APPENDIX G

Permits

City of Spokane Valley
Community & Public Works Department
10210 E. Sprague Ave.
Spokane Valley, WA 99206
(509) 720-5240
permitcenter@spokanevalley.org

EGR-2022-0081

DE-ENG-GRADING-ONLINE

PROJECT NAME / USE: UPRR TRENTWOOD DROSS SITE

ISSUED: 10/13/2022

SITE ADDRESS: 2315 N SULLIVAN RD SPOKANE VALLEY

EXPIRES: 10/13/2024

PROJECT DESCRIPTION: GRADING

PARCEL: 45114.9030

APPLICANT: Graymar Environmental Services, Inc.
601 S Pioneer Way Moses Lake, WA 98837
5097704456

OWNER: UNION PACIFIC RAILROAD CO
1400 DOUGLAS, STOP 1640
OMAHA, NE 68179

GENERAL CONTRACTOR: Graymar Environmental Services, Inc.
601 S Pioneer Way
Moses Lake, WA 98837
5097704456

License: GRAYMES821MP
Expires: 07/17/2024

FEES:	Paid	Due
Grading Permit	$486.00	$0.00
Grading Plan Review	$218.00	$0.00
Erosion/Sediment Control- Site Inspection	$104.00	$0.00
Totals :	**$808.00**	**$0.00**

CONDITIONS

* Forty-eight (48) hours prior to construction (onsite and/or within the right-of-way), securely post a construction warning sign at each ingress to the project area that is clearly visible from the right-of-way. The sign shall be posted for the duration of the project. See Street Standards Section 9.7.

* A SEPARATE ROW PERMIT W/APPROACHES IS REQUIRED FOR THE WORK TO CONNECT NEW ACCESS WITH PUBLIC RIGHT OF WAY

* Construction of every drywell, including fabric and drainrock, shall be observed by the on-site inspector (Street Standards 9.4.2) to confirm that it meets the design details and specifications. Drywells not observed shall have their performance verified by a full-scale drywell test (SRSM Chapter 4).

* All land disturbance and excavation within the City is subject to the Underground Utility Damage Prevention Act (chapter 19.122 RCW). Permittees shall be responsible for complying with chapter 19.122 RCW, including, but not limited to, calling 811 prior to excavation pursuant to RCW 19.122.030 to notify and allow utility providers an opportunity to locate underground utilities. Further, pursuant to RCW 19.122.033, permittees shall be responsible for notifying, contacting and consulting with pipeline companies prior to any construction or excavation that occurs within one hundred feet of a transmission pipeline. For further information regarding the Underground Utility Damage Prevention Act and the "Call Before You Dig" requirements, please contact the Washington Utilities and Transportation Commission.

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By accepting this permit and proceeding with the work, the applicant/permittee and owner acknowledges and agrees that: 1) If this permit is for construction of or on a dwelling, the dwelling is/will be served by potable water. 2) Ownership of this City of Spokane Valley permit inures to the property owner. 3) The applicant/permittee is the property owner or has full permission and authority to represent the property owner in this project and carry out the work specified in the permit. 4) All construction is to be done in full compliance with the City of Spokane Valley Municipal Code. The applicable codes are available for review at the City of Spokane Valley Permit Center. 5) The applicant/permittee further declares that they are either: (A) a contractor currently registered and properly licensed in accordance with Chapter 18.27 RCW; (B) the registered or legal owner or authorized agent of the property for which I am applying for permit and not a licensed contractor; or (C) otherwise exempt from the requirements set forth in RCW 18.27.090 and will abide by all provisions and conditions of the exemption as stated. 6) The City of Spokane Valley permit is a permit to carry out the work as specified therein and is not a permit or approval for any violation of federal, state or local laws, codes or ordinances. 7) Compliance with all federal, state, and local laws shall be the sole responsibility of the applicant/permittee and property owner. 8) Plans or additional information may be required to be submitted and subsequently approved before this application can be processed. The City is not responsible for any code violation through the issuance of this permit. 9) Failure to request and obtain the necessary inspections and inspection approvals may necessitate stoppage of work and/or removal of certain parts of the construction at the applicant's/permittee's or property owner's expense.

