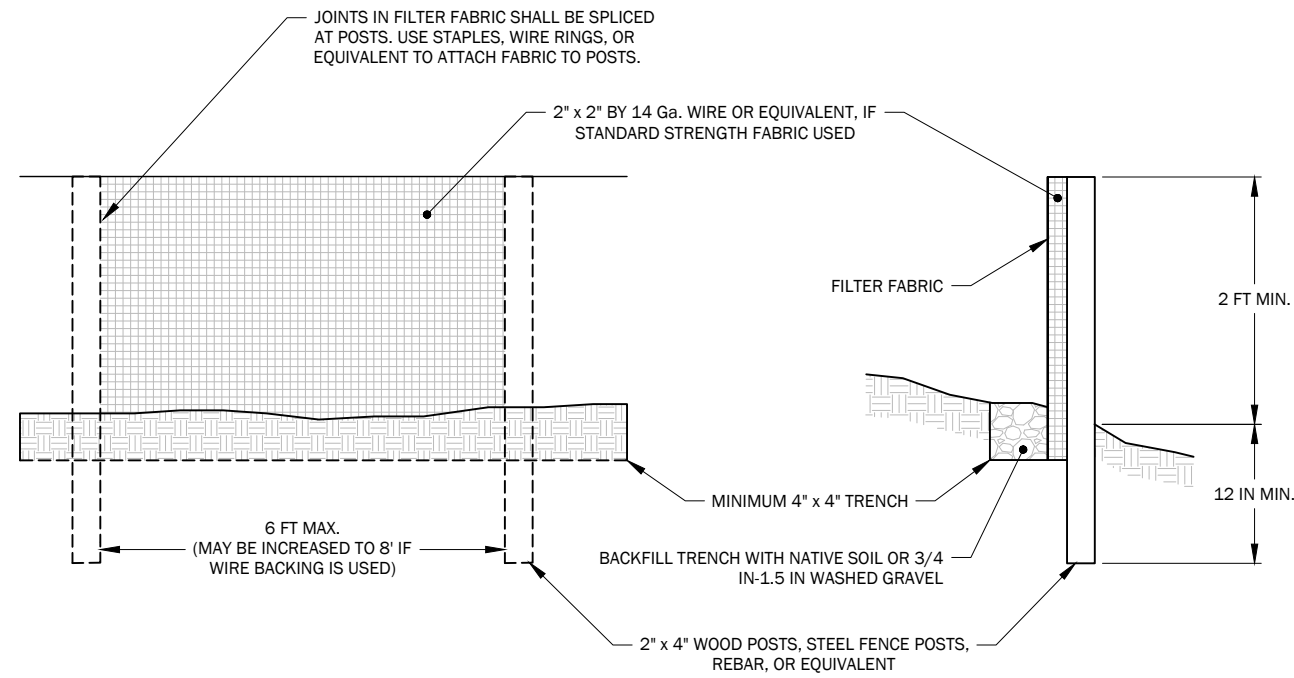
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 WENATCHEE, WASHINGTON

**EROSION AND SEDIMENT CONTROL PLAN**

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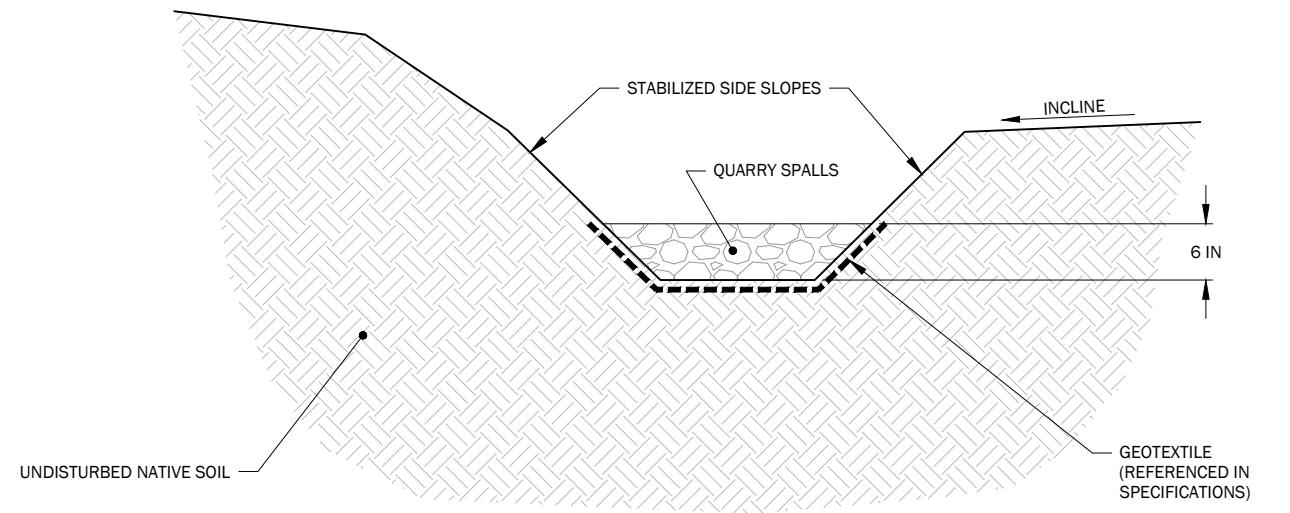
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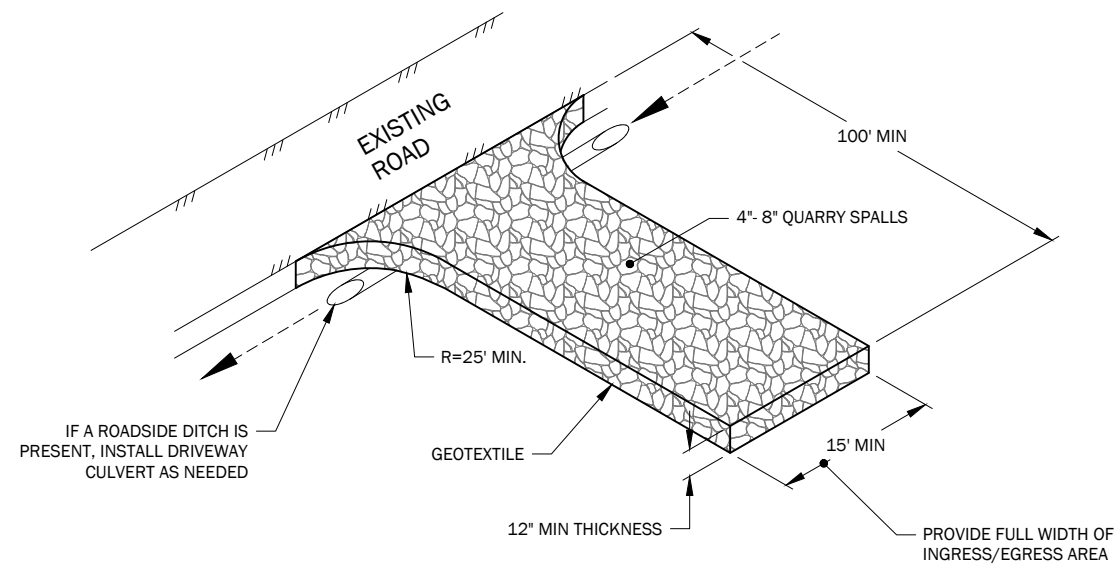


- NOTES:
- FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.
  - INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UPSLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.

**SILT FENCE DETAIL** 1  
SCALE: NOT TO SCALE 5



**SEDIMENT SWALE** 3  
SCALE: NOT TO SCALE 5



- NOTES:
- IT IS RECOMMENDED THAT THE ENTRANCE BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

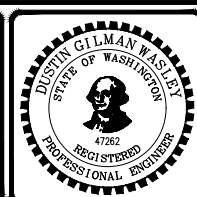
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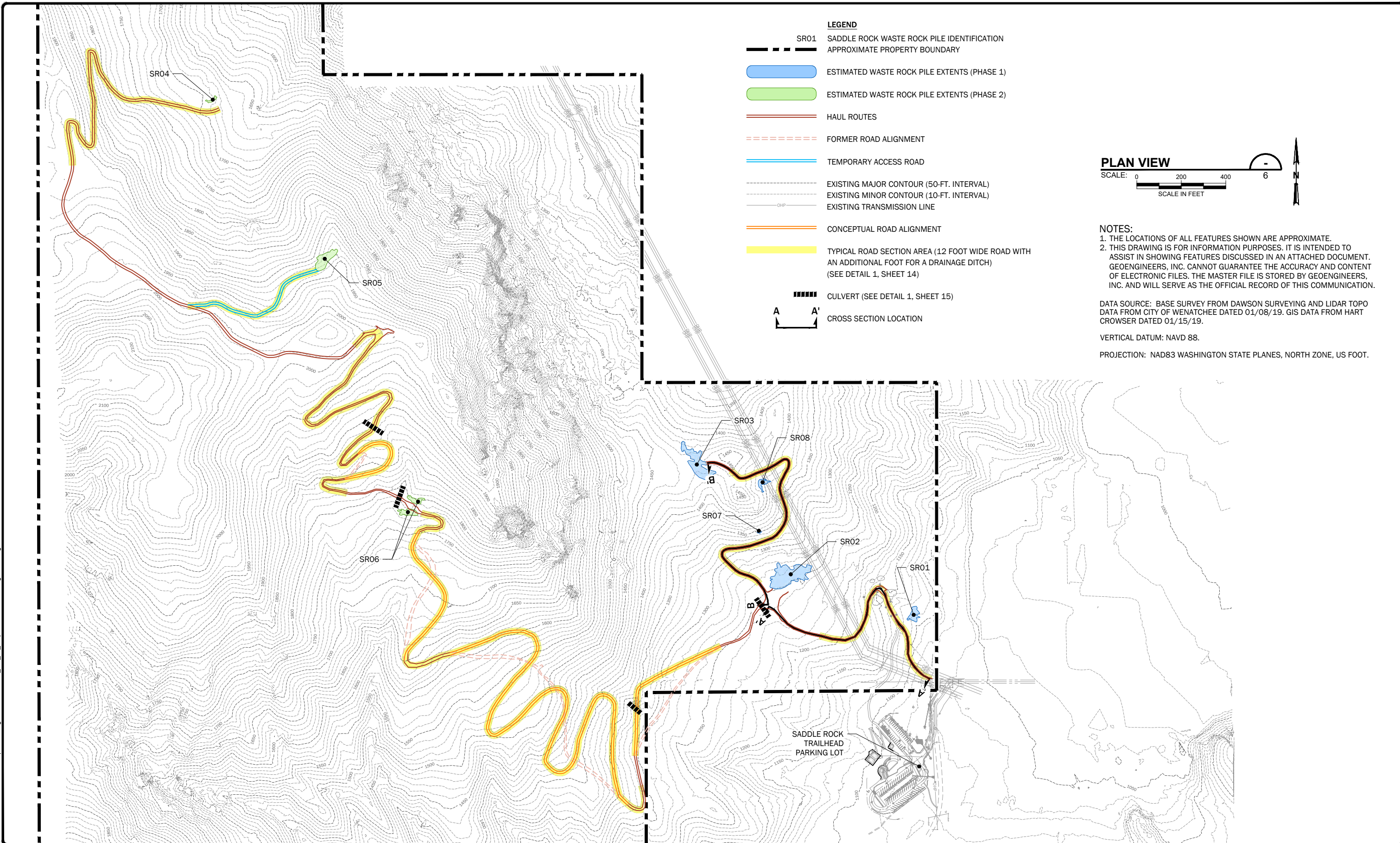
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SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

