REPORT

Engineering Design Report

Union Pacific Railroad, Aluminum Recycling Trentwood Site

Submitted to:

Washington Department of Ecology
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Acronyms and Abbreviations

amsl	above mean sea level
ARARs	Applicable or Relevant and Appropriate Requirements
alum	aluminum sulfate
bgs	below ground surface
BPA	Bonneville Power Administration
CAP	Cleanup Action Plan
CMP	Compliance Monitoring Plan
COC	constituent of concern
CQA	Construction Quality Assurance
CUL	cleanup level
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
EO	Enforcement Order
FEMA	Federal Emergency Management Agency
ESC	Erosion and Sediment Control
HASP	Health and Safety Plan
IDW	investigation derived waste
IWC	Imperial West Chemical
MTCA	Model Toxics Control Act
I & M	Inspection and Maintenance
PAX	polyaluminum chloride
PDI	Pre-Design Investigation
PPE	Personal Protective Equipment
RAO	Remedial Action Objective
RCW	Revised Code of Washington
RI/FS	Remedial Investigation and Feasibility Study
SAP	Sampling and Analysis Plan
SEPA	State Environmental Policy Act
SPCC	Spill Prevention, Control, and Countermeasure
SVRP	Spokane Valley-Rathdrum Prairie
TEE	terrestrial ecological evaluation
UPRR	Union Pacific Railroad Company
USEPA	United States Environmental Protection Agency
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

1.0 INTRODUCTION

This document is the Engineering Design Report (EDR) for the Aluminum Recycling Trentwood Site (Site). The report contains the plans, designs, and procedures to ensure the remedial action at the Site is conducted in a manner that is consistent with:

- The requirements of the Enforcement Order DE 20752 (EO) (Ecology 2021a).
- The Cleanup Action Plan (CAP) (Exhibit C of the EO; Ecology 2021b).
- The requirements of Washington Administrative Code (WAC) 173-340-400(4)(a).
- Accepted engineering practices.

1.1 Background

The Site is located in Spokane County, Washington in the Spokane Valley, within the incorporated limits of the City of Spokane Valley (Figure 1). The physical address of the Site is 2317 North Sullivan Road, Veradale, Washington. The Site is identified by Ecology as Facility Site ID 628 and Cleanup Site ID 1081. The Site consists of properties (or portions thereof) owned by Union Pacific Railroad Company (UPRR), the Washington State Department of Transportation (WSDOT), and Pentzer Venture Holdings, II, Inc. (Pentzer) as presented in Figure 2. All three properties are zoned industrial. However, only the UPRR property qualifies as an industrial property under WAC 173-340-745. The Site is approximately 9 acres, approximately 4 acres of which are covered by a stockpile of mixed aluminum process materials referred to as dross.

Starting in approximately 1966, UPRR's predecessor leased its property to a number of industrial tenants who engaged in operations generating aluminum dross which is presently stockpiled on the Site. Industrial tenants include the following: The Hillyard Processing Co., Hillyard Aluminum Recovery Corporation, Imperial West Chemical Co. (IWC), Kemwater North America Company, and Kemiron Northwest, Inc. n/k/a Kemira Water Solutions, Inc. (Kemira), the current tenant.[1]

The stockpile varies in depth from about 5 to 30 feet. The total volume of the stockpile is approximately 62,000 cubic yards (cy), and it extends onto the adjacent property owned by Pentzer (Figure 2). A silt fence and "ecology blocks" have been installed around the stockpile as an interim measure to control surface water runoff and sediment transport from the stockpile. The Spokane River is approximately 450 feet west of the Site (Figure 2).

Various investigations, including completion of a Model Toxics Control Act (MTCA) Remedial Investigation and Feasibility Study (RI/FS) (PBW 2012), and a Revised FS in 2021 (Golder 2021b), were completed at the Site from 2010 to 2021. Excavation of surficial soils with constituents of concern (COCs) on portions of the WSDOT and Pentzer properties was completed during the 2020 independent soil removal action; see CAP (Ecology 2021b) Figure 4 for the extent of shallow excavation areas.

[1] New information has been uncovered which supplements previously understood site history reported by Golder in earlier reports.

1.2 Purpose and Scope

This EDR has been prepared to fulfill the requirements of WAC 173-340-400(4)(a) and the EO (Ecology 2021a). The purpose of this report is to provide or document the following:

- Goals of the remedial action (see Section 1.3).
- General information on the facility, including a summary of information in the RI/FS (see Section 2.0).
- Identification of who will own, operate, and maintain the remedial action during and following construction (see Section 2.2).
- Site maps showing existing site conditions and proposed location of the remedial action (see Figures 2 and 3 and Design Drawings included in Appendix A).
- A description and conceptual plan of the remedial action (see Sections 1.4 and 3.1).
- Characteristics, quantity, and location of materials to be managed, including anticipated volumes, depths, and areal extents of excavations (see Sections 2.6, 3.1.2, Figure 3, and Design Drawings 100, 115, and 200 through 215).
- Soil excavation and disposal plan, including proposed transportation routes (see Figures 3 and 4).
- Engineered cap compositions and thicknesses (see Section 3.1.3).
- Material and design specifications (see Design Drawings 020 and 021 for technical specifications).
- Planned final grades and cross-sections (see Design Drawings 120, 121, and 220 through 222).
- Compaction requirements (see Design Drawings 020 and 021 for technical specifications).
- Stormwater management designs for both during and after implementation of the cleanup action (see Section 3.1.4 and Design Drawings 050, 051, 400, and 410).
- Design criteria or assumptions and operation parameters, including their engineering justification (see Appendix C for design calculations).
- Facility-specific characteristics which affect the design, construction, and/or operation of the remedial action (existing operations, flooding, seismic activity, temperature extremes, planning and development issues, soil, and groundwater characteristics; see Section 2.3).
- Implementation schedule (see Section 3.2).
- Specific measures to manage short-term hazards associated with the construction phase of the cleanup action, including but not limited to dust control, surface water/stormwater runoff management, accidental spill response, and the specifics of any quality control testing to be performed (see Section 3.3).
- Design features to assure long-term safety of workers and local residents (see Section 3.3.2).
- Design features for control of spills and accidental discharge (see Section 3.3.3).
- Discussion of methods for management of waste materials generated as a result of the remedial action (see Section 3.3.4).

- General description of construction testing for quality control (see Section 3.3.5 and Appendix B).
- General description of construction procedures to protect health and safety (see Section 3.3.7).
- A Health and Safety Plan (HASP) to be followed during the cleanup action. The HASP will conform to WAC 173-340-810 and include emergency information, characteristics of waste, levels of protection, hazard evaluation, and any other applicable site-specific information such as working on/near active rail lines. The HASP will also include information pertinent to transport of waste by truck, including any traffic control measures, traffic safety, routes, and securing loads (see Appendix D).
- A Compliance Monitoring Plan (CMP) prepared under WAC 173-340-410, describing monitoring to be performed during construction (see Appendix E).
- A Sampling and Analysis Plan (SAP) meeting the requirements of WAC 173-340-820, which is incorporated into the CMP (see Appendix E).
- An Inspection and Maintenance (I & M) Plan meeting the requirements of WAC 173-340-400(4)(c) for the engineered cover (see Appendix F).
- Any information not provided in the RI/FS needed to fulfill the applicable requirements of the State Environmental Policy Act (SEPA) (Revised Code of Washington [RCW] Chapter 43.21C). A SEPA checklist was prepared and submitted to Ecology on (Pending). This EDR report will be updated with any additional required information following Ecology's review of the SEPA checklist.
- Any additional information needed to address applicable state, federal and local requirements, including the substantive requirements for any exempted permits; and property access issues that need to be resolved to implement the remedial action(s) (see Section 3.3.6).

1.3 Remediation Goals

Remedial Action Objectives (RAOs) are site-specific goals based on acceptable exposure levels that are protective of human health and the environment and consider applicable or relevant and appropriate requirements (ARARs). RAOs identify risk pathways that remedial actions should address and identify acceptable exposure levels for residual constituents of concern. The RAOs identified in the CAP (Ecology 2021b) for this Site are:

- Prevent or minimize direct contact, ingestion, inhalation, or uptake of stockpile material by humans or ecological receptors.
- Prevent or minimize direct contact, ingestion, inhalation, or uptake of contaminated soil by humans or ecological receptors.
- Prevent or minimize direct contact, ingestion, or uptake of stormwater runoff from the stockpile.
- Prevent or minimize the potential for erosion to mobilize waste material and/or contaminated soil to adjacent properties.

1.4 Overview of the Remedy

The remedy selected in the CAP for the Site was Alternative 3 (Excavation and Disposal at a Permitted Landfill with Ecological Cap). All stockpile material and dross-containing soil (with concentrations above remediation levels on the UPRR property and above cleanup levels (CULs) on the Pentzer and WSDOT properties) (Figure 3)

will be removed from those properties and transported by truck to the Graham Road Landfill (see Figure 4) for disposal. Due to linear interpolation between data points, the approximate remedial action boundary extends slightly onto the Washington State Department of Parks and Recreation (WA Parks and Rec) property to the west of the Pentzer property. The boundary between the Pentzer property and the WA Parks and Rec property were sampled in April 2022 to determine if the remedial action boundary likely extends onto the WA Parks and Rec property. Results of that sampling effort indicate that the remedial action will likely extend onto WA Parks and Rec property. UPRR has initiated engagement with WA Parks and Rec regarding coordination for implementation of the remedial action.

Remaining soil on the UPRR property with COC concentrations exceeding CULs and less than remediation levels will be covered with an ecological cap (see Figure 3) with institutional controls. However, if removal of stockpile material or dross-containing soil achieves CULs on the UPRR property, an ecological cap and institutional controls will not be required.

Following removal of the dross stockpile, excavated areas will be backfilled to bring the final surface to elevations comparable to the adjacent properties and to create a flat surface prior to placing the cap on the UPRR property. The cap would consist of a geotextile layer overlain by a minimum of 6 inches of gravel. The cap is designed to prevent direct contact of humans or ecological receptors with contaminated soil and to minimize transport of contaminated soil by wind or stormwater runoff.

Because contaminated material would remain on the UPRR property exceeding unrestricted CULs, periodic monitoring and maintenance, institutional controls, and future periodic reviews would be required for that property.

This EDR presents the detailed design and procedures for implementing this remedy.

2.0 SITE INFORMATION

2.1 General Information

The Site's physical address is 2317 North Sullivan Road, Veradale, Washington. The Site, as defined under MTCA, consists of properties (or portions thereof) owned by UPRR, WSDOT, and Pentzer. A stockpile of mixed aluminum process materials referred to as dross is located on the northern portion of the UPRR property and the eastern portion of the Pentzer property (Figure 2). All three properties are zoned industrial. The Site is approximately 9 acres. The Spokane River is approximately 450 feet west of the Site.

The stockpile material on both the UPRR and Pentzer properties was placed there intentionally by former property users during their occupancy. The stockpile is located on land that is at a higher elevation than the property to the south, which has resulted in stockpile material being transported from the main stockpile to the south by stormwater runoff and vehicular traffic. The stockpile is approximately 600 feet long on the north side, 425 feet long on the south side, and 220 feet wide (approximately 4 acres). The depth of the stockpile varies from approximately 5 to 30 feet deep. The stockpile side slopes were estimated to be approximately 1H:1V and based on an updated November 2021 engineer estimate, the total volume of the stockpile is estimated to be approximately 62,000 cy. Approximately 8,000 to 10,000 cy of the total volume is estimated to be present on the Pentzer property.

2.2 Site Access, Property Owner and Operator Information

Access to the Site is from Sullivan Road at the entrance to the Kemira Water Solutions, Inc. (Kemira) facility located on the eastern part of the UPRR property (Figure 2). A dirt access road provides ingress and egress

through the WSDOT Property to the Pentzer property to access power utility lines and infrastructure owned by Bonneville Power Administration (BPA) and other entities.

Kemira leases a portion of the UPRR property and operates a facility that manufactures chemical coagulants (polyaluminum chloride [PAX] and aluminum sulfate [alum]) for use in water and wastewater treatment applications. Raw materials used in the manufacturing process include sulfuric acid, chloride sources (aluminum chloride, hydrochloric acid, etc.), and aluminum sources (alumina hydrate, aluminum metal, and/or alumina cake). Other materials used in the manufacturing process include soda ash, resins, xylene, and isopropyl alcohol. Sulfuric and hydrochloric acid are unloaded from railcars and stored in tanks at this facility. Other raw materials are stored in tanks and/or silos. The chemical coagulants are produced in various reactors and the finished products are stored in tanks.

2.3 Facility-Specific Characteristics Affecting Design

- Existing Operations – Currently there are no operations on the Site as defined in the EO. Kemira leases the eastern portion of the UPRR property as described in Section 2.2. The WSDOT property to the south of UPRR is a former borrow pit.
- Flooding – According to the Federal Emergency Management Agency (FEMA) flood insurance rate maps (Map Number 53063C0590D, Revised July 6, 2010), the Site is not within a 100-year flood zone and is not prone to flooding.
- Seismic Activity – The Site is located in Pleistocene gravel and sandy gravel deposits with interbedded silt lenses (see Section 2.5.) with few active faults. In general, Spokane Valley, WA has a moderate earthquake risk, with a total of 22 earthquakes since 1931. The USGS database shows that there is a 10.4% chance of a major earthquake within 50 kilometers of Spokane Valley, WA within the next 50 years. The largest earthquake within 30 miles of Spokane Valley, WA was a 4.0 Magnitude in 2001 (www.homefacts/earthquakes/washington/spokane-county 10/21/2021).
- Climate Extremes – The Spokane Valley is a semi-arid region that has warm, dry summers and cool, moist winters. Annual rainfall averages 20 inches, with most precipitation occurring from November to March, frequently as snowfall. Snowfall accumulations of 1 foot or more are frequent in the Spokane area, but the snow usually melts within a few days (Molenaar 1988). Average temperatures in the area range from 27°F during the winter months to 69°F during the summer months. Precipitation in the area ranges from less than 1 inch during the months of July, August, and September, to slightly more than 2 inches during the months of November and December, to slightly less than 2 inches during January through June (NOAA 2021). Wind data from Felts Field, located approximately 5 miles west of the Site, indicates that the prevailing wind direction is southwest or south-southwest from November through June and north-northeast from July through October (Western Regional Climate Center 2021).
- Planning and Development – All three properties are zoned industrial. Any planned use or development will be required to be consistent with zoning. If development is planned that is not consistent with current zoning, an amendment to the Spokane County Zoning Code for a Site-Specific Zone Reclassification will need to be applied for, adopted, and formally changed. Completion of the remedial action as outlined in the CAP (Ecology 2021b) will leave the WSDOT and Pentzer properties unencumbered with environmental covenant restrictions.

2.4 Site Investigations

UPRR conducted a RI/FS at the Site pursuant to a 2010 Agreed Order with Ecology under the Washington State MTCA Cleanup Regulation Chapter 173 340 WAC (PBW 2012).

The 2012 RI/FS determined that groundwater, which is approximately 50 to 60 feet below ground surface (bgs), and surface water and sediments in the nearby Spokane River were not impacted by COCs. The 2012 RI/FS also determined that the dross material is not a dangerous waste under Washington State's Dangerous Waste Regulations Chapter 173-303 WAC (Ecology 2020), and this was confirmed in the Revised FS (Golder 2021b).

The 2012 RI/FS further identified the extent of COC concentrations in the dross stockpile and dross-containing soil on the three affected properties. This data was used to evaluate the extent of dross-containing soil for the 2020 independent soil removal action, where some of the impacted surface soil on the WSDOT and Pentzer properties adjacent to the dross stockpile was removed and placed on the dross stockpile.

The 2020 Pre-Design Investigation (PDI) further delineated the extent of the impacts on the WSDOT and Pentzer properties (Golder 2021a). Through the processes of stormwater runoff and wind erosion of both dross material currently stockpiled onsite and likely historical dross placed onsite, including dross placed on the east side of the Kemira facility, dross came to be deposited on the WSDOT and Pentzer properties and migrated into the soil column over the years since the Site has been used to stockpile dross. The primary COCs associated with aluminum dross in soil at the Site are metals including aluminum, arsenic, barium, copper, and to a lesser extent chromium (total) and mercury.

Ecology identified the Site soil CULs and remediation levels in the CAP (Ecology 2021b). The CULs and remediation levels are provided in Tables 1 and 2. The soil remediation levels are based on MTCA Method A or B CULs for industrial properties.

A Revised FS was submitted by UPRR in April 2021 to re-visit the remediation technologies presented in the 2012 RI/FS. The PDI data were used to support the design of the recommended remedial alternative. The Final CAP (Ecology 2021b) presented the selected remedial alternative, which consists of excavation and off-site disposal of the dross stockpile and dross-containing soil impacted with COCs at concentrations that exceed the CULs.

2.5 Site Geology and Hydrogeology

2.5.1 Geology

The surface geology in the Site vicinity consists of Pleistocene-aged glacial flood deposits (Hart Crowser 2009). The glacial flood deposits consist of poorly to moderately well-sorted, massive- to thick-bedded, stratified deposits of boulders, cobbles, pebbles, and sand resulting from multiple episodes of catastrophic outbursts from glacially dammed Lake Missoula. Undifferentiated alluvium and loess deposits may be present along the Spokane River. The top of the bedrock (metamorphic rocks) is at an elevation of approximately 1,700 to 1,750 feet above mean sea level (amsl), or at a depth of approximately 250 to 300 feet bgs.

Based on observation of subsurface materials collected during the 2012 RI/FS, the Site geology is consistent with the scientific literature and descriptions reported in other environmental investigations conducted in the area. A 1- to 2-foot-thick surface soil layer was observed across the Site. This soil layer consisted of unconsolidated silt, sand, and gravel. Beneath this surficial soil layer are poorly sorted sandy gravel, gravelly sand, and sand

consistent with glacial flood deposits. These soils are typically dark gray and tan, have angular grains, and contain some cobbles and pebbles.

2.5.2 Hydrogeology

The Pleistocene-aged glacial flood deposits present at the Site are part of a regional aquifer system called the Spokane Valley-Rathdrum Prairie (SVRP) aquifer. The SVRP aquifer is designated as a Sole Source Aquifer by the United States Environmental Protection Agency (USEPA). The SVRP provides drinking water to approximately 500,000 residents in the region and covers approximately 370 square miles (Hart Crowser 2009). In the vicinity of the Site, the aquifer is called the Spokane aquifer, which underlies about 135 square miles in the Spokane River valley. The Spokane aquifer is unconfined and is recharged by surface infiltration, from the Spokane and Little Spokane Rivers, and contribution from the Spokane-Rathdrum Prairie aquifer that is hydraulically connected and located to the east. Groundwater flow in the aquifer is generally to the west, with flow in the vicinity of the Site to the west/southwest (Hart Crowser 2009). Groundwater flow in general is influenced by the Spokane and Little Spokane Rivers, which have a close hydraulic connection to the aquifer. The Spokane aquifer is highly permeable and consists of coarse sand, gravel, cobbles, and boulders deposited by historic floods which accounts for the large amount of water storage and high hydraulic conductivity in the aquifer. The thickness of the aquifer varies from relatively thin in the City of Spokane where basalt bedrock approaches the surface, to a thickness of greater than 300 feet near the state border with Idaho. In the vicinity of the Site, the thickness is estimated to be approximately 200 to 350 feet, and the groundwater flow velocity is approximately 33 feet per day (Hart Crowser 2009).

During the 2012 RI/FS investigation, groundwater was encountered in the Site's monitoring wells at a depth of approximately 45 to 55 feet bgs. Groundwater flow is from east to west toward the Spokane River, which can act as a losing or gaining water body depending on river flow and recent precipitation. The groundwater gradient across the Site is approximately 0.003 foot/foot based on water level data collected during the 2012 RI/FS.

2.6 Nature and Extent of Contamination

The 2012 RI/FS identified the extent of COC concentrations in the dross stockpile and dross-containing soil on the three affected properties. The primary COCs associated with aluminum dross in soil at the Site are metals such as aluminum, arsenic, barium, copper (primary COCs), and to lesser extent chromium (total) and mercury.

The RI/FS soil investigation was designed to evaluate soil, stockpile material, and dross-containing soil. Two soil borings were completed into the stockpile to evaluate its composition, determine the depth of the soil/stockpile interface, and assess whether COCs leached into the soil and to what depth. Eight soil borings were completed outside of the stockpile to determine the horizontal and vertical extent of stockpile erosion and determine the depth of leached COCs. Soil samples were also collected during the installation of the two downgradient monitoring wells. Three groundwater monitoring wells were installed to evaluate potential groundwater contamination, one upgradient and two downgradient. The RI/FS (PBW 2012) summarizes all RI soil, stockpile, and groundwater sampling results.

A limited independent removal action (IRA) of dross-impacted soil was conducted by UPRR on the WSDOT and Pentzer properties in 2020. The IRA removed the top 6-inches of soil in select areas. Post-excavation confirmation samples were collected. Analysis of the IRA samples indicated that soils remained impacted with Site COCs at concentrations that exceed the Site CULs to a greater extent than indicated by the RI data.

A PDI was conducted later in 2020 to better delineate the horizontal and vertical extent of soil impacted above Site CULs. A total of 18 borings were drilled and approximately 60 soil samples were collected from depths between 0 to 15 feet bgs and analyzed for Site COCs to support vertical delineation. Soils were collected from a 37-cell grid and screened using XRF to assist in horizontal delineation, selecting locations to collect surface soil samples, and compared to laboratory analyzed soil samples. A total of 17 PDI surface soil samples were analyzed for Site COCs to support horizontal delineation of impacted soils. The data for the IRA confirmational sampling are presented in Table 3 of the Union Pacific Railroad Co. – Feasibility Study (Revised) Aluminum Recycling Trentwood Site (Golder 2021b).

2.6.1 Stockpile

The stockpile evaluation indicated that two different types of dross material were present based on significant color variations (gray and tan). Samples of both materials were collected from the surface to depths of fifteen feet. Samples of gray material were higher in aluminum and lower in metals such as copper and chromium than the tan material. Gray material was also lower in chloride and nitrate, but higher in sulfate. Depth profiles of stockpile samples also indicated that concentrations of metals and conventionals (chloride, fluoride, nitrate-nitrogen, nitrite-nitrogen and sulfate) reduced significantly below the stockpile interface, indicating that significant leaching was not occurring. None of the stockpile samples aligned with traditional dross composition, indicating the stockpile was likely not comprised of a high percentage of dross. The stockpile material is suspected to be a mixture of aluminum sulfate and its processing residues. Small amounts of residual dross material may be present but has not been confirmed.

2.6.2 Soil

Soil samples outside the stockpile area confirmed erosion from the stockpile has occurred. In areas with steep slopes, such as the UPRR/WSDOT property border, significant erosion has occurred. In other areas with gentler slopes adjacent to the stockpile, erosion is less defined. Sampling was designed to coincide with visual evidence of erosion, since the stockpile material was much lighter in color than native soil. Samples showed much lower COC concentrations than stockpile material. The highest levels of COCs occur at the surface and generally decrease rapidly with depth. Sampling was conducted at a level area at the base of a slope nearest the Spokane River to evaluate the potential for contaminants to have reached the surface water. COC concentrations in these samples did not exceed conservative screening levels. Based on this and the results of the groundwater evaluation provided below, it was determined that sediments were not affected.

2.6.3 Groundwater

Three groundwater monitoring wells were installed to evaluate potential groundwater impacts: one upgradient and two downgradient. As with soil, groundwater was evaluated for dross-related COCs (metals and conventionals). Groundwater elevations were also measured to determine flow direction and gradient.

Two monitoring events were conducted in late 2010. Groundwater was at a depth of between 45 and 55 feet bgs, and generally flowed from west to southwest towards the Spokane River, which is consistent with information on regional groundwater flow. The stretch of the river in the vicinity of the Site is a losing or gaining reach depending on river flow and recent participation events. Sampling results indicated that concentrations of metals and conventionals did not exceed conservative screening levels. Concentrations of COCs in samples from the downgradient wells were generally consistent with concentrations of COCs in the samples from the upgradient well. Therefore, it was determined groundwater was not impacted by site-related COCs and surface water samples were not collected from the Spokane River.

2.7 Risks to Human Health and the Environment

The Site is currently zoned as heavy industrial in the City of Spokane Valley. Properties to the east, west, and north of the Site are also zoned heavy industrial. Immediately to the south of the Site and adjacent to the Spokane River, property is zoned as parks/open spaces and contains a public use trail.

Exposures to human populations could occur through direct contact with contaminated surface or subsurface soil, dust entrained in air, or surface water runoff from the stockpile. Erosion from the stockpile also serves to spread the COCs and make incidental exposure more likely. Trespassing is highly likely due to the Site's proximity to the rail line and the river trail and to the lack of any fencing outside of the UPRR property or signage. Potential exposed populations include workers at the neighboring Kemira plant, trespassers to the property, and recreational users of the trail.

Exposure to environmental receptors is likely given the presence of natural vegetation, open space, and the Spokane River. A terrestrial ecological evaluation (TEE) was presented in the CAP (Ecology 2021b) that fully evaluated the potential exposure to ecological receptors.

2.8 Potential Contaminant Transport

Soil has been impacted by past activities at the Site and erosional transport of stockpile materials. People may be exposed to COCs in soil via dermal contact or inhalation of dust. Potential human receptors include on-site workers, trespassers, and recreational users of the Spokane River shoreline. Both plant and animal receptors are also present due to the proximity to undeveloped land.

The remedial action for the Site consists of excavation and off-site disposal of the stockpile, excavation and off-site disposal of soil exceeding CULs on the WSDOT and Pentzer properties, and capping on-site soil exceeding CULs but below remediation levels on the UPRR property. The purpose of the cap is to prevent direct contact of humans or ecological receptors with COCs in soil and to minimize transport of COCs in soil by wind or stormwater runoff. An Environmental Covenant will be required for the UPRR property that prohibits any activity that compromises the integrity of the cap (i.e., drilling; digging; piercing the cap with sampling device, post, stake, or similar device; grading; excavation; installation of underground utilities; removal of the cap; or application of loads in excess of the cap load-bearing capacity) without prior written approval by Ecology (Ecology 2021b).

3.0 REMEDIATION APPROACH

The remedial alternative selected for the Site is designed to achieve the RAOs:

- Prevent or minimize direct contact, ingestion, inhalation, or uptake of stockpile material by humans or ecological receptors.
- Prevent or minimize direct contact, ingestion, inhalation, or uptake of contaminated soil by humans or ecological receptors.
- Prevent or minimize direct contact, ingestion, or uptake of stormwater runoff from the stockpile.
- Prevent or minimize the potential for erosion to mobilize waste material and/or contaminated soil to adjacent properties.

As previously discussed, the remedy selected in the CAP (Ecology 2021b) for the Site was Alternative 3 (Excavation and Disposal at a Permitted Landfill with Ecological Cap). All stockpile material and dross-containing

soil (with COC concentrations above remediation levels on the UPRR property and above CULs on the Pentzer and WSDOT properties) (see Figure 3) will be removed from those properties and transported by truck to the Graham Road Landfill (see Figure 4) for disposal. Excavated areas will be backfilled and generally restored to existing grade. If COC concentrations are below remediation levels, a portion of the excavated soil will be used as fill to regrade the slope on the south side slope of the UPRR property to approximately a 3H:1V slope (or less steep) to allow for the ecological cap to be placed.

Following removal of the dross stockpile, excavated areas will be backfilled to the extent necessary to bring the final surface up to elevations comparable to the adjacent properties and to create a flat surface on the UPRR property. An ecological cap will be required to cover the areas with soil COC concentrations exceeding CULs and less than remediation levels on the UPRR property, in addition to requirements for institutional controls. The cap will consist of a geotextile layer overlain by a minimum of 6 inches of gravel. The cap is designed to prevent direct contact of humans or ecological receptors with COCs in soil and to minimize transport of impacted soil by wind or stormwater runoff. However, if removal of stockpile material or dross-containing soil achieves CULs on the UPRR property, an ecological cap and institutional controls will not be required.

The following sections provide a general description of the remedial action. The engineering analyses and construction documents are presented in the following appendices:

Appendix A – Design Drawings and Technical Specifications for the remedial action.

Appendix B – Construction Quality Assurance (CQA) Plan describing the CQA activities required during remedial construction activities.

Appendix C – Engineering calculations that were performed to support the design.

Appendix D – Health and Safety Plan (HASP) specifies emergency procedures, site hazards, protective clothing, equipment, and monitoring required for protection of human health and the environment during remediation activities.

Appendix E – Compliance Monitoring Plan (CMP) describing performance, protection, and compliance monitoring to be conducted at the Site during remediation. The CMP incorporates the Sampling and Analysis Plan (SAP), which describes the sampling procedures and analytical methods to be used to collect the required data during construction.

Appendix F – Inspection and Maintenance (I & M) Plan describes the procedures to be conducted at the Site following completion of the remedial action to ensure ongoing protection for human health and the environment.

3.1 Design Framework

The areas of soil removal and capping are shown in Figure 3 and are presented in more detail in the Design Drawings provided in Appendix A. Soil removal areas are based on the limits of dross stockpile material and dross-containing soil identified in the Revised FS Report (Golder 2021b).

3.1.1 Site Preparation

Prior to beginning earthwork activities, several site preparation activities will be performed:

- Complete a utility locate survey to locate all underground utilities in the project area.

- Install erosion and sediment control (ESC) measures to prevent soil/sediment from migrating off-site. At a minimum, silt fence will be installed along the southwest side of the excavation area (between the excavation area and the Spokane River; see Design Drawing 050 in Appendix A).
- Install temporary chain-link fencing, safety fencing, barricades, signage, and other features to prevent inadvertent access by the public to the work area.
- Set up temporary facilities, including office trailers, sanitary facilities, utilities, and fueling and maintenance areas.
- Improve existing gravel access roads.
- Install a vehicle access gate and construction entrance at the main site entrance to control access and minimize risk to the public.
- Install a truck wheel wash system to remove soil from wheels and undersides of trucks leaving the site and using public highways.
- Decommission monitoring wells.

3.1.2 Soil Removal

Soil removal will occur in two designated areas: the dross stockpile area and the off-pile area.

***Dross Stockpile Area*:** The dross stockpile is located on UPRR property and Pentzer property. The entire dross stockpile (approximately 62,000 cy) will be removed and transported to the Graham Road Landfill for disposal. On the UPRR property, it is assumed that dross stockpile material and underlying soil will be excavated to 1 foot below the existing ground surface elevation around the periphery of the stockpile; the actual depth of removal is to be determined in the field by confirmatory testing such that remediation levels are achieved. Excavation areas on the UPRR property will be backfilled with clean fill material or material removed from WSDOT or Pentzer properties that are above CULs (but below remediation levels) to achieve the ecological cap subgrade and south side slope regrade elevations as shown on the Design Drawings. On the Pentzer property, soil underlying the dross stockpile will be removed to CULs to a maximum depth of 6 feet bgs per the CAP (Ecology 2021b). Excavations will be backfilled with clean soil backfill to the elevations shown on the Design Drawings.

***Off-Pile Area*:** The off-pile area is located on Pentzer and WSDOT properties. In this area, soil with COC concentrations above CULs (approximately 20,000 cy) will be removed. If off-pile area soil testing shows that COC concentrations are below remediation levels, excavated off-pile area soil may be used as backfill for the ecological cap subgrade and south side slope regrade on the UPRR property. The remaining excavated off-pile area soil will then be screened to remove larger cobbles and boulders. Material retained by screening (material larger than 6 inches in dimension) will be stockpiled on-site for later use as backfill in the bottom of the off-pile area excavations. Material not retained on the screen (material finer than 6 inches in dimension) will be transported to the Graham Road Landfill for disposal. Off-pile area excavation depths are estimated on Design Drawings 200 through 202; the actual depth of removal is to be determined in the field by confirmatory testing such that CULs are achieved. Excavations will not extend below a maximum depth of 6 feet bgs for protection of ecological receptors per the CAP (Ecology 2021b). However, if human health criteria are exceeded at 6 feet bgs, additional excavation will be performed as needed to a maximum extent of 15 feet bgs. Off-pile excavation areas will be backfilled with clean soil backfill to the elevations shown on the Design Drawings. On the south side slope of the UPRR property, the slope will be regraded to approximately a 3H:1V slope (or less steep) to allow for the

ecological cap to be placed. As mentioned above, if COC concentrations are above CULs (but below remediation levels) in soil excavated from off-pile areas, a portion of the excavated soil could be used as backfill on the UPRR property.

There are several aboveground and underground power lines traversing the site to the west of the dross stockpile, as shown on the Design Drawings. These are owned by three electrical utility providers: the BPA, Avista Corporation, and Inland Power & Light Co. Each provider has specific requirements when excavating in proximity to power line support structures, (e.g., within a certain distance of poles, guy wires, and underground utilities), but the providers have all agreed to work with the construction contractor to safely allow soil removal to the extent possible. The allowable conditions will be coordinated with the utility providers. Currently known requirements are included in the Design Drawings. When finalized, permits from each utility provider will be provided to the construction contractor.