INSPECTION CARD

City of Spokane Valley
Community & Public Works Department
10210 E. Sprague Ave.
Spokane Valley, WA 99206

PERMIT #: EGR-2022-0081 **PROJECT ADDRESS:** 2315 N SULLIVAN RD

PARCEL #: 45114.9030 **PROJECT DESCRIPTION:** GRADING

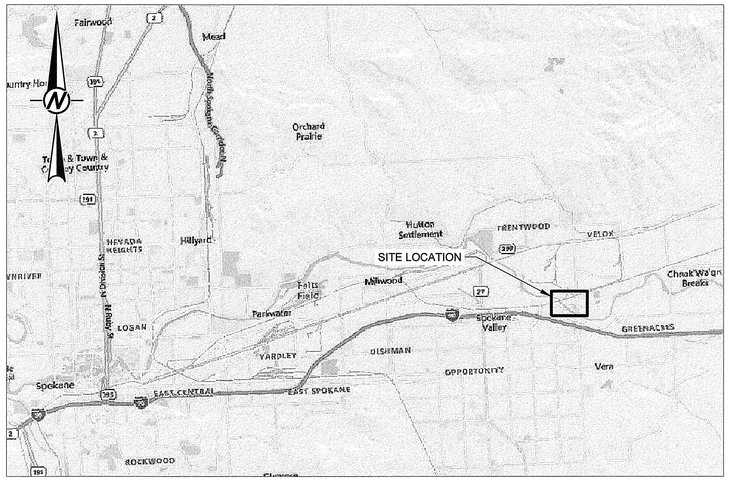
OWNER: UNION PACIFIC RAILROAD CO **ADDRESS:** 1400 DOUGLAS, STOP 1640 OMAHA, NE 68179 **PHONE:**

CONTRACTOR: Graymar Environmental Services, Inc. **ADDRESS:** 601 S Pioneer Way Moses Lake, WA 98837 **PHONE:** 5097704456

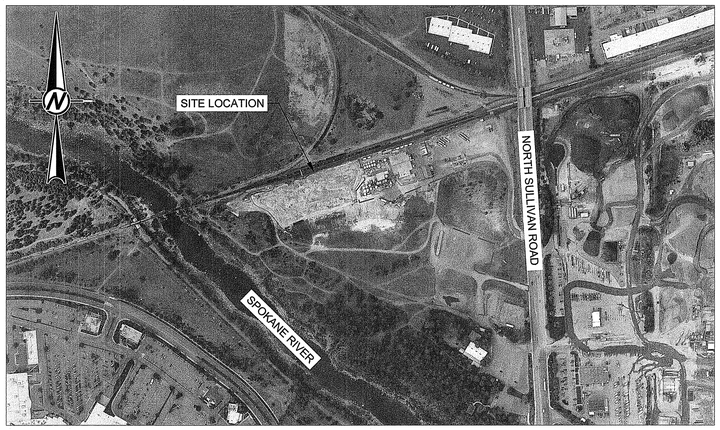
CONTRACATOR LICENSE: GRAYMES821MP **LENDER:**

INSPECTION	INSP	Status	DATE	COMMENTS
SITE EROSION CONTROL				
DE-PROGRESS INSPECTION				
DE-PUNCH LIST				
FINAL ACCEPTANCE				

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 3)
021	GENERAL NOTES AND SPECIFICATIONS (2 OF 3)
022	GENERAL NOTES AND SPECIFICATIONS (3 OF 3)
030	SITE OVERVIEW 1
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
110	SUBGRADE PLAN (1 OF 2)
111	SUBGRADE PLAN (2 OF 2)
115	DROSS STOCKPILE REMOVAL SECTIONS
120	ECOLOGICAL CAP AND CONTAINMENT BERM PLAN (1 OF 2)
121	ECOLOGICAL CAP AND CONTAINMENT BERM PLAN (2 OF 2)
130	ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (1 OF 2)
131	ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (2 OF 2)
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