**EROSION AND SEDIMENT CONTROL DETAILS**

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DESIGN: JRS	SHEET 5 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>5</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

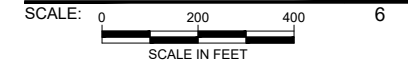
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**LEGEND**

- SR01 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION
- APPROXIMATE PROPERTY BOUNDARY
- ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
- ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 2)
- HAUL ROUTES
- FORMER ROAD ALIGNMENT
- TEMPORARY ACCESS ROAD
- EXISTING MAJOR CONTOUR (50-FT. INTERVAL)
- EXISTING MINOR CONTOUR (10-FT. INTERVAL)
- EXISTING TRANSMISSION LINE
- CONCEPTUAL ROAD ALIGNMENT
- TYPICAL ROAD SECTION AREA (12 FOOT WIDE ROAD WITH AN ADDITIONAL FOOT FOR A DRAINAGE DITCH) (SEE DETAIL 1, SHEET 14)
- CULVERT (SEE DETAIL 1, SHEET 15)
- CROSS SECTION LOCATION

**PLAN VIEW**



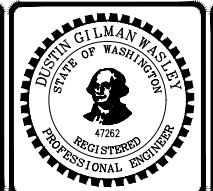
**NOTES:**  
 1. THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE.  
 2. THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT. GEOENGINEERS, INC. CANNOT GUARANTEE THE ACCURACY AND CONTENT OF ELECTRONIC FILES. THE MASTER FILE IS STORED BY GEOENGINEERS, INC. AND WILL SERVE AS THE OFFICIAL RECORD OF THIS COMMUNICATION.

DATA SOURCE: BASE SURVEY FROM DAWSON SURVEYING AND LIDAR TOPO DATA FROM CITY OF WENATCHEE DATED 01/08/19. GIS DATA FROM HART CROWSER DATED 01/15/19.  
 VERTICAL DATUM: NAVD 88.  
 PROJECTION: NAD83 WASHINGTON STATE PLANES, NORTH ZONE, US FOOT.

NO.	DATE	BY	REVISION

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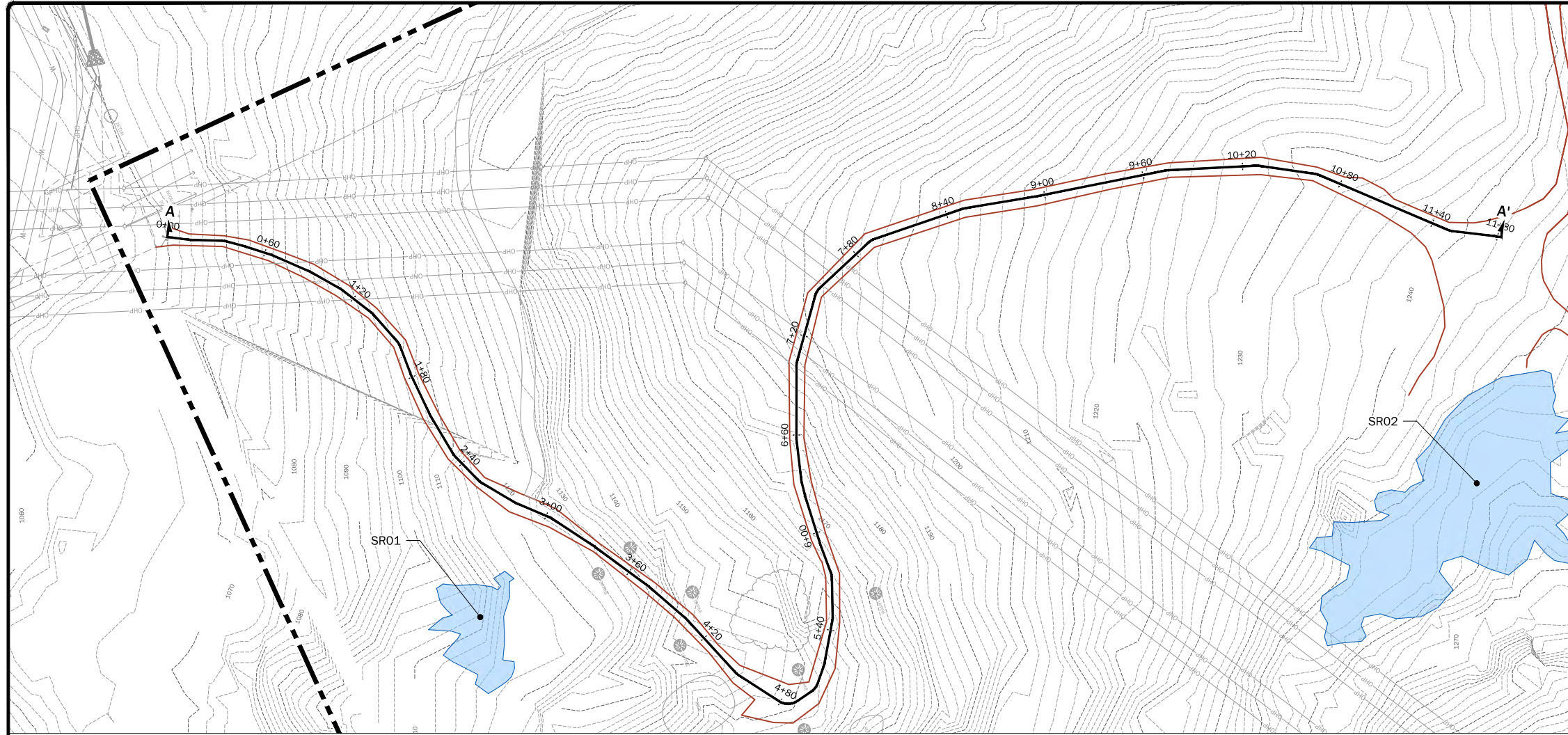


DRAFT INTERIM REMOVAL ACTION  
 SADDLE ROCK PARK  
 WENATCHEE, WASHINGTON

**PROPOSED HAUL ROAD ALIGNMENT**

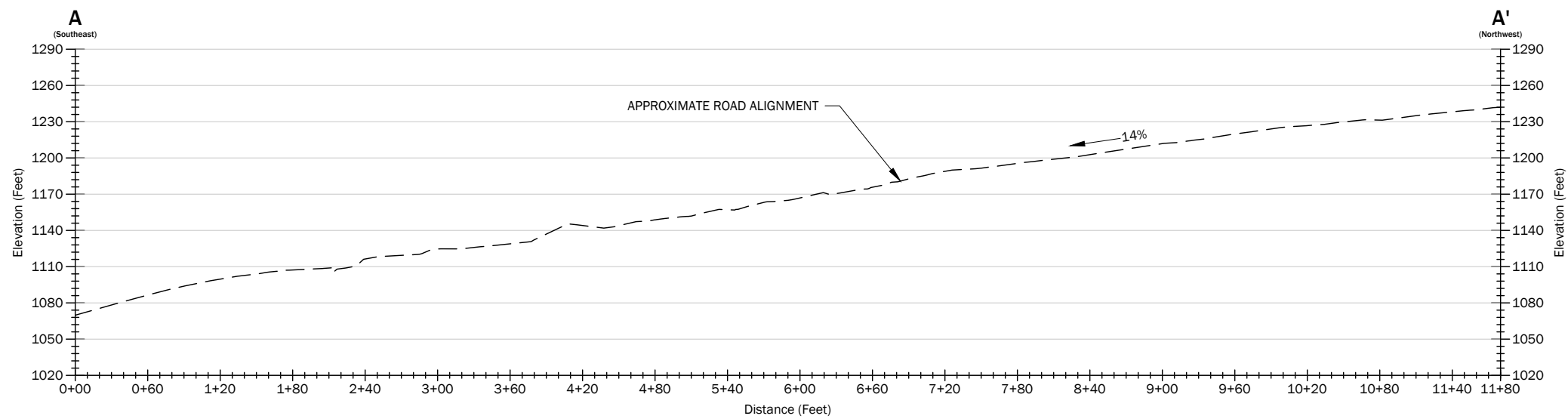
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DESIGN: JRS	SHEET 6 OF 15
CHECKED: NER	DATE: 04.30.19
DRAWING NO	<b>6</b>

DRAFT SUBMITTAL - NOT FOR CONSTRUCTION



- LEGEND**
- SR01 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION
  - APPROXIMATE PROPERTY BOUNDARY
  - ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
  - HAUL ROAD
  - EXISTING MAJOR CONTOUR (10-FT. INTERVAL)
  - EXISTING MINOR CONTOUR (2-FT. INTERVAL)
  - EXISTING TRANSMISSION LINE
  - CROSS SECTION LOCATION

**ACCESS ROAD PLAN**  
 SCALE: 0 40 80 7  
 SCALE IN FEET



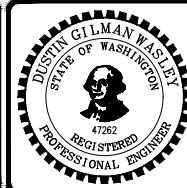
**CROSS SECTION A-A'**  
 HORIZONTAL SCALE IN FEET  
 VERTICAL SCALE IN FEET  
 VERTICAL EXAGGERATION: 1X

P:\4296008\CAD\00\ira.prelim.design\R001429600800\_Sht\_07\_Access Road Plan and Cross Section A-A'.dwg