3.1.3 Ecological Cap

On the UPRR property, following removal of the dross stockpile and underlying soil to achieve remediation levels, excavated areas will be backfilled to bring the ecological cap subgrade surface up to elevations comparable to the adjacent properties and to create a “platform surface” with a uniform grade toward the west. An ecological cap is required to cover the areas with soil COC concentrations exceeding CULs and less than remediation levels on the UPRR property. The purpose of the cap is to prevent direct contact of humans or ecological receptors with COCs in soil and to minimize transport of COCs in soil by wind or stormwater runoff. The ecological cap consists of a geotextile layer overlain by a minimum of 6 inches of gravel (see Detail 8 on Design Drawing 130).

Buffers, which could also be referred to as setbacks, were included along the Pentzer property boundary to the west and the WSDOT property to the south to alleviate any concerns of soil above remediation levels migrating onto adjacent properties. A 5-foot wide clean (< CULs) soil buffer will be included on UPRR property adjacent to Pentzer and WSDOT property boundaries.

3.1.4 Surface Water Management

During construction, surface water will be managed using temporary ESC measures to prevent soil/sediment from migrating off-site (i.e., silt fence, straw bales, straw wattles, and plastic sheeting).

Following construction, on the UPRR property, surface water will be managed with a berm around the entire perimeter of the “platform surface,” with an overflow at the northwest corner (per the Surface Water Management Plan; see Drawing 400); on the Pentzer and WSDOT properties, the existing grades and overland flow pathways will be reestablished following excavation and backfilling activities.

A hydrology and hydraulics analysis was performed to size the berm and overflow outlet and channel, and to confirm that the railroad ditch on the north side of the UPRR property has sufficient capacity (see calculations provided in Appendix C). Per the WSDOT Highway Runoff Manual (WSDOT 2019), the short-duration storm normally generates the greatest peak discharges from small impervious basins and should therefore be used to size stormwater conveyances. The berm was sized to retain the 100-year, 3-hour short-duration storm peak runoff volume (1,900 cubic feet) with an emergency overflow to the railroad ditch in the northwest corner of the UPRR property. The railroad ditch was verified as adequate to convey the 100-year, 3-hour short-duration storm peak discharge (0.67 cubic feet per second). Because of the small drainage area within the berm around the perimeter of the “platform surface”, the berm was sized for ease of constructability and maintenance and provides a greater capacity than required for the design storm. The berm was sized to have a 6-foot top width, 2-foot height, and

2H:1V side slopes. With this sizing, the berm will retain up to about three times the 100-year, 3-hour short-duration storm peak runoff volume (1,900 cubic feet), and for this reason, together with infiltration, stormwater is unlikely to discharge through the emergency overflow, except during much larger storm events. The railroad ditch will be regraded to reestablish the existing railroad ditch configuration with a minimum 1-foot depth, 6-foot bottom width, and 2H:1V side slopes. Stormwater management details are shown in Drawing 400 in Appendix A.

3.1.5 Site Stabilization and Restoration

After earthwork activities are completed, the following activities will be performed to secure and stabilize the Site:

- Install security fence around the ecological cap area.
- Reestablish access roads in excavation areas.
- Reseed disturbed areas (outside of ecological cap area, drainage ditches, and access roads).

3.1.6 Monitoring Programs

Both short-term (during remedial action and verification period) monitoring and confirmational or long-term (following completion of remediation) monitoring is required in support of the remedial action. Short-term (i.e., performance and protection) monitoring requirements for the remedial action construction period are outlined in the CMP. Long-term compliance monitoring requirements following completion of remedial action construction associated with the UPRR property are outlined in the I&M Plan.

3.1.6.1 Short-Term Monitoring

Performance monitoring is short-term monitoring that confirms that the cleanup action has attained cleanup standards or other performance standards [WAC 173-340-410(b)]. Performance monitoring will consist of collecting soil samples for field screening and laboratory analysis.

Performance monitoring will direct remediation activities and confirm that CULs have been attained. As identified in the CAP, dross-containing soil with COCs at concentrations that exceed CULs will be excavated from WSDOT and Pentzer properties to achieve CULs (Figure 3). Dross and dross-containing soil with concentrations of COCs that exceed remediation levels will be excavated from the UPRR property.

Protection monitoring (i.e., health and safety monitoring) for dust will also be performed during construction to ensure that site workers, the public, and the environment are not exposed to undue or unexpected risks.

3.1.6.2 Long-Term Monitoring

Confirmational monitoring is long-term monitoring performed following completion of the cleanup action to verify its long-term effectiveness [WAC 173-340-410(c)] (i.e., that the site remedy is performing as expected over time). Long-term monitoring will be conducted to 1) verify that the remedy performs as expected over time, and 2) allow timely maintenance of a cap and other physical components of the remedial action.

Periodic site inspections and surveys will determine maintenance needs and monitor cap performance. Long-term cap monitoring will continue during the post-closure period, assumed for the purposes of this EDR and for cost-estimating purposes to last 15 to 20 years. However, long-term monitoring will be required for the UPRR property as long as Site COCs remain in soil above CULs.

Cap monitoring will consist primarily of visual inspections for damage and subsidence. The cap will be periodically examined for the presence of offsets, scarps, low-points, ponded water, odd changes in grade, and erosion. The inspection of stormwater infrastructure, fencing and signage will be included with any cap monitoring events.

3.2 Implementation Schedule and Staging of Remedial Action

Remedial action activities are expected to be performed in the Summer of 2022, subject to approval by Ecology.

Task or Deliverable	Completion Times
Submittal of Final Engineering Design Report (EDR)	May 17, 2022
Submittal of SEPA Checklist	Within 14 days after submittal of Final EDR (SEPA review may take 90 days)
Contractor Procurement	30 days after submittal of Final EDR
Begin Implementation of Remedial Action	30 days after receipt of Ecology's written approval of EDR or 14 days after approval of SEPA checklist, whichever occurs last
Complete Remedial Action	150 days after starting date
Submittal of Draft Cleanup Action Report (CAR)	90 days after completion of remedial action
Submittal of Final CAR	30 days after receiving Ecology's comments on Draft CAR
Preparation and Submittal of Environmental Covenants	30 days after approval of Final CAR

3.3 Other Design Features and Considerations

3.3.1 Access Controls

Access to the ecological cap area will be controlled by a vehicle gate at the main site entrance and by a perimeter fence around the capped area, as discussed in previous sections and presented in detail in the Design Drawings included in Appendix A.

3.3.2 Design Features to Assure Long-term Safety of Workers and Local Residences

As described in the previous section, security fencing will be installed around the ecological cap area. In addition, institutional controls will be put in place for the ecological cap area, restricting that area for industrial use only and prohibiting any activities that would compromise the integrity of the ecological cap area.

3.3.3 Design Features for Control of Spills

Contractor operations that involve potentially hazardous materials, such as equipment refueling, will be allowed only in areas where the potential for environmental impacts from spills is low. In addition, the contractor will be

required to submit a site-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan for this project. Details of these environmental protection requirements are presented in Appendix A.

3.3.4 Management of Waste Materials

As described in the previous section, a truck wheel wash system will be installed to remove soil from wheels and the undersides of trucks leaving the site and using public highways. In addition, street cleaning will be conducted in the event of unavoidable track-out or release of soil/sediment off-site. Dust control using water trucks will also be employed to prevent airborne soil/sediment dispersion throughout construction.

Soils impacted with concentrations of the Site COCs above cleanup criteria removed from the excavations will be segregated to the extent possible. In most cases, these soils will be temporarily stockpiled at the Site. Stockpiled soils will be placed on plastic sheeting and prevented from migrating offsite by berms constructed of soil, hay bales, or other suitable materials. Stockpiles will be covered overnight to minimize windblown dust or exposure to precipitation. Soil from the stockpiles will be loaded onto trucks provided by the excavation subcontractor and transported to the Graham Road Landfill. Clean soil stockpiled during the excavation may be used as backfill material. Personal Protective Equipment (PPE) and other solid waste generated during the remedial action will be placed in garbage bags and disposed of off-site as general municipal waste.

Truck wheel wash water and equipment and PPE decontamination water will be captured and placed in 55-gallon WSDOT-approved drums. The drums will be transported by truck and disposed of in a permitted liquid disposal facility.

3.3.5 Construction CQA

A comprehensive CQA Plan has been developed for this project to ensure and demonstrate that the remedial action is performed in accordance with approved construction documents. The CQA Plan establishes the responsibilities and authorities of the various parties involved in construction, establishes procedures and frequencies for testing and inspection, establishes hold points for key construction activities, and defines minimum documentation requirements. The CQA Plan is included in Appendix B.

3.3.6 Other Information to Address Applicable, State, Federal, and Local Requirements

MTCA provides an exemption from the procedural requirements of several state laws and from any laws authorizing local government permits or approvals for remedial actions conducted under a consent decree, order, or agreed order (RCW 70A.305.090). However, the substantive requirements of a required permit must be met. The procedural requirements of the following state laws are exempted:

- Ch. 70.94 RCW, Washington Clean Air Act;
- Ch. 70.95 RCW, Solid Waste Management, Reduction, and Recycling;
- Ch. 70A.305 RCW, Hazardous Waste Management;
- Ch. 75.20 RCW, Construction Projects in State Waters;
- Ch. 90.48 RCW, Water Pollution Control; and
- Ch. 90.58 RCW, Shoreline Management Act of 1971.

WAC 173-340-710(4) sets forth the criteria Ecology evaluates when determining whether certain requirements are relevant and appropriate for a cleanup action. The following state and federal laws contain the ARAR requirements that apply to the cleanup action at the Site:

- Ch. 18.104 RCW, Water Well Construction;
- Ch. 173-160 WAC, Minimum Standards for Construction and Maintenance of Water Wells;
- Ch. 173-162 WAC, Rules & Regulations Governing the Licensing of Well Contractors & Operators;
- Ch. 70A.305 RCW, MTCA;
- Ch. 173-340 WAC, MTCA Cleanup Regulation;
- Ch. 43.21C RCW, State Environmental Policy Act;
- Ch. 197-11 WAC, SEPA Rules;
- 29 CFR 1910, Occupational Safety and Health Act;
- 42 USC 7401, Clean Air Act of 1977;
- 40 CFR 50, National Ambient Air Quality Standards;
- Ch. 70.94 RCW, Washington Clean Air Act;
- Ch. 43.21A RCW; Ch. 173-400 WAC, General Regulations for Air Pollution;
- Ch. 173-460 WAC, Controls for New Sources of Air Pollution;
- Ch. 173-470 WAC, Ambient Air Quality Standards for Particulate Matter; and
- Ch. 70A.305 RCW, MTCA.

Information necessary for Ecology to address the meeting of substantive requirements is provided in this EDR. UPRR has a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to the EO, and to comply with those requirements. As additional federal, state, and local requirements are identified by Ecology or UPRR, Ecology will document in writing if they are applicable to actions carried out pursuant to this EO and whether UPRR must implement those requirements. Permits obtained for the remedial actions will be provided to Ecology.

3.3.7 Construction Procedures to Protect Health and Safety

Health and safety procedures for Site workers are addressed in the HASP, which is presented in Appendix D.

3.3.8 Compliance Monitoring

Under WAC 173-340-410, compliance monitoring consists of protection monitoring, performance monitoring, and confirmational monitoring. The CMP (Appendix E) details the monitoring that will occur during construction and following completion of construction.

Protection monitoring is conducted to confirm “that human health and the environment are adequately protected during future construction and operation of an interim action or cleanup action as described in the safety and

health plan" [WAC 173-340-410(a)]. Monitoring for protection of human health is addressed in the Site-specific HASP, which is included as Appendix D of this EDR.

Performance monitoring confirms that the cleanup standard or other performance standards have been attained [see WAC 173-340-410(b)]. Performance monitoring will consist of collecting soil samples for field screening and laboratory analysis. Performance monitoring will direct remediation activities and confirm that CULs have been attained. As identified in the CAP (Ecology 2021b), dross-containing soil COCs at concentrations that exceed CULs will be excavated from WSDOT and Pentzer properties to achieve CULs (Figure 3). Dross and dross-containing soil with concentrations of COCs that exceed remediation levels will be excavated from the UPRR property.

Confirmational monitoring is performed to confirm the long-term effectiveness of the remedy, following completion of the constructed remedial action [see WAC 173-340-410(c)]. Long-term maintenance and monitoring inspections of the ecological cap are described in the I & M Plan, which is included as Appendix F.

3.3.9 Sampling and Analysis

Sampling and analysis to be performed during construction is discussed in the SAP, which is presented in Appendix E.

3.3.10 Inspection and Maintenance

Inspection and maintenance procedures to be conducted at the Site following completion of the remedial action are discussed in the I & M Plan, which is presented in Appendix F.

Golder Associates USA Inc.

Vanessa Nancarrow

Vanessa M. Nancarrow, PE
Senior Project Engineer

Frank S. Shuri

Frank S. Shuri, LG, LEG, PE
Principal Engineer

Ted Norton
Associate/Environmental Consultant

VMN/FSS/TN/ks

https://golderassociates.sharepoint.com/sites/116727/project files/5 technical work/2021 edr/edr/final edr/19119180-r-rev0-trentwood edr-05172022.docx

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Tables

Table 1: Cleanup Levels - Unrestricted Land Use
Aluminum Recycling Trentwood - Compliance Monitoring Plan
Union Pacific Railroad

Constituent of Concern (COC)	Units	Maximum Value	Method A Unrestricted[(a)]	Method B Unrestricted Non-Cancer[(b)]	Method B Unrestricted Cancer[(c)]	Ecological Indicator Values[(d)]	Background[(e)] (Spokane Co.)	Unrestricted Land Use Cleanup Level (mg/kg)	Primary COC	Basis
Aluminum	mg/kg	121,000	-	80,000	-	50	21,400	21,400	yes	Background
Arsenic	mg/kg	16	20	24	0.67	10	9	10	yes	Ecological
Barium	mg/kg	381	-	16,000	-	102	-	102	yes	Ecological
Chromium (III)	mg/kg	172	2000*	120,000	-	42	18	42	yes	Ecological
Copper	mg/kg	1,460	-	3,200	-	50	22	50	yes	Ecological
Lead	mg/kg	93.8	250*	-	-	50	15	50	no**	Cm<Cul
Mercury	mg/kg	5	2*	-	-	0.1	0.02	0.1	yes	Ecological

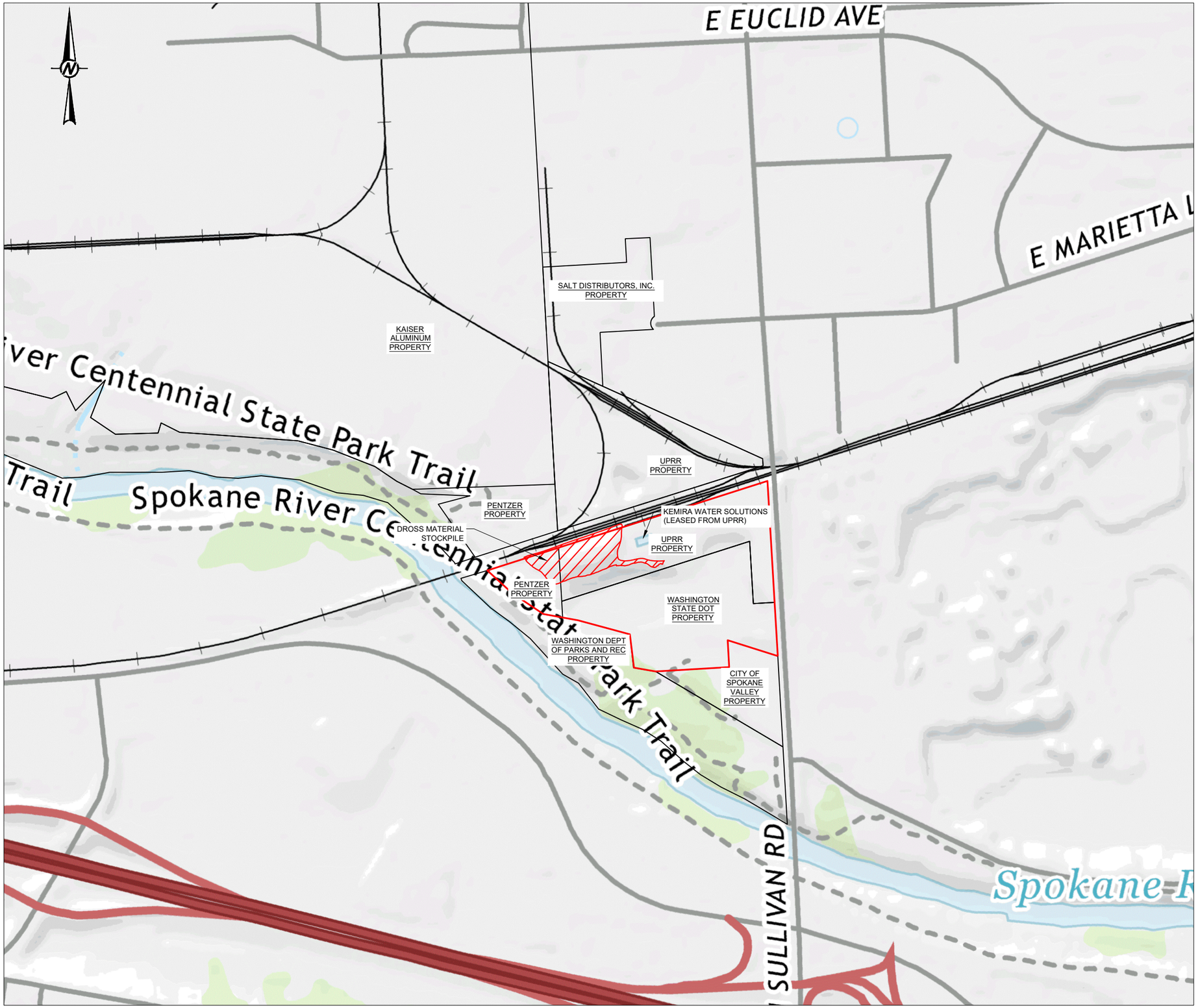
Notes:
- Not Available
Cm = maximum concentration
CUL = cleanup level
* - Method A number based on protection of groundwater and Site RI determined groundwater was not impacted.
** - COC evaluation outlined in the Final CAP (Ecology 2021) determined lead is not a Primary COC.
(a) - Method A unrestricted land use values based on WAC 173-900, Table 740-1.
(b) - Method B unrestricted land use non-cancer values based on WAC 173-740 Equation 740-1.
(c) - Method B unrestricted land use cancer values based on WAC 173-740 Equation 740-2.
(d) - Ecological indicator values are based on WAC 173-900, Table 749-3 for protection of plants, soil biota and wildlife.
(e) - Natural Background Soil Metals Concentrations in Washington State (Ecology 1994).

Table 2: Remediation Levels
Aluminum Recycling Trentwood - Compliance Monitoring Plan
Union Pacific Railroad

Constituent of Concern (COC)	Units	Maximum Value	Method A Industrial[(a)]	Method C Industrial Non-Cancer[(b)]	Method C Industrial Cancer[(c)]	Ecological Indicator Values[(d)]	Protection of Groundwater[(e)]	Remediation Levels[(f)]	Basis
Aluminum	mg/kg	121,000	-	3,500,000	-	50	6,900,000	3,500,000	Human Health
Arsenic	mg/kg	16	20	1,100	88	132	42	42	Human Health
Barium	mg/kg	381	-	70,000	-	500	24,000	700,000	Human Health
Chromium (III)	mg/kg	172	2000*	5,300,000	-	67	6,900,000	5,300,000	Human Health
Copper	mg/kg	1,460	-	140,000	-	217	4,100	140,000	Human Health
Mercury	mg/kg	5	2*	-	-	5.5	30	5.5	Ecological

Notes:
- Not Available
* - Method A number based on protection of groundwater and Site RI determined groundwater was not impacted.
(a) - Method A Industrial values based on WAC 173-900, Table 745-1.
(b) - Method C industrial non-cancer values based on WAC 173-745 Equation 745-1.
(c) - Method C industrial cancer values based on WAC 173-745 Equation 745-2.
(d) - Ecological indicator values are based on WAC 173-900, Table 749-3 for protection of plants, soil biota and wildlife.
(e) - Unsaturated zone concentration Protective of Groundwater, using site specific groundwater flow and infiltration values.
(f) - Use of remediation levels requires institutional controls and construction of ecological cap in areas where COC concentrations exceed unrestricted CULs but are below remediation levels on industrial (Union Pacific) property.

Figures



LEGEND

APPROXIMATE MTCA SITE BOUNDARY

LIMITS OF DROSS STOCKPILE

REFERENCE(S)

BASE MAP TAKEN FROM USGS.GOV, GREENACRES, WASH 7.5 MIN. USGS QUADRANGLE DATED 2020, DOWNLOADED IN PDF FORMAT.

0 300 600
1" = 300' FEET

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SITE LOCATION MAP

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-19
DESIGNED	CC
PREPARED	REDMOND
REVIEWED	TN
APPROVED	TJN

PROJECT NO.	PHASE	REV.	FIGURE
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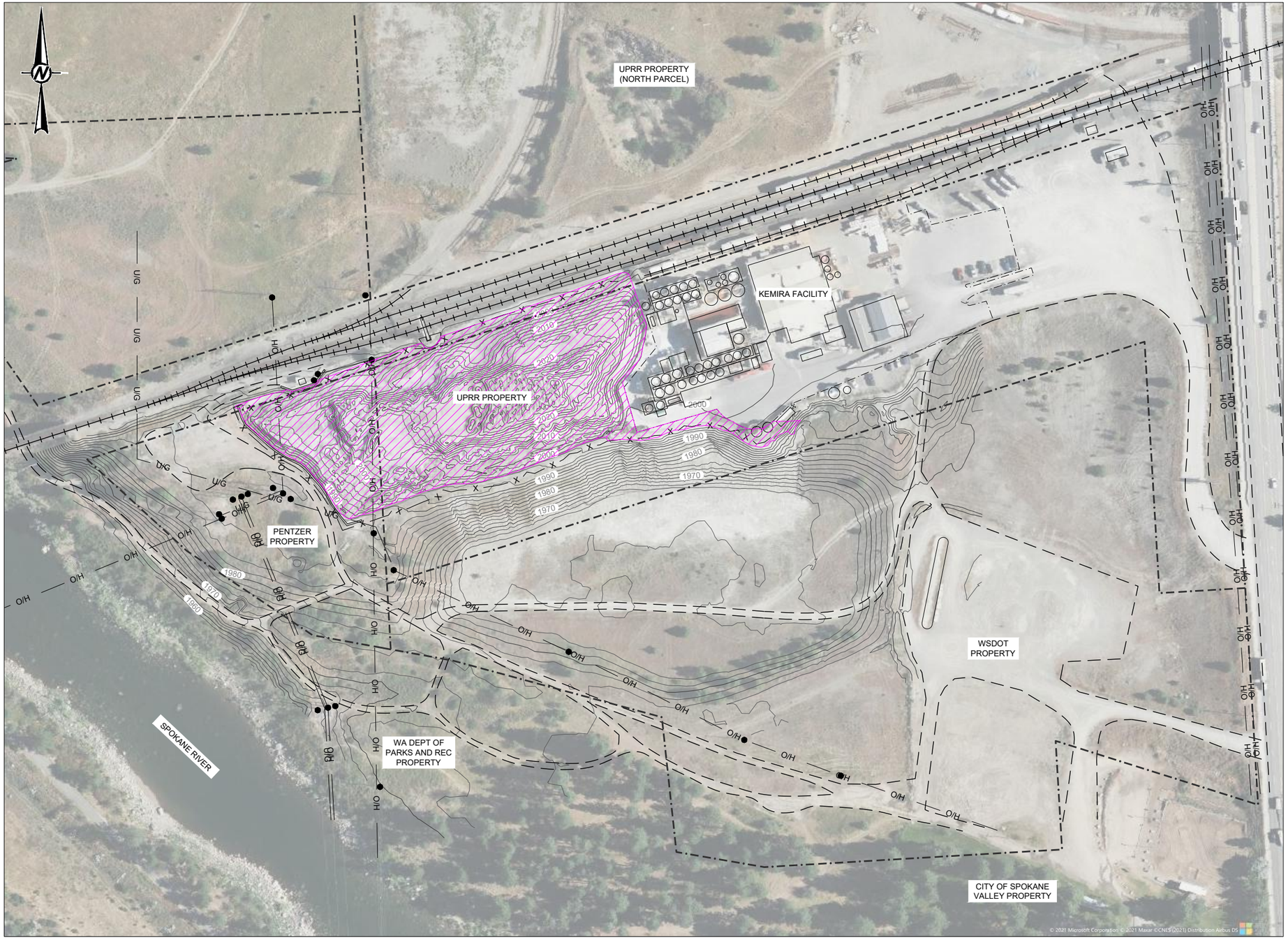


LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- LIMITS OF DROSS STOCKPILE

REFERENCE(S)

1. AERIAL IMAGE PROVIDED BY MICROSOFT, CORP., DATED 6/4/2021.
2. TOPOGRAPHIC CONTOURS PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021.
3. PROPERTY BOUNDARIES PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/18/2021.
4. SITE FEATURES DIGITIZED FROM ORTHOPHOTO PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021
5. HORIZONTAL DATUM: NAD83 WASHINGTON STATE PLANE (2011), NORTH ZONE, US FOOT.
6. VERTICAL DATUM: NAVD88.

0 80 160
1" = 80' FEET

CLIENT
UNION PACIFIC RAILROAD CO.

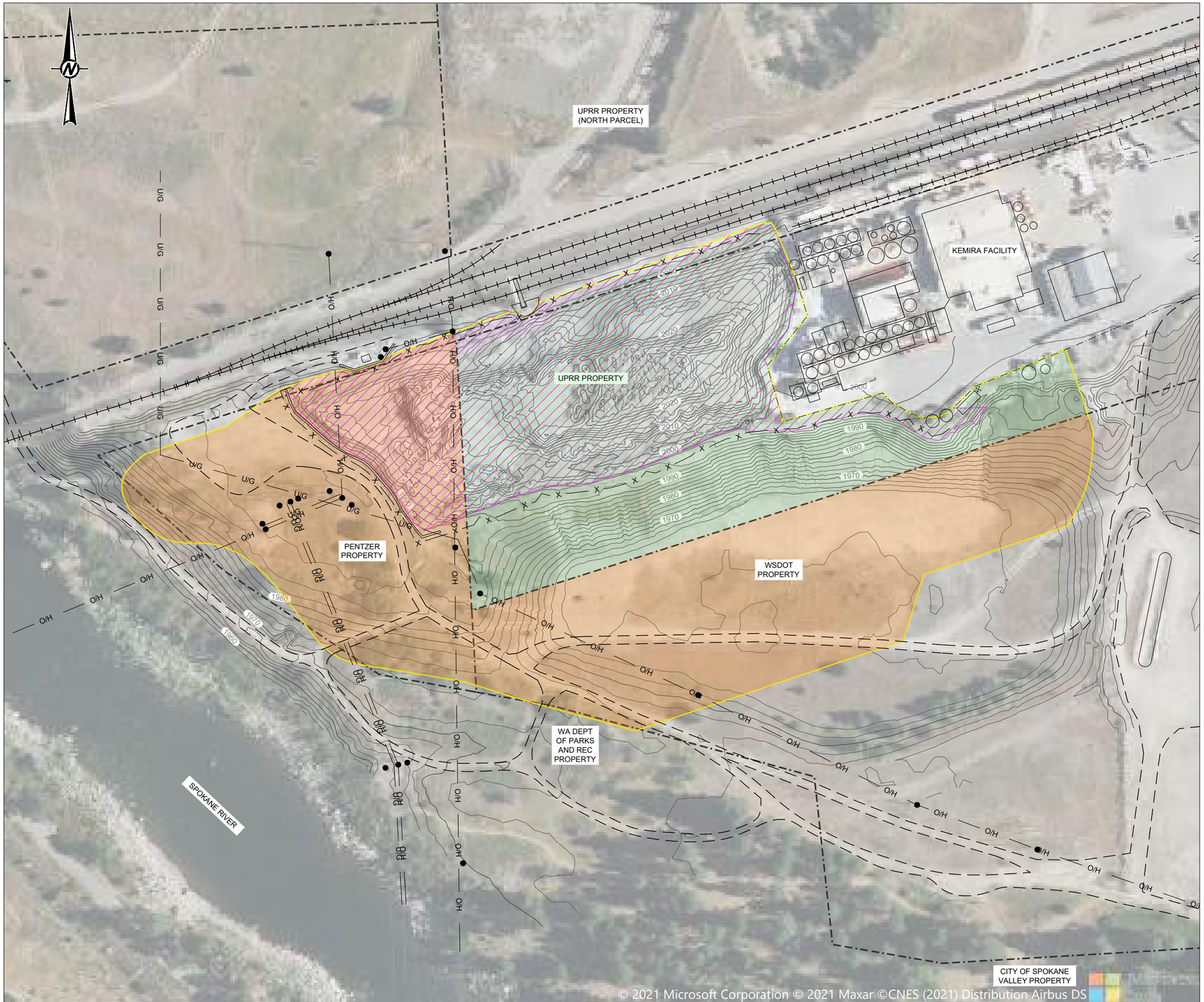
CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-11-19
DESIGNED	VMN
PREPARED	REDMOND
REVIEWED	FSS
APPROVED	TJN

PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SITE MAP

PROJECT NO.	PHASE	REV.	FIGURE
19119180	1000B	A	2



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- LIMITS OF DROSS STOCKPILE
- SOIL EXCAVATION AREA
- ECOLOGICAL CAP AREA FOLLOWING REMOVAL OF DROSS STOCKPILE MATERIAL
- EXCAVATION AREA OF DROSS STOCKPILE AND DROSS-CONTAINING SOIL TO ACHIEVE CLEANUP ACTION LEVELS BASED ON UNRESTRICTED USE. AREA TO BE BACKFILLED WITH IMPORTED CLEAN MATERIAL TO RESTORE EXISTING GRADE

0 60 120
1" = 60' FEET

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SOIL EXCAVATION AND CAPPING PLAN

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-05-17
DESIGNED	VMN
PREPARED	REDMOND
REVIEWED	FSS
APPROVED	TJN

PROJECT NO.	PHASE	REV.	FIGURE
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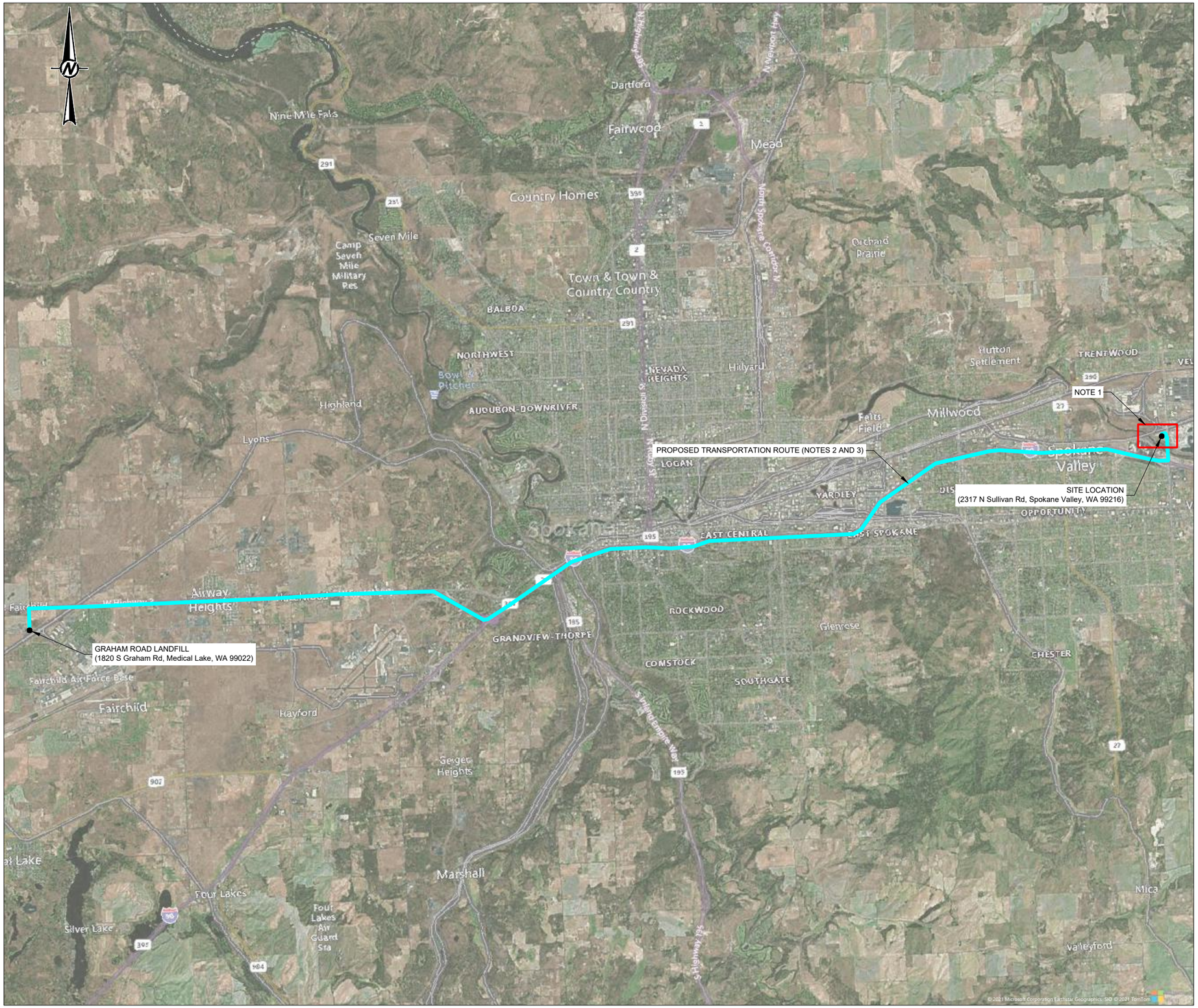


NOTE(S)

1. SEE FIGURE 3 FOR SOIL EXCAVATION PLAN. EXCAVATED DROSS AND DROSS-CONTAINING SOIL IS TO BE DISPOSED AT THE GRAHAM ROAD LANDFILL.