City of Spokane Valley
Development Engineering

Reviewer: CGL
New Street Miles - Public: /

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

Project # EGR-2022-0081
RECEIVED
OCT 13 2022 CGL
COSV PERMIT CENTER
SUB # Final REV. #

0 8000 16000
1" = 8000' FEET

0 400 800
1" = 400' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

TITLE
COVER SHEET

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

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 1 in

Path: \\golder.gds\corp\kestate\office\Redmond\geomatics\UnionPacificRailroad\Trentwood\WA\99_PROJECTS\19119180\1000B\02_PRODUCTION\DWG\Issued For City of Spokane Valley Grading Permit Review\ | File Name: 19119180_1000B_001.dwg | Last Edited By: vnayner Date: 2022-10-12 Time:10:45:06 AM | Printed By: VNayner Date: 2022-10-12 Time:2:55:36 PM

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.

City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

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

10/12/22

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UNION PACIFIC RAILROAD CO.

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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.	of	SHEET
19119180	1000B	1		020

1 in — IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

Path: \\golder.gds\corp\seattle\office\Redmond\geomatics\Union Pacific Railroad\Trentwood\Wk99_PROJECTS\19119180\1000B\02_PRODUCTION\DWG\Issued For City of Spokane Valley Grading Permit Reviews | File Name: 19119180_1000B_002.dwg | Last Edited By: vmyner Date: 2022-10-12 Time:2:48:11 PM | Printed By: VMyner Date: 2022-10-12 Time:2:55:50 PM

EROSION AND SEDIMENT CONTROL (ESC)

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. DECOMMISSION 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.

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed
☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

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SEAL

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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.	of	SHEET
19119180	1000B	1		021

CITY OF SPOKANE VALLEY GENERAL CONSTRUCTION NOTES PER SVSS APPENDIX 4A

A. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE CITY OF SPOKANE VALLEY STREET STANDARDS, SPOKANE REGIONAL STORMWATER MANUAL AND ALL OTHER GOVERNING AGENCY'S STANDARDS.

B. PRIOR TO SITE CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR LOCATING UNDERGROUND UTILITIES. CALL THE UNDERGROUND UTILITY LOCATION SERVICE AT 1-800-424-5555 BEFORE YOU DIG.

C. LOCATIONS OF EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. ANY CONFLICTING UTILITIES SHALL BE RELOCATED PRIOR TO CONSTRUCTION OF ROAD AND DRAINAGE FACILITIES.

D. THE CONTRACTOR IS REQUIRED TO HAVE A COMPLETE SET OF THE ACCEPTED STREET AND DRAINAGE PLANS ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

E. IF THE CONTRACTOR DISCOVERS ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE APPLICANT'S ENGINEER AND ONSITE INSPECTOR.

F. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THE INFILTRATION CAPACITY OF STORMWATER FACILITIES (E.G., LINE THE FACILITY WITH FILTER FABRIC, OVER-EXCAVATE UPON COMPLETION OF THE INFRASTRUCTURE, ETC.)

G. WHERE DIRECTED BY THE CITY OF SPOKANE VALLEY, THE CONTRACTOR SHALL PLACE TRAFFIC CONTROL DEVICES, THE PLACEMENT AND TYPE OF WHICH SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

H. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH AND CONTACT ALL APPROPRIATE UTILITIES INVOLVED PRIOR TO CONSTRUCTION.

I. ALL PAVEMENT CUTS TO CONNECT UTILITIES SHALL BE REPAIRED IN CONFORMANCE WITH THE REGIONAL PAVEMENT CUT POLICY.

J. ALL SURVEY MONUMENTS SHALL BE PROTECTED DURING CONSTRUCTION BY OR UNDER THE DIRECTION OF A LICENSED SURVEYOR AS REQUIRED BY STATE LAW. ANY DISTURBED OR DAMAGED MONUMENTS SHALL BE REPLACED BY OR UNDER THE DIRECTION OF A LICENSED SURVEYOR PRIOR TO CERTIFICATION /FINAL PLAT AND/OR RELEASE OF SURETY. THE CONTRACTOR IS RESPONSIBLE FOR THE FILING OF PERMITS FOR MONUMENT REMOVAL AND REPLACEMENT WITH THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES, AS REQUIRED BY WAC-120-070.

K. CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND ACQUIRING ELECTRICAL INSPECTIONS REQUIRED BY THE STATE.

L. CONTRACTOR IS RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO INITIATING CONSTRUCTION.

M. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL HAVE A CURRENT CITY OF SPOKANE VALLEY BUSINESS LICENSE.

N. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE LICENSED BY THE STATE OF WASHINGTON AND BONDED TO DO WORK IN THE PUBLIC RIGHT-OF-WAY.

O. NO WORK ON THIS PROJECT SHALL COMMENCE UNTIL A CITY OF SPOKANE VALLEY RIGHT-OF-WAY PERMIT HAS BEEN ISSUED.

P. THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES, PUBLIC OR PRIVATE, AT ALL TIMES DURING CONSTRUCTION.

Q. CONTRACTORS SHALL CONTROL DUST IN ACCORDANCE WITH REGULATIONS OF LOCAL AIR POLLUTION CONTROL AUTHORITY.

R. CONTRACTOR SHALL REMOVE ALL CONSTRUCTION RELATED DEBRIS TO AN APPROVED WASTE DISPOSAL SITE.

S. FIRE HYDRANTS SHALL BE INSTALLED AND FUNCTIONING PRIOR TO THE CONSTRUCTION OF ANY STRUCTURES.

T. CONTRACTOR SHALL MAINTAIN FIRE APPARATUS ACCESS STREETS DURING CONSTRUCTION.

U. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ON-SITE INSPECTOR ONE BUSINESS DAY BEFORE ANY CONSTRUCTION OR PRODUCT PLACEMENT TAKES PLACE THAT REQUIRES TESTING OR OBSERVATION (REFER TO APPENDIX 9A- MINIMUM MATERIAL TESTING FREQUENCIES). THE ON-SITE INSPECTOR WILL DETERMINE THE TIME REQUIRED TO SATISFACTORILY ACHIEVE THE NECESSARY TESTING, OBSERVATION AND DOCUMENTATION. THE ON-SITE INSPECTOR WILL BE REQUIRED TO BE ON SITE 100% OF THE TIME DURING HMA PLACEMENT, DRYWELL PLACEMENT, AND TRENCH WORK.

SRSM ESC STANDARD PLAN NOTES PER SRSM APPENDIX 9A

THE FOLLOWING ESC STANDARD PLAN NOTES ORIGINATE FROM SECTION 9.4.3. THESE NOTES ARE AN OVERALL SET; USE ONLY WHAT APPLIES TO THE GIVEN PROJECT.

1. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED IN ORDER TO BEST MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION CONTROL PROBLEMS:
   - (a) CLEAR AND GRUB SUFFICIENTLY FOR INSTALLATION OF TEMPORARY ESC BMPS;
   - (b) INSTALL TEMPORARY ESC BMPS, CONSTRUCTING SEDIMENT TRAPPING BMPS AS ONE OF THE FIRST STEPS PRIOR TO GRADING;
   - (c) CLEAR, GRUB AND ROUGH GRADE FOR ROADS, TEMPORARY ACCESS POINTS AND UTILITY LOCATIONS;
   - (d) STABILIZE ROADWAY APPROACHES AND TEMPORARY ACCESS POINTS WITH THE APPROPRIATE CONSTRUCTION ENTRY BMP;
   - (e) CLEAR, GRUB AND GRADE INDIVIDUAL LOTS OR GROUPS OF LOTS;
   - (f) TEMPORARILY STABILIZE, THROUGH RE-VEGETATION OR OTHER APPROPRIATE BMPS, LOTS OR GROUPS OF LOTS IN SITUATIONS WHERE SUBSTANTIAL CUT OR FILL SLOPES ARE A RESULT OF THE SITE GRADING;
   - (g) CONSTRUCT ROADS, BUILDINGS, PERMANENT STORMWATER FACILITIES (I.E. INLETS, PONDS, UIC FACILITIES, ETC.);
   - (h) PROTECT ALL PERMANENT STORMWATER FACILITIES UTILIZING THE APPROPRIATE BMPS;
   - (i) INSTALL PERMANENT ESC CONTROLS, WHEN APPLICABLE; AND,
   - (j) REMOVE TEMPORARY ESC CONTROLS WHEN:
     - i. PERMANENT ESC CONTROLS, WHEN APPLICABLE, HAVE BEEN COMPLETELY INSTALLED;
     - ii. ALL LAND-DISTURBING ACTIVITIES THAT HAVE THE POTENTIAL TO CAUSE EROSION OR SEDIMENTATION PROBLEMS HAVE CEASED; AND,
     - iii. VEGETATION HAD BEEN ESTABLISHED IN THE AREAS NOTED AS REQUIRING VEGETATION ON THE ACCEPTED ESC PLAN ON FILE WITH THE LOCAL JURISDICTION.
2. INSPECT ALL ROADWAYS, AT THE END OF EACH DAY, ADJACENT TO THE CONSTRUCTION ACCESS ROUTE. IF IT IS EVIDENT THAT SEDIMENT HAS BEEN TRACKED OFF SITE AND/OR BEYOND THE ROADWAY APPROACH, CLEANING IS REQUIRED.
3. IF SEDIMENT REMOVAL IS NECESSARY PRIOR TO STREET WASHING, IT SHALL BE REMOVED BY SHOVELING OR PICKUP SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
4. IF STREET WASHING IS REQUIRED TO CLEAN SEDIMENT TRACKED OFF SITE, ONCE SEDIMENT HAS BEEN REMOVED, STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON-SITE OR OTHERWISE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.
5. RESTORE CONSTRUCTION ACCESS ROUTE EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITION.
6. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AN UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
7. INSPECT SEDIMENT CONTROL BMPS WEEKLY AT A MINIMUM, DAILY DURING A STORM EVENT, AND AFTER ANY DISCHARGE FROM THE SITE (STORMWATER OR NON-STORMWATER). THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE A MONTH IF THE SITE IS STABILIZED AND INACTIVE.
8. CONTROL FUGITIVE DUST FROM CONSTRUCTION ACTIVITY IN ACCORDANCE WITH THE STATE AND/OR LOCAL AIR QUALITY CONTROL AUTHORITIES WITH JURISDICTION OVER THE PROJECT AREA.
9. STABILIZE EXPOSED UNWORKED SOILS (INCLUDING STOCKPILES), WHETHER AT FINAL GRADE OR NOT, WITHIN 10 DAYS DURING THE REGIONAL DRY SEASON (JULY 1 THROUGH SEPTEMBER 30) AND WITHIN 5 DAYS DURING THE REGIONAL WET SEASON (OCTOBER 1 THROUGH JUNE 30). SOILS MUST BE STABILIZED AT THE END OF A SHIFT BEFORE A HOLIDAY WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. THIS TIME LIMIT MAY ONLY BE ADJUSTED BY A LOCAL JURISDICTION WITH A "QUALIFIED LOCAL PROGRAM," IF IT CAN BE DEMONSTRATED THAT THE RECENT PRECIPITATION JUSTIFIES A DIFFERENT STANDARD AND MEETS THE REQUIREMENTS SET FOURTH IN THE CONSTRUCTION STORMWATER GENERAL PERMIT.
10. PROTECT INLETS, DRYWELLS, CATCH BASINS AND OTHER STORMWATER MANAGEMENT FACILITIES FROM SEDIMENT, WHETHER OR NOT FACILITIES ARE OPERABLE.
11. KEEP ROADS ADJACENT TO INLETS CLEAN.
12. INSPECT INLETS WEEKLY AT A MINIMUM AND DAILY DURING STORM EVENTS.
13. CONSTRUCT STORMWATER CONTROL FACILITIES (DETENTION/RETENTION STORAGE POND OR SWALES) BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERATIONAL BEFORE THE CONSTRUCTION OF IMPERVIOUS SITE IMPROVEMENTS.
14. STOCKPILE MATERIALS (SUCH AS TOPSOIL) ON SITE, KEEPING OFF OF ROADWAY AND SIDEWALKS.
15. COVER, CONTAIN AND PROTECT ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCT, AND NON-INERT WASTES PRESENT ON SITE FROM VANDALISM (SEE CHAPTER 173-304 WAC FOR THE DEFINITION OF INERT WASTE), USE SECONDARY CONTAINMENT FOR ON-SITE FUELING TANKS.
16. CONDUCT MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM REPAIRS, SOLVENT AND DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CLEAN ALL CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. IF RAINING OVER EQUIPMENT OR VEHICLE, PERFORM EMERGENCY REPAIRS ON SITE USING TEMPORARY PLASTIC BENEATH THE VEHICLE.
17. CONDUCT APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, IN SUCH A MANNER, AND AT APPLICATION RATES, THAT INHIBITS THE LOSS OF CHEMICALS INTO STORMWATER RUNOFF FACILITIES. AMEND MANUFACTURER'S RECOMMENDED APPLICATION RATES AND PROCEDURES TO MEET THIS REQUIREMENT, IF NECESSARY.
18. INSPECT ON A REGULAR BASIS (AT A MINIMUM WEEKLY, AND DAILY DURING/AFTER A RUNOFF PRODUCING STORM EVENT) AND MAINTAIN ALL EROSION AND SEDIMENT CONTROL BMPS TO ENSURE SUCCESSFUL PERFORMANCE OF THE BMPS. NOTE THAT INLET PROTECTION DEVICES SHALL BE CLEANED OR REMOVED AND REPLACE BEFORE SIX INCHES OF SEDIMENT CAN ACCUMULATE.
19. REMOVE TEMPORARY ESC BMPS WITHIN 30 DAYS AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. PERMANENTLY STABILIZE AREAS THAT ARE DISTURBED DURING THE REMOVAL PROCESS.