NO.	DATE	BY	REVISION



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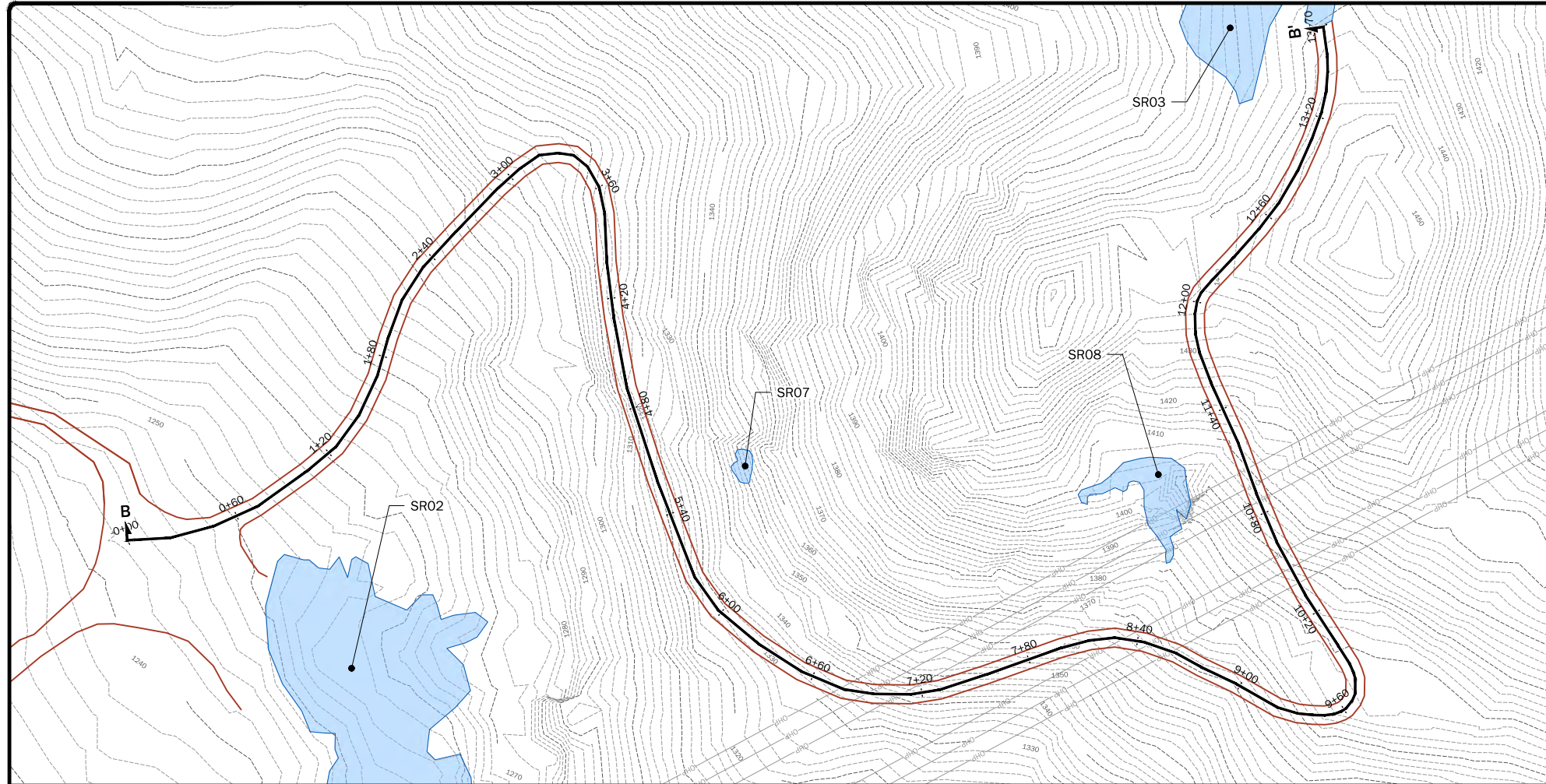
DRAFT INTERIM REMOVAL ACTION  
 SADDLE ROCK PARK  
 WENATCHEE, WASHINGTON

**ACCESS ROAD PLAN AND CROSS SECTION A-A'**

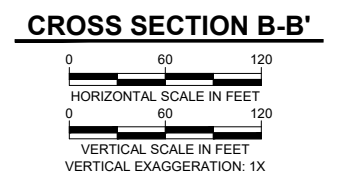
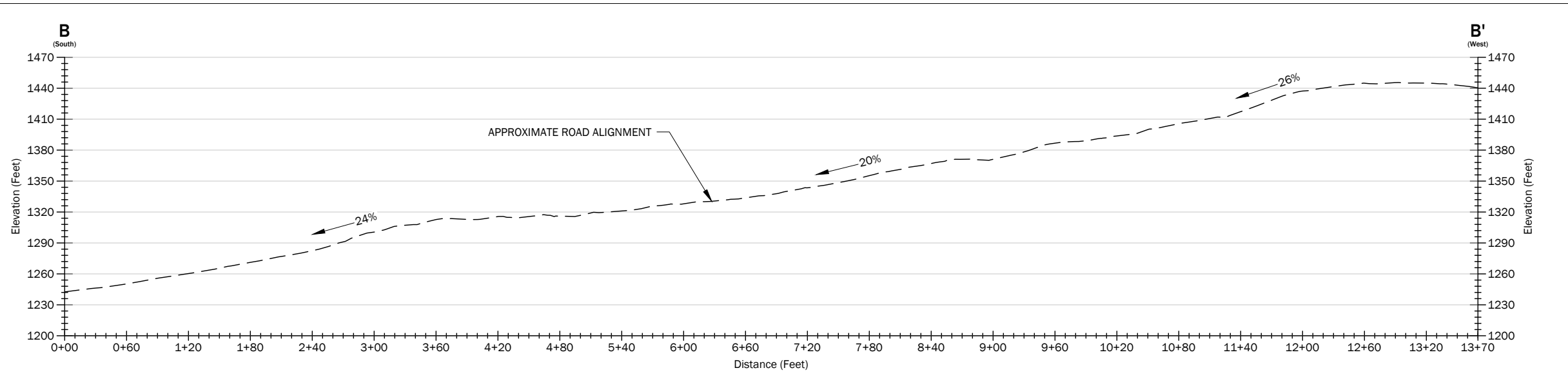
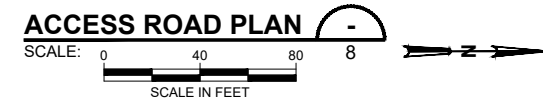
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 DESIGN: JRS SHEET 7 OF 15  
 CHECKED: NER DATE: 03.22.19  
 DRAWING NO

7

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**



- LEGEND**
- SR03 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION
  - APPROXIMATE PROPERTY BOUNDARY
  - ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
  - HAUL ROAD
  - EXISTING MAJOR CONTOUR (10-FT. INTERVAL)
  - EXISTING MINOR CONTOUR (2-FT. INTERVAL)
  - EXISTING TRANSMISSION LINE
  - B B' CROSS SECTION LOCATION

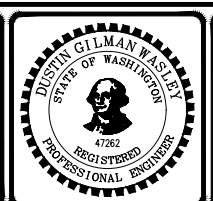


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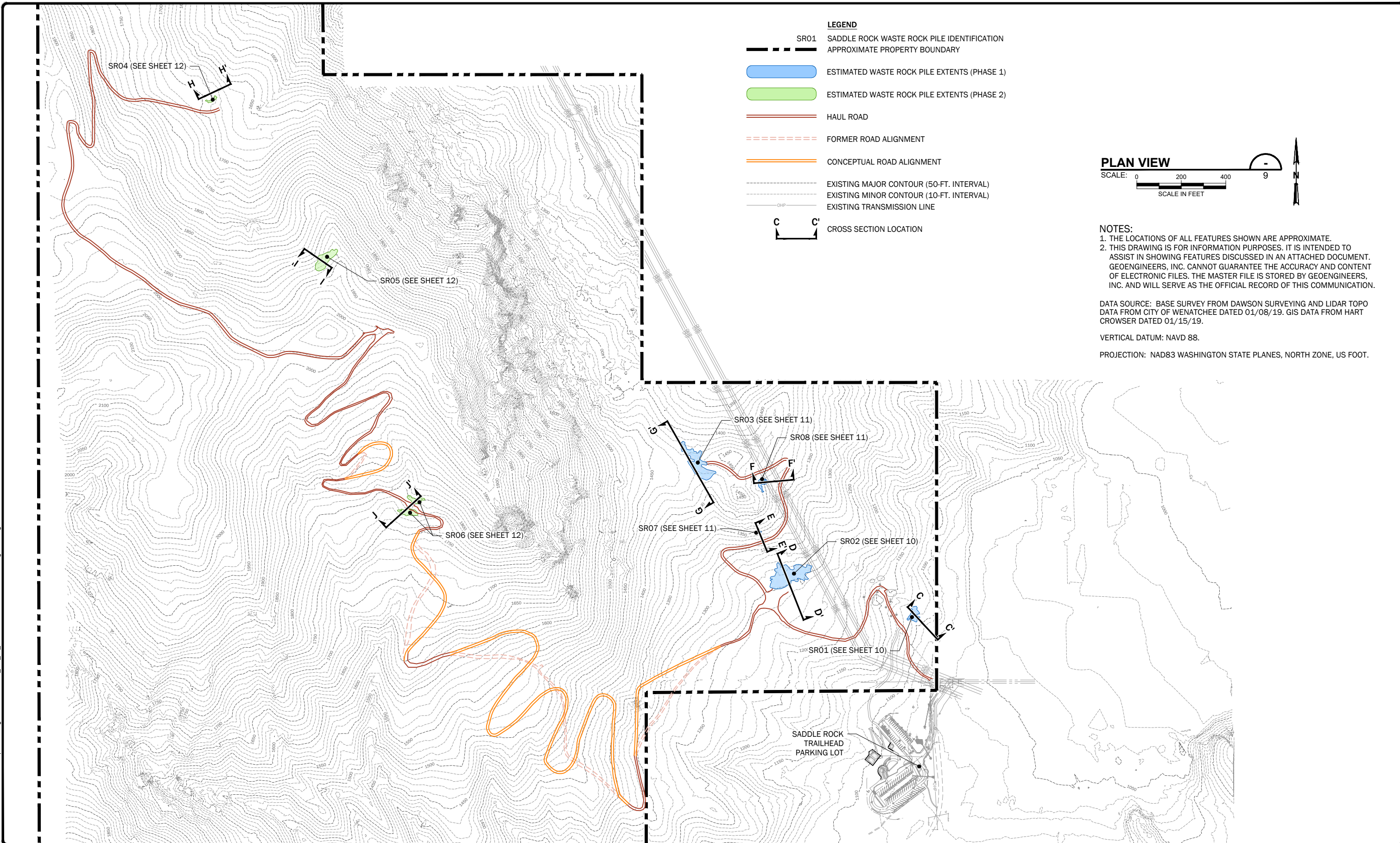
DRAFT INTERIM REMOVAL ACTION  
SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

**ACCESS ROAD PLAN AND CROSS SECTION B-B'**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 8 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>8</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

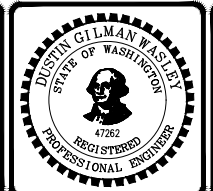
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 Plotted: 04/30/2019, 13:54 | svt



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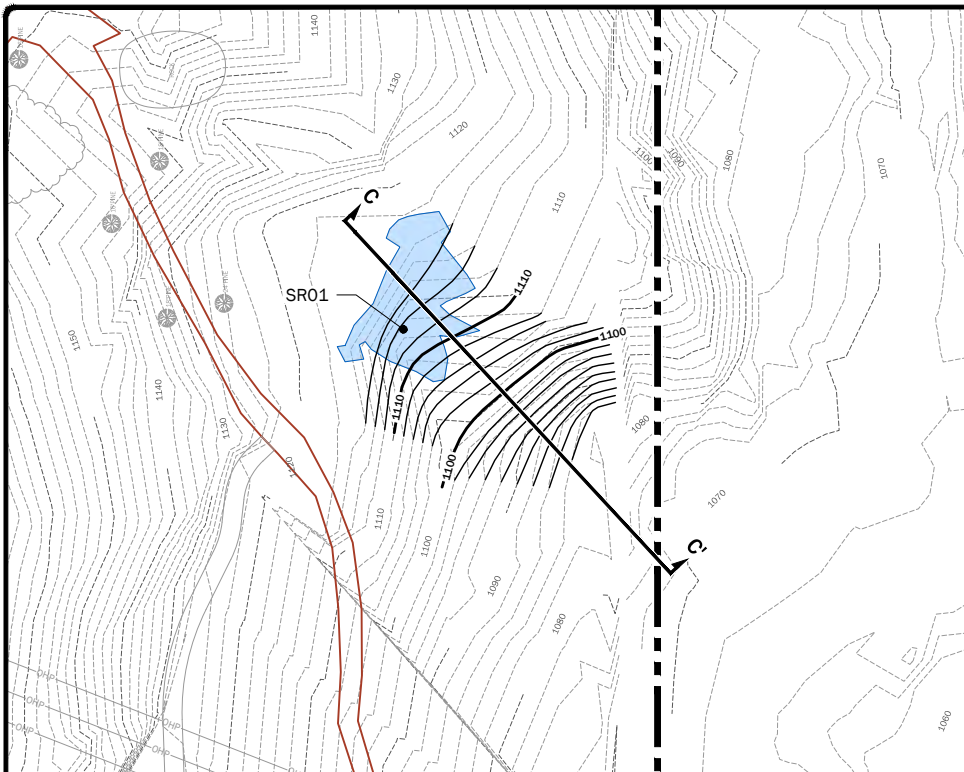
DRAFT INTERIM REMOVAL ACTION  
 SADDLE ROCK PARK  
 WENATCHEE, WASHINGTON