2. PROPOSED TRANSPORTATION ROUTE:
   1. TURN RIGHT OUT OF SITE ENTRANCE ONTO SULLIVAN RD AND TAKE SULLIVAN RD FOR APPROXIMATELY 0.5 MILES TO I-90 W.
   2. TAKE I-90 W FOR APPROXIMATELY 14 MILES TO US-2 W.
   3. TAKE US-2 W FOR APPROXIMATELY 9 MILES AND TURN LEFT ONTO S CHRISTENSEN RD/S GRAHAM RD.
   4. TURN RIGHT AT THE GRAHAM ROAD LANDFILL IN APPROXIMATELY 0.3 MILES.

3. THE PROPOSED TRANSPORTATION ROUTE IS BASED ON GOOGLE MAPS DIRECTIONS. THE ACTUAL TRANSPORTATION ROUTE IS TO BE DETERMINED AT THE TIME OF HAULING BY THE HAULING COMPANY.

0 5000 10000
1" = 5000' FEET

CLIENT
UNION PACIFIC RAILROAD CO.

PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SOIL EXCAVATION AND DISPOSAL PLAN WITH PROPOSED TRANSPORTATION ROUTES

CONSULTANT
GOLDER
MEMBER OF WSP

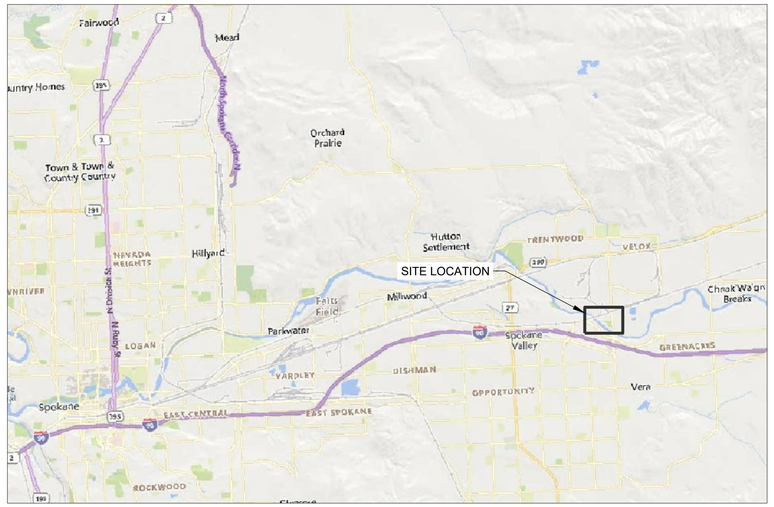
YYYY-MM-DD	2021-11-19
DESIGNED	VMN
PREPARED	REDMOND
REVIEWED	FSS
APPROVED	TJN

PROJECT NO.	PHASE	REV.	FIGURE
19119180	1000B	A	4

APPENDIX A

Design Drawings and Specifications

ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON



VICINITY MAP
SCALE 1" = 8000'

SITE LOCATION MAP
SCALE 1" = 400'

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
010	COVER SHEET
020	GENERAL NOTES AND SPECIFICATIONS (1 OF 2)
021	GENERAL NOTES AND SPECIFICATIONS (2 OF 2)
030	SITE OVERVIEW
040	SURVEY MONUMENTATION AND CONTROL
050	EROSION AND SEDIMENT CONTROL PLAN
051	EROSION AND SEDIMENT CONTROL DETAILS
060	ACCESS ROAD AND STAGING AREA PLAN
061	ACCESS ROAD DETAILS
070	MONITORING WELL DECOMMISSIONING
100	DROSS STOCKPILE REMOVAL PLAN
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120	ECOLOGICAL CAP AND CONTAINMENT BERM PLAN (1 OF 2)
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200	OFF-PILE AREAS SOIL REMOVAL PLAN (1 OF 3)
201	OFF-PILE AREAS SOIL REMOVAL PLAN (2 OF 3)
202	OFF-PILE AREAS SOIL REMOVAL PLAN (3 OF 3)
203	OFF-PILE AREAS SOIL REMOVAL CONTOURS (1 OF 3)
204	OFF-PILE AREAS SOIL REMOVAL CONTOURS (2 OF 3)
205	OFF-PILE AREAS SOIL REMOVAL CONTOURS (3 OF 3)
210	OFF-PILE AREAS SOIL REMOVAL SECTIONS (1 OF 2)
211	OFF-PILE AREAS SOIL REMOVAL SECTIONS (2 OF 2)
215	OFF-PILE AREAS SOIL REMOVAL DETAILS
220	OFF-PILE AREAS FINAL GRADING PLAN (1 OF 3)
221	OFF-PILE AREAS FINAL GRADING PLAN (2 OF 3)
222	OFF-PILE AREAS FINAL GRADING PLAN (3 OF 3)
400	SURFACE WATER MANAGEMENT PLAN
410	SURFACE WATER MANAGEMENT DETAILS
500	FENCING PLAN (1 OF 2)
501	FENCING PLAN (2 OF 2)
510	FENCING DETAILS

NOT FOR CONSTRUCTION

DRAFT

0 8000 16000
1" = 8000' FEET

0 400 800
1" = 400' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
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PROJECT
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REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
COVER SHEET

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	1 of 35	010

UTILITIES

A. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND PROTECTING ALL UTILITIES, BOTH ABOVE AND BELOW GROUND, DURING THE WORK.

B. CONTRACTOR SHALL ARRANGE FOR PUBLIC UTILITY LOCATES. CONTRACTOR SHALL ALSO ARRANGE FOR PRIVATE LOCATE SERVICES IN ALL GROUND DISTRUBANCEAREAS NOT COVERED BY PUBLIC LOCATES.

C. THE OWNER WILL OBTAIN PERMITS FROM BPA, AVISTA, AND INLAND POWER. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH ALL PERMIT CONDITIONS. NOTHING IN THESE PERMITS SHALL RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR IDENTIFYING AND PROTECTING UTILITIES AND COMPLYING WITH ALL OTHER REQUIREMENTS OF THIS ARTICLE.

D. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE CONDITIONS ESTABLISHED BY THE ELECTRICAL UTILITY PROVIDERS FOR WORK UNDER AND ADJACENT TO THEIR POWER LINES, BOTH OVERHEAD AND UNDERGROUND, INCLUDING SOIL REMOVAL AND REPLACEMENT. COSTS FOR SPECIALIST PERSONNEL REQUIRED OR PROVIDED BY THE UTILITY COMPANIES SHALL BE INCLUDED IN THE CONTRACTOR'S PRICES. REDUCED OUTPUT RESULTING FROM UTILITY REQUIREMENTS SHALL BE FACTORED INTO CONTRACTOR'S UNIT RATES FOR WORK IN THESE AREAS.

E. ANY UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE OWNER AND UTILITY PROVIDER WILL DETERMINE THE EXTENT OF DAMAGE AND THE NEED FOR REPAIR OR REPLACEMENT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL PENALTIES, FEES, AND OTHER COSTS ASSESSED BY THE UTILITY PROVIDER OR AUTHORITY HAVING JURISDICTION (AHJ) THAT ARE RELATED TO UTILITY DAMAGE.

CONTRACTOR HEALTH AND SAFETY

A. ALL CONTRACTOR PERSONNEL INVOLVED IN ACTIVITIES THAT COULD POTENTIALLY CAUSE THEM TO COME IN CONTACT WITH CONTAMINATED MATERIALS SHALL BE 40-HOUR TRAINED IN ACCORDANCE WITH OSHA 1910.120 HAZARDOUS WASTE OPERATIONS.

B. SUBMIT FOR APPROVAL A SITE-SPECIFIC HEALTH AND SAFETY PLAN.

C. NO CONTRACTOR PERSONNEL SHALL WORK WITHIN 25 FEET OF THE CLOSEST RAILROAD TRACK UNLESS THEY HAVE SUCCESSFULLY COMPLETED UNION PACIFIC RAILROAD SAFETY TRAINING. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IF SUCH TRAINING WILL BE REQUIRED AND SUBMIT DOCUMENTATION OF COMPLETED TRAINING.

PUBLIC SAFETY

A. INSTALL BARRICADES, SAFETY FENCING, SIGNAGE, AND OTHER FEATURES TO PREVENT INADVERTENT ACCESS BY MEMBERS OF THE PUBLIC TO THE WORK AREA.

B. CHAIN LINK FENCING

1. INSTALL TEMPORARY CHAIN LINK FENCING TO EXCLUDE THE GENERAL PUBLIC FROM THE WORK AREA AND STAGING \ LAYDOWN AREA(S).
2. TEMPORARY CHAIN LINK FENCING SHALL BE A MINIMUM OF 6 FEET HIGH.
3. INSTALL GATES WITH SIZE AND LOCATION AS NECESSARY, SUBJECT TO THE REQUIREMENTS OF THE TRAFFIC CONTROL PLAN AND THE APPROVAL OF THE CONSTRUCTION MANAGER.
4. MATERIALS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF WSDOT 9-16.1 “CHAIN LINK FENCE AND GATES”.
5. FENCE POSTS MAY BE DRIVEN INTO THE GROUND OR WELDED TO HORIZONTAL TUBULAR FEET OR SIMILAR METHOD OF SUPPORT.

C. SAFETY FENCE

1. SAFETY FENCE SHALL BE HIGH-VISIBILITY FENCING CONFORMING TO THE REQUIREMENTS OF WSDOT 8-01.3(9)A1 “HIGH VISIBILITY FENCING”.
2. INSTALL SAFETY FENCING AROUND EXCAVATIONS, AT THE TOP OF SLOPES, AND IN ANY OTHER LOCATIONS AS NECESSARY TO EXCLUDE PERSONNEL FROM DANGEROUS SITUATIONS, OR AS DIRECTED BY THE CONSTRUCTION MANAGER.

D. BARRICADES

PER WSDOT 1-10.3(3)D “BARRICADES” AND 9-35.6 “BARRICADES”.

E. SIGNAGE

1. ATTACH OSHA DANGER SIGNS TO OUTSIDE OF TEMPORARY CHAIN LINK FENCE AT MAXIMUM 100-FOOT INTERVALS.
2. DANGER SIGNS SHALL BE STANDARD PRODUCTS, ALUMINUM, NOMINAL 18 INCHES BY 24 INCHES IN DIMENSION, WITH CLEAR LETTERING THAT SAYS “DANGER - CONSTRUCTION AREA - KEEP OUT” OR SIMILAR MESSAGE.

TRAFFIC CONTROL

A. PRIOR TO BEGINNING WORK, SUBMIT TRAFFIC CONTROL PLAN FOR APPROVAL BY JURISDICTIONAL AUTHORITY. CONSTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR HAULING OF SOIL AND DEBRIS, MOVING OF OVERSIZE EQUIPMENT, AND OTHER REGULATED ACTIVITIES.

B. TRAFFIC CONTROL PLAN SHALL ADDRESS TRUCKS ENTERING AND LEAVING SITE AND SHALL COMPLY WITH ALL CITY, COUNTY, AND STATE REQUIREMENTS.

C. SUBMIT COPY OF APPROVED TRAFFIC CONTROL PLAN AND PERMIT(S) TO CONSTRUCTION MANAGER FOR INFORMATION.

SURVEYING

A GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL PROVIDE ALL SURVEYING REQUIRED FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO MONUMENTATION, STAKING, LAYOUT, AND ALL OTHER NECESSARY ACTIVITIES AS REQUIRED DURING CONSTRUCTION TO CONTROL THEIR ACTIVITIES, TO ACHIEVE LINES AND GRADES, AND OTHERWISE COMPLETE THE WORK AS SHOWN ON THE DRAWINGS.
2. ALL SURVEYING ACTIVITIES SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF WASHINGTON.
3. “SURVEY POINT” AS DEFINED IN THIS SECTION MEANS DETERMINATION OF NORTHING, EASTING, AND ELEVATION AT THE SUBJECT POINT.
4. PROVIDE ELECTRONIC FILES IN AUTOCAD 2019 OR HIGHER VERSION AND, IF REQUESTED, HARD COPY TO THE CONSTRUCTION MANAGER.
5. DATA SHALL INCLUDE AS A MINIMUM THE DATE OF THE SURVEY, PERSONNEL PERFORMING THE SURVEY, EQUIPMENT USED, A UNIQUE IDENTIFIER FOR EACH SURVEY POINT, AND THE X, Y, AND Z COORDINATES OF THAT POINT IN THE PROJECT COORDINATE SYSTEM.
6. FINAL DETERMINATION OF THE ACCEPTABILITY OF THE CONTRACTOR'S SURVEY DATA SHALL BE MADE BY THE CONSTRUCTION MANAGER.

B. REFERENCE DATUM

SURVEY POINTS SHALL BE REFERENCED TO THE SAME HORIZONTAL DATUM AND VERTICAL DATUM AS SHOWN ON THE DRAWINGS FOR THIS PROJECT.

C. EQUIPMENT

THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, SUPPLIES, AND SUPPORTING MATERIAL REQUIRED FOR SURVEY ACTIVITIES. SUCH EQUIPMENT SHALL BE STANDARD COMMERCIALLY AVAILABLE EQUIPMENT SUITABLE FOR THE INTENDED PURPOSE OF THIS SECTION.

D. ACCURACY

1. ALL SURVEYING ACTIVITIES SHALL BE PERFORMED USING METHODS AND EQUIPMENT WITH SUFFICIENT ACCURACY TO MEASURE TO THE TOLERANCES LISTED IN THESE SPECIFICATIONS.
2. UNLESS OTHERWISE SPECIFIED OR INDICATED, THE MINIMUM REQUIRED ACCURACY FOR BOTH VERTICAL AND HORIZONTAL MEASUREMENTS SHALL BE ± 0.1 FOOT.

E. CONTROL

1. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL VERIFY THE LOCATIONS, CONDITION, AND ACCURACY OF EXISTING MONUMENTS AND ESTABLISH ANY OTHER REFERENCE POINTS OR MONUMENTS THAT MAY BE REQUIRED.
2. LOCATIONS OF EXISTING SURVEY MONUMENTS ARE SHOWN ON THE DRAWINGS.

F. SURVEY FOR MEASUREMENT

1. SURVEY POINTS TO MEASURE AREA SHALL BE AT INTERVALS OF 50-FEET OR LESS AROUND THE PERIMETER OF THE SUBJECT AREA.
2. SURVEY FOR LINEAR FOOT MEASUREMENTS SHALL BE AT INTERVALS OF 50-FEET OR LESS ALONG THE CENTERLINE OF THE SUBJECT FEATURE.
3. WHEN “BEFORE” AND “AFTER” SURVEYS ARE PERFORMED FOR THICKNESS MEASUREMENT, POINTS AT THE SAME HORIZONTAL COORDINATES SHALL BE USED FOR MEASUREMENT, UNLESS APPROVED OTHERWISE IN ADVANCE BY THE CONSTRUCTION MANAGER. THE GRID SPACING FOR SUCH MEASUREMENT SHALL BE 25 FEET, UNLESS APPROVED OR DIRECTED OTHERWISE BY THE CONSTRUCTION MANAGER.
4. WHERE THE MEASUREMENT METHOD IS BY TAPING, THE CONTRACTOR SHALL PERFORM THE MEASUREMENT WITH A HIGH-QUALITY SURVEYOR'S TAPE.
5. THE CONTRACTOR SHALL SURVEY THE LOCATIONS OF ANY “POTHOLES” OR OTHER FEATURES USED FOR MEASUREMENT, AS DIRECTED BY THE CONSTRUCTION MANAGER.

G. AS-BUILT DRAWINGS

AT THE END OF THE PROJECT, PROVIDE AS-BUILT DRAWINGS SHOWING, AT A MINIMUM, LATERAL EXTENT AND DEPTH OF SOIL REMOVAL, FINAL REGRADED SURFACES, EXTENT OF ECOLOGICAL CAP, CENTER LINES OF SURFACE WATER DITCHES, INSTALLED FENCING, AND INFORMATION ON OTHER FEATURES CONSTRUCTED OR MODIFIED DURING THE WORK.

TEMPORARY FACILITIES

A. GENERAL

1. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY FACILITIES AND UTILITIES DESCRIBED IN THIS SECTION AND AS REQUIRED TO FULLY SUPPORT ALL WORK ACTIVITIES AND COMPLY WITH THE HEALTH AND SAFETY AND ENVIRONMENTAL PROTECTION REQUIREMENTS DESCRIBED IN THESE SPECIFICATIONS AND AS REQUIRED BY APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
2. TEMPORARY BUILDINGS, STORAGE FACILITIES, AND MAINTENANCE AND FUELING AREAS SHALL BE READY FOR USE PRIOR TO THE ASSOCIATED PHASE OF THE SITE WORK.
3. ANY LOCAL PERMITS REQUIRED FOR INSTALLATION AND/OR OPERATIONS SHALL BE OBTAINED BY THE CONTRACTOR. COPIES OF ALL PERMITS SHALL BE PROVIDED TO THE CONSTRUCTION MANAGER.
4. ALL TEMPORARY FACILITIES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES, REGULATIONS, AND ORDINANCES.

B. ELECTRICAL SERVICE

1. THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL ELECTRICAL SERVICE PROVIDER FOR SERVICE LINES AND CONNECTION.
2. ANY OVERHEAD POWER WIRES RUN SHALL HAVE AT LEAST 14 FEET OF GROUND CLEARANCE AT THE LOW POINT OF THE WIRE BEING RUN BETWEEN THE POWER POLES AND/OR A STRUCTURE.
3. IF ON-SITE POWER GENERATION (E.G., DIESEL GENERATORS) IS USED, EQUIPMENT SHALL COMPLY WITH CURRENT U.S. EPA, ECOLOGY, AND CITY \ COUNTY PERMITTING AND OPERATIONAL REQUIREMENTS FOR SUCH UNITS, IN PARTICULAR THE CORRECT ENGINE TIER AND FUEL (E.G., ULTRA-LOW SULFUR DIESEL FUEL) ALLOWED FOR THE SITE AREA. GENERATORS SHALL BE EQUIPPED WITH SUITABLE NOISE AND EXHAUST LIMITING DEVICES AND LOCATED SO AS TO PREVENT NOISE OR EXHAUST DISTURBANCE TO ANY PERSONNEL WORKING IN THE FACILITIES AREA AND COMPLY WITH APPLICABLE NOISE LIMITS AT THE PROPERTY BOUNDARY.
4. THE CONTRACTOR SHALL PROVIDE GFI-PROTECTED POWER OUTLETS FOR WORK OPERATIONS, WITH BRANCH WIRING AND DISTRIBUTION BOXES LOCATED AS REQUIRED.
5. FLEXIBLE POWER CORDS SHALL BE SUPPLIED AS REQUIRED AND SIZED (WIRE GAUGE) TO CARRY THE LOADS FOR THE EQUIPMENT BEING USED. ALL SUCH CORDS SHALL BE DISCONNECTED WHEN NOT IN USE.
6. THE CONTRACTOR SHALL PAY THE ELECTRICAL UTILITY COMPANY DIRECTLY FOR ALL POWER USAGE ASSOCIATED WITH THE WORK.

C. TEMPORARY LIGHTING

1. PROVIDE TEMPORARY LIGHTING AS NECESSARY TO PERFORM ALL WORK ACTIVITIES SAFELY AND AS INTENDED.
2. THE CONTRACTOR SHALL PROVIDE BRANCH WIRING FROM A DESIGNATED POWER SOURCE TO DISTRIBUTION BOXES WITH LIGHTING CONDUCTORS, PIGTAILS AND LAMPS, AS NECESSARY.
3. THE CONTRACTOR SHALL MAINTAIN LIGHTING AND PROVIDE ROUTINE REPAIRS.

D. WATER

1. NON-POTABLE WATER
   a. NON-POTABLE WATER SHALL BE OBTAINED FROM HYDRANT(S) AT THE LOCATION(S) SHOWN ON THE DRAWINGS, I.E. "WATER SOURCE."
   b. MAINTAIN A SUFFICIENT QUANTITY OF NON-POTABLE WATER ON-SITE TO SATISFY FIRE PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL COMPLY WITH LOCAL ORDINANCES REGARDING FIRE PROTECTION SERVICE.
   c. THE CONTRACTOR SHALL PAY THE WATER PROVIDER DIRECTLY FOR ALL WATER USAGE ASSOCIATED WITH THE WORK.
2. POTABLE WATER
   a. PROVIDE POTABLE WATER FROM OFF-SITE SOURCES FOR DRINKING, HANDWASHING, SHOWERS, AND SIMILAR USES PER REGULATORY REQUIREMENTS.
   b. FOR DRINKING, PROVIDE POTABLE BOTTLED WATER FROM A COMMERCIAL SOURCE NORMALLY ENGAGED IN PROVIDING SUCH WATER. WATER STATIONS SHALL BE PROVIDED AT A MINIMUM IN EACH TRAILER AND AT STRATEGIC LOCATIONS AROUND THE SITE, CONSISTENT WITH HEALTH AND SAFETY REQUIREMENTS.
   c. CONTRACTOR SHALL IDENTIFY AND OBTAIN AND PAY FOR ALL NECESSARY APPROVALS AND PERMITS FOR POTABLE WATER OBTAINED FROM PUBLIC WATER SUPPLIES.

E. SANITARY FACILITIES

1. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN REQUIRED TEMPORARY TOILET FACILITIES AND WASH STATIONS PER STATE AND LOCAL REGULATIONS/ORDINANCES.
2. SEPARATE TOILET FACILITIES SHALL BE PROVIDED FOR MEN AND WOMEN AND SHALL BE CLEARLY MARKED AS SUCH.
3. THE CONTRACTOR SHALL CLEAN, EMPTY, SUPPLY, AND MAINTAIN ALL PORTABLE TOILET FACILITIES AS REQUIRED TO KEEP THEM IN A FUNCTIONAL AND SANITARY CONDITION, BUT IN NO CASE AT INTERVALS GREATER THAN ONCE PER WEEK, UNLESS APPROVED OTHERWISE BY THE CONSTRUCTION MANAGER.

F. TEMPORARY BUILDINGS

1. PROVIDE PORTABLE OR MOBILE BUILDINGS INCLUDING A CONTRACTOR OFFICE, A CONSTRUCTION MANAGER TRAILER, AND ANY OTHER TRAILERS NEEDED BY CONTRACTOR FOR THE WORK.
2. THE CONSTRUCTION MANAGER TRAILER SHALL BE A MINIMUM OF 10 FT BY 40 FT IN DIMENSION AND SHALL HAVE TWO 10-FT BY 10-FT OFFICES AND ONE 10-FT BY 20-FT LABORATORY AND EQUIPMENT AREA.
3. TEMPORARY BUILDINGS SHALL HAVE STEPS AND LANDINGS AT ENTRANCE DOORS. PROVIDE BOOT CLEANING STATIONS AND DOORMATS AT EACH BUILDING ENTRANCE.
4. CONDITION, APPEARANCE, AND FINAL LOCATION OF TEMPORARY BUILDINGS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE CONSTRUCTION MANAGER AND SHALL BE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AND ORDINANCES.
5. THE TEMPORARY BUILDINGS SHALL BE OF SOUND CONSTRUCTION, WEATHER-TIGHT, AND EQUIPPED WITH CLIMATE-CONTROL UNITS (HEAT AND AIR CONDITIONING).
6. TEMPERATURE TRANSMISSION RESISTANCE OF THE BUILDING WALLS, CEILING, FLOORS, AND ROOF SHALL BE COMPATIBLE WITH OCCUPANCY AND STORAGE REQUIREMENTS.
7. EACH BUILDING SHALL BE EQUIPPED WITH A FIRE EXTINGUISHER AND FIRST AID KIT.
8. BUILDING SPACES SHALL HAVE ADEQUATE INTERIOR LIGHTING AND EXTERIOR LIGHTING AT THE ENTRANCES.
9. PROVIDE AT A MINIMUM DESKS, CHAIRS, AND FILING CABINETS IN EACH INTERNAL AREA OF EACH TEMPORARY BUILDING, TOGETHER WITH OTHER FURNISHINGS AND EQUIPMENT AS NECESSARY TO SUPPORT THE WORK.
10. TEMPORARY BUILDINGS SHALL BE ESTABLISHED AND FULLY OPERATIONAL WITHIN ONE WEEK OF CONTRACTOR MOBILIZATION TO THE SITE.

G. COMMUNICATIONS

1. THE CONTRACTOR SHALL PROVIDE TELEPHONE SERVICE, INTERNET AND EMAIL SERVICE, AND OTHER COMMUNICATION SERVICES AT THE SITE AS NECESSARY TO SUPPORT HIS OPERATIONS.
2. THE CONTRACTOR SHALL PROVIDE RADIOS OR OTHER APPROVED DEVICES FOR COMMUNICATIONS BETWEEN OPERATORS, DRIVERS, FOREMEN, AND OTHER ON-SITE PERSONNEL DURING THE PROJECT TO ENSURE ADEQUATE COORDINATION AND SAFE WORKING CONDITIONS. PROVIDE TWO RADIOS TO CONSTRUCTION MANAGER AND SAMPLING PERSONNEL, RESPECTIVELY.
3. THE CONTRACTOR SHALL ARRANGE FOR COMMUNICATION SERVICES AND PAY THE PROVIDER(S) DIRECTLY, INCLUDING BUT NOT LIMITED TO HOOKUPS, WIRING, PHONE DROPS, MODIFICATIONS, USAGE FEES, MAINTENANCE, AND FINAL REMOVAL OF THE COMMUNICATIONS SYSTEMS.

H. STORAGE FACILITIES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF HIS EQUIPMENT AND MATERIAL ON SITE. THE CONTRACTOR SHALL PROVIDE SECURED STORAGE SPACE AS NECESSARY AND SHALL PROVIDE ANY OTHER SECURITY MEASURES NECESSARY TO PREVENT UNAUTHORIZED ACCESS, VANDALISM, THEFT, WEATHER DAMAGE, AND OTHER ADVERSE SITUATIONS.
2. PROVIDE SECURE, LOCKABLE STORAGE FACILITIES AS NECESSARY FOR TOOLS, MATERIALS, EQUIPMENT, SUPPLIES, AND THE LIKE. STORAGE FACILITIES SHALL COMPLY WITH ALL APPLICABLE REGULATORY AND SAFETY REQUIREMENTS.
3. STORAGE FACILITIES MAY BE LOCATED AS CONVENIENT WITHIN THE AREAS SHOWN ON THE DRAWINGS, SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER.

I. FUELING AND MAINTENANCE AREAS

1. FUELING AND MAINTENANCE FACILITIES SHALL BE DESIGNED, EQUIPPED, AND OPERATED IN ACCORDANCE WITH THE PROVISIONS OF CONTRACTOR'S APPROVED SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLAN AND THE SITE CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
2. PROVIDE APPROPRIATE FIRE EXTINGUISHERS AT THE FUELING AND MAINTENANCE AREAS AND ANY LOCATIONS WHERE FUELING, WELDING, TORCH CUTTING, OR OTHER SIMILAR ACTIVITIES WILL BE PERFORMED.
3. ENSURE THAT ALL WELDING, OXYGEN, ACETYLENE, AND OTHER GAS BOTTLES ARE STORED UPRIGHT AND SECURED AT ALL TIMES TO PREVENT TIPPING OR FALLING OVER, ESPECIALLY WHEN BEING USED.
4. STORE ALL MATERIALS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS AND BEST INDUSTRY PRACTICES.

J. CONTRACTOR PARKING AREA

1. THE CONTRACTOR SHALL USE THE DESIGNATED PARKING AREA FOR HIS PERSONNEL AT THE LOCATION SHOWN ON THE DRAWINGS. CONTRACTOR PERSONNEL SHALL PARK ONLY IN THIS DESIGNATED AREA.
2. NO OVERNIGHT PARKING SHALL BE ALLOWED IN THE PARKING LOT.

K. ACCESS ROADS

1. RESTORE ACCESS ROADS TO AT LEAST THE SERVICE LEVEL PRIOR TO THE PROJECT.
2. RESTORE ACCESS ROADS TO UTILITY FEATURES AS REQUIRED BY THE UTILITY PROVIDER.

L. MAINTENANCE AND CLEANING

1. THE CONTRACTOR SHALL PERFORM WEEKLY CLEANING AND MAINTENANCE FOR ALL BUILDINGS, TRAILERS, AND STORAGE SHEDS.
2. MAINTAIN APPROACH WALKS FREE OF MUD, SNOW AND ICE, WATER, AND DEBRIS.
3. THE CONTRACTOR SHALL PROVIDE PORTABLE DUMPSTERS FOR DISPOSAL OF OFFICE WASTE, GARBAGE, AND OTHER MUNICIPAL-TYPE WASTES. BOXES SHALL HAVE HEAVY LIDS FOR COMPLETE CLOSURE AND SHALL BE LOCKABLE IF NECESSARY TO PREVENT ACCESS BY WILDLIFE.
4. DUMPSTERS SHALL BE PERIODICALLY EMPTIED AT A MINIMUM FREQUENCY OF ONCE PER WEEK OR WHEN THEY REACH CAPACITY. WASTE SHALL BE DISPOSED OF IN A PERMITTED LANDFILL.
5. COMBUSTIBLE DEBRIS AND MATERIALS SHALL BE MANAGED IN SUCH A MANNER AS TO PREVENT ACCIDENTAL COMBUSTION. ACCUMULATIONS OF SUCH MATERIALS WILL NOT BE ALLOWED AT ANY TIME OR LOCATION DURING THE PROJECT.

L. REMOVAL

UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL REMOVE TEMPORARY FACILITIES, SUPPORTS/FOUNDATIONS, TEMPORARY FENCING, AND ALL EQUIPMENT, MATERIALS, AND DEBRIS FROM THE SITE. UTILITY SERVICES SHALL BE TERMINATED IN A SAFE MANNER CONSISTENT WITH UTILITY PROVIDER AND CODE REQUIREMENTS.

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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
GENERAL NOTES AND SPECIFICATIONS (1 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	2 of 35	020

EROSION AND SEDIMENT CONTROL

A. GENERAL

1. THE CONTRACTOR SHALL PREVENT SEDIMENT ASSOCIATED WITH CONSTRUCTION ACTIVITIES FROM LEAVING THE WORK AREA.
2. PRIOR TO BEGINNING ANY GROUND-DISTURBING ACTIVITIES, SUBMIT A TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN FOR APPROVAL. THE TESC PLAN SHALL DESCRIBE IN DETAIL THE MATERIALS, LOCATION, AND OPERATION \ MAINTENANCE OF ALL CONTROL MEASURES PROPOSED TO ACHIEVE THE REQUIREMENTS OF THIS SECTION.
3. THE CONTRACTOR MAY ELECT TO USE OTHER BEST MANAGEMENT PRACTICES (BMPS) NOT LISTED IN THESE SPECIFICATIONS, FOR EXAMPLE STRAW WATTLES OR PLASTIC SHEETING, IF APPROPRIATE FOR HIS OPERATIONS. DESCRIBE ALL SUCH BMPS IN THE TESC PLAN.
4. FAILURE TO LIST A PARTICULAR EROSION CONTROL METHOD OR REQUIREMENT IN THESE SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR COMPLYING WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
5. ALSO COMPLY WITH ALL PERTINENT REQUIREMENTS OF THE CONSTRUCTION STORMWATER GENERAL PERMIT \ SWPPP.

B. SILT FENCE

1. SILT FENCE MATERIAL SHALL CONFORM TO WSDOT 9-33.1 "GEOSYNTHETIC MATERIAL REQUIREMENTS" INCLUDING TABLE 6 "GEOTEXTILE FOR TEMPORARY SILT FENCE".
2. INSTALL SILT FENCE IN ACCORDANCE WITH WSDOT 8-01.3(9)A2 "SILT FENCE". USE BACKUP SUPPORT WHERE NEEDED OR AS DIRECTED BY THE CONSTRUCTION MANAGER.