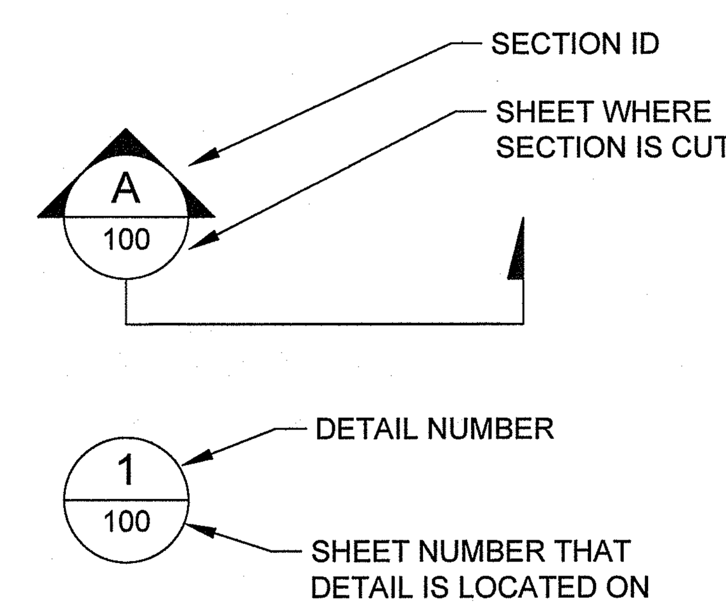
ADDITIONAL ESC NOTE

A SITE LOG SHALL BE COMPLETED WITH THE PROJECT PER SVSS 5.4. INSPECTIONS FOR SITES ONE ACRE OR MORE ARE REQUIRED TO BE CONDUCTED BY A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL). SEE SVSS APPENDIX 9-D FOR INSPECTION REQUIREMENTS.

1

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



City of Spokane Valley Development Engineering

Reviewer: C82

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

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.