**EXCAVATION OVERVIEW AND GRADING PLAN**

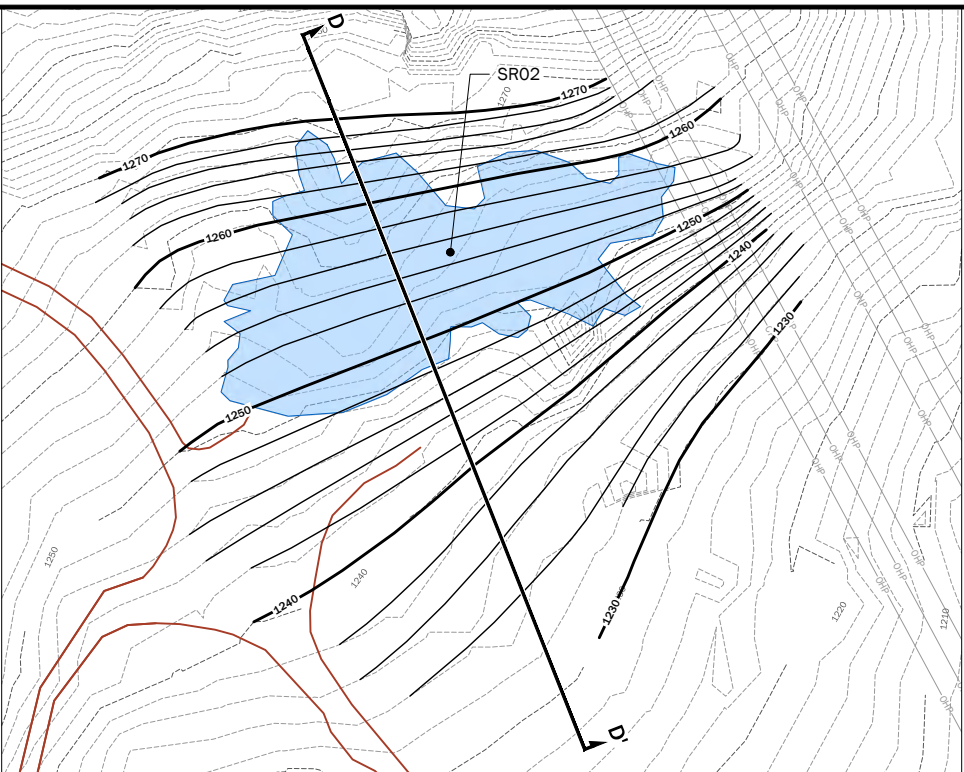
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DESIGN: JRS	SHEET 9 OF 15
CHECKED: NER	DATE: 04.30.19
DRAWING NO	<b>9</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

P:\44296008\CAD\000\ira.prim design\R001\429600800\_Sht\_10\_WRP SR01 and SR02 Exis and Post Excav Plan and Sects.dwg  
Plotted: 03/21/2019, 18:10 | svf



**SR01 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 40 80 10  
SCALE IN FEET



**SR02 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 40 80 10  
SCALE IN FEET

- LEGEND**
- SR01 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION
  - APPROXIMATE PROPERTY BOUNDARY
  - ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
  - HAUL ROAD
  - EXISTING MAJOR CONTOUR (10-FT. INTERVAL)
  - EXISTING MINOR CONTOUR (2-FT. INTERVAL)
  - EXISTING TRANSMISSION LINE
  - PROPOSED MAJOR CONTOUR (10-FT. INTERVAL)
  - PROPOSED MINOR CONTOUR (2-FT. INTERVAL)
  - C C' CROSS SECTION LOCATION

NOTE:  
1. WILL BE FINALIZED AFTER SURVEY.

TO BE DETERMINED  
BY SURVEY

TO BE DETERMINED  
BY SURVEY

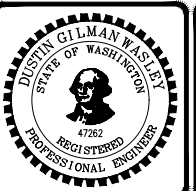
**SR01 - CROSS SECTION C-C'**  
HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET  
VERTICAL EXAGGERATION: 1X

**SR02 - CROSS SECTION D-D'**  
HORIZONTAL SCALE IN FEET  
VERTICAL SCALE IN FEET  
VERTICAL EXAGGERATION: 1X

NO.	DATE	BY	REVISION

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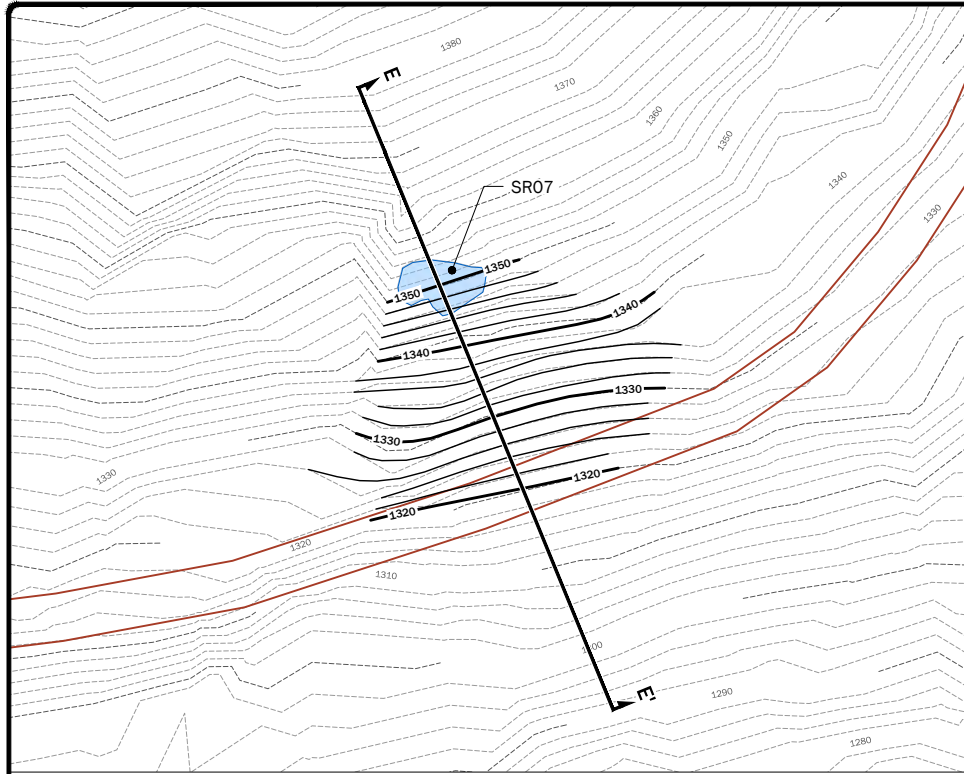
DRAFT INTERIM REMOVAL ACTION  
SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

**WASTE ROCK PILE SR01 AND SR02 EXISTING AND POST EXCAVATION PLAN AND SECTIONS**

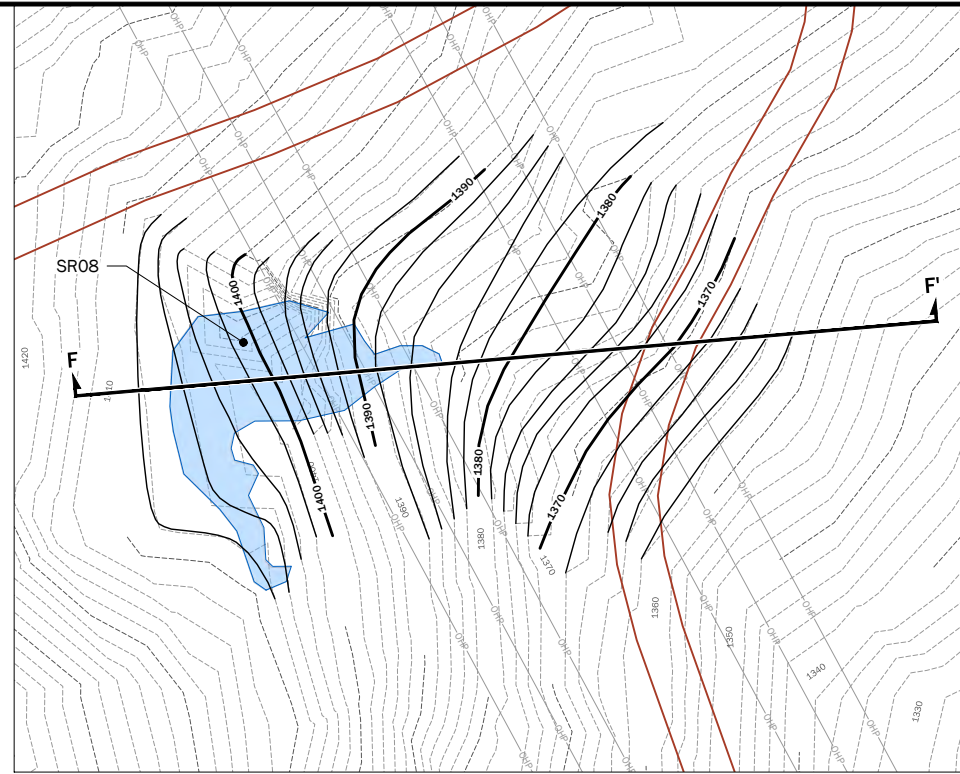
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DESIGN: JRS	SHEET 10 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	10