C. STRAW BALES OR WATTLES

1. STRAW BALES SHALL BE WEED-FREE IN ACCORDANCE WITH WSDOT 9-14.5(1) "STRAW".
2. STRAW WATTLES SHALL CONFORM TO WSDOT 9-14.6(5) "WATTLES".
3. INSTALL WATTLES IN ACCORDANCE WITH WSDOT 8-01.3(10) "WATTLES".

D. TRUCK WASH SYSTEM

1. PROVIDE WASH SYSTEM TO REMOVE ALL SOIL FROM WHEELS AND UNDERSIDE OF TRUCKS LEAVING THE SITE AND USING PUBLIC HIGHWAYS.
2. INSTALL WASH SYSTEM AT LOCATION SHOWN ON THE DRAWINGS.
3. WASH SYSTEM SHALL COLLECT ALL WASH WATER TO PREVENT INFILTRATION INTO GROUND.
4. WASH SYSTEM SHALL BE MANUFACTURED UNIT DESIGNED SPECIFICALLY FOR INTENDED PURPOSE. ACCEPTABLE PRODUCTS INCLUDE MOBYDICK CONLINE KIT FLEX 800 B, NEPTUNE MAXIMUS SERIES, OR APPROVED EQUAL.
5. CONTRACTOR SHALL PROVIDE WATER, POWER, AND OTHER UTILITIES FOR WASH SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS FOR "TEMPORARY FACILITIES" IN THESE SPECIFICATIONS.
6. TRANSPORT AND DISPOSE OF WASH WATER IN PERMITTED LIQUID DISPOSAL FACILITIY.
7. TRANSPORT AND DISPOSE OF CONTAMINATED SEDIMENT AT GRAHAM ROAD LANDFILL.

E. STREET CLEANING

IF UNAVOIDABLE TRACK-OUT OR OFF-SITE SEDIMENT RELEASE OCCURS, CLEAN STREETS AS SOON AS PRACTICABLE IN ACCORDANCE WITH WSDOT 8-01.3(8) "STREET CLEANING".

CLEARING

A. CHIP AND STOCKPILE ON SITE FOR USE AS SOIL AMENDMENT IN UPPER 6 INCHES OF CLEAN SOIL BACKFILL IN OFF-PROPERTY AREAS.

EARTH MATERIALS

A. GENERAL REQUIREMENTS

1. EARTH MATERIALS SHALL BE CLEAN INORGANIC SOIL MATERIAL FREE OF RUBBISH, DEBRIS, ORGANIC MATERIAL, ICE, FROZEN SOIL, OR OTHER DELETERIOUS MATERIAL.
2. EARTH MATERIAL SHALL BE FREE OF CHEMICAL CONTAMINANTS ABOVE MTCA UNRESTRICTED USE LEVELS FOR THIS SITE.
3. SUBMIT FOR APPROVAL INFORMATION ON PROPOSED EARTH MATERIALS, INCLUDING BUT NOT LIMITED TO SOURCE, TYPE OF MATERIAL, AND TEST DATA TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION.
4. ALL LOADS OF EARTH MATERIALS, INCLUDING CONTAMINATED SOILS, SHALL BE COVERED WHEN HAULING ON PUBLIC HIGHWAYS.
5. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF ALL ON-SITE INTERIM STOCKPILES TO CONSTRUCTION MANAGER FOR APPROVAL PRIOR USE.

B. EXCAVATION

1. EXCAVATE CONTAMINATED SOILS TO THE MINIMUM EXTENTS SHOWN ON THE DRAWINGS.
2. THE ACTUAL EXTENT OF SOIL REMOVAL WILL BE DETERMINED IN THE FIELD BY THE CONSTRUCTION MANAGER. THE CONTRACTOR SHALL SEQUENCE HIS SOIL REMOVAL ACTIVITIES TO ACCOMMODATE THE REQUIRED SAMPLING AND TESTING ACTIVITIES. NO ADDITIONAL COST OR SCHEDULE INCREASES WILL BE ALLOWED FROM THE FAILURE OF THE CONTRACTOR TO SEQUENCE HIS ACTIVITIES APPROPRIATELY.
3. DISPOSE OF MATERIAL FROM THE DROSS STOCKPILE AT THE GRAHAM ROAD LANDFILL.
4. SOILS REMOVED FROM AREAS OUTSIDE OF THE DROSS STOCKPILE MAY BE USED AS BACKFILL TO REACH SUBGRADE ELEVATIONS REQUIRED ON THE UPRR PROPERTY IF THEY ARE IMPACTED BELOW AGREED-UPON LEVELS, AS APPROVED \ DIRECTED BY THE CONSTRUCTION MANAGER. AFTER SUBGRADE ELEVATIONS ARE ACHIEVED ON THE UPRR PROPERTY, REMAINING SOILS SHALL BE SCREENED TO REMOVE ALL MATERIAL GREATER THAN 6 INCHES IN DIMENSION. MATERIAL RETAINED ON THE SCREEN SHALL BE STOCKPILED AT A LOCATION AS SHOWN ON THE DRAWINGS OR AS APPROVED \ DIRECTED BY THE CONSTRUCTION MANAGER FOR LATER USE AS BACKFILL. MATERIAL PASSING THE SCREEN SHALL BE DISPOSED OF AT THE GRAHAM ROAD LANDFILL.
5. IT IS NOT ANTICIPATED THAT REMOVAL OF IMPACTED MATERIAL ALONG THE NORTH SIDE OF THE DROSS STOCKPILE WILL BE CLOSE ENOUGH TO THE UPRR TRACKS OR DEEP ENOUGH THAT SHORING WILL BE REQUIRED. HOWEVER, IF DURING REMEDIATION IT IS DETERMINED THAT SHORING IS REQUIRED, BASED ON THE CRITERIA CONTAINED IN THE UPRR GUIDELINES FOR TEMPORARY SHORING, DATED OCTOBER 25, 2004 (THE GUIDELINES), THEN THE CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON, TO PREPARE A SHORING DESIGN IN ACCORDANCE WITH THE GUIDELINES. THE SHORING DESIGN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY UPRR PRIOR TO CONSTRUCTION.

C. BACKFILL

1. BACKFILL FROM OFFSITE SOURCES SHALL BE NON-PLASTIC SOIL AS DETERMINED BY ASTM D4318 "STANDARD TEST METHODS FOR LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOILS", SHALL HAVE A MAXIMUM PARTICLE SIZE OF 6 INCHES, AND SHALL HAVE NO MORE THAN 15% BY DRY WEIGHT OF MATERIAL PASSING THE U.S. NO. 200 SIEVE.
2. PLACE BACKFILL IN MAXIMUM 12-INCH-THICK LOOSE LIFTS AND COMPACT WITH AT LEAST 4 PASSES OF A SMOOTH DRUM VIBRATORY ROLLER WITH A MINIMUM STATIC WEIGHT OF 15,000 LBS SUCH AS A CAT CS44, IR SD-70, OR SIMILAR APPROVED EQUIVALENT TO ACHIEVE A FIRM AND UNYIELDING SURFACE.

D. ECOLOGICAL CAP GRAVEL

1. GRAVEL FOR THE ECOLOGICAL CAP SHALL BE ANGULAR TO SUBANGULAR, SOUND, HARD, DURABLE NATURAL ROCK CONFORMING TO THE REQUIREMENTS OF WSDOT 9-03.9(2) "PERMEABLE BALLAST".
2. PREPARE SUBGRADE BY ROLLING WITH A MINIMUM OF 4 PASSES OF A SMOOTH DRUM VIBRATORY ROLLER WITH A MINIMUM STATIC WEIGHT OF 15,000 LBS SUCH AS A CAT CS44, IR SD-70, OR SIMILAR APPROVED EQUIVALENT TO ACHIEVE A FIRM AND UNYIELDING SURFACE. SURFACE SHALL BE SMOOTH, FLAT, AND FREE OF RUTS AND PROTRUSIONS GREATER THAN 0.5 INCHES. CONTRACTOR SHALL PROTECT SURFACE AND REPAIR AS NECESSARY TO MEET THE REQUIREMENTS OF THIS SECTION PRIOR TO PLACING OVERLYING MATERIALS.
3. PLACE ECOLOGICAL CAP GRAVEL IN A SINGLE LIFT, USING METHODS THAT WILL NOT STRETCH, DISPLACE, OR DAMAGE THE UNDERLYING GEOTEXTILE.

E. ARMOR ROCK

ARMOR ROCK SHALL BE SOUND, HARD, DURABLE NATURAL ROCK CONFORMING TO THE REQUIREMENTS OF WSDOT 9-13.1(5) "QUARRY SPALLS", INCLUDING THE REQUIREMENTS OF WSDOT 9-13.1(1) "GENERAL".

F. BPA ROAD GRAVEL

[TBD]

G. POWER POLE BACKFILL GRAVEL

[TBD]

H. DUST CONTROL

1. PREVENT NUISANCE DUST DURING EXCAVATION AND FILLING OPERATIONS.
2. ONLY WATER SHALL BE USED FOR DUST CONTROL. NON-POTABLE WATER WILL BE ACCEPTABLE.
3. THE CONSTRUCTION MANAGER MAY DIRECT THE CONTRACTOR TO INCREASE DUST CONTROL ACTIVITIES IF IN HIS\HER OPINION EXCESSIVE DUST IS BEING GENERATED.

GEOTEXTILE

A. GEOTEXTILE SHALL BE NON-WOVEN NEEDLEPUNCHED POLYPROPYLENE MATERIAL CONFORMING TO THE REQUIREMENTS OF GRI GT13(A) "TEST METHODS AND PROPERTIES FOR GEOTEXTILES USED AS SEPARATION BETWEEN SUBGRADE SOIL AND AGGREGATE", TABLE 1(A) - "GEOTEXTILE PROPERTIES CLASS 1 (HIGH SURVIVABILITY)".

B. SUBMIT FOR APPROVAL INFORMATION ON PROPOSED GEOTEXTILE MATERIAL, INCLUDING BUT NOT LIMITED TO MANUFACTURER, STANDARD PROPERTIES SHEET, AND TEST DATA TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION.

C. OVERLAP GEOTEXTILE PANELS AS RECOMMENDED BY THE MANUFACTURER.

D. GEOTEXTILES SHALL BE CONTINUOUSLY SEWN (I.E., SPOT SEWING IS NOT ALLOWED). ALTERNATIVELY, SINGLE OR DOUBLE WEDGE FUSION WELDING WILL BE ACCEPTABLE. LEISTER WELDING (SPOT OR CONTINUOUS) WILL NOT BE ACCEPTED AS A SEAMING METHOD. ALL SEWING SHALL BE DONE USING A SEWING MACHINE WHICH CREATES A CHAIN STITCH. WHEN ENTERING AND EXITING A SEAM, THE STITCHES SHALL BE OVERLAPPED TO PREVENT UNRAVELING.

VEHICLE ACCESS GATE

A. FABRICATE AND INSTALL VEHICLE ACCESS GATE AS SHOWN ON THE DRAWINGS.
B. PAINT VEHICLE ACCESS GATE WITH OSHA SAFETY YELLOW PAINT SUITABLE FOR OUTDOOR EXPOSURE.
C. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE GATE DESIGN IF IT USES STANDARD COMMERCIAL DESIGN AND WILL PROVIDE EQUIVALENT PERFORMANCE AND DURABILITY.

PERMANENT SECURITY FENCE

A. FENCE AND GATES SHALL CONFORM TO THE REQUIREMENTS OF WSDOT 9-16.1 EXCEPT AS NOTED IN THIS SECTION.
B. POSTS SHALL BE GRADE 1.
C. STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 AND SHALL BE HOT-DIPPED GALVANIZED INSIDE AND OUT.
D. USE SEAMLESS PIPE ONLY.
E. CHAIN LINK FENCE FABRIC SHALL BE 9 GAUGE STEEL, 2-INCH MESH, GALVANIZED CLASS 1 (1.2 OZ/SF) AND SHALL SATISFY ALL OTHER REQUIREMENTS OF THE CLFMI *PRODUCT MANUAL*.
F. BARBED WIRE SHALL CONSIST OF TWO STRANDS OF TWISTED WIRE WITH 4-POINT BARBS AT 5-INCH SPACING. BARBS SHALL BE 14 GAUGE AND SHALL BE GALVANIZED AT A MINIMUM OF 0.65 OZ/SF AND OF SUFFICIENT STRENGTH TO WITHSTAND WITHOUT FAILURE, 250 POUNDS DOWNWARD PULL. LINE WIRE SHALL BE 12-1/2 GAUGE AND SHALL BE GALVANIZED AT A MINIMUM OF 0.8 OZ/SF. BARBED WIRE SUPPORT ARMS SHALL CONFORM TO THE REQUIREMENTS OF THE CLFMI *PRODUCT MANUAL* AND SHALL BE INCLINED OUTWARD AT APPROXIMATELY 45 DEGREES FROM THE ENCLOSED AREA. BARBED WIRE SHALL BE DISCONTINUED BETWEEN THE GATE FRAME AND GATE POST.
G. STEEL PLATES, SHAPES, AND BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36.
H. HOT DIP GALVANIZE ALL STEEL COMPONENTS AND FABRICATIONS AND IN ACCORDANCE WITH ASTM A123, 2.3 OZ PER SQUARE FOOT MINIMUM.
I. ELECTRODES FOR WELDING SHALL MEET AWS SPECIFICATIONS FOR THE METAL ALLOY WELDED. USE E70XX UNLESS NOTED OTHERWISE.
J. GALVANIZING SOLDER SHALL BE GAL-VIZ MANUFACTURED BY HARRIS WELCO OR APPROVED EQUAL.
K. ALL OTHER CHAIN LINK FENCE MATERIALS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF WSDOT 9-16.1 OR, IF NOT SPECIFIED, THE REQUIREMENTS OF THE CLFMI *PRODUCT MANUAL* UNLESS INDICATED OTHERWISE IN THESE SPECIFICATIONS OR ON THE DRAWINGS.
L. CONCRETE SHALL AT A MINIMUM CONFORM TO THE REQUIREMENTS OF WSDOT CLASS 3000 CONCRETE.
M. CONSTRUCT SECURITY FENCE IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF WSDOT 8 12.3(1) AND THE CLFMI PRODUCT MANUAL, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
N. INSTALL CHAIN LINK FENCE IN ACCORDANCE WITH ASTM F567.
O. DO NOT INSTALL FENCE OR GATES UNTIL FINAL SITE GRADING HAS BEEN PERFORMED AND APPROVED BY THE CONSTRUCTION MANAGER.
P. PLACE CONCRETE AROUND POSTS IN A SINGLE PLACEMENT AND TAMP FOR CONSOLIDATION. CHECK EACH POST FOR VERTICAL ALIGNMENT AND DEPTH OF SET. CROWN TOP OF POST FOOTINGS TO SHED WATER OFF CONCRETE, AWAY FROM POST.
Q. SET KEEPERS, STOPS, SLEEVES, AND OTHER ACCESSORIES INTO CONCRETE.
R. INSTALL BRACES SO THAT POSTS ARE PLUMB WHEN DIAGONAL RODS ARE UNDER PROPER TENSION.
S. INSTALL TENSION WIRES BEFORE STRETCHING FABRIC. TIE WIRES TO EACH POST WITH TIES OR CLIPS.
T. AFTER THE ERECTION AND INSTALLATION ARE COMPLETE, REPAIR ALL DAMAGED GALVANIZED SURFACES ACCORDING TO ASTM A153, USING "HOT STICK" GALVANIZING SOLDER, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

LOCKS

A. PROVIDE HIGH-STRENGTH HARDENED STEEL PADLOCKS AND CHAINS FOR ALL VEHICLE ACCESS AND MAINTENANCE GATES.
B. THE LOCKS FOR EACH TYPE OF GATE (VEHICLE ACCESS AND MAINTENANCE GATES) SHALL BE KEYED THE SAME, BUT THE LOCKS FOR VEHICLE ACCESS GATES SHALL BE KEYED DIFFERENTLY FROM THOSE FOR MAINTENANCE GATES.
C. PROVIDE 3 SETS OF KEYS OF EACH TYPE TO THE CONSTRUCTION MANAGER.

RESEEDING

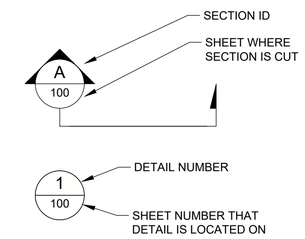
A. RESEED DISTURBED AREAS WITH DEPARTMENT OF ECOLOGY STORMWATER MANAGEMENT MANUAL FOR EASTERN WASHINGTON (SMMEW) TABLE 7.7 SEED MIX A USING THE INDICATED SEEDING RATES. NOTE THAT SEEDING RATES SHALL BE DOUBLED IF HYDROSEEDING OR BROADCAST METHODS ARE USED.
B. PERFORM RESEEDING IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF ECOLOGY SMMEW BMP C120E, IN PARTICULAR ALLOWABLE SEEDING TIME WINDOWS AND HYDROSEEDING METHODS.
C. RESEED ANY SEEDED AREAS THAT FAIL TO ESTABLISH ≥ 50% COVER AS DETERMINED BY VISUAL INSPECTION BY THE OWNER AFTER 3 MONTHS OF ACTIVE GROWTH FOLLOWING GERMINATION DURING THE INITIAL GROWING SEASON.
D. DO NOT RESEED ECOLOGICAL CAP AREA, DRAINAGE DITCHES, ACCESS ROADS, OR OTHER AREAS WHERE RESEEDING WOULD BE DETRIMENTAL TO THE FUNCTION OF THE AREA.

MONITORING WELL DECOMMISSIONING

A. DECOMISSION MONITORING WELLS AT LOCATIONS SHOWN ON THE DRAWINGS.
B. DECOMMISSION WELLS IN ACCORDANCE WITH WAC 173-160-381.
C. DECOMMISSIONING SHALL BE PERFORMED BY A QUALIFIED WELL CONTRACTOR LICENSED IN ACCORDANCE WITH WAC 173-162.
D. REMOVE AND DISPOSE OF BOLLARDS, CONCRETE PADS, WELL CASING, AND OTHER STRUCTURES AND RESTORE THE GROUND SURFACE TO CONDITIONS TO MATCH THE SURROUNDING GROUND SURFACE.

LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE



REFERENCE(S)

1. ORTHOPHOTO PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021.
2. TOPOGRAPHIC CONTOURS PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021.
3. PROPERTY BOUNDARIES PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/18/2021.
4. SITE FEATURES DIGITIZED FROM ORTHOPHOTO PROVIDED BY MID-MOUNTAIN SURVEYORS, INC. DATED 3/8/2021.
5. HORIZONTAL DATUM: NAD83 WASHINGTON STATE PLANE (2011), NORTH ZONE, US FOOT.
6. VERTICAL DATUM: NAVD88.
7. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM), VERSIONS CURRENT AT TIME OF BID.
8. GEOSYNTHETIC RESEARCH INSTITUTE (GRI), VERSIONS CURRENT AT TIME OF BID.
9. WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT) STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, 2020 VERSION.

NOT FOR CONSTRUCTION
DRAFT

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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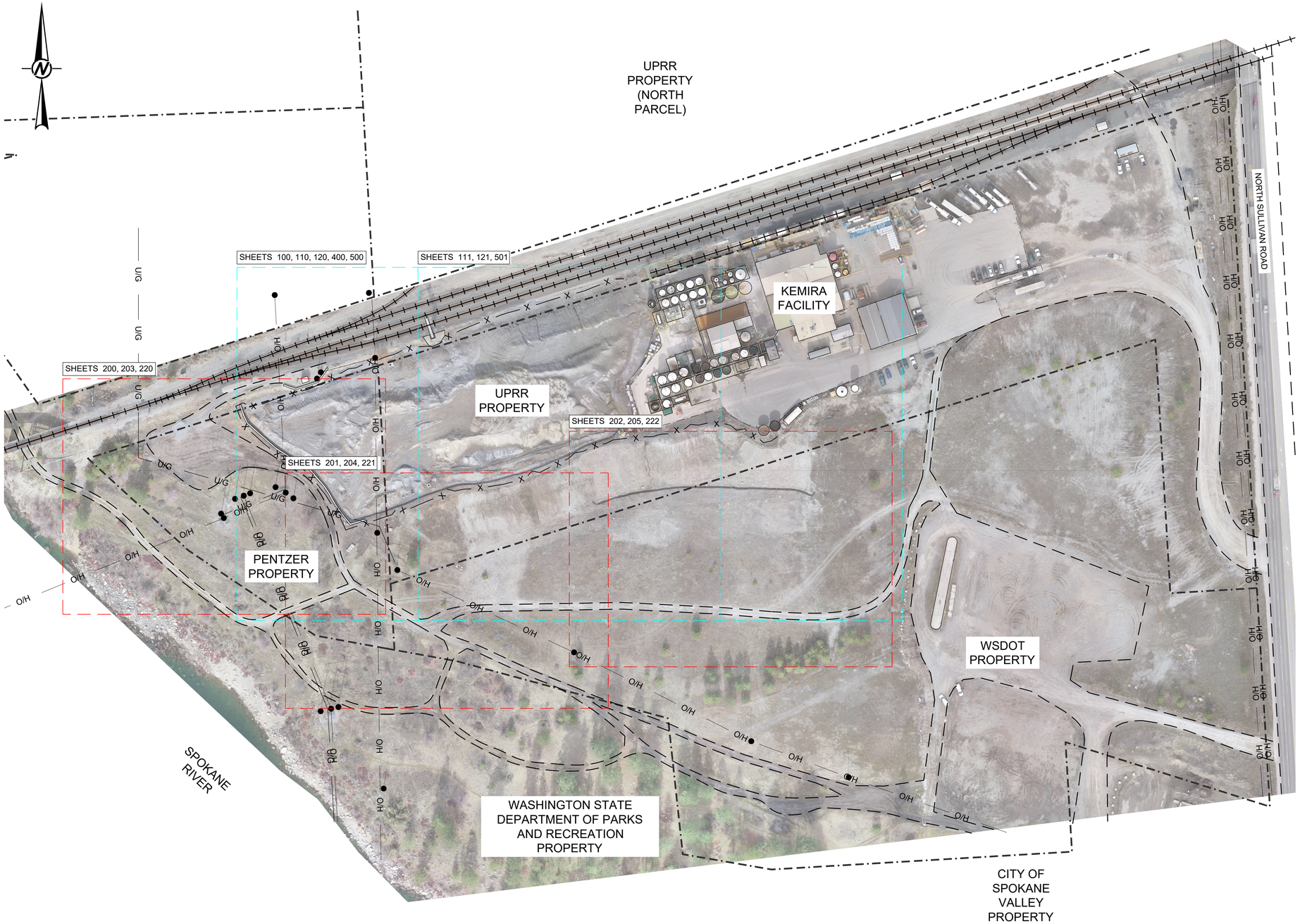
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
GENERAL NOTES AND SPECIFICATIONS (2 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	3 of 35	021



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE

NOT FOR CONSTRUCTION

DRAFT

0 150 300
1" = 150' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SITE OVERVIEW

PROJECT NO.	PHASE	REV.	SHEET
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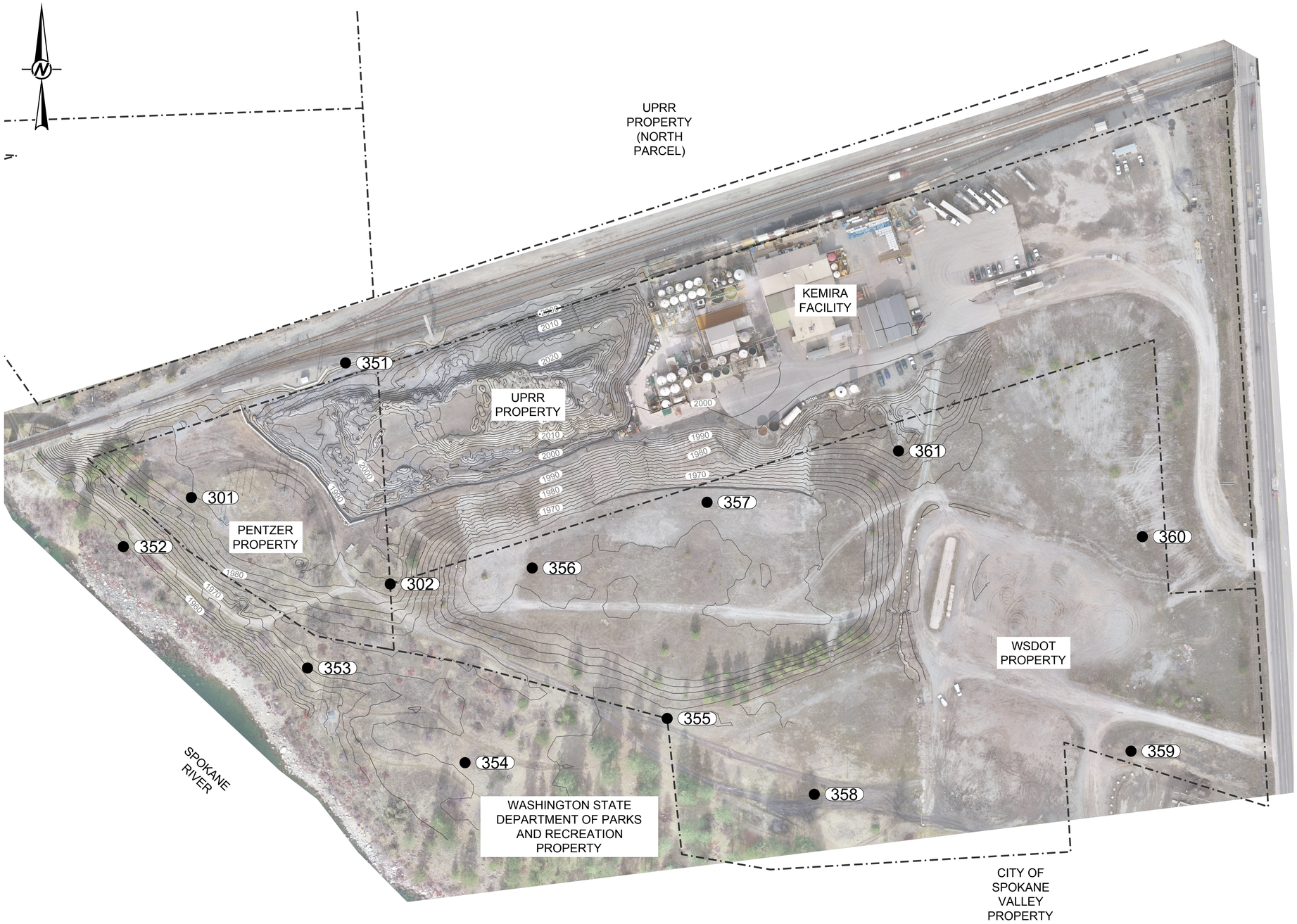

LEGEND

- PROPERTY BOUNDARY
- 301 MID-MOUNTAIN SURVEYORS CONTROL POINTS
- MAJOR CONTOUR INTERVAL (10FT)
- MINOR CONTOUR INTERVAL (2FT)

REFERENCE(S)

1. BASE MAP PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021.
2. TOPOGRAPHIC CONTOURS PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/8/2021.
3. PROPERTY BOUNDARIES PROVIDED BY MID-MOUNTAIN SURVEYORS, INC., DATED 3/18/2021.
4. HORIZONTAL DATUM: NAD83 WASHINGTON STATE PLANE (2011), NORTH ZONE, US FOOT.
5. VERTICAL DATUM: NAVD88.
6. POINT NO. 304 IS LOCATED OUTSIDE OF AREA EXTENTS SHOWN.

CONTROL POINT TABLE

POINT NO.	NORTHING (FT)	EASTING (FT)	ELEVATION (FT)	POINT DESCRIPTION
301	268111.18	2534360.51	1985.98	5/8" rebar 'GPS CONTROL'
302	267981.45	2534659.03	1985.65	5/8" rebar
304	270345.04	2541232.43	2005.20	WSDOT 'FLORA' ID8479
351	268313.14	2534591.86	1995.11	6" mag. Nail
352	268037.50	2534258.53	1956.95	6" mag. Nail
353	267855.45	2534534.78	1969.85	6" mag. Nail
354	267713.43	2534771.26	1972.23	6" mag. Nail
355	267779.79	2535074.44	1975.19	5/8" rebar
356	268005.48	2534872.03	1963.87	6" mag. Nail
357	268104.08	2535134.36	1963.00	6" mag. Nail
358	267665.96	2535295.20	1975.48	6" mag. Nail
359	267730.68	2535770.47	1979.52	6" mag. Nail
360	268052.45	2535787.44	1976.42	6" mag. Nail
361	268181.13	2535421.63	1987.57	6" mag. Nail

NOT FOR CONSTRUCTION

DRAFT

0 80 160
1" = 80' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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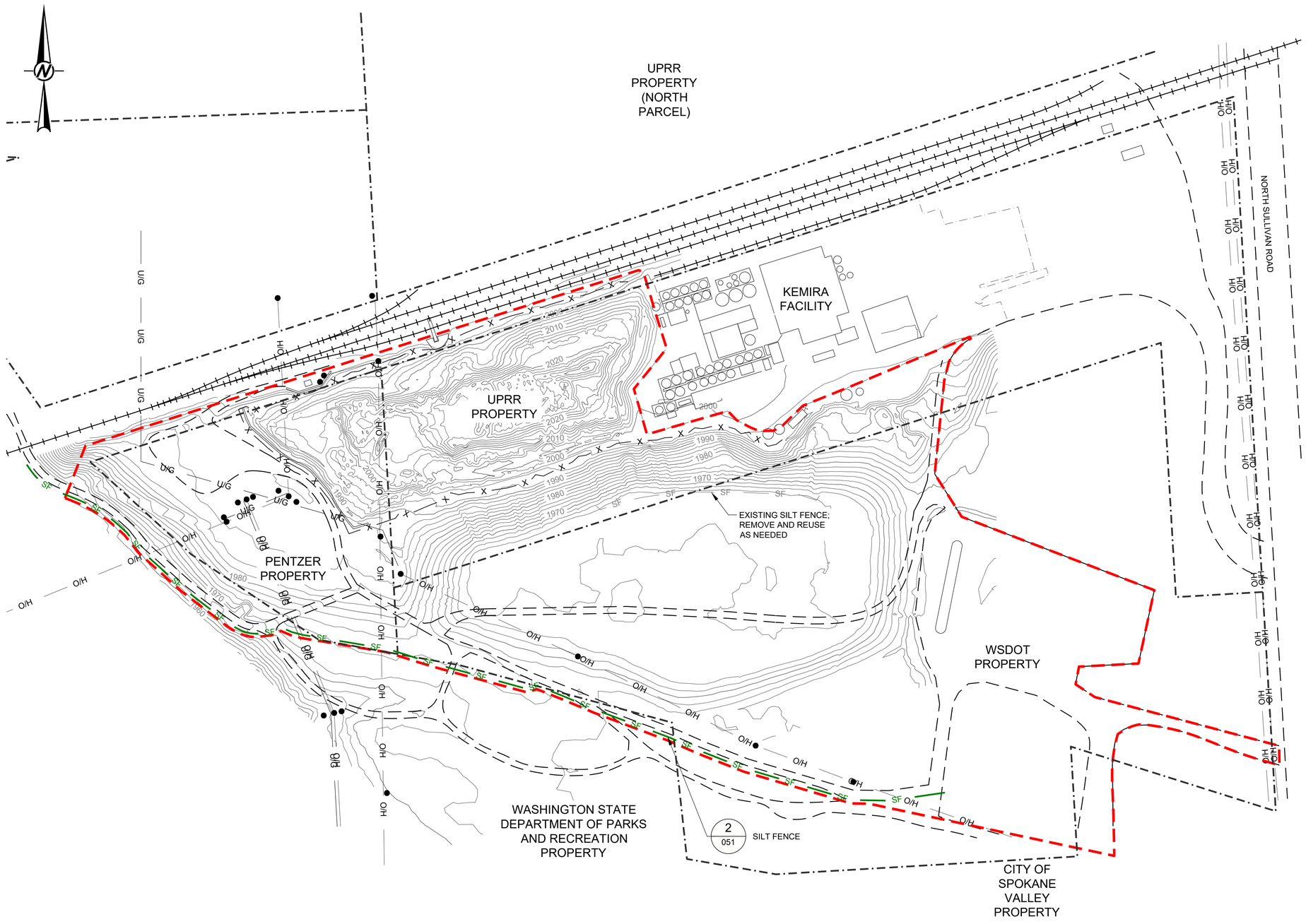
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SURVEY MONUMENTATION AND CONTROL

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	5 of 35	040



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- SF — EXISTING SILT FENCE
- SF — PROPOSED SILT FENCE
- LIMIT OF DISTURBANCE

NOTE(S)

1. WHERE EROSION AND SEDIMENT CONTROL MEASURES ARE NOT SHOWN ON THE DRAWINGS, THEY SHALL BE INSTALLED AS NEEDED OR AS DIRECTED BY THE CONSTRUCTION MANAGER.
3. AS NEEDED OR DIRECTED, INSTALL STRAW BALE BARRIERS TO PREVENT SEDIMENT FROM MIGRATING OUTSIDE OF THE WORK AREA LIMITS. SEE DETAIL 1, SHEET 051.
4. AS NEEDED OR DIRECTED, INSTALL SILT FENCE TO PREVENT SEDIMENT FROM MIGRATING OUTSIDE OF THE WORK AREA LIMITS. SEE DETAIL 2, SHEET 051.