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

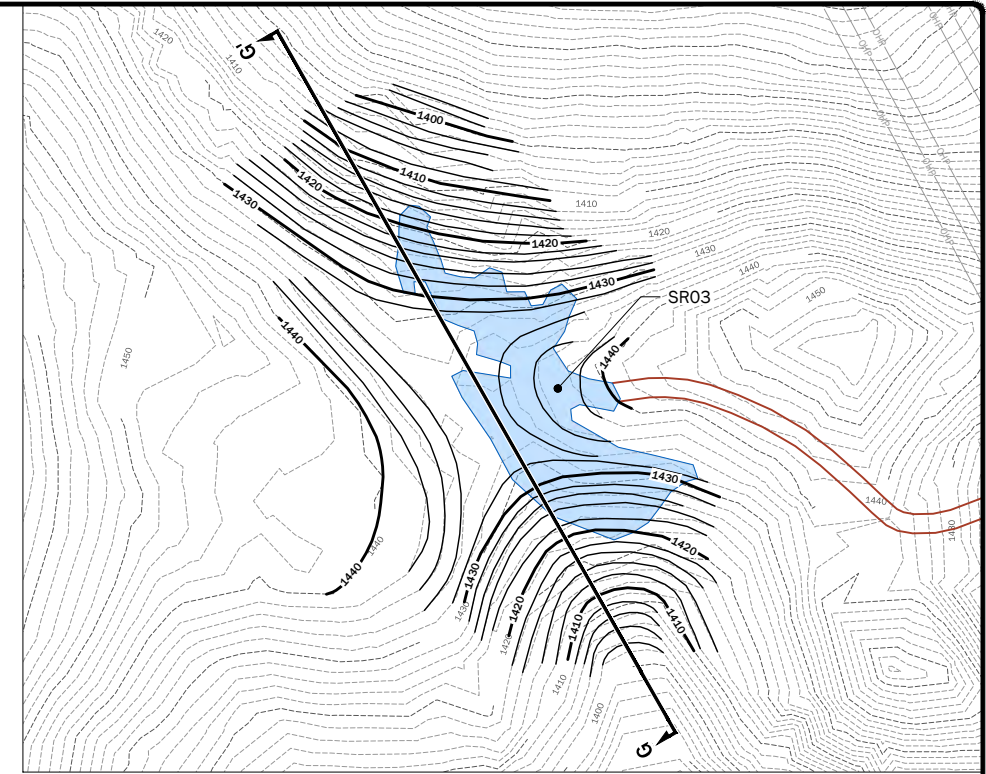
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Plotted: 03/21/2019, 18:12 | svf



**SR07 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 20 40 11  
SCALE IN FEET



**SR08 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 20 40 11  
SCALE IN FEET



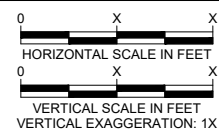
**SR03 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 50 100 11  
SCALE IN FEET

TO BE DETERMINED  
BY SURVEY

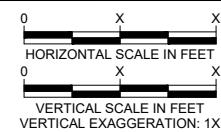
TO BE DETERMINED  
BY SURVEY

TO BE DETERMINED  
BY SURVEY

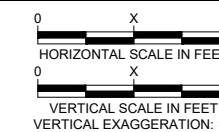
**SR07 - CROSS SECTION E-E'**



**SR08 - CROSS SECTION F-F'**



**SR03 - CROSS SECTION G-G'**



- LEGEND**
- SR03 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 1)
  - HAUL ROAD

- EXISTING MAJOR CONTOUR (10-FT. INTERVAL)
- EXISTING MINOR CONTOUR (2-FT. INTERVAL)
- EXISTING TRANSMISSION LINE

- PROPOSED MAJOR CONTOUR (10-FT. INTERVAL)
- PROPOSED MINOR CONTOUR (2-FT. INTERVAL)

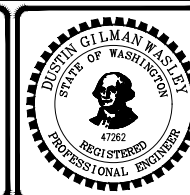
**E E'**  
CROSS SECTION LOCATION

**NOTE:**  
1. WILL BE FINALIZED AFTER SURVEY.

NO.	DATE	BY	REVISION



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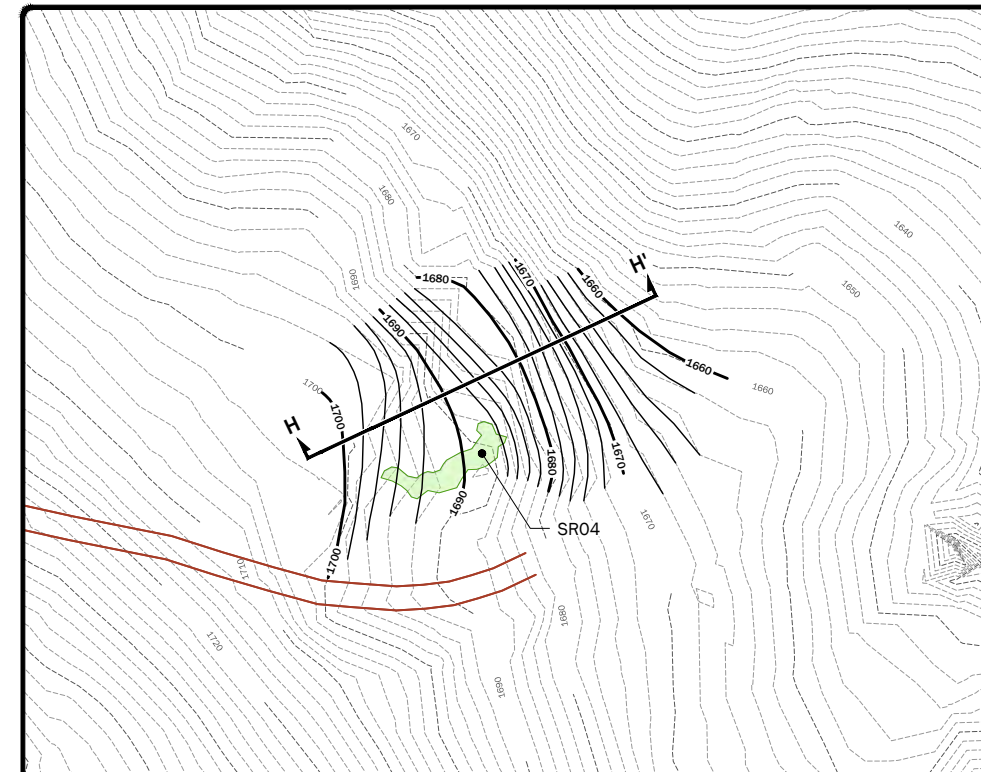
DRAFT INTERIM REMOVAL ACTION  
SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

**WASTE ROCK PILE SR03, SR07 AND SR08 EXISTING AND POST EXCAVATION PLAN AND SECTIONS**

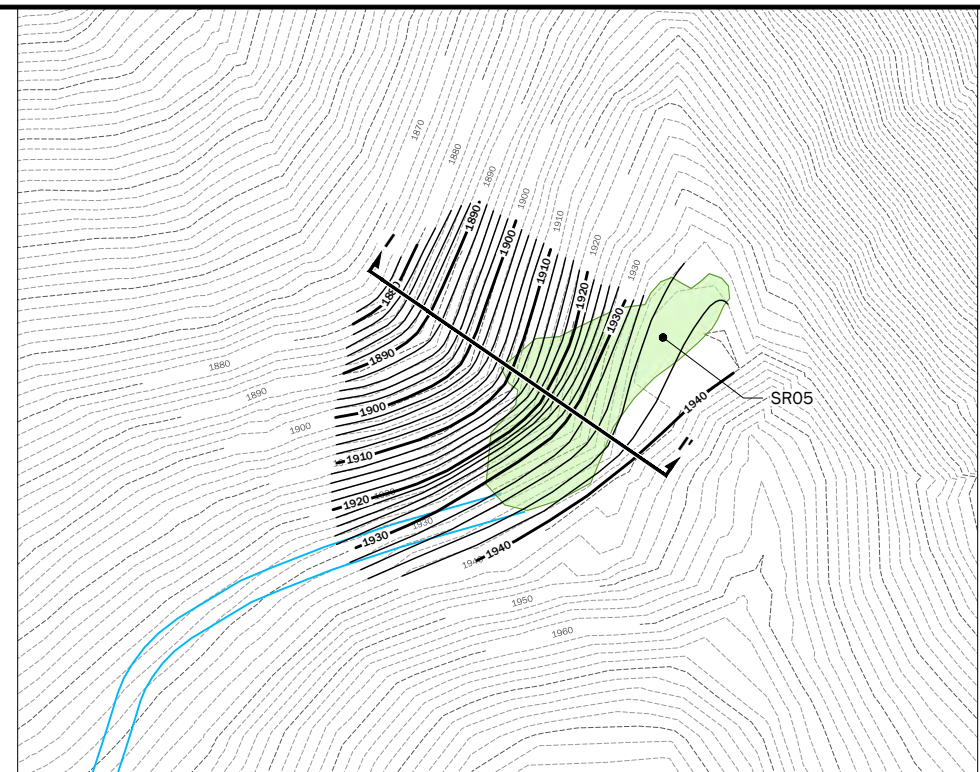
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DESIGN: JRS	SHEET 11 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>11</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**

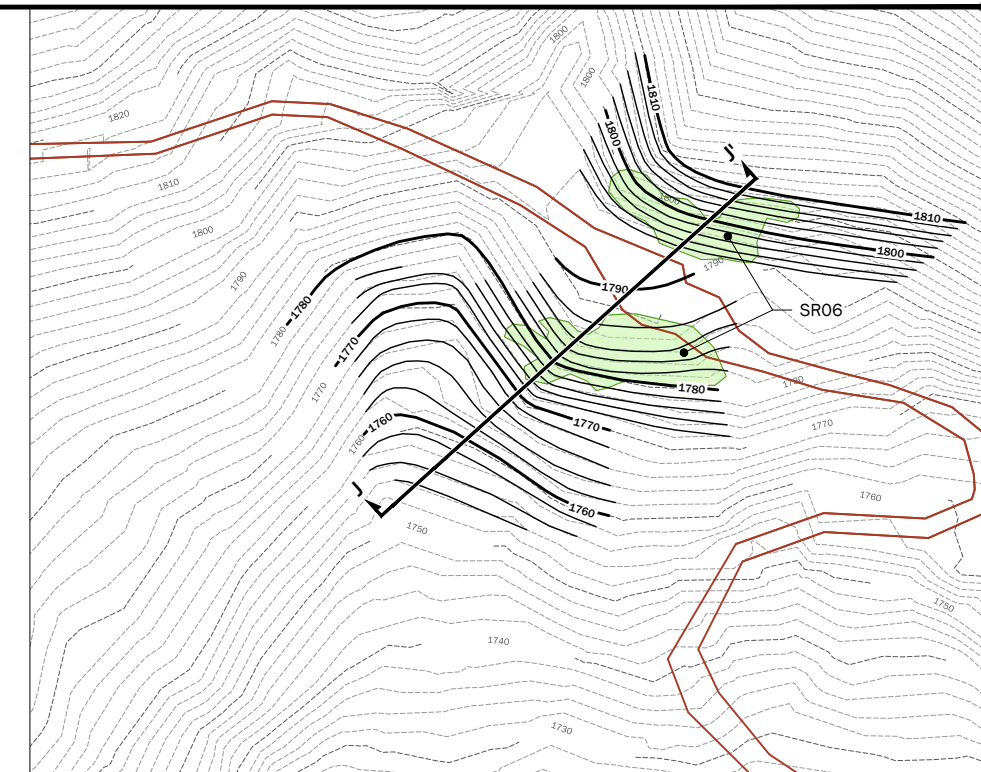
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Plotted: 03/21/2019, 18:14 | svt



**SR04 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 40 80 12  
SCALE IN FEET



**SR05 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 40 80 12  
SCALE IN FEET



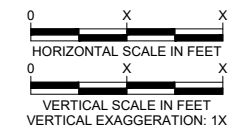
**SR06 - EXISTING AND POST-EXCAVATION PLAN**  
SCALE: 0 40 80 12  
SCALE IN FEET

TO BE DETERMINED  
BY SURVEY

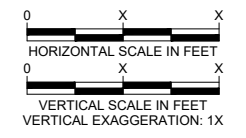
TO BE DETERMINED  
BY SURVEY

TO BE DETERMINED  
BY SURVEY

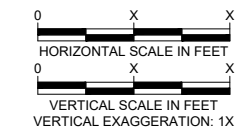
**SR04 - CROSS SECTION H-H'**



**SR05 - CROSS SECTION I-I'**



**SR06 - CROSS SECTION J-J'**



- LEGEND**
- SR04 SADDLE ROCK WASTE ROCK PILE IDENTIFICATION ESTIMATED WASTE ROCK PILE EXTENTS (PHASE 2)
  - HAUL ROAD

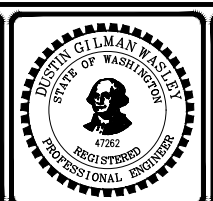
- TEMPORARY ACCESS ROAD
- EXISTING MAJOR CONTOUR (10-FT. INTERVAL)
- EXISTING MINOR CONTOUR (2-FT. INTERVAL)

- PROPOSED MAJOR CONTOUR (10-FT. INTERVAL)
- PROPOSED MINOR CONTOUR (2-FT. INTERVAL)
- CROSS SECTION LOCATION

**NOTE:**  
1. WILL BE FINALIZED AFTER SURVEY.

NO.	DATE	BY	REVISION

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SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

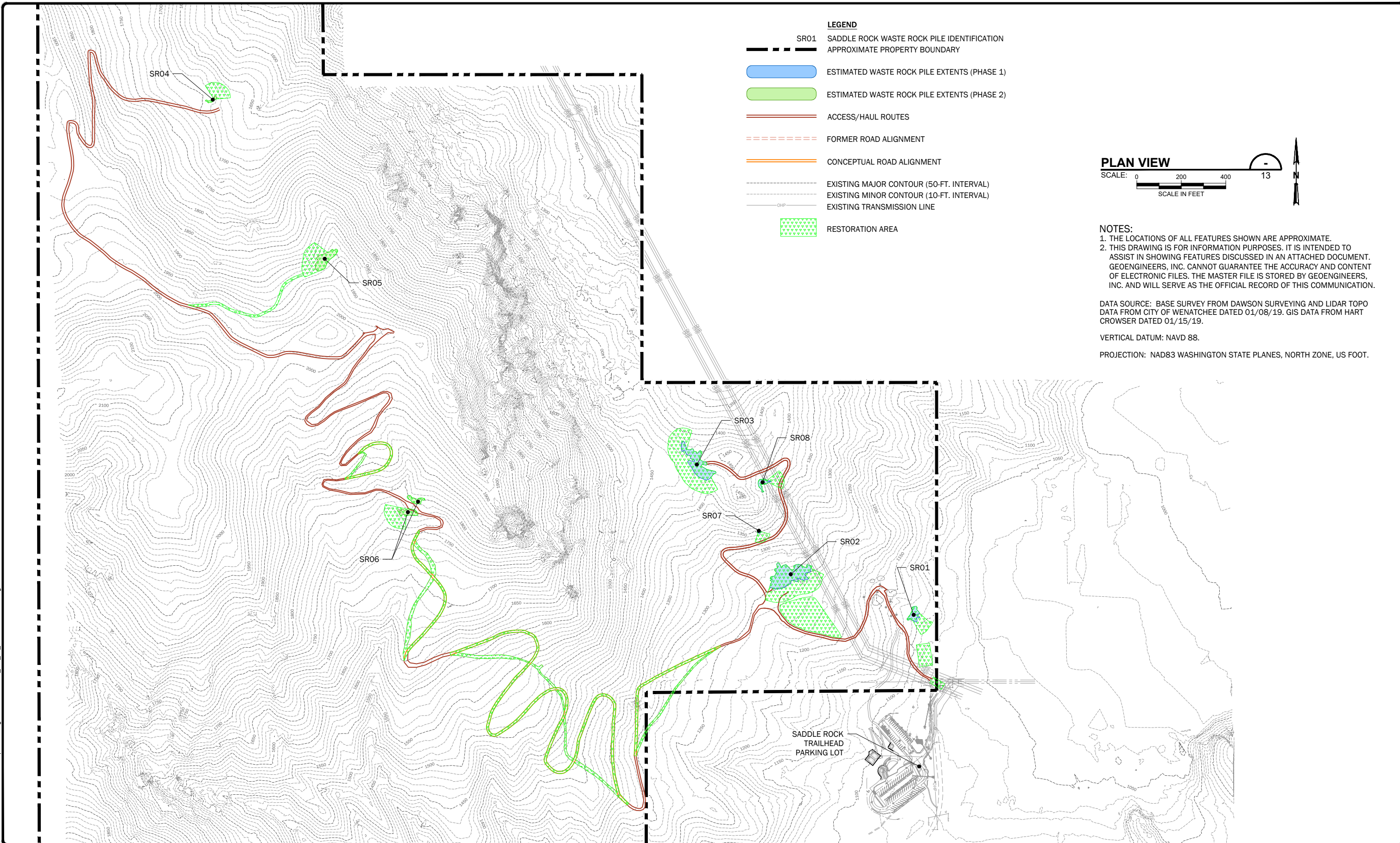
**WASTE ROCK PILE SR04, SR05 AND SR06 EXISTING AND POST EXCAVATION PLAN AND SECTIONS**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 12 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>12</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**



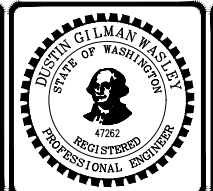
P:\4296008\CAD\00\ira.prim design\R001429600800\_Sht\_13\_Restoration Plan.dwg  
 Plotted: 04/30/2019, 13:55 | svt



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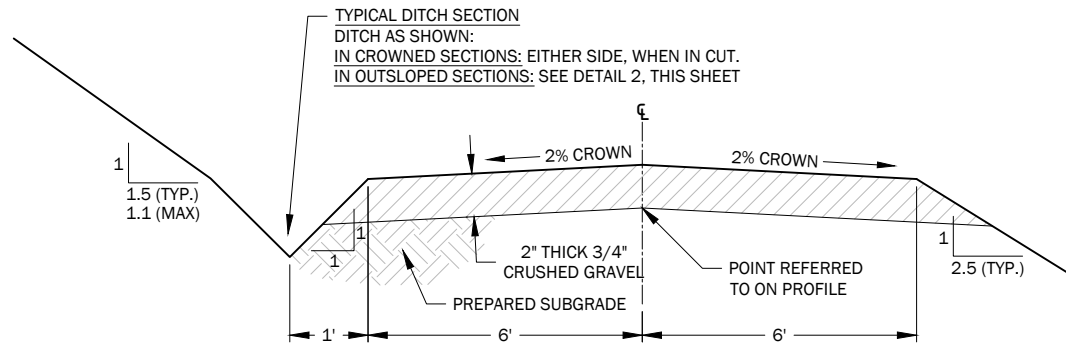


DRAFT INTERIM REMOVAL ACTION  
 SADDLE ROCK PARK  
 WENATCHEE, WASHINGTON

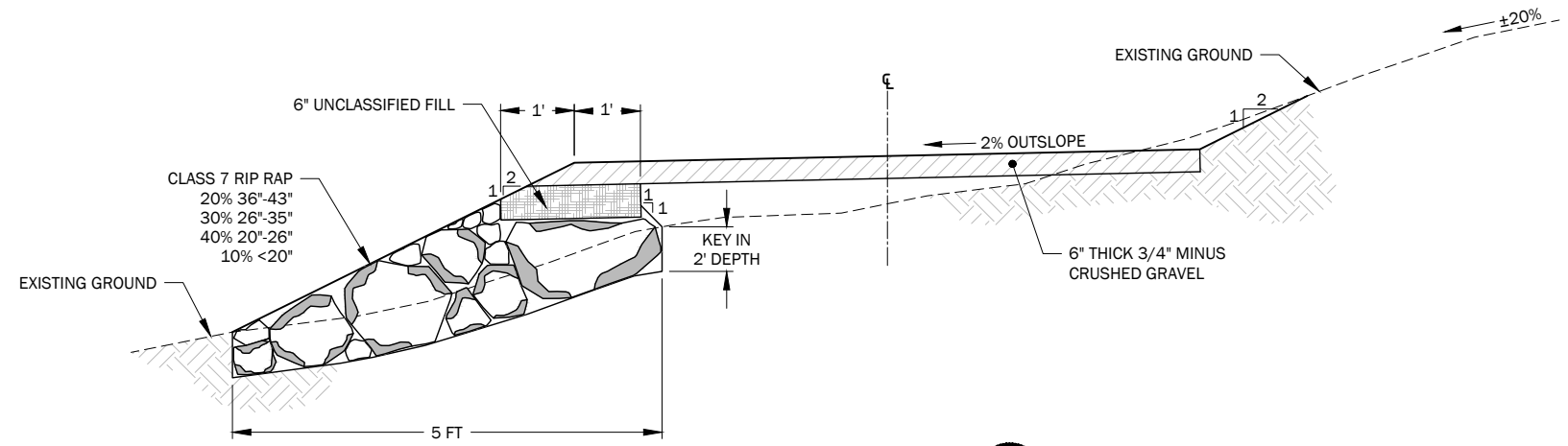
**RESTORATION PLAN**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 13 OF 15
CHECKED: NER	DATE: 04.30.19
DRAWING NO	<b>13</b>

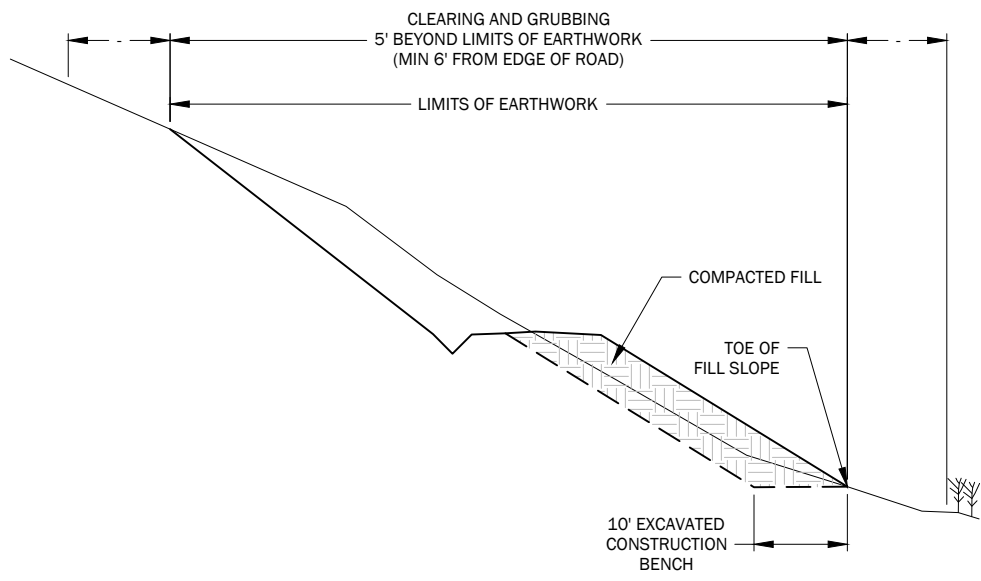
**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**