NOT FOR CONSTRUCTION

DRAFT

0 80 160
1" = 80' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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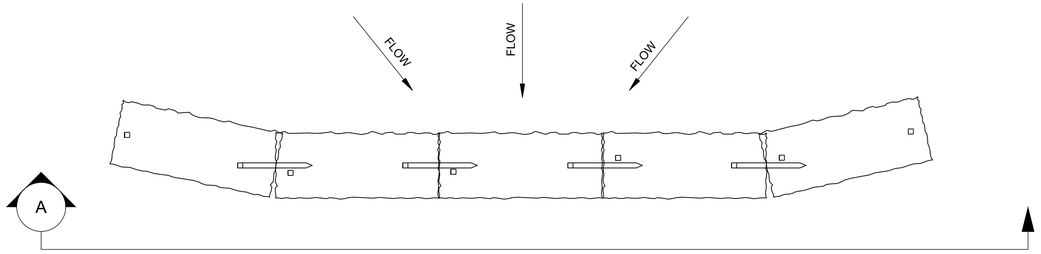
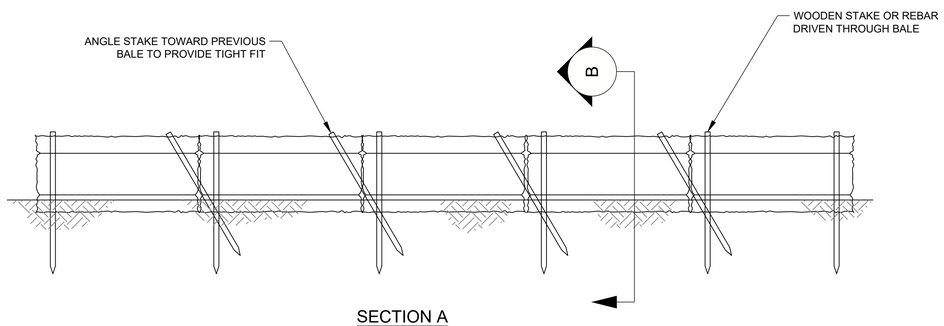
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
EROSION AND SEDIMENT CONTROL PLAN

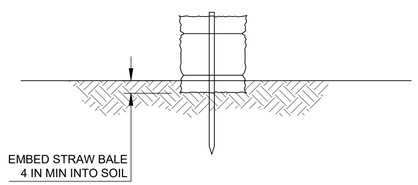
PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	6 of 35	050



PLAN



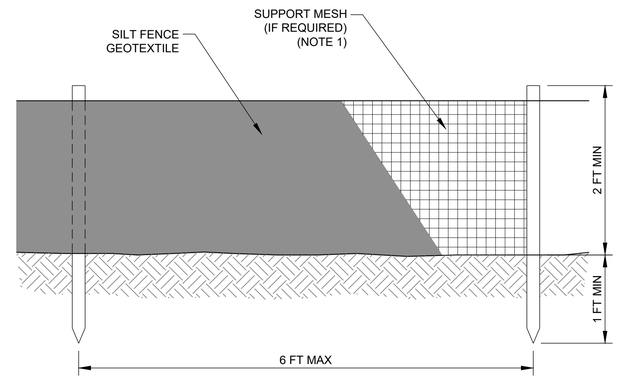
SECTION A

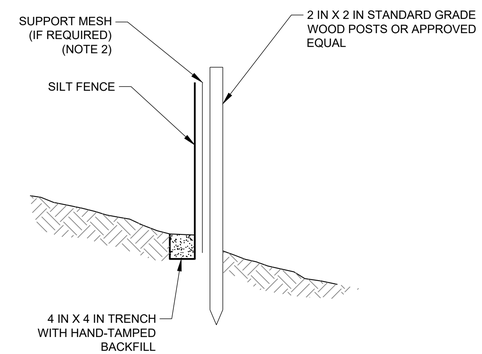


SECTION B

NOTES:
1. STRAW BALES SHALL BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING.
2. KEY IN BALES TO PREVENT EROSION OR FLOW UNDER BALES.
3. NUMBER OF BALES IN EACH BARRIER TO BE DETERMINED BY THE CONSTRUCTION MANAGER.

SCALE N.T.S. 1 - STRAW BALE BARRIER





NOTES:
1. SUPPORT MESH SHALL BE REQUIRED IF SPACING BETWEEN POSTS IS INCREASED OR IF IN THE OPINION OF THE CONSTRUCTION MANAGER, THE SILT FENCE IS NOT ADEQUATELY SUPPORTED TO FUNCTION AS INTENDED.
2. EXTEND SUPPORT MESH AT LEAST 3 INCHES INTO TRENCH.

SCALE N.T.S. 2 - SILT FENCE

NOT FOR CONSTRUCTION
DRAFT

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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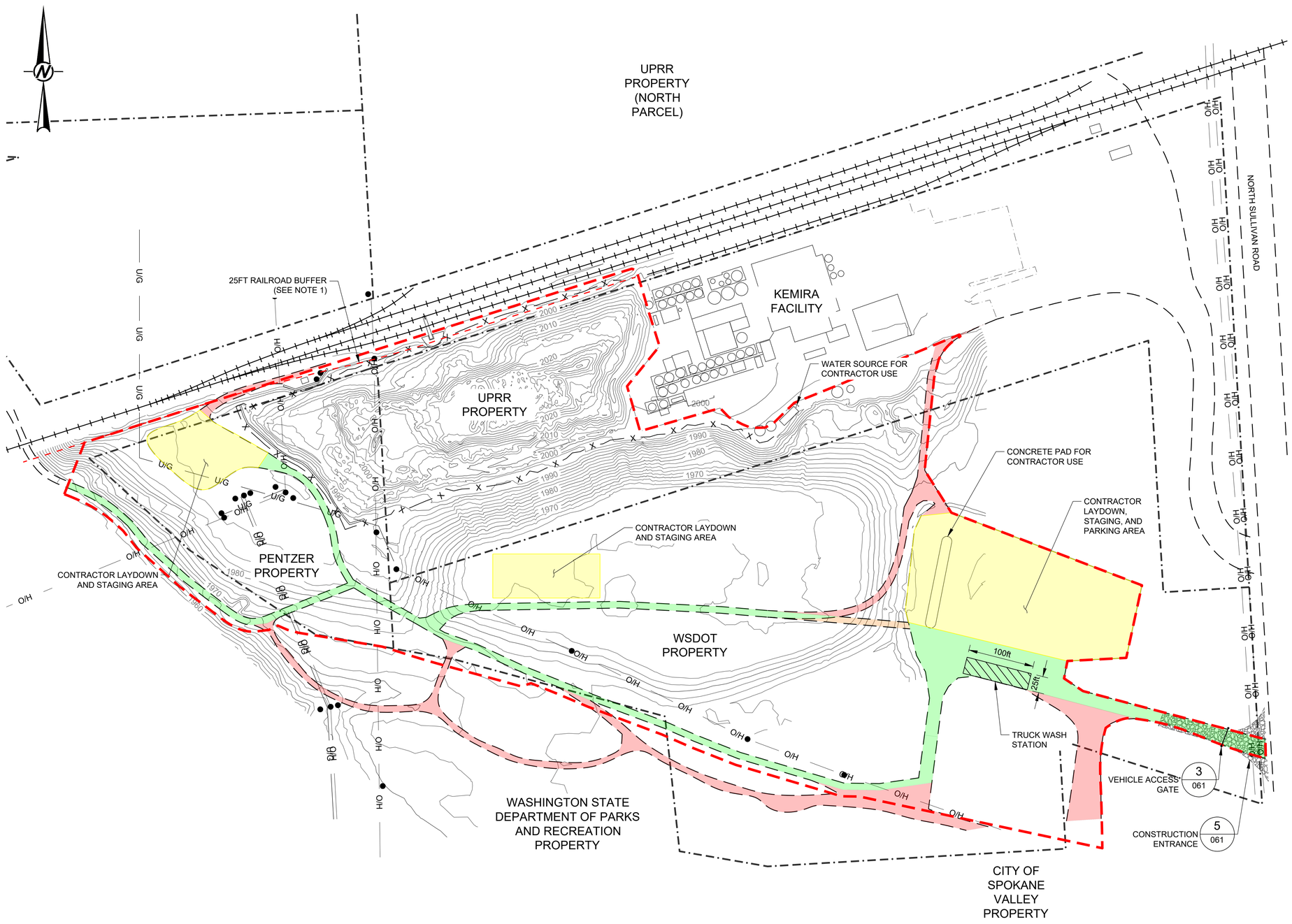
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
EROSION AND SEDIMENT CONTROL DETAILS

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	7 of 35	051



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- LIMIT OF DISTURBANCE
- CONTRACTOR LAYDOWN AND STAGING AREAS
- PROPOSED CONTRACTOR / EQUIPMENT ACCESS IN GOOD TO FAIR CONDITION, TO BE REPAIRED AS NEEDED
- PROPOSED CONTRACTOR / EQUIPMENT ACCESS, IMPROVEMENTS REQUIRED (NOTE 2)
- ADDITIONAL CONTRACTOR / EQUIPMENT ACCESS, TO BE USED IF NEEDED

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. CONTRACTOR TO DETERMINE REQUIRED MATERIALS AND EXTENT OF ROAD UPGRADES, SUBMIT TO CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO CONSTRUCTION.

NOT FOR CONSTRUCTION

DRAFT

0 80 160
1" = 80' FEET

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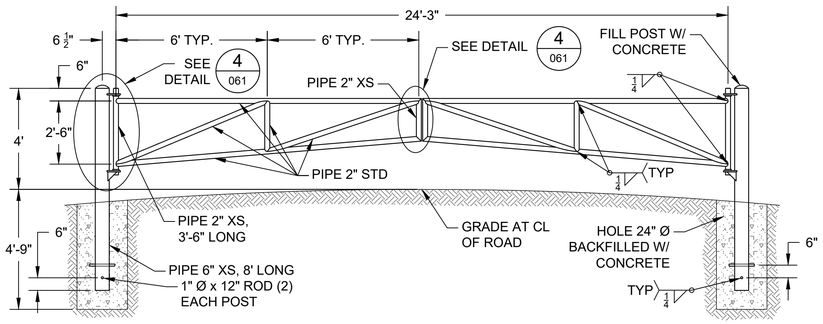
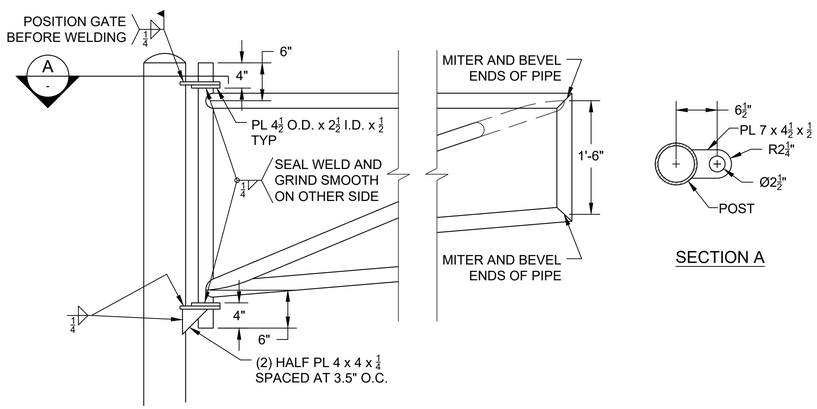
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ACCESS ROAD AND STAGING AREA PLAN

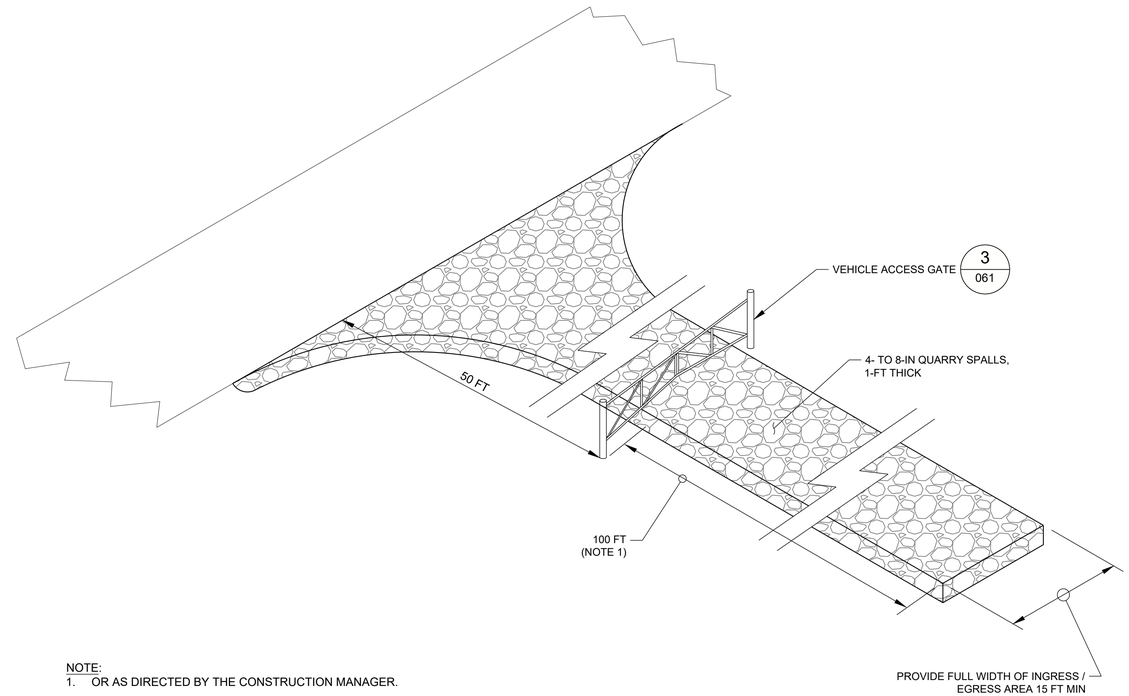
PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	8 of 35	060



SCALE 1" = 3' 3 / - VEHICLE ACCESS GATE



SCALE 1" = 1' 4 / - VEHICLE ACCESS GATE DETAILS



NOTE:
1. OR AS DIRECTED BY THE CONSTRUCTION MANAGER.

SCALE N.T.S. 5 / - CONSTRUCTION ENTRANCE

NOT FOR CONSTRUCTION

DRAFT

0 1 2
1" = 1' FEET

0 3 6
1" = 3' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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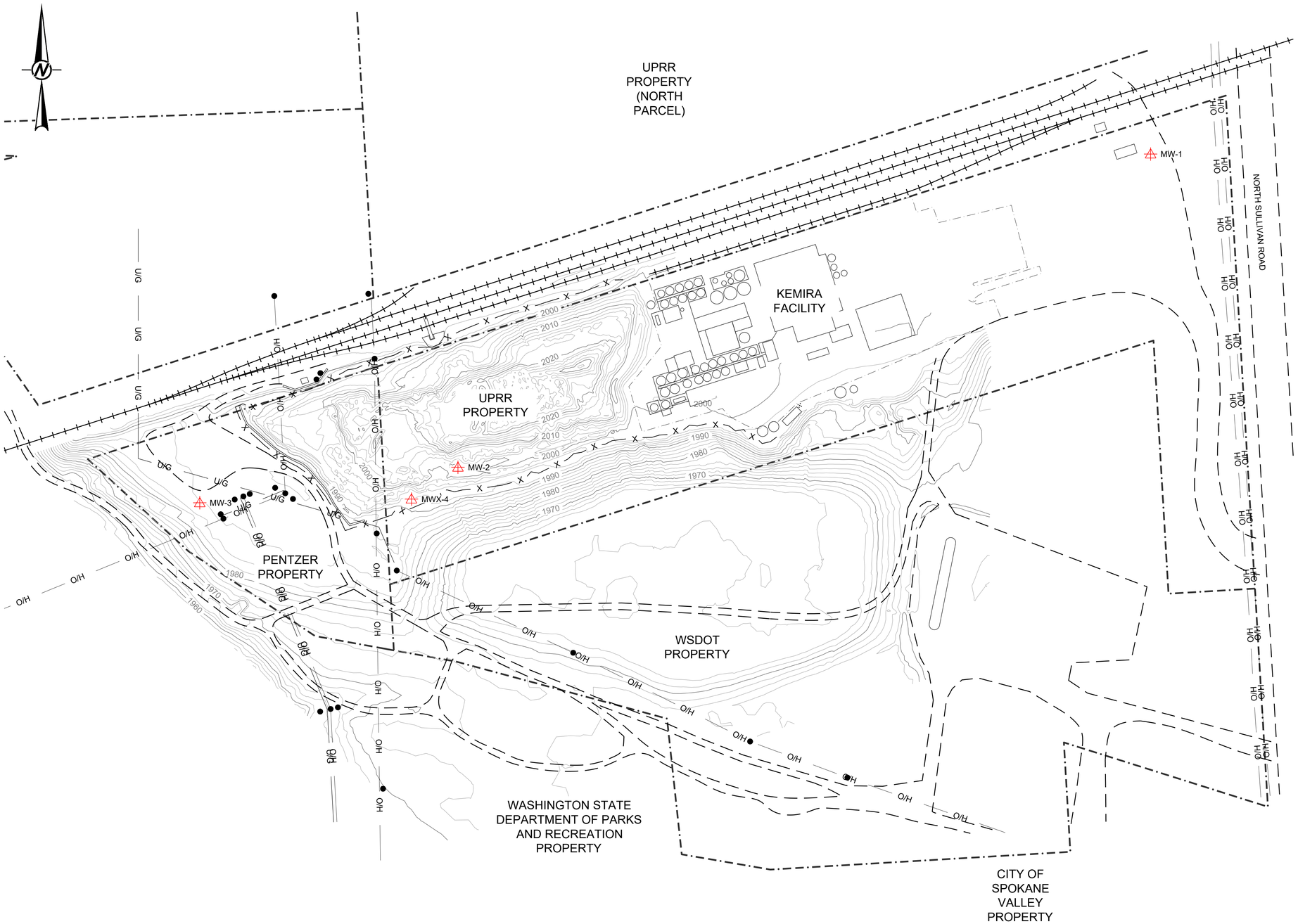
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ACCESS ROAD DETAILS

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	9 of 35	061



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- EXISTING MONITORING WELL TO BE DECOMMISSIONED

NOT FOR CONSTRUCTION

DRAFT

0 80 160

1" = 80' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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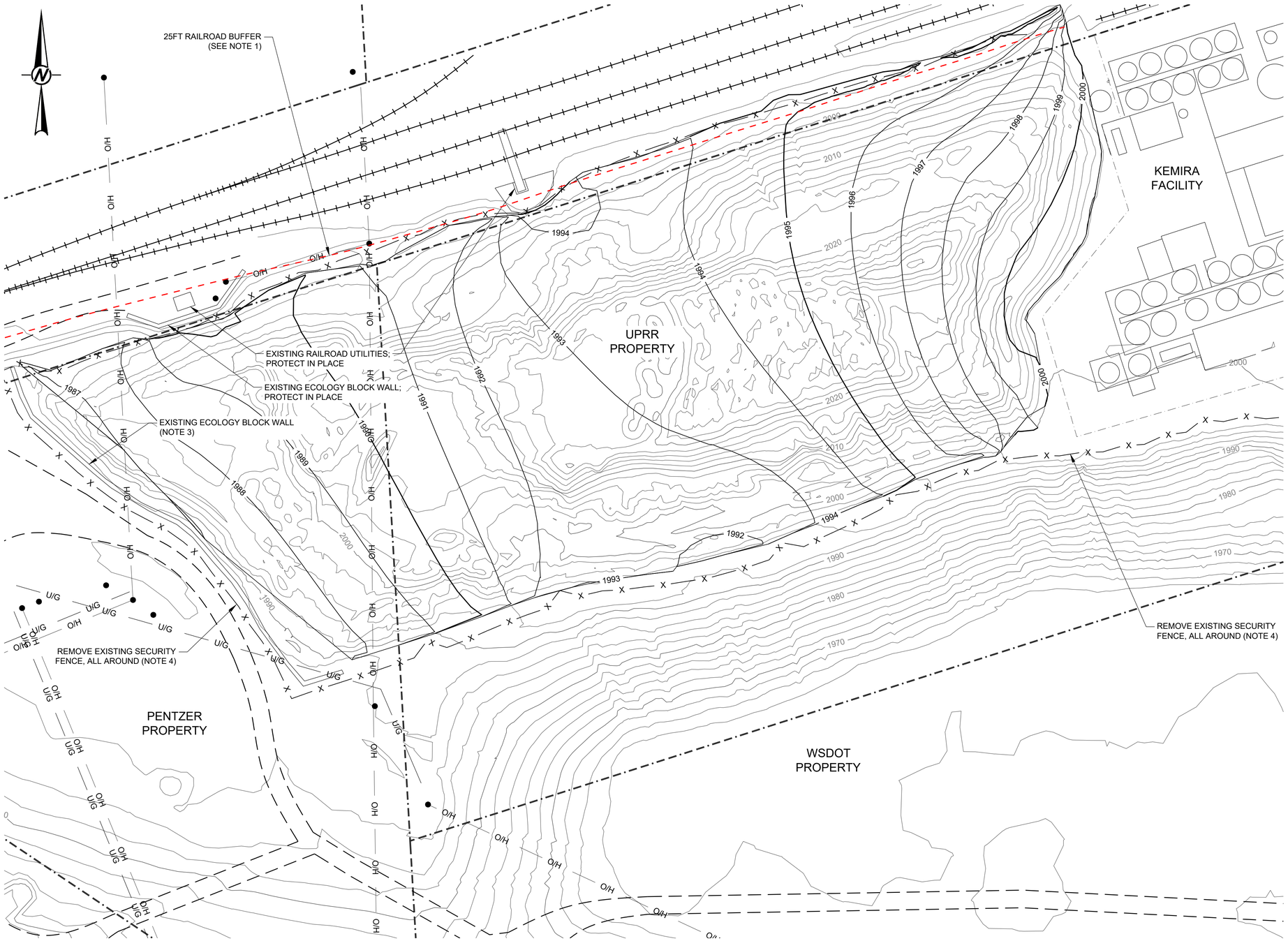
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
MONITORING WELL DECOMMISSIONING

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	070



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- X — SECURITY FENCE
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- ASSUMED STOCKPILE SUBGRADE MAJOR CONTOUR (5-FT INTERVAL) (NOTE 2)
- ASSUMED STOCKPILE SUBGRADE MINOR CONTOUR (1-FT INTERVAL) (NOTE 2)

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. ACTUAL DEPTH OF REMOVAL BELOW DROSS STOCKPILE TO BE DETERMINED IN THE FIELD BY CONFIRMATORY TESTING PERFORMED BY THE CONSTRUCTION MANAGER.
3. REMOVE AND STORE AT KEMIRA FACILITY, LOCATION AS APPROVED BY THE CONSTRUCTION MANAGER.
4. RENTED FENCE SHALL BE RETURNED TO THE RENTAL COMPANY.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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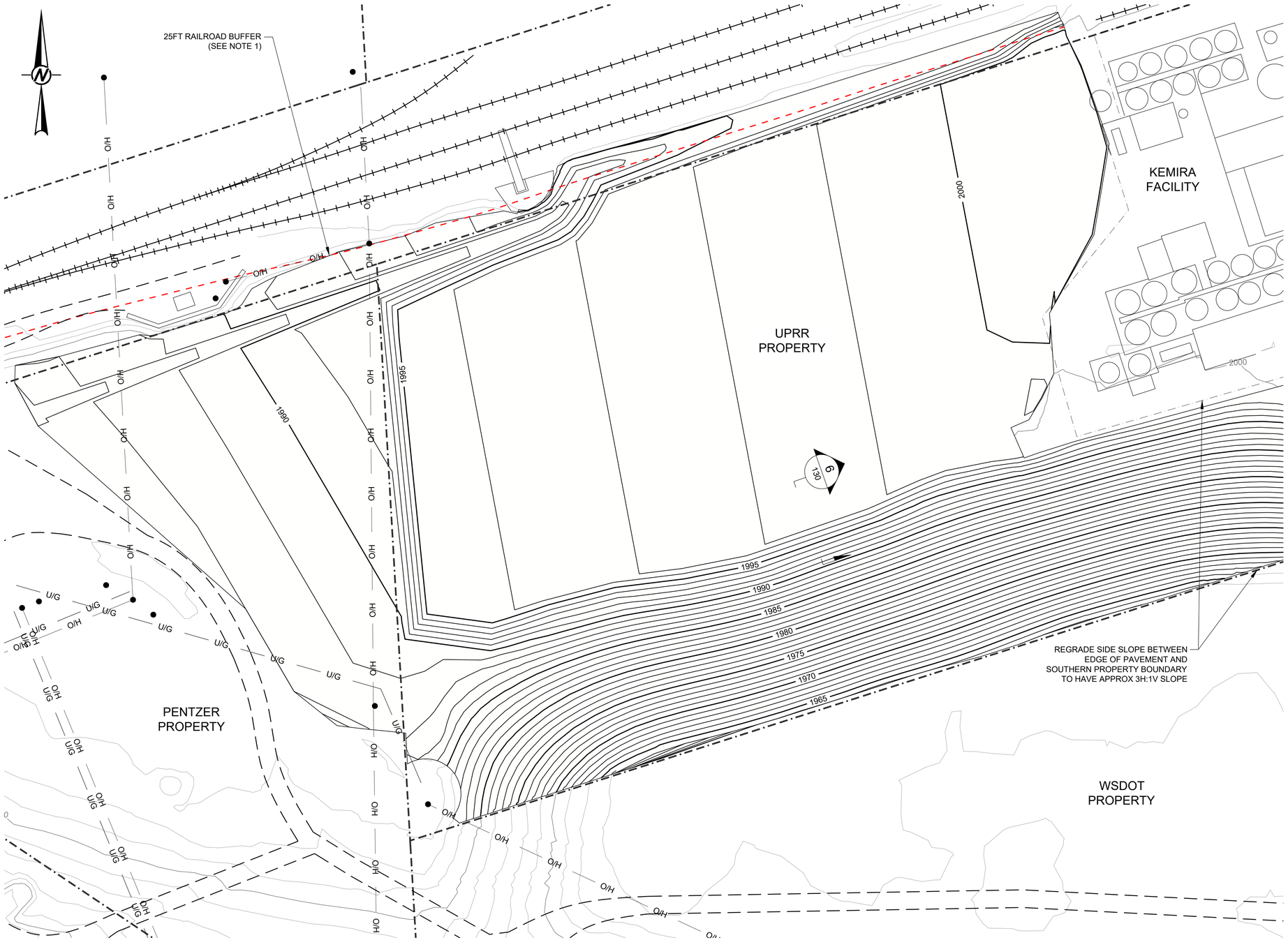
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
DROSS STOCKPILE REMOVAL PLAN

PROJECT NO.	PHASE	REV.	11 of 35	SHEET
19119180	1000B	C		100



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

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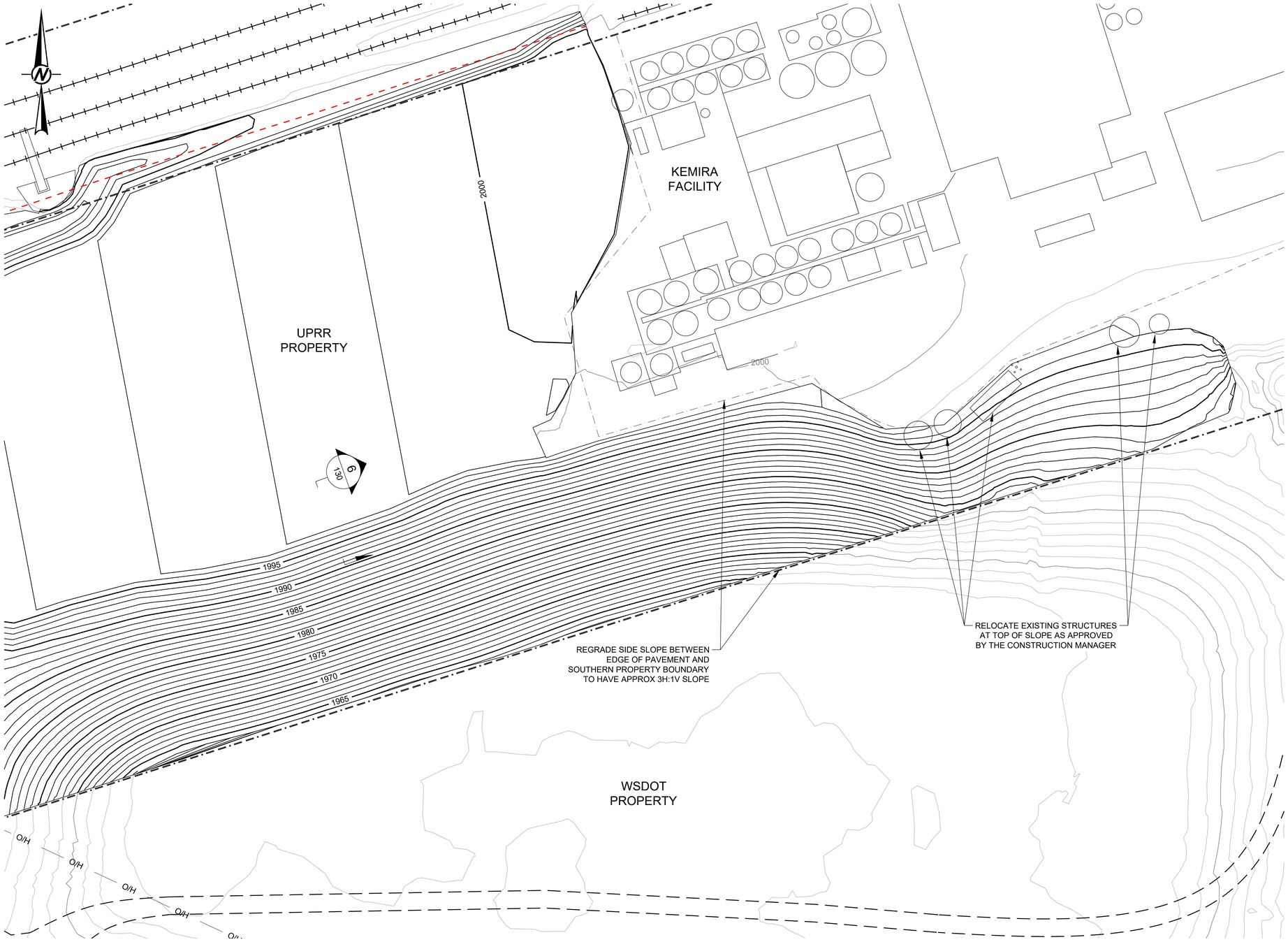
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SUBGRADE PLAN (1 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	12 of 35	110