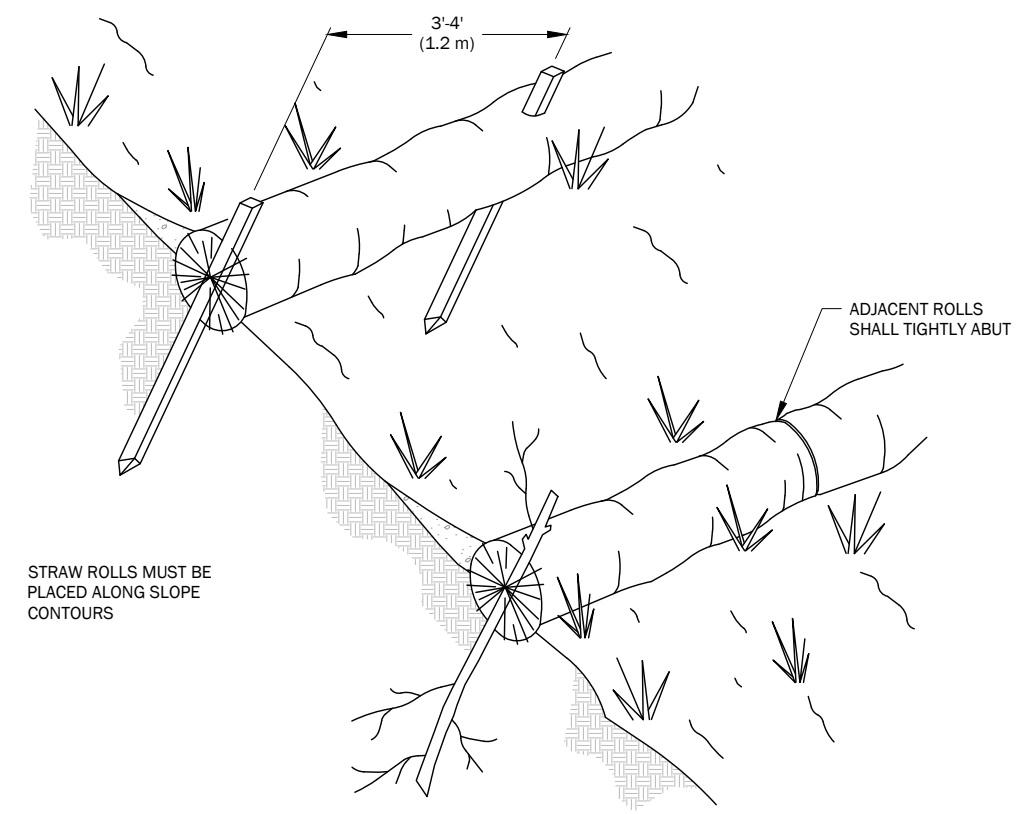
**TYPICAL ROAD CROSS SECTION** 1  
SCALE: NOT TO SCALE 14



**TYPICAL OUTSLOPE SECTION** 2  
SCALE: NOT TO SCALE 14



**TYPICAL FILL SLOPE PREPARATION** 3  
SCALE: NOT TO SCALE 14



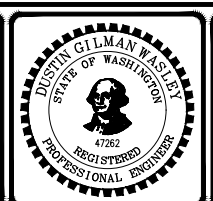
**STRAW WATTLES DETAIL** 4  
SCALE: NOT TO SCALE 14

P:\44296008\CAD\00\ira.prelim.design\R00142960000\_Sht\_14\_Details.dwg  
Plotted: 03/22/2019, 12:12 | svt

NO.	DATE	BY	REVISION

**GEOENGINEERS**

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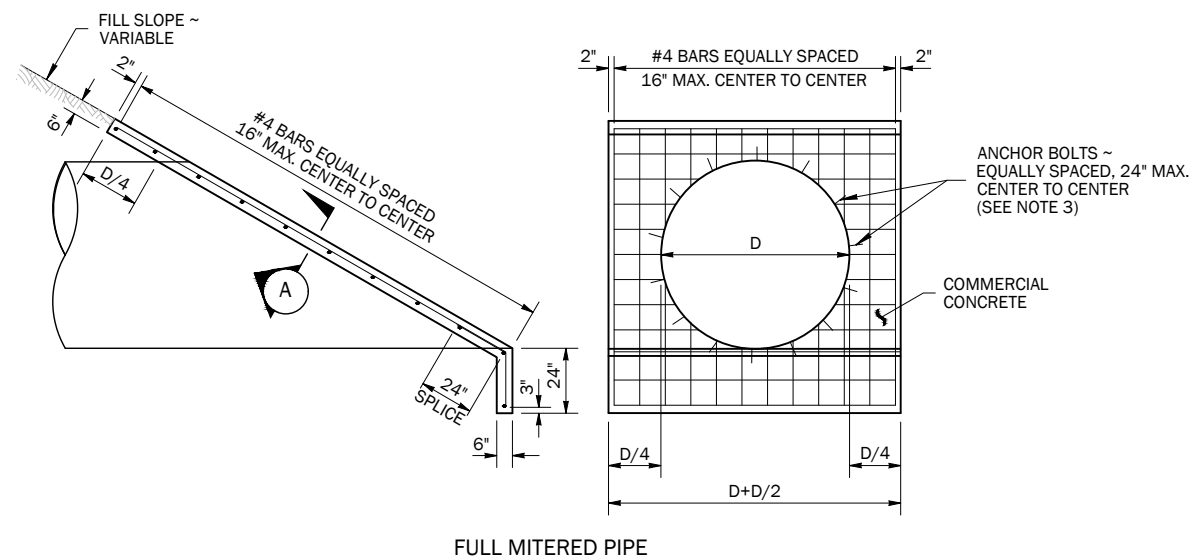


DRAFT INTERIM REMOVAL ACTION  
SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

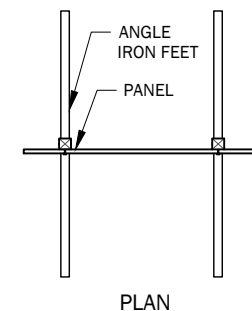
**DETAILS**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 14 OF 15
CHECKED: NER	DATE: 03.22.19
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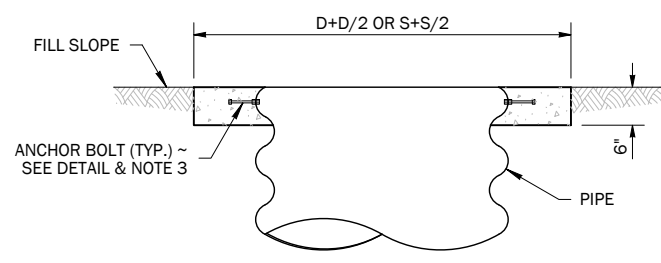
**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**



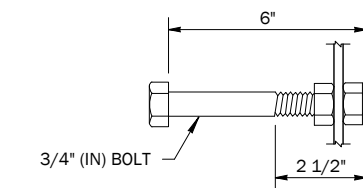
FULL MITERED PIPE



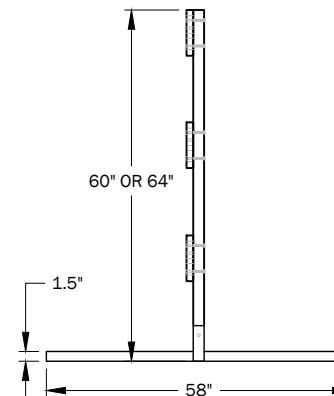
PLAN



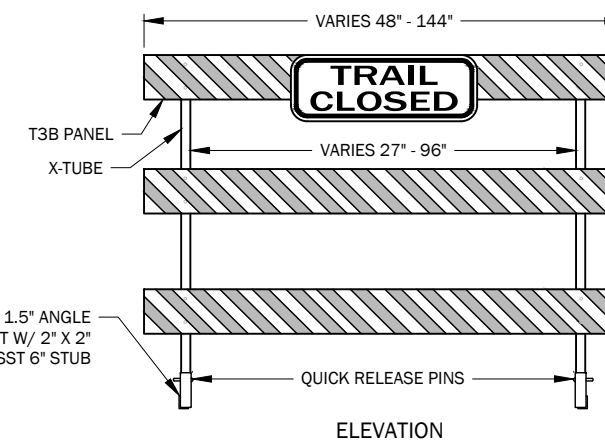
SECTION A



ANCHOR BOLT DETAIL  
SEE STANDARD SPECIFICATION SECTION 9-06.5(1)



SECTION



ELEVATION

**TRAIL CLOSURE SIGN DETAIL** 2  
SCALE: NOT TO SCALE 15

NOTES:

1. THE VARIABLE DIMENSION INDICATED FOR THE HEIGHT OF STEP FOR STEP MITERED PIPES SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATIONS UNLESS SPECIFIED DIFFERENTLY ON THE PLANS OR IN THE SPECIAL PROVISIONS.
2. REINFORCING STEEL SHALL HAVE 1 1/2" (IN) MIN. CLEAR COVER TO ALL CONCRETE SURFACES.
3. HEADWALLS FOR CONCRETE CULVERT PIPE MAY OMIT ANCHOR BOLT ATTACHMENT.
4. WHEN STEEL PIPE SAFETY BARS ARE USED, HEADWALL THICKNESS SHALL BE INCREASED TO 8" (IN).

**HEADWALLS FOR CULVERT PIPE AND UNDERPASS** 1

SCALE: NOT TO SCALE

15

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Plotted: 03/22/2019, 16:47 | svf

NO.	DATE	BY	REVISION

DRAFT INTERIM REMOVAL ACTION  
SADDLE ROCK PARK  
WENATCHEE, WASHINGTON

**DETAILS**

DRAWN: SCY	PROJ NO: 4296-008-00
DESIGN: JRS	SHEET 15 OF 15
CHECKED: NER	DATE: 03.22.19
DRAWING NO	<b>15</b>

**DRAFT SUBMITTAL - NOT FOR CONSTRUCTION**



**APPENDIX A**  
**Revised Agreed Order Schedule**

## SCHEDULE OF DELIVERABLES

The schedule for deliverables described in the Agreed Order and the Scope of Work is presented below. If the date for submission of any item or notification required by this Schedule of Deliverables occurs on a weekend, state or federal holiday, the date for submission of that item or notification is extended to the next business day following the weekend or holiday. Where a deliverable due date is triggered by Ecology notification, comments or approval, the starting date for the period shown is the date the CITY received such notification, comments or approval by certified mail, return receipt requested, unless otherwise noted below. Where triggered by Ecology receipt of a deliverable, the starting date for the period shown is the date that Ecology receives the deliverable by email.

<b>Task</b>	<b>SOW Deliverable</b>	<b>Deliverable description</b>	<b>Subtask Duration</b>	<b>Completion Times</b>	<b>Date</b>
	Effective date of Agreed Order			After signing and public notice.	10/25/18
	Procurement of ENGINEER	RFP Package and CITY selection materials	14 days	Following effective date of Agreed Order.	11/8/18
		Selection and Contracting of ENGINEER	83 days	Following previous schedule item.	1/30/19
1.	IRA Preliminary Design and Cost Estimate	Submittal of draft document to CITY & Ecology	37 days	Following previous schedule item.	3/8/19*
		IRA Preliminary Design Review Meeting	4 days	Following previous schedule item.	3/12/19*
		Submittal of final document to CITY & Ecology <sup>1</sup>	17 days	Following previous schedule item.	3/29/19*
2.	IRA Design Sampling & Analysis	Submittal of draft plan document to CITY & Ecology <sup>2</sup>	109 days	Following effective date of Agreed Order.	2/11/19
		Submittal of final plan document to CITY & Ecology <sup>1</sup>	21 days	Following previous schedule item.	2/22/19
		Technical Memorandum to	95 days	Following previous schedule item.	5/17/19*

Exhibit B Scope of Work and Schedule

		CITY & Ecology			
3.	IRA Design	Submittal of draft document and Bid Package to CITY & Ecology	32 days	Following previous schedule item.	6/18/19*
		IRA Preliminary Design Review Meeting	7 days	Following previous schedule item.	6/25/19*
		Submittal of final document and Bid Package to CITY & Ecology <sup>1</sup>	13 days	Following previous schedule item.	7/8/19*
	Procurement of Construction CONTRACTOR	Bidding by City	1 day	Following previous schedule item.	7/9/19*
		Selection & Contracting of CONTACTOR	30 days	Following previous schedule item.	8/8/19*
4a.	IRA Field Implementation	IRA Field Implementation Kickoff Meeting	8 days	Following previous schedule item.	8/16/19*
		Start of IRA Field Implementation	3 days	Following previous schedule item.	8/19/19*
		Completion of IRA Field Implementation <sup>2</sup>	60 days	Following previous schedule item.	10/18/19*
4b.	IRA Completion Report	Submittal of draft document to CITY & Ecology	105 days	Following previous schedule item.	1/31/20*
		IRA Completion Report Review Meeting	7 Days	Following previous schedule item.	2/7/20*
		City & Ecology comments on draft document	21 days	Following previous schedule item.	2/28/20*
		Submittal of final document to CITY & Ecology <sup>1</sup>	28 days	Following previous schedule item.	3/27/20*

## Exhibit B Scope of Work and Schedule

1 – Ecology reserves the right, at the sole discretion of Ecology, to require one additional comment and document revision round, if needed. All Ecology comments must be addressed to Ecology's satisfaction prior to document finalization.

2 – Any field delays due to weather or safety considerations shall be considered by Ecology.

\* – Estimated date. Adjustments may apply based on weather or other considerations.



**APPENDIX B**  
**Inadvertent Discovery Procedure**

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## *Project Recommendations*

During the course of inspection, RLR identified six historic mining sites, and one historic archaeological or historic property, and have uncovered evidence of a Native American traditional cultural property associated with the site. The archaeological properties have been recorded to the Washington State Department of Archaeology and Historic Preservation's Washington Information System for Architectural and Archaeological Records Data (WISAARD) database as archaeological sites. Prior to development of the project area, **Reiss-Landreau Research recommends that the stakeholders consider putting forth a district nomination for the sites associated with Saddle Rock, as their historic relationship is clear and notable. In addition, the eligibility of the sites under criterion A and B are clearly established.**

Inadvertent Discovery Procedure.

If any archaeological resources are discovered or suspected during the course of the project, activity in the immediate area shall stop until a professional archaeologist can assess the discovery.

If the inadvertent discovery is archaeological material:

1. The project proponent, Chelan County Department of Community Development and the Washington State Department of Archaeology and Historic Preservation (DAHP) will be contacted and work in that area will stop.
2. The archaeologist will contact the Project Proponent, The City of Wenatchee.
  - a. Upon notification of discovery of potential archaeological deposits, a professional archaeologist will evaluate the remains.
  - b. The DAHP will be given the opportunity to view the artifacts within 48 hours after the discovery or at the earliest possible time thereafter. The discovery will be kept confidential. After halting construction, securing the site, and notifying the contractor, the archaeologist will conduct a brief in-field evaluation. The purpose of the evaluation is to determine whether the discovered resources have potential to answer research questions.
  - c. Evaluation protocols are described in the following section.
  - d. If parties agree that the artifacts are not significant, RLR will ask the construction representatives to resume construction.

- e. If parties agree that the artifacts are significant, the Washington State DAHP will issue a stop work order until further notice for all construction work in the area defined as a significant site.

**Guidelines for the Discovery of Human Remains:**

1. All persons who know of the existence and location of human remains must, by law, **notify the county coroner and local law enforcement**. This must be done in the most expeditious manner possible. (RCW 27.44; 68.50; 68.60);
2. Any person engaging in ground disturbing activity that encounters skeletal human remains must **cease all activity which may cause further disturbance to the remains, make a reasonable effort to protect the area from further disturbance, report the presence and location of those remains to the coroner and local law enforcement** (RCW 27.44; 68.50; 68.60). The remains should not be touched, moved, or further disturbed;
3. The county coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. (RCW 27.44; 68.50; 68.60);
4. If the county coroner determines the remains are non-forensic, then the Department of Archaeology and Historic Preservation will take jurisdiction over the remains. (RCW 27.44; 68.50; 68.60);
5. The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to the affected parties. (RCW 27.44, 68.50; 68.60);
6. The DAHP will handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains if there is no federal agency involved.

**APPENDIX C**  
**Construction Cost Estimate**

**Table C-1**  
**Phase 1 Revised Cost Estimate**  
**Saddle Rock Project**  
**Wenatchee, Washington**

Scope Item	Unit	Unit Cost <sup>1</sup>	Quantity <sup>2</sup>	Extended
<b>Remedial Construction Cost Estimate</b>				
<b>Logistics</b>				
Mobilization/Bonding	LS	\$62,000.00	1	\$62,000
Site Clearing and Grubbing	LS	\$8,000.00	1	\$8,000
Staging Area / Temporary Construction Facilities / Construction Entrance	LS	\$20,000.00	1	\$20,000
<b>Task Sub-Total</b>				<b>\$90,000</b>
<b>Road Improvements</b>				
Roads Improvements from Entrance to SR-03	LF	\$12.00	2,052	\$24,624
<b>Task Sub-Total</b>				<b>\$24,624</b>
<b>Excavate Waste Rock and Transport to Loading Area</b>				
SR-01	CY	\$15.00	200	\$3,000
SR-02	CY	\$10.00	3,200	\$32,000
SR-03/SR-08	CY	\$10.00	2,200	\$22,000
<b>Task Sub-Total</b>				<b>\$57,000</b>
<b>Load, Transport, and Waste Rock Disposal in Landfill<sup>3</sup></b>				
Load Waste Rock into Waste Management Trucks	CY	\$4.00	5,600	\$22,400
Transport <sup>4</sup>	Ton	\$8.00	8,400	\$67,200
Disposal <sup>4</sup>	Ton	\$35.00	8,400	\$294,000
<b>Task Sub-Total</b>				<b>\$383,600</b>
<b>Incidentals</b>				
Silt Fence	LF	\$4.00	2,800	\$11,200
Dust Suppressant (water and truck) During Construction	Day	\$1,000.00	45	\$45,000
Construct Detention Basin / Sediment Swale	LS	\$24,000.00	1	\$24,000
Site Restoration/Grading, SR-01, SR02, SR-03, SR-07 and SR-08	AC	\$5,000.00	1.8	\$8,851
Construction Observation, Confirmation Sample Collection and Documentation	LS	\$50,000.00	1	\$50,000
Purchase Tree Plantings for Chelan Douglas Land Trust	LS	\$10,000.00	1	\$10,000
<b>Task Sub-Total</b>				<b>\$149,051</b>
Phase 1 Remedial Action Sub-Total				\$704,275
Contingency (20%)				\$140,855
<b>Phase 1 Remedial Action Estimated Total with 20% Contingency</b>				<b>\$845,130</b>

**Notes:**

<sup>1</sup>Unit costs derived from either RS Means, estimates from local vendors, and professional experience. Estimated costs are considered to be within a margin of +/- 20 percent.

<sup>2</sup>Assumes based on preliminary drawings and past work by Hart Crowser.

<sup>3</sup>Assumes disposal at Greater Wenatchee Regional Landfill

<sup>4</sup>Assumes 1.5 tons per cubic yard

CY = cubic yard; LF = linear foot; LS = lump sum estimate; EA = Each; Ac = Acre

**Table C-1**  
**Phase 2 Revised Cost Estimate**  
**Saddle Rock Project**  
**Wenatchee, Washington**

Scope Item	Unit	Unit Cost <sup>1</sup>	Quantity <sup>2</sup>	Extended
<b>Remedial Construction Cost Estimate</b>				
<b>Logistics</b>				
Mobilization/Bonding	LS	\$63,000.00	1	\$63,000
Site Clearing and Grubbing	LS	\$6,000.00	1	\$6,000
<b>Task Sub-Total</b>				<b>\$69,000</b>
<b>Road Improvements</b>				
Revised Road Alignment and Improvement from SR-02 to SR-06	LF	\$30.00	4,476	\$134,280
Revised Road Alignment and Improvements from SR-06 to SR-04	LF	\$30.00	3,511	\$105,330
Temporary Access Road to SR-05	LF	\$8.00	690	\$5,520
Gravel finish all haul roads, 2-inches thick, 5/8-inch minus, haul, place, compact	CY	\$50.00	2,300	\$115,012
<b>Task Sub-Total</b>				<b>\$360,142</b>
<b>Excavate Waste Rock and Transport to Loading Area</b>				
SR-04	CY	\$65.00	100	\$6,500
SR-05	CY	\$50.00	500	\$25,000
SR-06	CY	\$50.00	300	\$15,000
<b>Task Sub-Total</b>				<b>\$46,500</b>
<b>Load, Transport, and Waste Rock Disposal in Landfill<sup>3</sup></b>				
Load Waste Rock into Waste Management Trucks	CY	\$4.00	900	\$3,600
Transport <sup>4</sup>	Ton	\$8.00	1,350	\$10,800
Disposal <sup>4</sup>	Ton	\$35.00	1,350	\$47,250
<b>Task Sub-Total</b>				<b>\$61,650</b>
<b>Incidentals</b>				
Silt Fence	LF	\$4.00	1,336	\$5,344
Install Culverts Along Road Alignment	EA	\$5,000.00	4	\$20,000
Dust Suppressant (water and truck) During Construction	Day	\$1,000.00	45	\$45,000
Site Restoration/Grading, SR-04, SR05, SR-06, Roads, Entrance and Staging Area	AC	\$7,000.00	2.6	\$18,038
Install Bate Gates	EA	\$7,000.00	3	\$21,000
Adit Closure	EA	\$3,000.00	2	\$6,000
Construction Observation, Confirmation Sample Collection and Documentation	LS	\$50,000.00	1	\$50,000
Purchase Tree Plantings for Chelan Douglas Land Trust	LS	\$10,000.00	1	\$10,000
<b>Task Sub-Total</b>				<b>\$165,382</b>
Remedial Action Sub-Total				\$702,674
Contingency (20%)				\$140,535
<b>Phase 2 Remedial Action Estimated Total with 20% Contingency</b>				<b>\$843,209.22</b>

**Notes:**

<sup>1</sup>Unit costs derived from either RS Means, estimates from local vendors, and professional experience. Estimated costs are considered to be within a margin of +/- 20 percent.

<sup>2</sup>Assumes based on preliminary drawings and past work by Hart Crowser.

<sup>3</sup>Assumes disposal at Greater Wenatchee Regional Landfill

<sup>4</sup>Assumes 1.5 tons per cubic yard

CY = cubic yard; LF = linear foot; LS = lump sum estimate; EA = Each; AC = Acre