LEGEND

- PROPERTY BOUNDARY
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- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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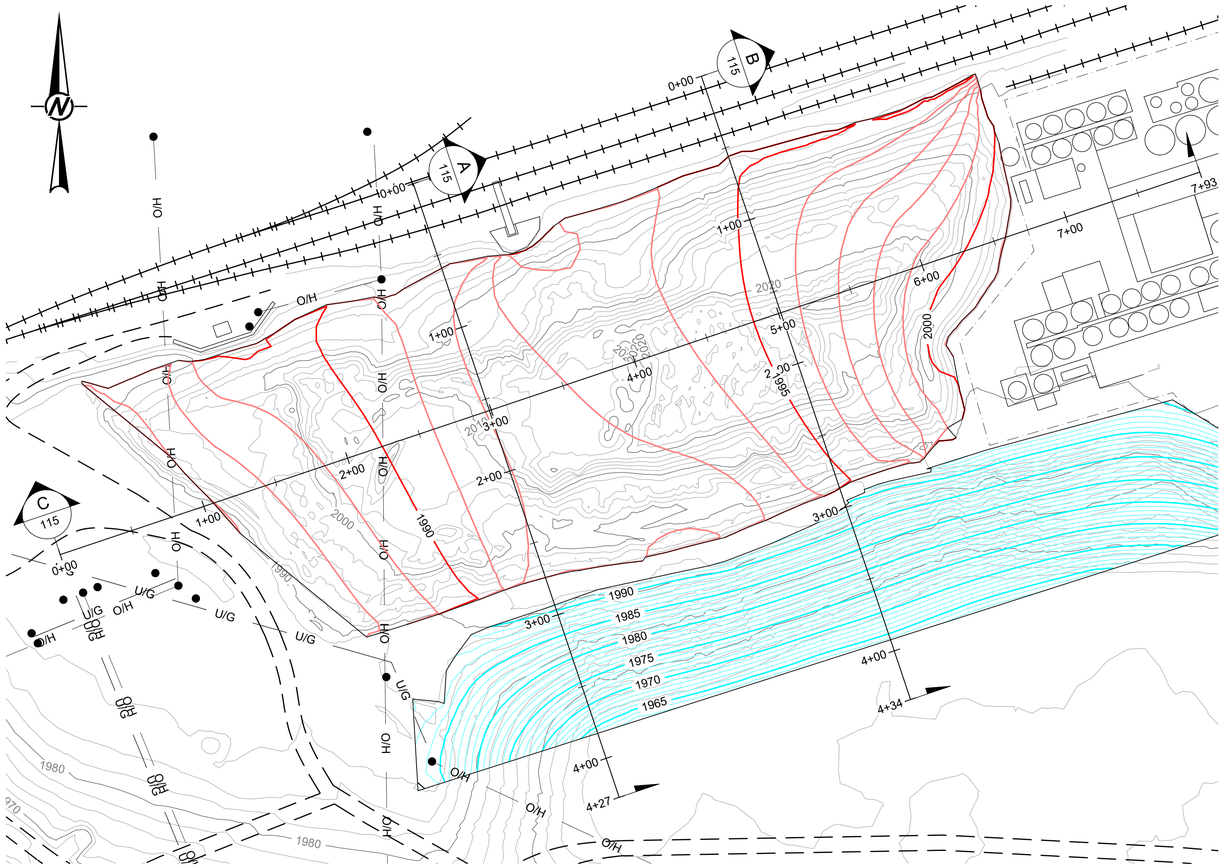
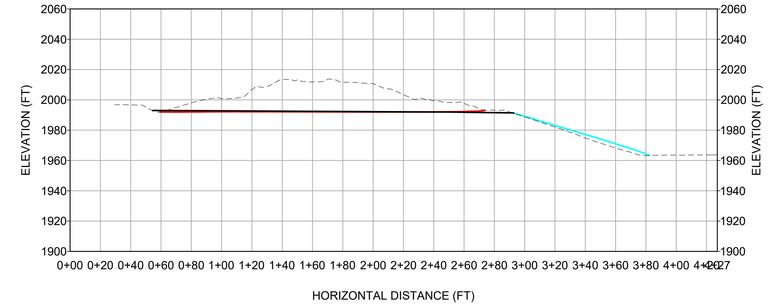
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

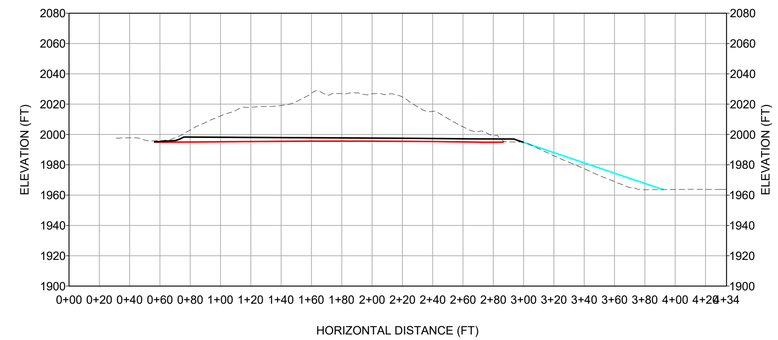
TITLE
SUBGRADE PLAN (2 OF 2)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	13 of 35 111

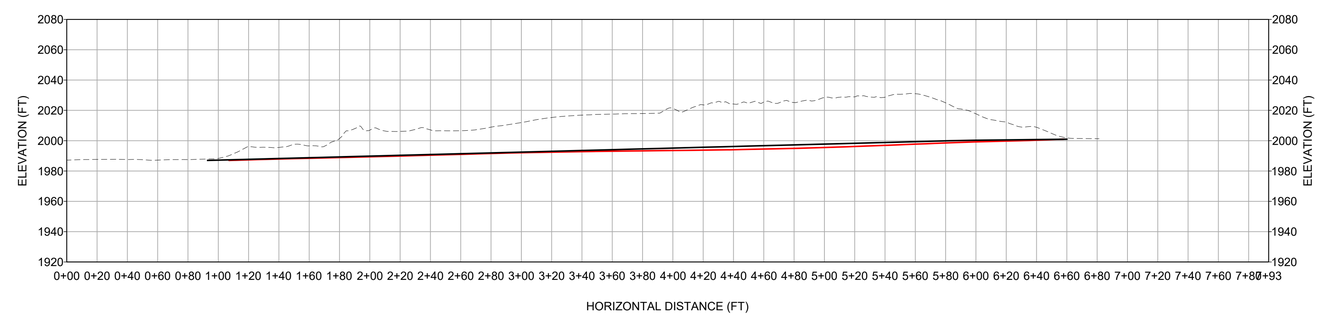




SCALE 1" = 50' / VERT. SCALE 1:1 — A 115 — DROSS STOCKPILE NW-SE SECTION



SCALE 1" = 50' / VERT. SCALE 1:1 — B 115 — DROSS STOCKPILE NW-SE SECTION



SCALE 1" = 50' / VERT. SCALE 1:1 — C 115 — DROSS STOCKPILE SW-NE SECTION

LEGEND

- EXISTING GROUND SURFACE (MID MOUNTAIN SURVEY 2021)
- DROSS STOCKPILE ASSUMED SUBGRADE SURFACE
- DROSS STOCKPILE PROPOSED CAP SUBGRADE
- EXCAVATION \ FILL FOR CAP SUBGRADE

NOT FOR CONSTRUCTION

DRAFT

0 50 100
1" = 50' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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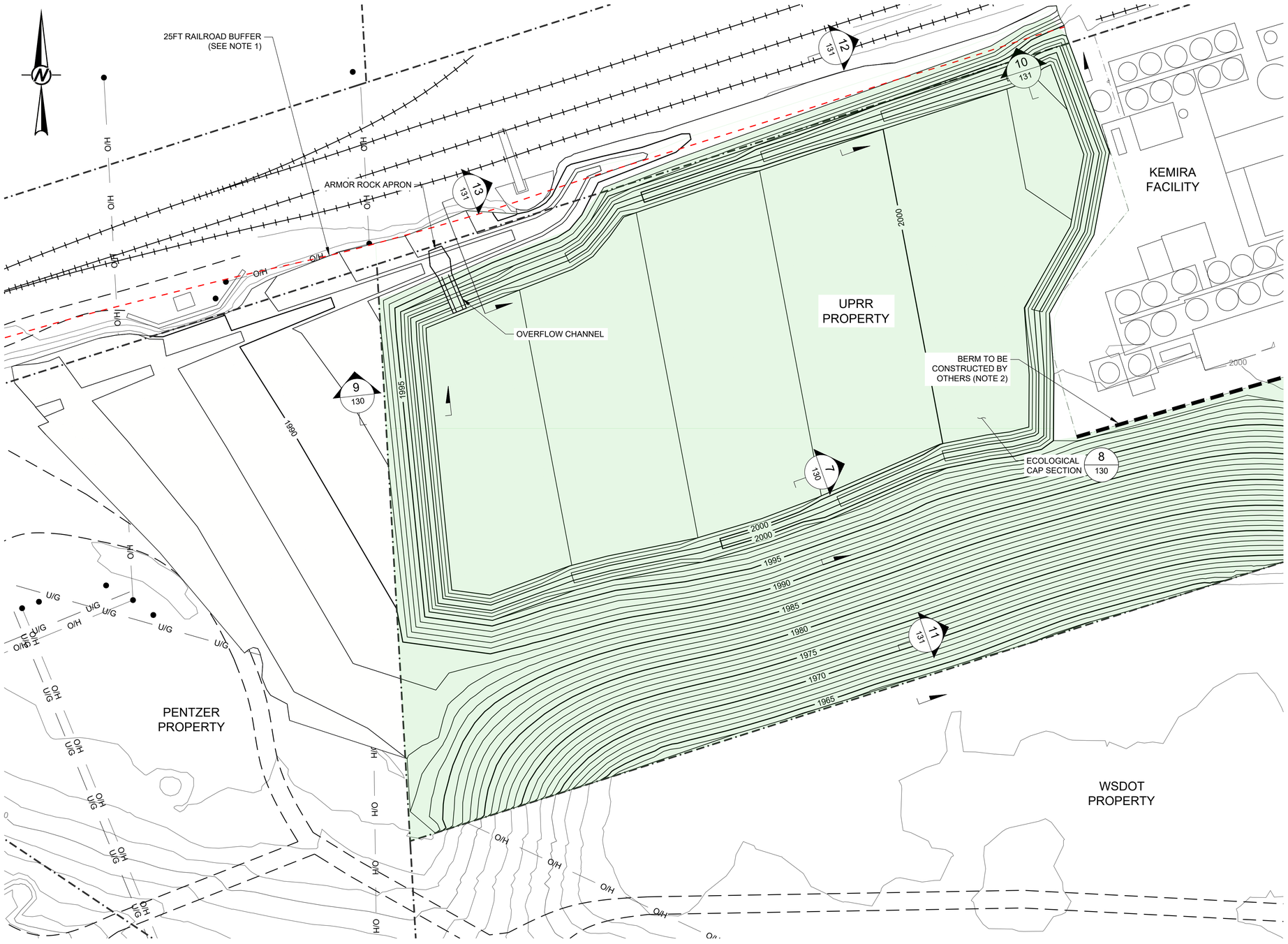
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
DROSS STOCKPILE REMOVAL SECTIONS

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	115



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)
- ECOLOGICAL CAP
- BERM TO BE CONSTRUCTED BY OTHERS

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. SURFACE WATER RUNOFF IS NOT ALLOWED TO FLOW ONTO ECOLOGICAL CAP AREA.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

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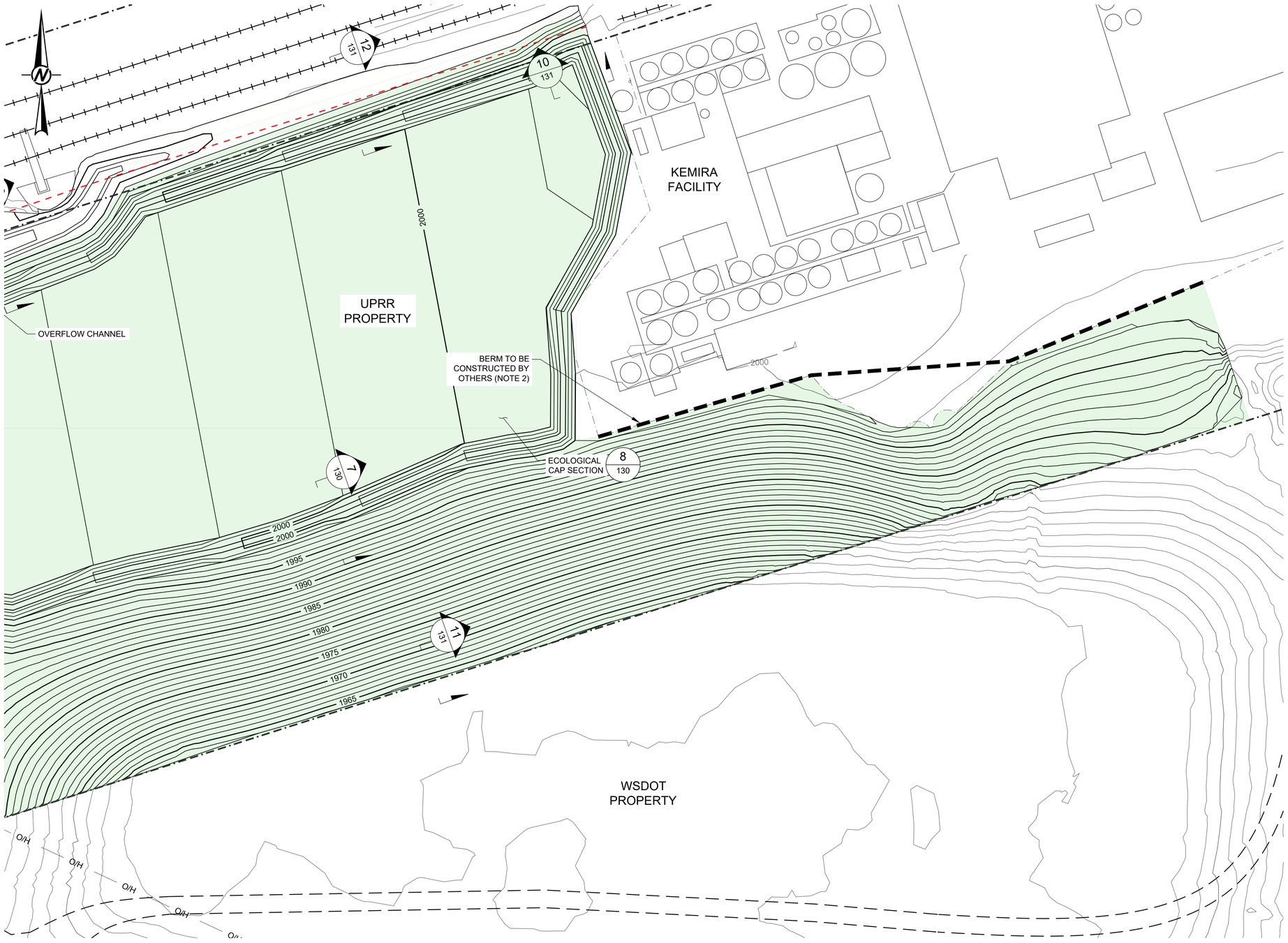
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ECOLOGICAL CAP AND CONTAINMENT BERM PLAN (1 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	15 of 35	120



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)
- ECOLOGICAL CAP
- BERM TO BE CONSTRUCTED BY OTHERS

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. SURFACE WATER RUNOFF IS NOT ALLOWED TO FLOW ONTO ECOLOGICAL CAP AREA.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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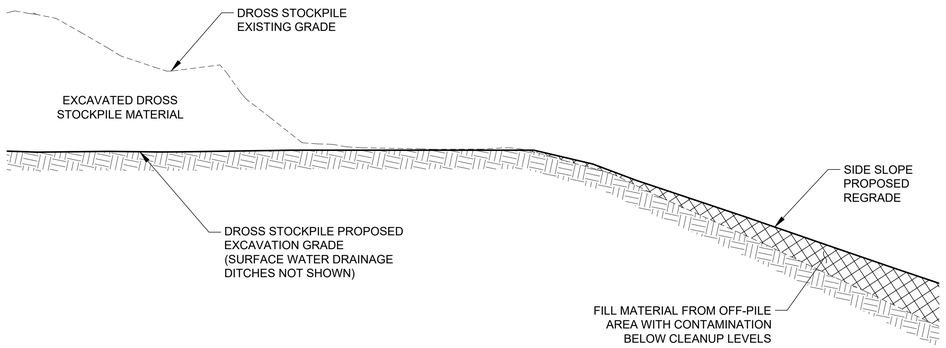
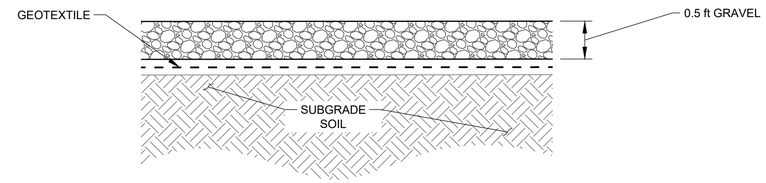
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ECOLOGICAL CAP AND CONTAINMENT BERM PLAN (2 OF 2)

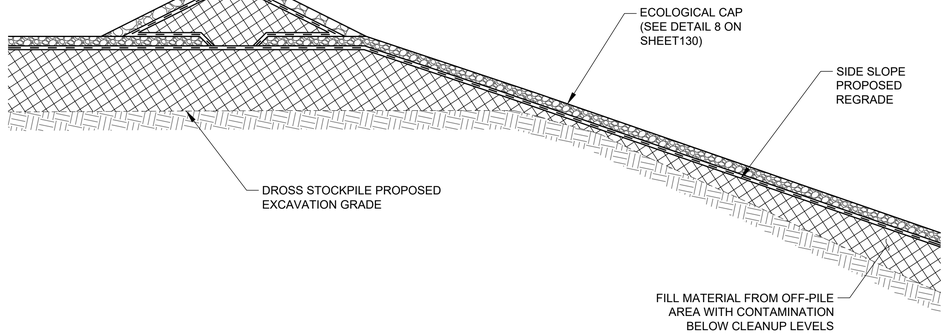
PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	16 of 35 121



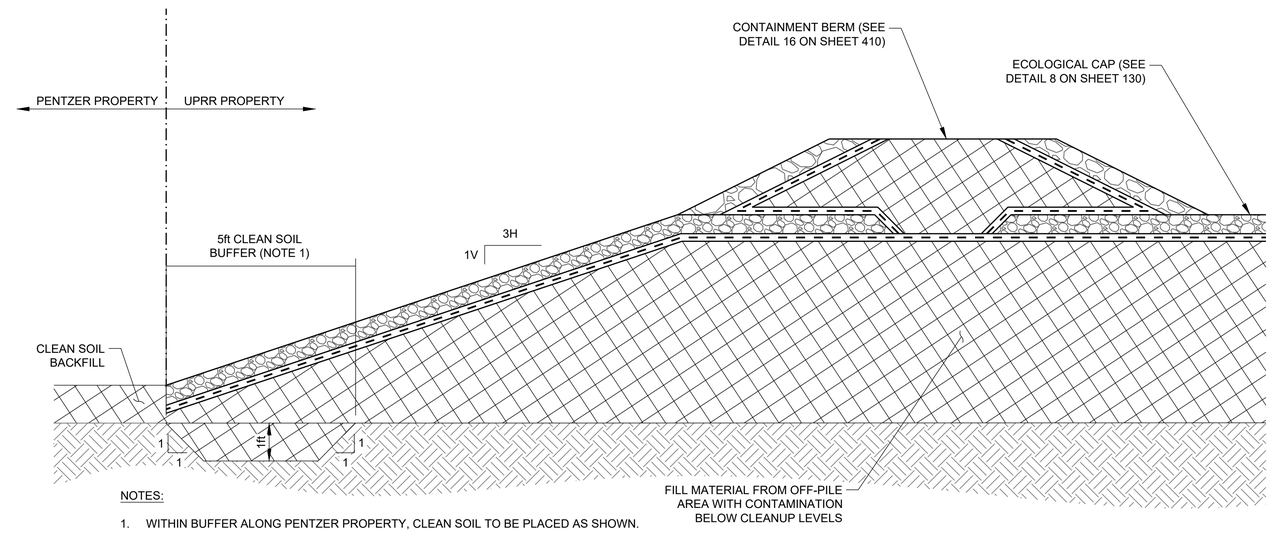
SCALE 1" = 4' 6 - DROSS STOCKPILE AND SIDE SLOPE REGRADE EXCAVATION TIE-IN



SCALE 1" = 1' 8 - ECOLOGICAL CAP SECTION



SCALE 1" = 4' 7 - DROSS STOCKPILE AND SIDE SLOPE REGRADE FINAL GRADE TIE-IN



NOTES:

1. WITHIN BUFFER ALONG PENTZER PROPERTY, CLEAN SOIL TO BE PLACED AS SHOWN.

SCALE 1" = 2' 9 - ECOLOGICAL CAP TERMINATION - WEST

NOT FOR CONSTRUCTION

DRAFT

0 1 2
1" = 1' FEET

0 2 4
1" = 2' FEET

0 4 8
1" = 4' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

SEAL

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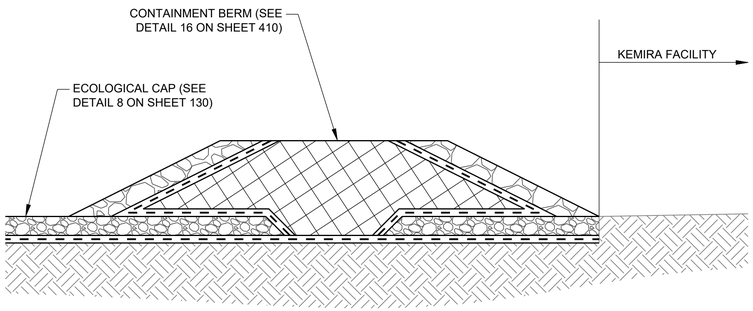
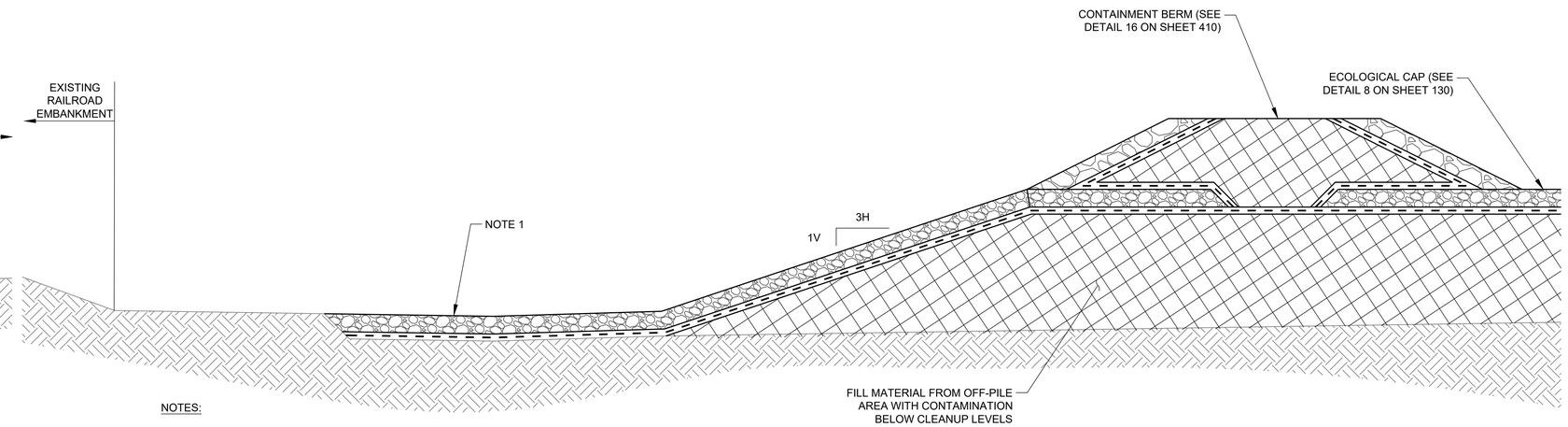
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (1 OF 2)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	17 of 35 130



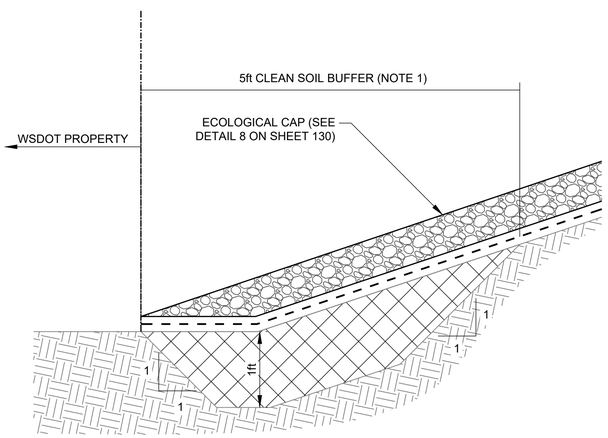
SCALE 1" = 2' 10 - ECOLOGICAL CAP TERMINATION - EAST



NOTES:

1. GRAVEL LINING TO BE PLACED IN EXISTING RAILROAD DITCH ONLY WHERE EXCAVATION OCCURS TO REMOVE CONTAMINATED MATERIAL AND THE DITCH LINING NEEDS TO BE REESTABLISHED.

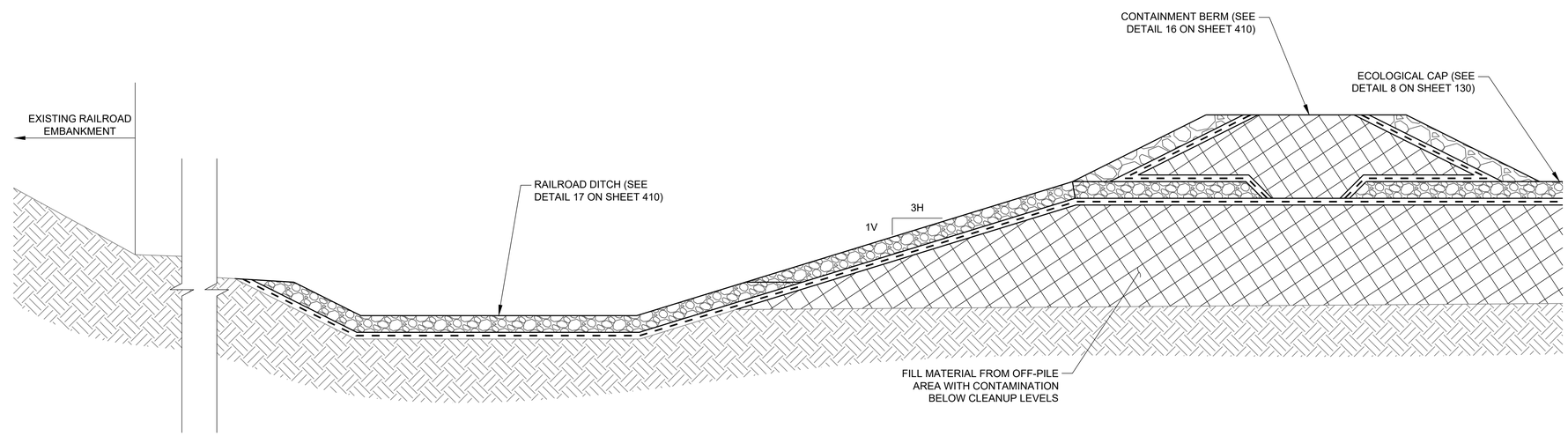
SCALE 1" = 2' 12 - ECOLOGICAL CAP TERMINATION - NORTH WITH EXISTING RAILROAD DITCH



NOTES:

1. WITHIN BUFFER ALONG WSDOT PROPERTY, CLEAN SOIL TO BE PLACED AS SHOWN.

SCALE 1" = 1' 11 - ECOLOGICAL CAP TERMINATION - SOUTH



SCALE 1" = 2' 13 - ECOLOGICAL CAP TERMINATION - NORTH WITH REGRADED RAILROAD DITCH

NOT FOR CONSTRUCTION

DRAFT

0 1 2
1" = 1' FEET

0 2 4
1" = 2' FEET

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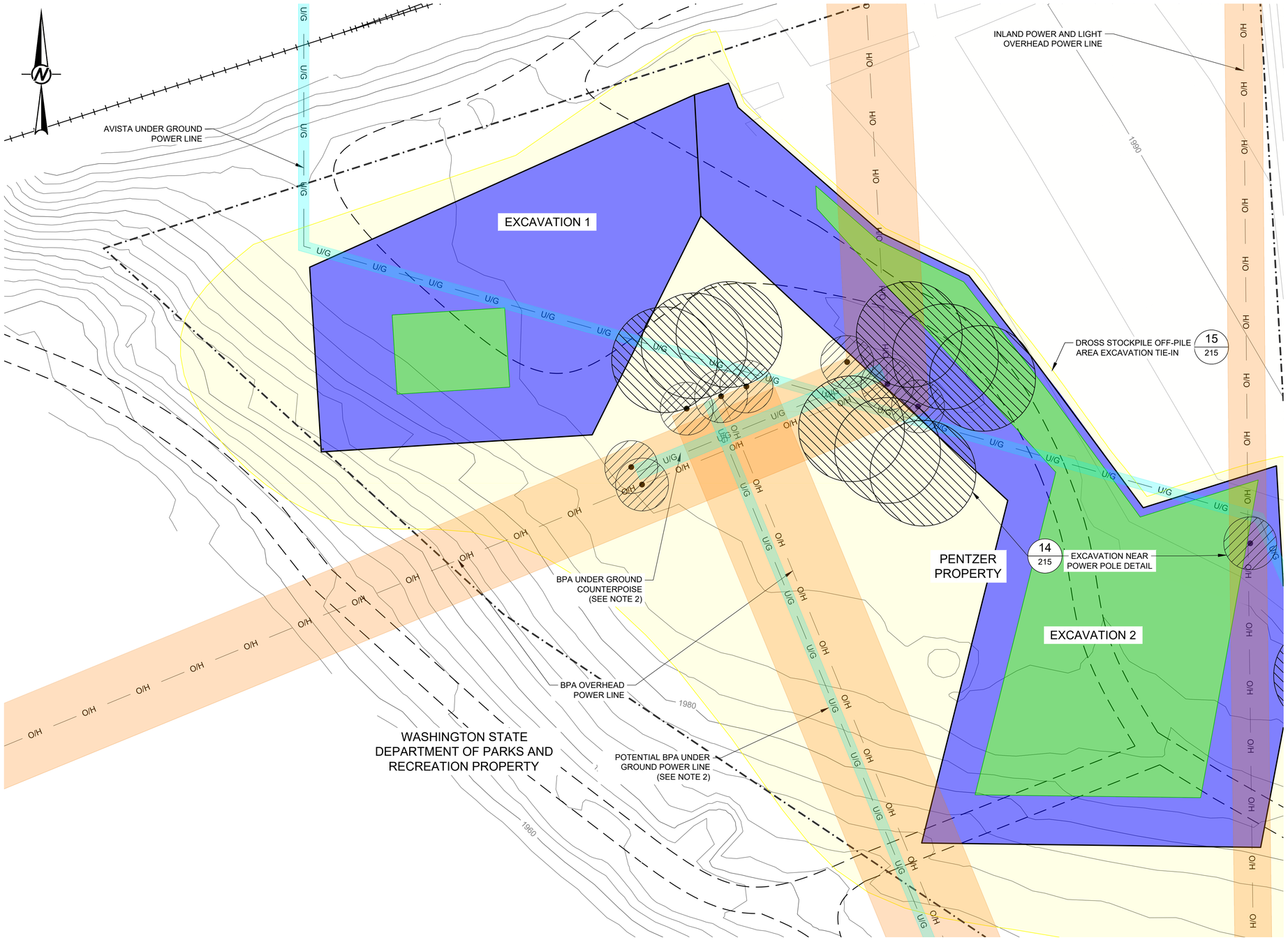
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (2 OF 2)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	131



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- UTILITY COORDINATION ZONE - POWER POLE (NOTE 2 AND 3)
- UTILITY COORDINATION ZONE - POWER POLE ANCHOR (NOTE 2 AND 3)
- UTILITY COORDINATION ZONE - OVERHEAD POWER LINE (NOTE 2 AND 3)
- UTILITY COORDINATION ZONE - UNDERGROUND POWER LINE (NOTE 2 AND 3)
- EXCAVATION TO APPROXIMATELY 2FT BELOW GRADE (NOTE 1)
- EXCAVATION TO APPROXIMATELY 4FT BELOW GRADE (NOTE 1)
- EXCAVATION TO APPROXIMATELY 6FT BELOW GRADE (NOTE 1)

NOTE(S)

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UTILITY COMPANY REQUIREMENTS

UTILITY	UTILITY COORDINATION ZONE
BONNEVILLE POWER ADMINISTRATION (BPA)	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
AVISTA CORPORATION	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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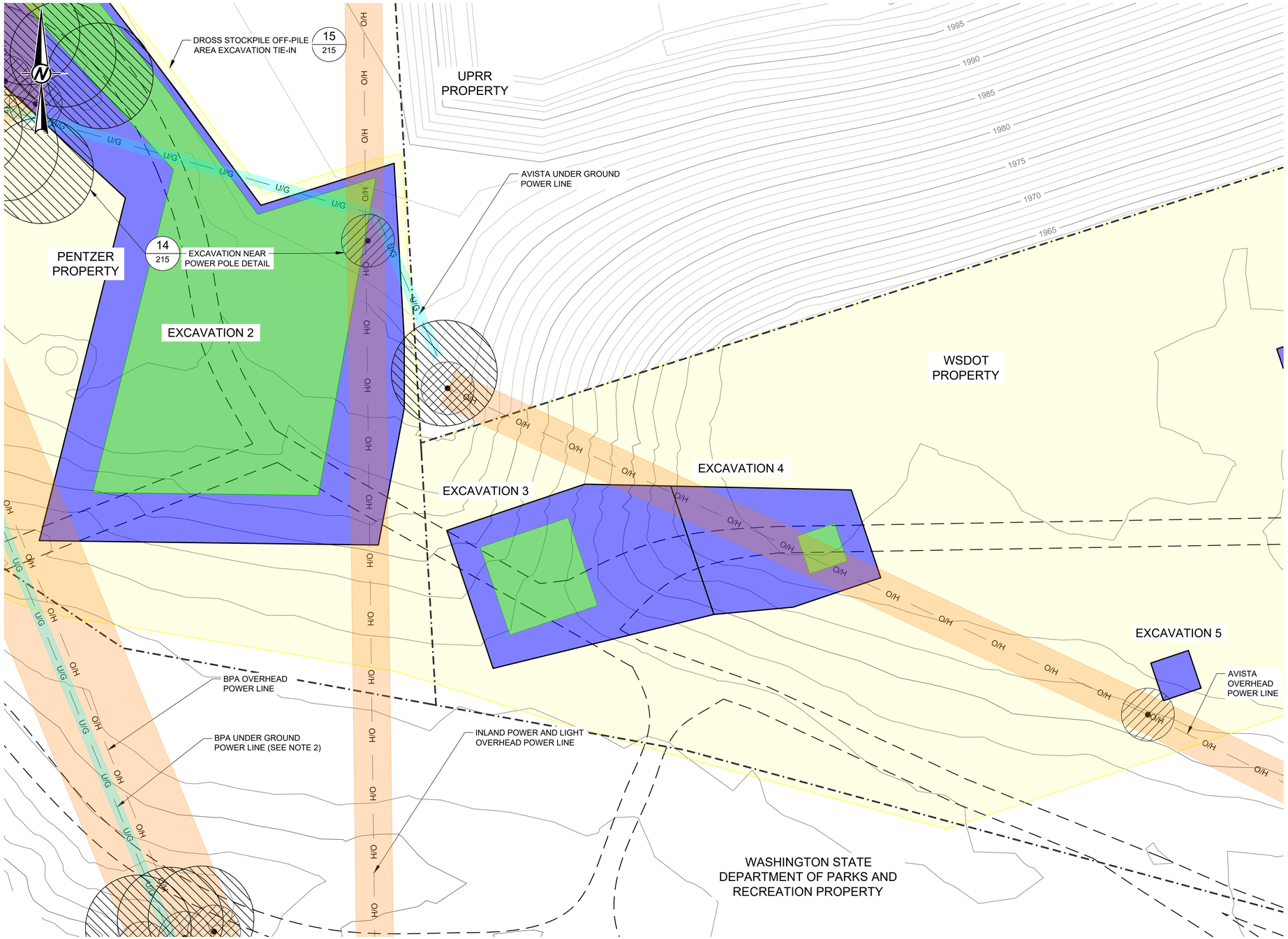
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL PLAN (1 OF 3)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	19 of 35 200



LEGEND

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- UTILITY COORDINATION ZONE - POWER POLE ANCHOR (NOTE 2 AND 3)
- UTILITY COORDINATION ZONE - OVERHEAD POWER LINE (NOTE 2 AND 3)
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- EXCAVATION TO APPROXIMATELY 2FT BELOW GRADE (NOTE 1)
- EXCAVATION TO APPROXIMATELY 4FT BELOW GRADE (NOTE 1)
- EXCAVATION TO APPROXIMATELY 6FT BELOW GRADE (NOTE 1)

NOTE(S)

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UTILITY COMPANY REQUIREMENTS

UTILITY	UTILITY COORDINATION ZONE
BONNEVILLE POWER ADMINISTRATION (BPA)	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
AVISTA CORPORATION	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL PLAN (2 OF 3)

PROJECT NO.	PHASE	REV.	20 of 35	SHEET
19119180	1000B	C		201

LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
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NOTE(S)

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UTILITY COMPANY REQUIREMENTS	
UTILITY	UTILITY COORDINATION ZONE
BONNEVILLE POWER ADMINISTRATION (BPA)	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
AVISTA CORPORATION	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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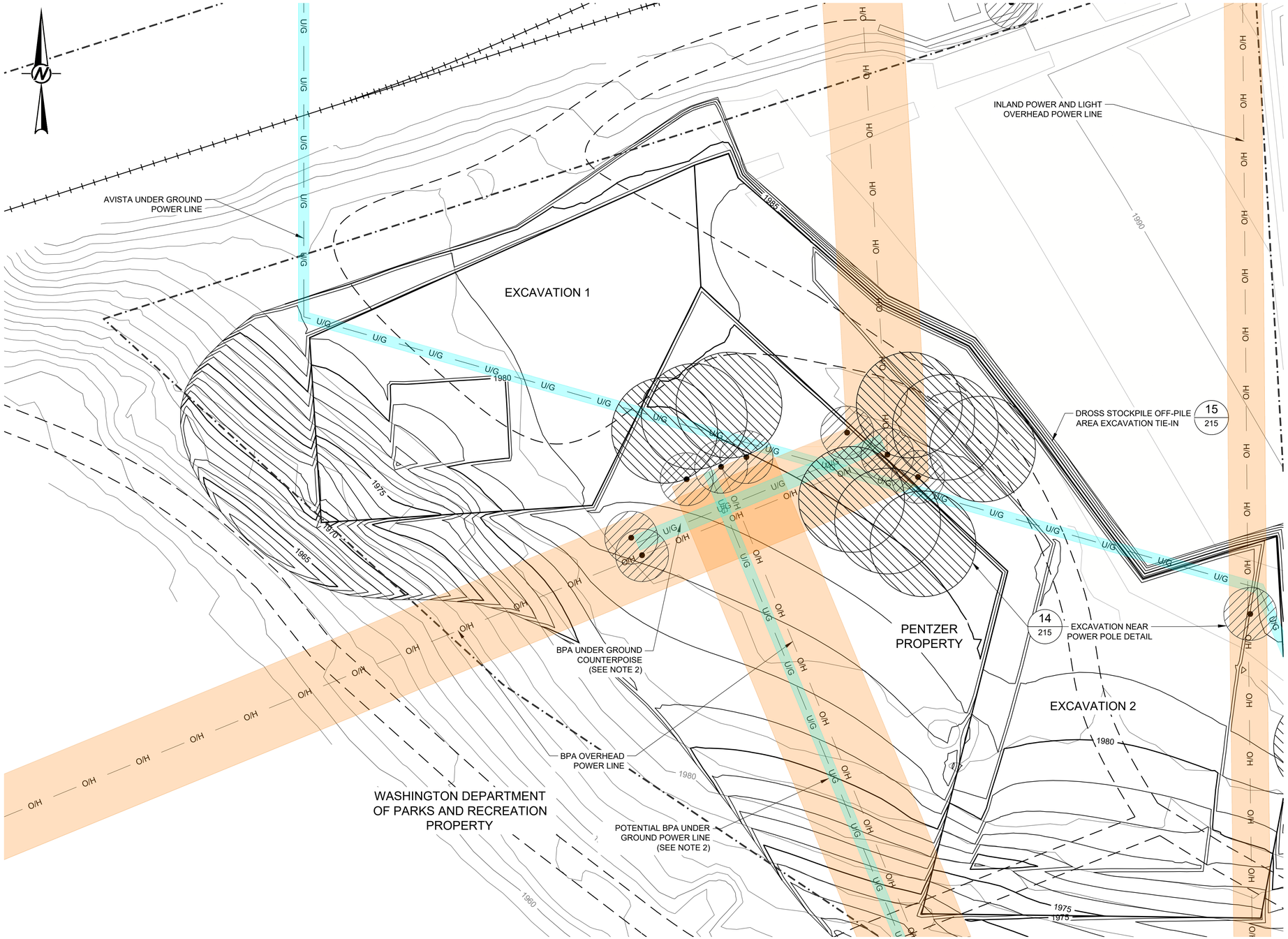
www.golder.com

PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL PLAN (3 OF 3)

PROJECT NO. 19119180 | PHASE 1000B | REV. C | 21 of 35 | SHEET 202



LEGEND

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- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOTE(S)

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POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
AVISTA CORPORATION	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
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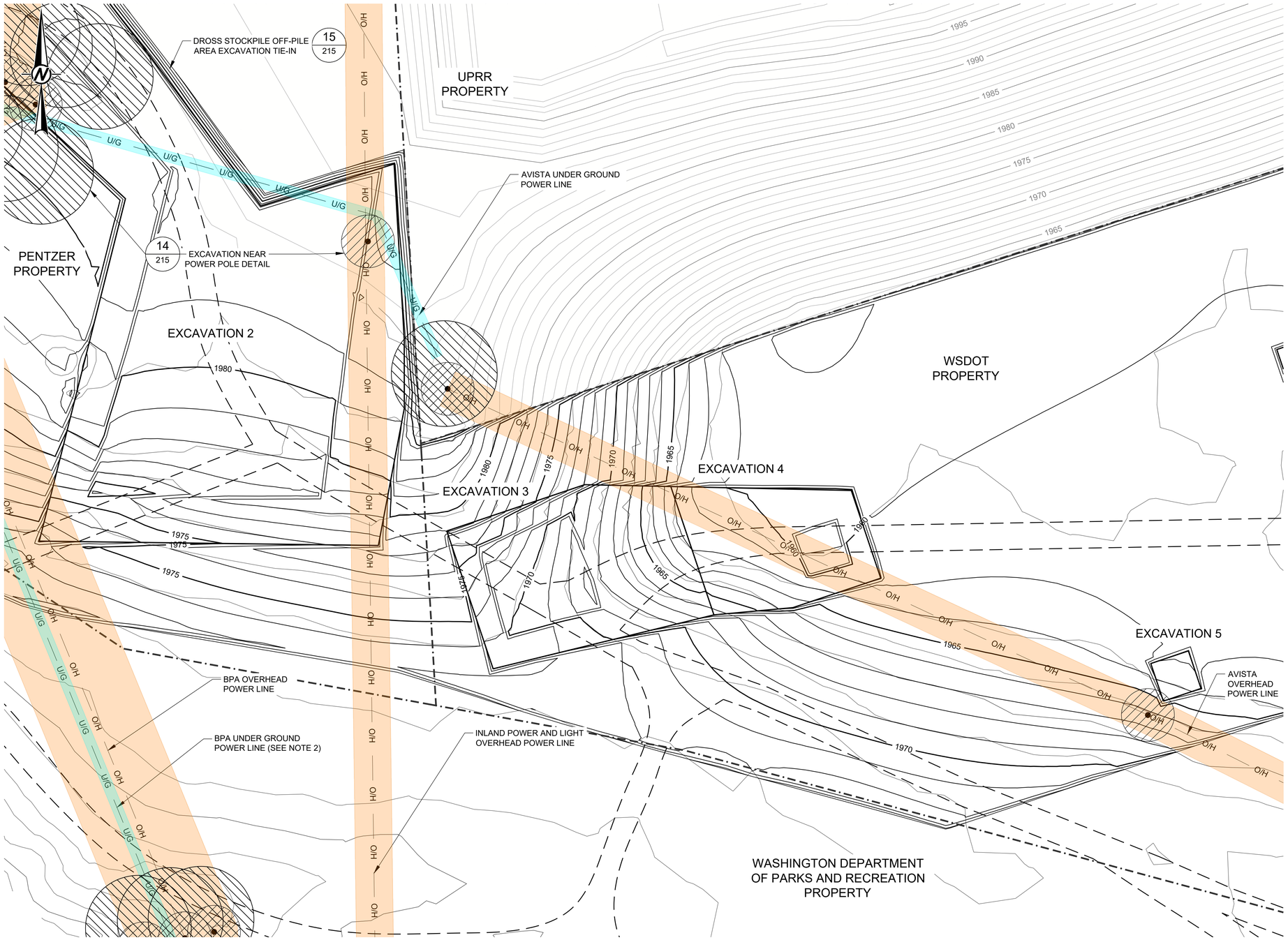
TITLE
OFF-PILE AREAS SOIL REMOVAL CONTOURS (1 OF 3)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	22 of 35 203



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OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
AVISTA CORPORATION	
OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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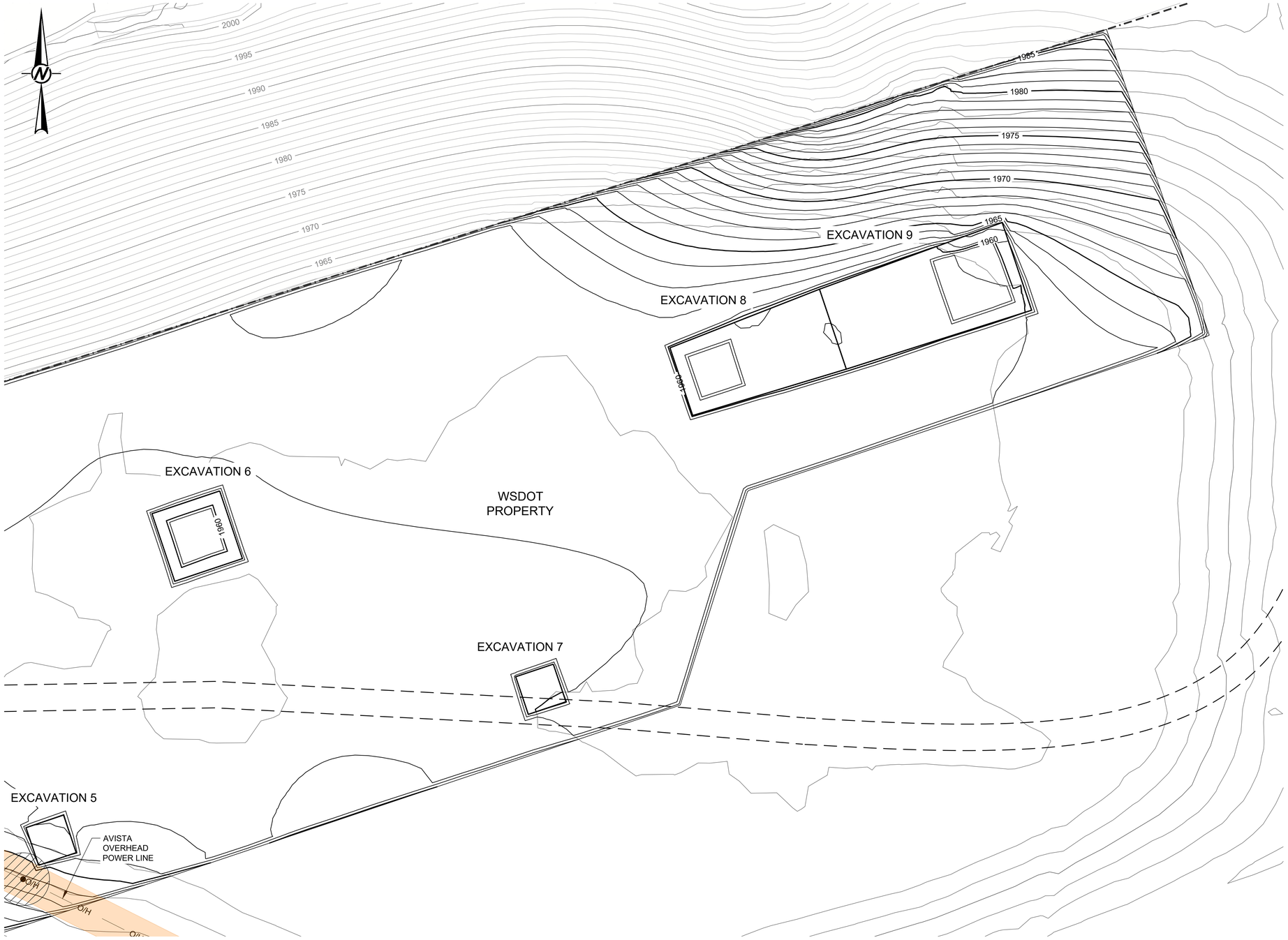
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL CONTOURS (2 OF 3)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	23 of 35	204



LEGEND

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POWER POLES	TBD
POWER POLE ANCHORS	TBD
UNDERGROUND COUNTERPOISE	TBD
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OVERHEAD POWERLINES	TBD
UNDERGROUND POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD
INLAND POWER AND LIGHT COMPANY	
OVERHEAD POWERLINES	TBD
POWER POLES	TBD
POWER POLE ANCHORS	TBD

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DRAFT

0 20 40
1" = 20' FEET

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REGISTERED
PROFESSIONAL ENGINEER

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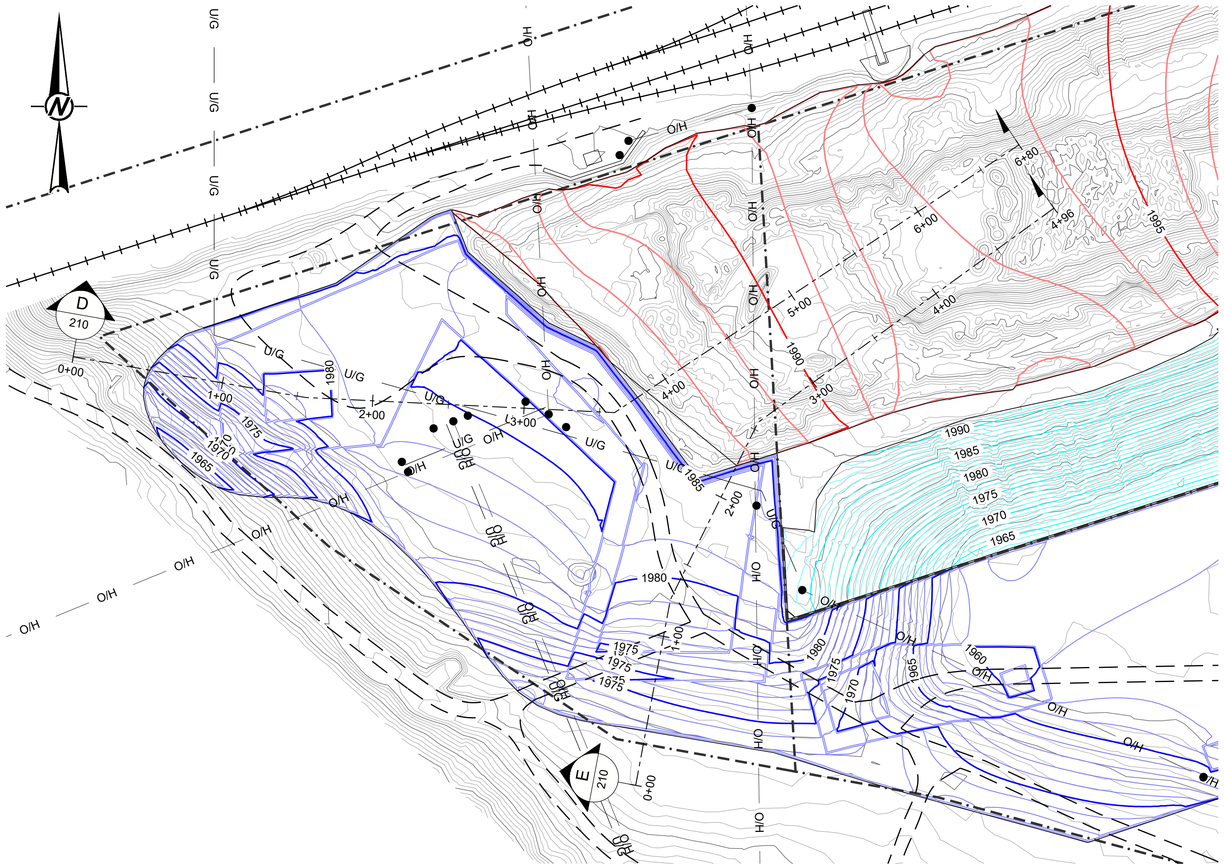
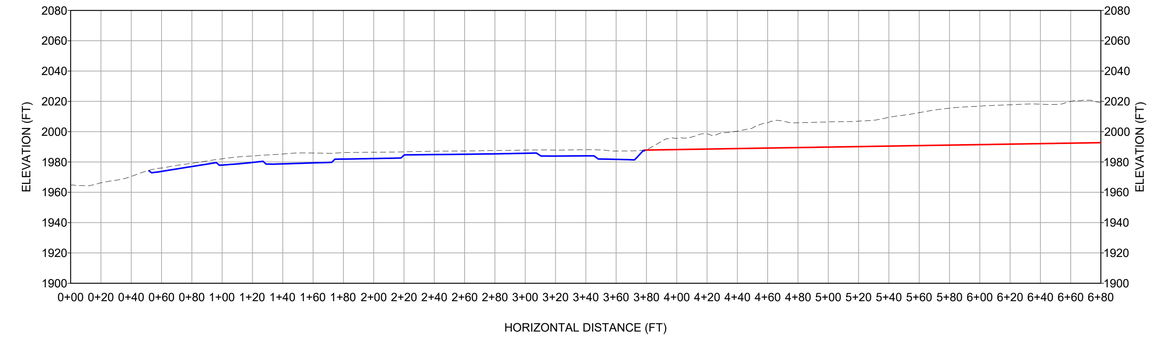
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

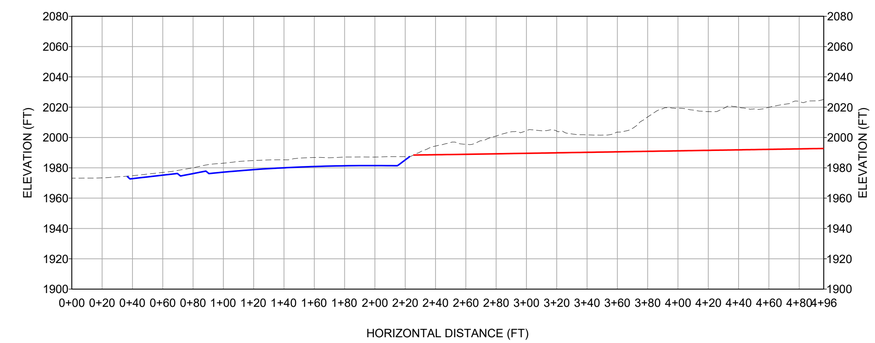
TITLE
OFF-PILE AREAS SOIL REMOVAL CONTOURS (3 OF 3)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	24 of 35	205





SCALE 1" = 50' / VERT. SCALE 1:1 — D 210 — WESTERN AREA OFF-PILE REMOVAL SECTION - NORTH



SCALE 1" = 50' / VERT. SCALE 1:1 — E 210 — WESTERN AREA OFF-PILE REMOVAL SECTION - SOUTH

LEGEND

- EXISTING GROUND SURFACE (MID MOUNTAIN SURVEY 2021)
- DROSS STOCKPILE ASSUMED SUBGRADE SURFACE
- OFF-PILE AREAS PROPOSED EXCAVATION

NOT FOR CONSTRUCTION

DRAFT

0 50 100
1" = 50' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

SEAL

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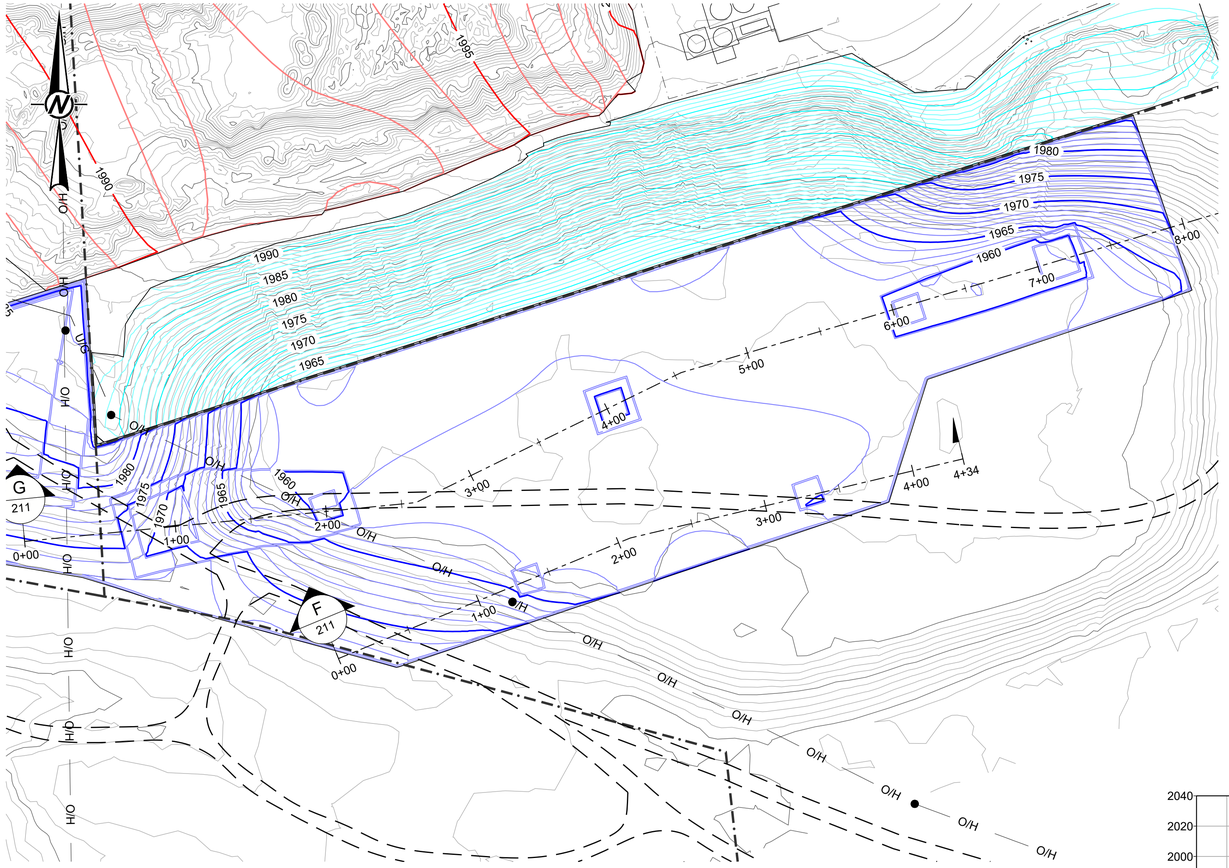
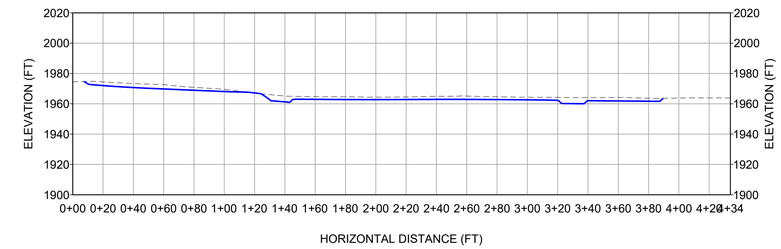
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

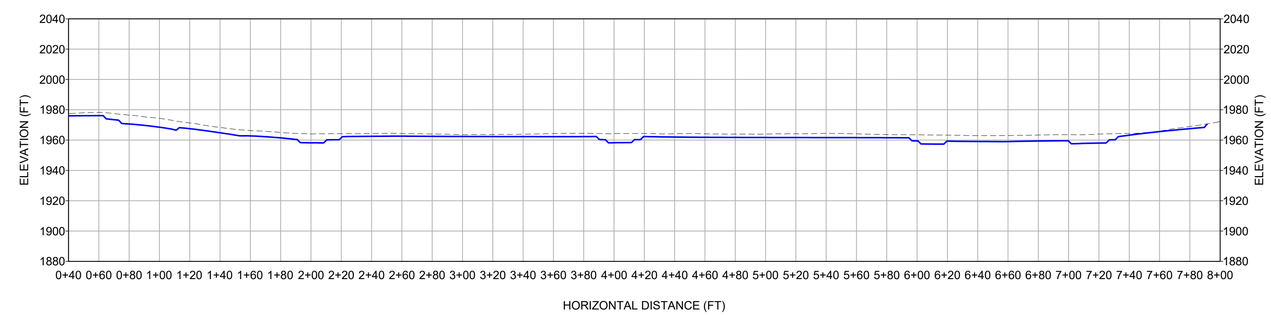
TITLE
OFF-PILE AREAS SOIL REMOVAL SECTIONS (1 OF 2)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	25 of 35 — 210





SCALE 1" = 50' / VERT. SCALE 1:1 — F / 211 — SOUTHERN AREA OFF-PILE REMOVAL SECTION - SOUTH



SCALE 1" = 50' / VERT. SCALE 1:1 — G / 211 — SOUTHERN AREA OFF-PILE REMOVAL SECTION - NORTH

LEGEND

- EXISTING GROUND SURFACE (MID MOUNTAIN SURVEY 2021)
- OFF-PILE AREAS PROPOSED EXCAVATION
- EXCAVATION \ FILL FOR CAP SUBGRADE

NOT FOR CONSTRUCTION

DRAFT

0 50 100
1" = 50' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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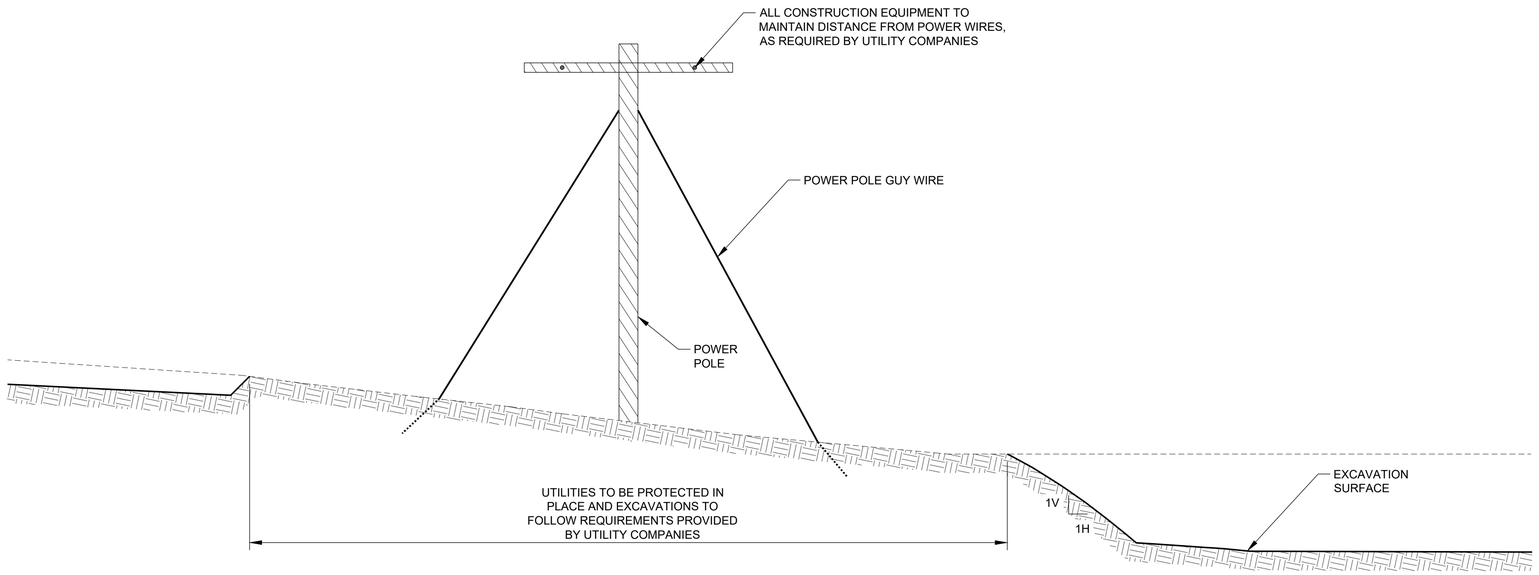
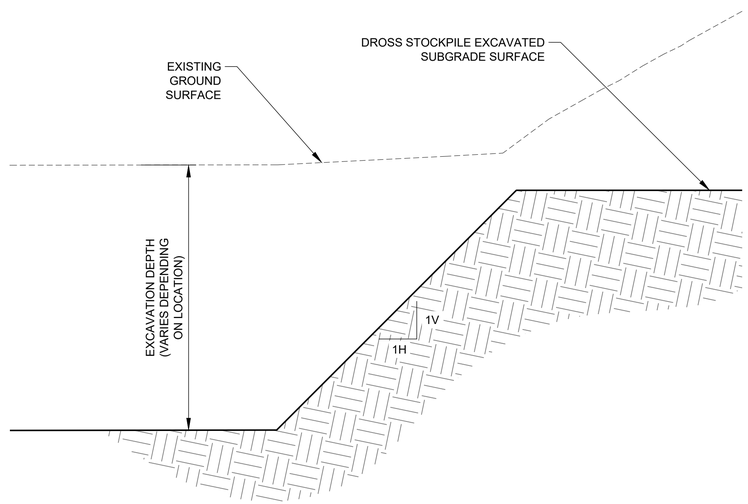
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL SECTIONS (2 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	26 of 35	211



SCALE 1" = 4' 14 - EXCAVATION NEAR POWER POLE



SCALE 1" = 2' 15 - DROSS STOCKPILE OFF-PILE AREA EXCAVATION TIE-IN

NOT FOR CONSTRUCTION

DRAFT

0 2 4
1" = 2' FEET

0 4 8
1" = 4' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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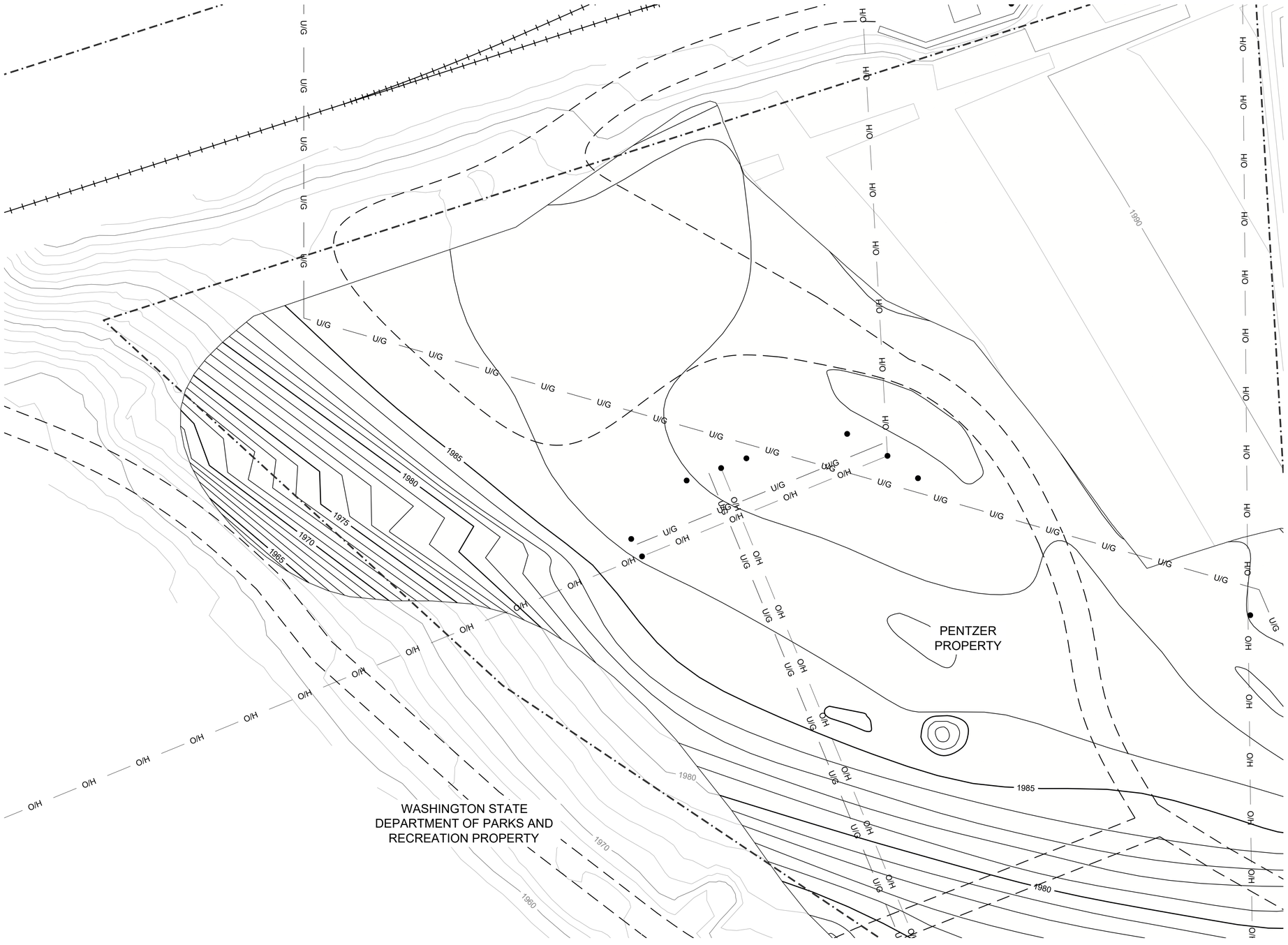
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS SOIL REMOVAL DETAILS

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	27 of 35	215



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOTE(S)

1. FINAL CONTOURS SHOWN ON THIS DRAWING ARE APPROXIMATE. GRADE TO ACHIEVE INDICATED ELEVATIONS +- 0.5 FT AND POSITIVE DRAINAGE AT ALL LOCATIONS. TIE INTO ADJACENT TOPOGRAPHY TO SMOOTH, NATURAL TRANSITIONS. FINAL GRADES SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER.

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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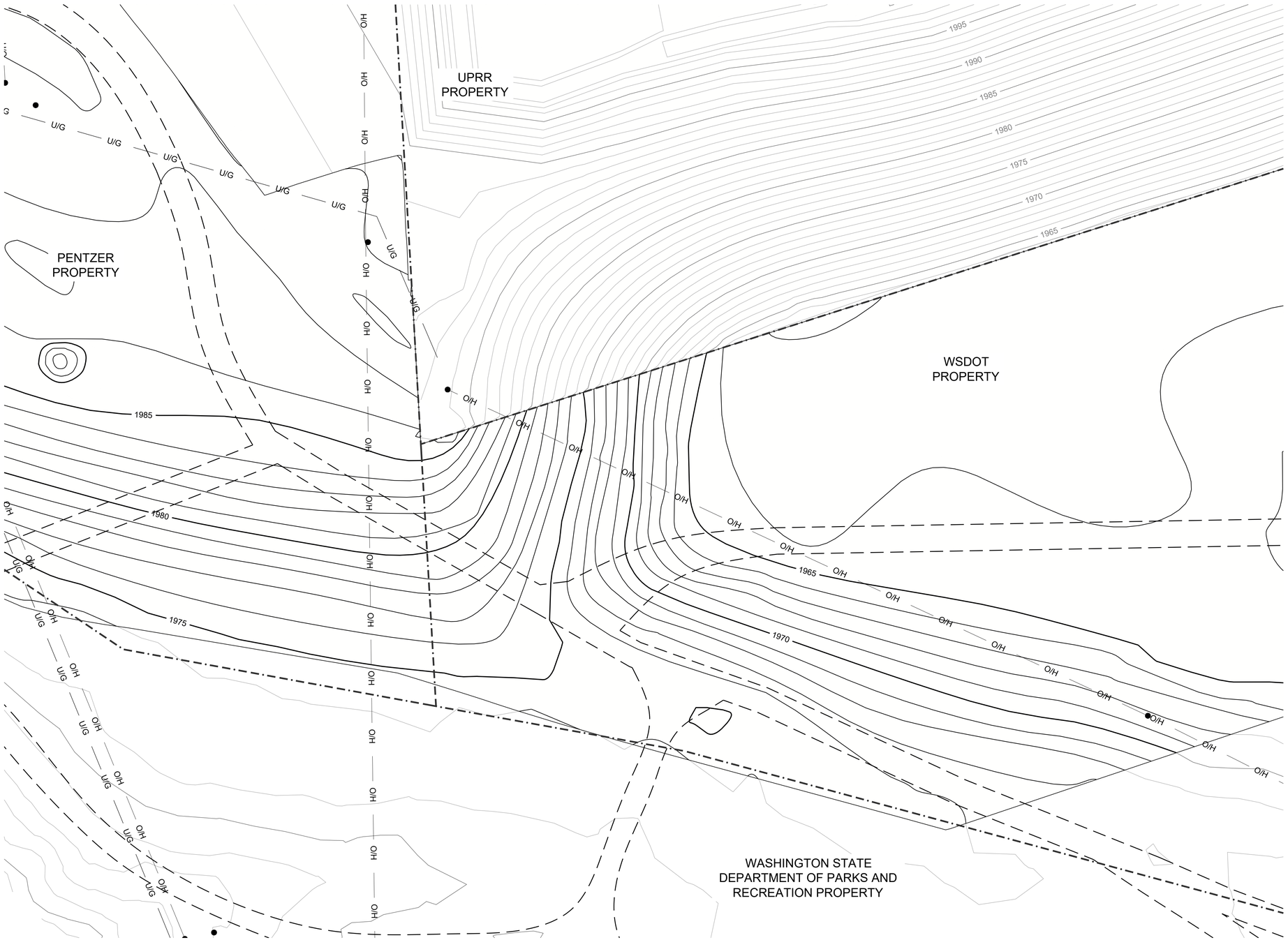
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS FINAL GRADING PLAN (1 OF 3)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	28 of 35 — 220



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOTE(S)

1. FINAL CONTOURS SHOWN ON THIS DRAWING ARE APPROXIMATE. GRADE TO ACHIEVE INDICATED ELEVATIONS +- 0.5 FT AND POSITIVE DRAINAGE AT ALL LOCATIONS. TIE INTO ADJACENT TOPOGRAPHY TO SMOOTH, NATURAL TRANSITIONS. FINAL GRADES SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER.

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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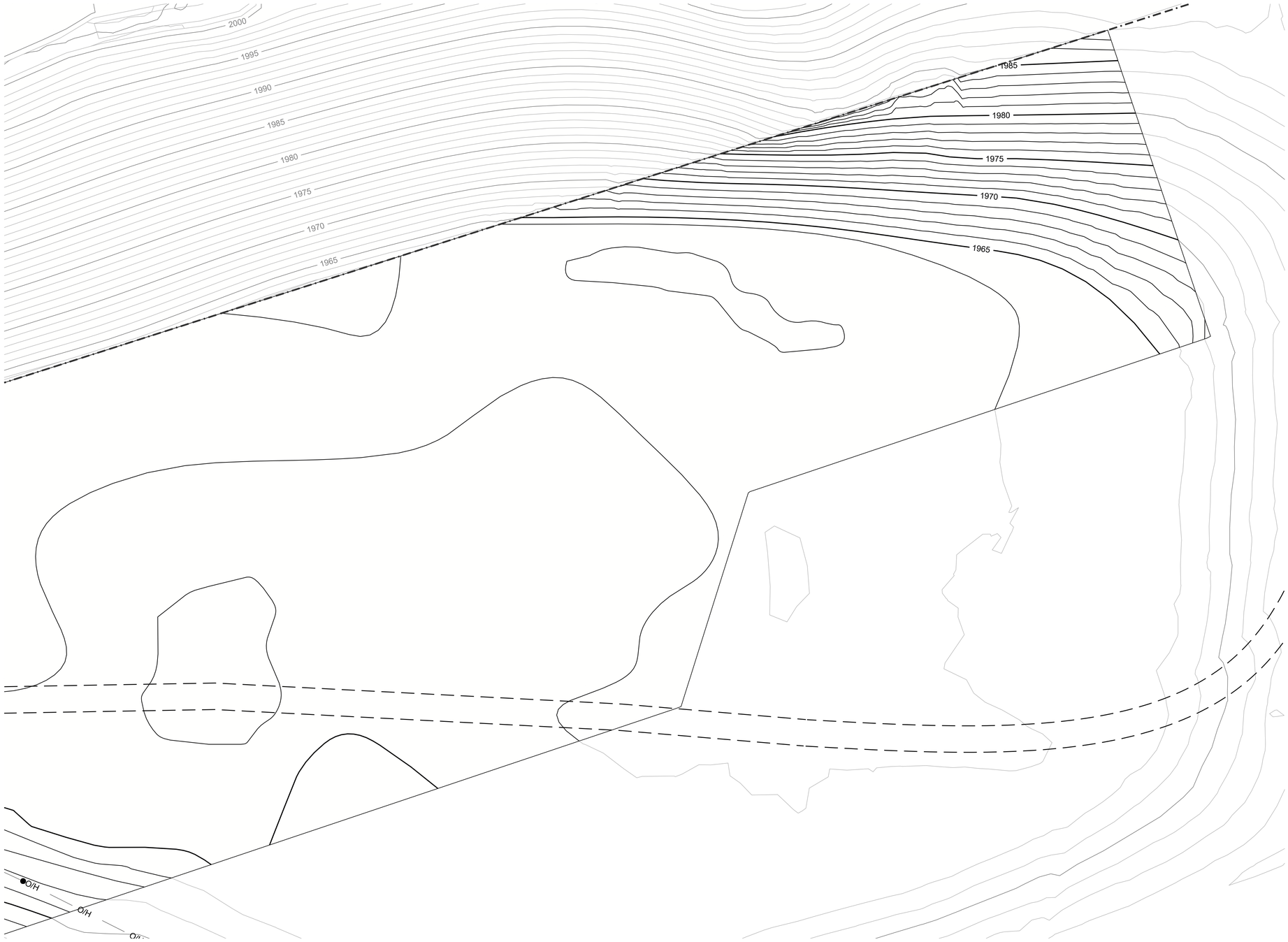
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS FINAL GRADING PLAN (2 OF 3)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	29 of 35	221



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- EXISTING MAJOR CONTOUR (10-FT INTERVAL)
- EXISTING MINOR CONTOUR (2-FT INTERVAL)
- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

NOTE(S)

1. FINAL CONTOURS SHOWN ON THIS DRAWING ARE APPROXIMATE. GRADE TO ACHIEVE INDICATED ELEVATIONS +- 0.5 FT AND POSITIVE DRAINAGE AT ALL LOCATIONS. TIE INTO ADJACENT TOPOGRAPHY TO SMOOTH, NATURAL TRANSITIONS. FINAL GRADES SUBJECT TO APPROVAL BY THE CONSTRUCTION MANAGER.

NOT FOR CONSTRUCTION

DRAFT

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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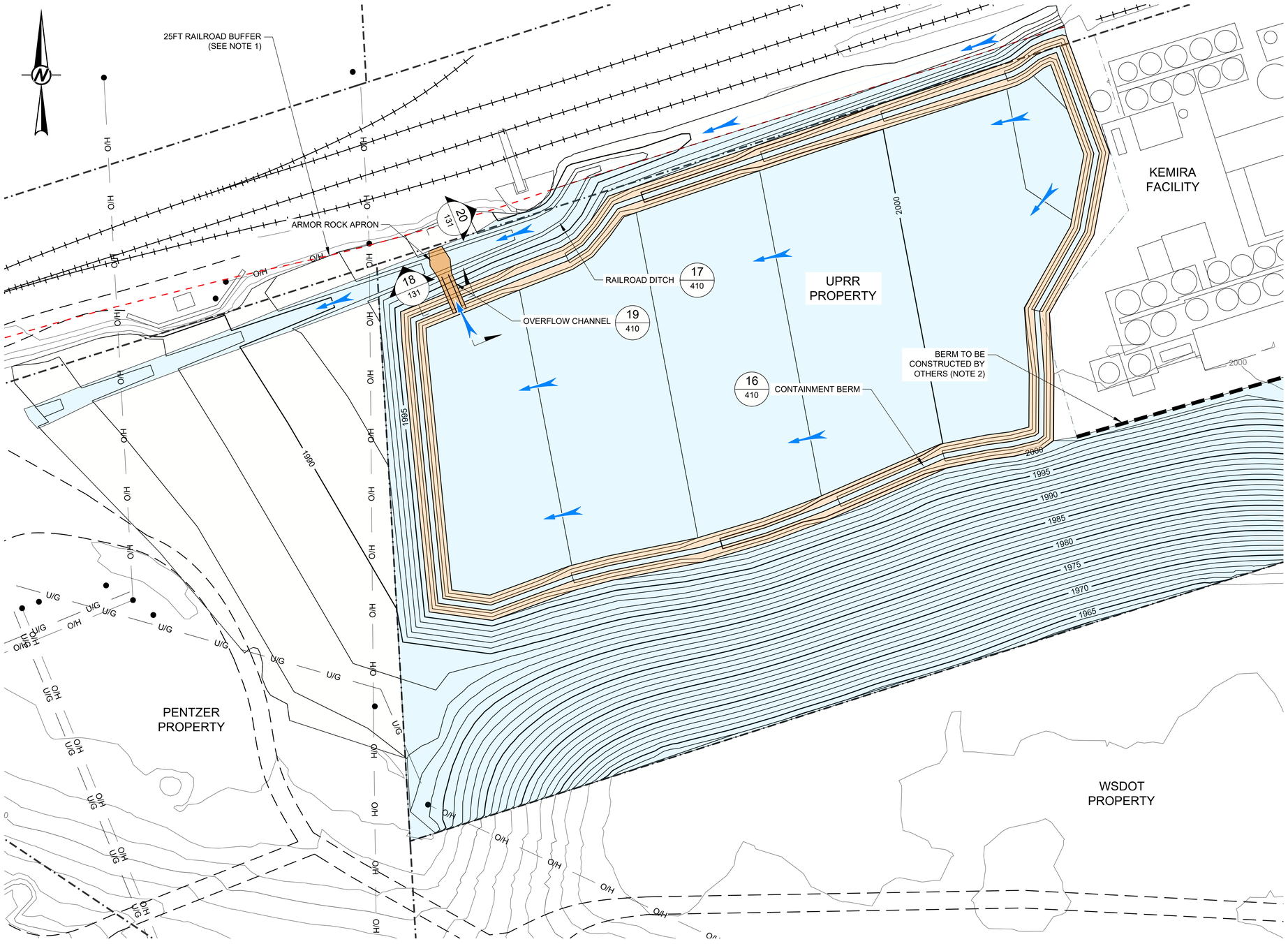
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
OFF-PILE AREAS FINAL GRADING PLAN (3 OF 3)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	30 of 35	222



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- GRAVEL COVER
- ARMOR ROCK COVER
- BERM TO BE CONSTRUCTED BY OTHERS
- FLOW DIRECTION

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. SURFACE WATER RUNOFF IS NOT ALLOWED TO FLOW ONTO ECOLOGICAL CAP AREA.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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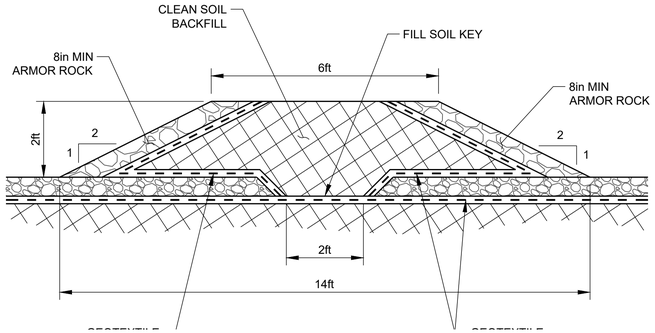
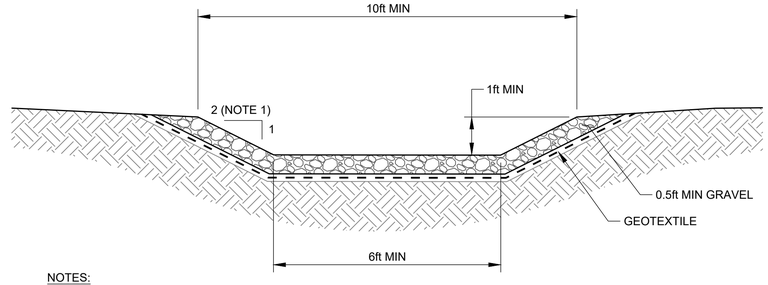
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SURFACE WATER MANAGEMENT PLAN

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	31 of 35	400



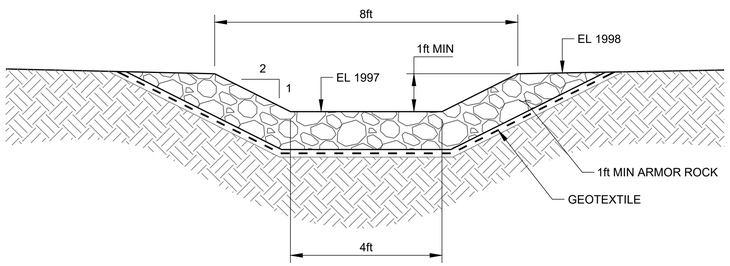
SCALE 1" = 2' 16 - CONTAINMENT BERM



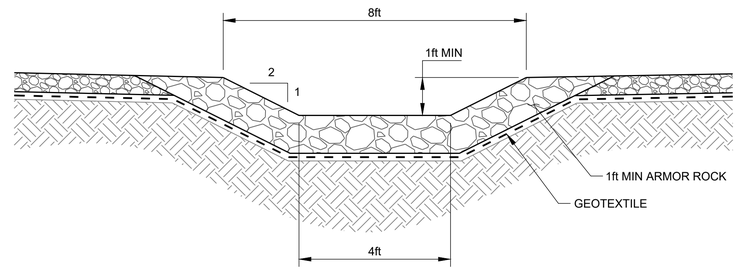
NOTES:

1. OR LESS STEEP.

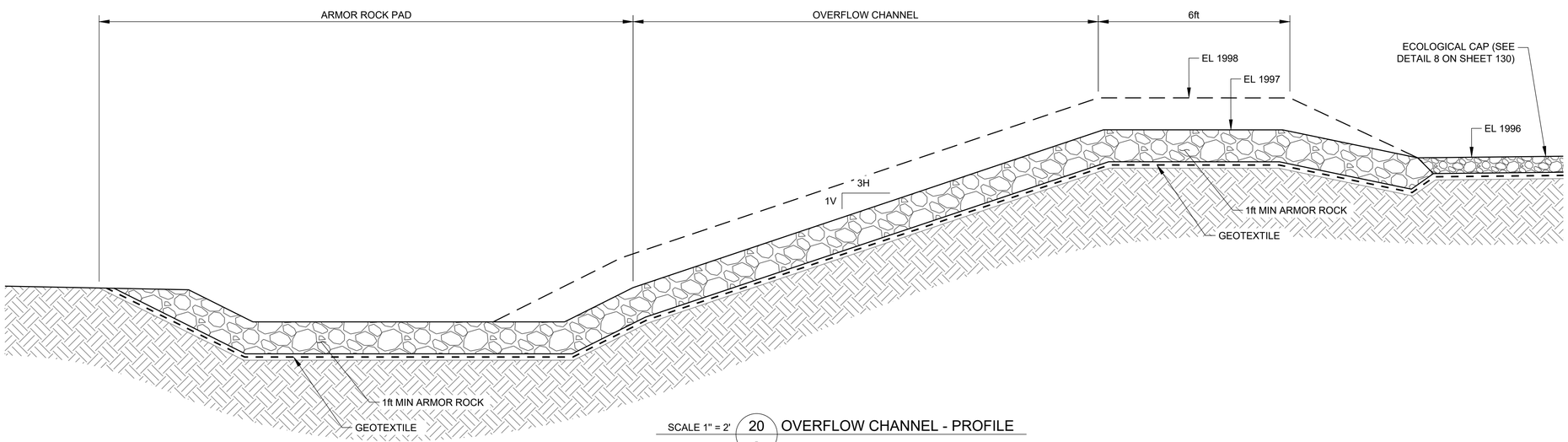
SCALE 1" = 2' 17 - RAILROAD DITCH



SCALE 1" = 2' 18 - OVERFLOW OUTLET



SCALE 1" = 2' 19 - OVERFLOW CHANNEL - SECTION



SCALE 1" = 2' 20 - OVERFLOW CHANNEL - PROFILE

NOT FOR CONSTRUCTION

DRAFT

0 2 4
1" = 2' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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PROJECT
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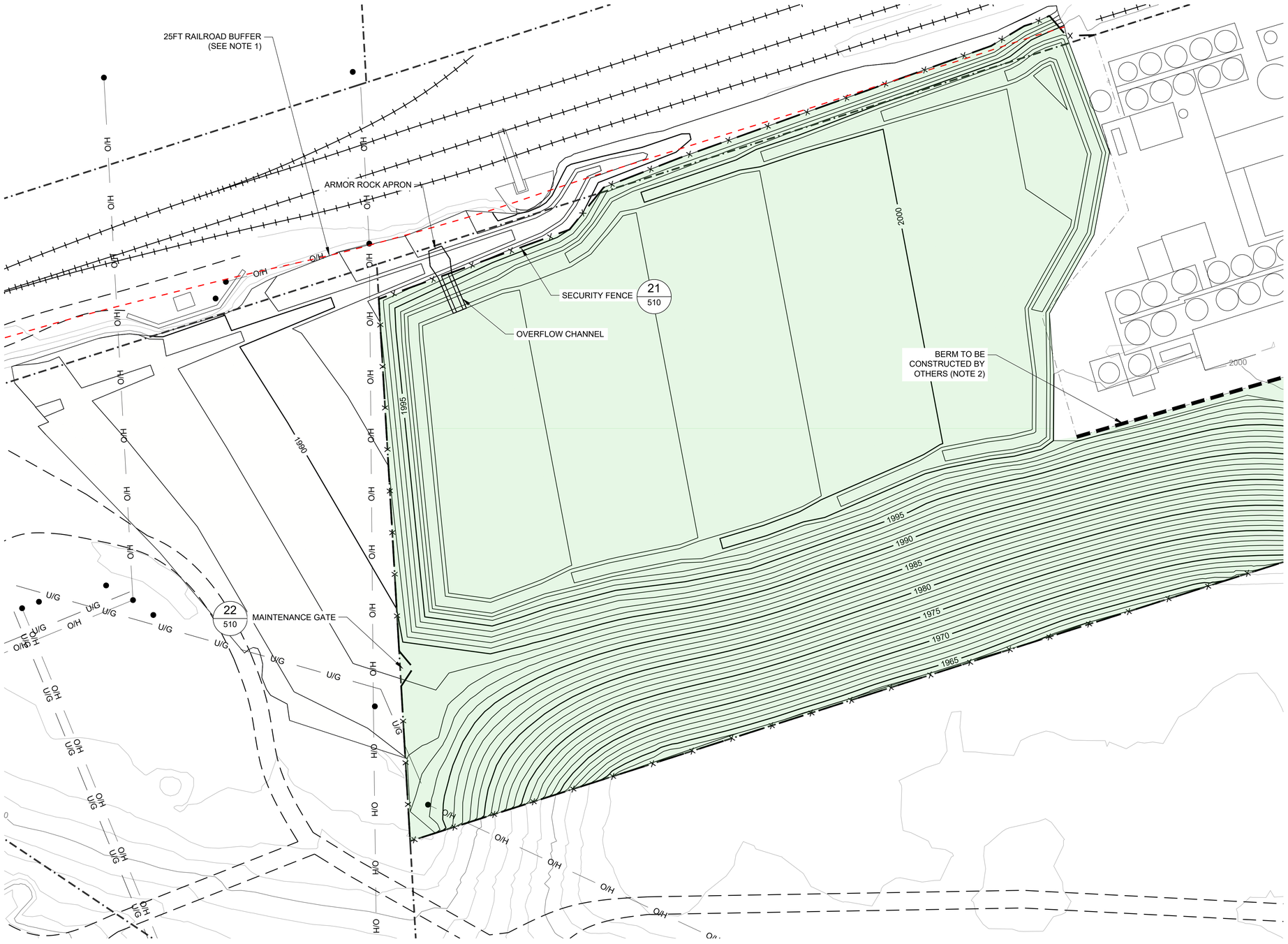
SPOKANE VALLEY, WASHINGTON

TITLE
SURFACE WATER MANAGEMENT DETAILS

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	32 of 35	410



LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- ECOLOGICAL CAP
- BERM TO BE CONSTRUCTED BY OTHERS
- X — PROPOSED SECURITY FENCE

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. SURFACE WATER RUNOFF IS NOT ALLOWED TO FLOW ONTO ECOLOGICAL CAP AREA.

NOT FOR CONSTRUCTION

DRAFT

0 30 60
1" = 30' FEET

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A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
FENCING PLAN (1 OF 2)

PROJECT NO.	PHASE	REV.		SHEET
19119180	1000B	C	33 of 35	500

LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
- U/G — UNDERGROUND POWER LINE
- APPROXIMATE EDGE OF PAVEMENT
- ECOLOGICAL CAP
- BERM TO BE CONSTRUCTED BY OTHERS
- X — PROPOSED SECURITY FENCE

NOTE(S)

1. ALL PERSONNEL WITHOUT PROPER RAILROAD SAFETY TRAINING ARE PROHIBITED FROM ENTERING THE RAILROAD BUFFER ZONE.
2. SURFACE WATER RUNOFF IS NOT ALLOWED TO FLOW ONTO ECOLOGICAL CAP AREA.

NOT FOR CONSTRUCTION

DRAFT

0 30 60

1" = 30' FEET

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PROJECT
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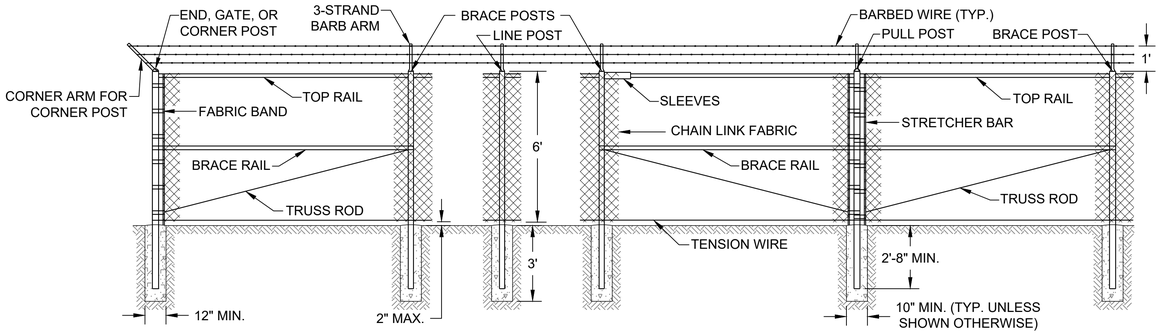
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
FENCING PLAN (2 OF 2)

PROJECT NO.	PHASE	REV.	SHEET
19119180	1000B	C	501



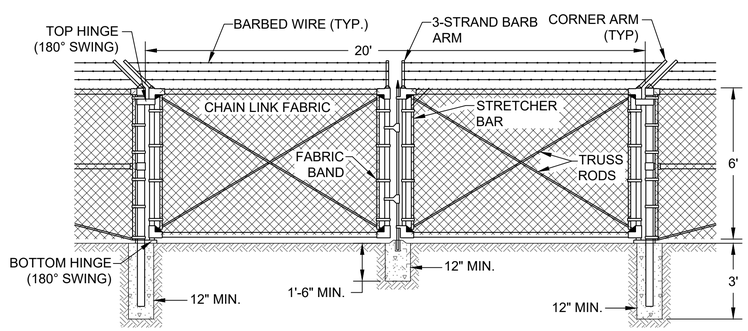
NOTES:

1. ALL POSTS SHALL BE SPACED AT 10' MAXIMUM INTERVALS UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER.
2. TENSION WIRES SHALL BE PLACED WITHIN THE LIMITS OF THE FIRST FULL FABRIC WEAVE.
3. DETAILS ARE ILLUSTRATIVE AND SHALL NOT LIMIT HARDWARE DESIGN OR POST SELECTION OF ANY PARTICULAR FENCE TYPE.
4. BARB ARMS SHALL BE INCLINED AT APPROXIMATELY 45° FROM VERTICAL TOWARD THE OUTSIDE OF THE ENCLOSED AREA.

SCALE N.T.S. 21 - SECURITY FENCE TYPICAL DETAIL

SECURITY FENCE POST AND RAIL SCHEDULE

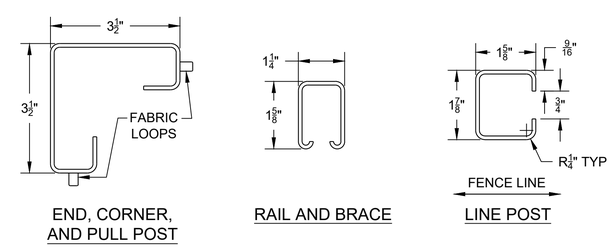
		BRACE RAIL & TOP RAIL	LINE POST & BRACE POST	END, CORNER, & PULL POST	GATE POST
ROUND	I.D. PIPE (IN)	$1\frac{1}{4}$	2	$2\frac{1}{2}$	$3\frac{1}{2}$
	WEIGHT (LB/FT)	2.27	3.65	5.79	9.1
H-COLUMN	SIZE (IN)	$1\frac{1}{4} \times 1\frac{5}{8}$	$2\frac{1}{4}$	N/A	N/A
	WEIGHT (LB/FT)	1.35	4.0	N/A	N/A
ROLL FORMED	SIZE (IN)	$1\frac{5}{8} \times 1\frac{1}{4}$	$1\frac{5}{8} \times 1\frac{7}{8}$	$3\frac{1}{2} \times 3\frac{1}{2}$	N/A
SEE DETL 22/510	WEIGHT (LB/FT)	1.35	2.34	5.14	N/A



NOTES:

1. BARBED WIRE SHALL BE DISCONTINUED BETWEEN GATE FRAME AND GATE POST.
2. BARB ARMS SHALL BE INCLINED AT APPROXIMATELY 45° FROM VERTICAL TOWARD THE OUTSIDE OF THE ENCLOSED AREA.

SCALE N.T.S. 22 - MAINTENANCE GATE



SCALE N.T.S. 23 - ROLL-FORMED SECTIONS FOR SECURITY FENCE

NOT FOR CONSTRUCTION

DRAFT

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
C	2022-05-17	REVISED TO ADDRESS AGENCY REVIEW COMMENTS	VMN	REDMOND	FSS	TJN
B	2021-12-16	DRAFT FOR AGENCY REVIEW	VMN	REDMOND	FSS	TJN
A	2021-11-12	DRAFT FOR CLIENT REVIEW	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER

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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
FENCING DETAILS

PROJECT NO.	PHASE	REV.	35 of 35	SHEET
19119180	1000B	C		510