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN

SEAL

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

10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

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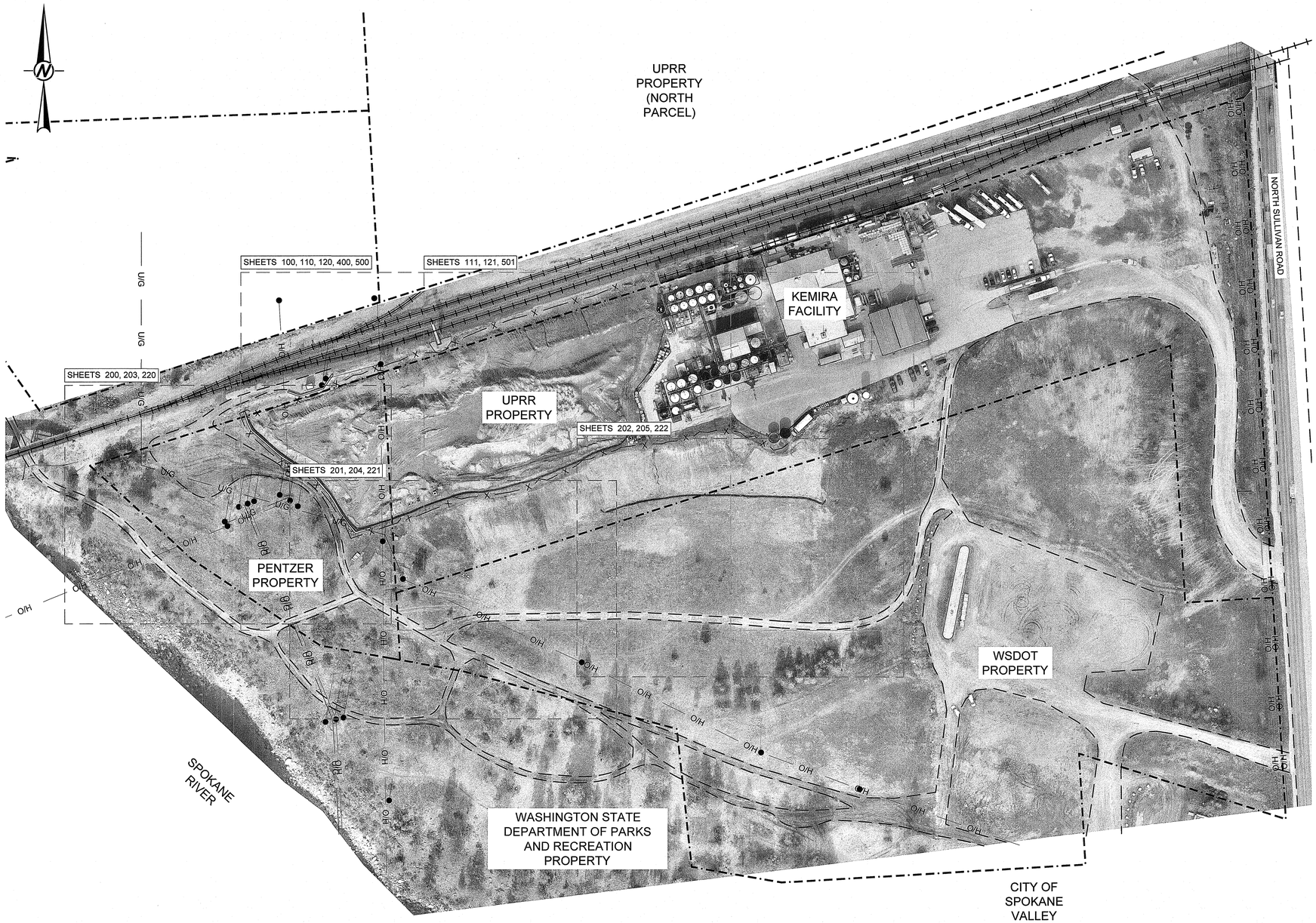
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
GENERAL NOTE AND SPECIFICATIONS (3 OF 3)

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		022



City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 150 300
1" = 150' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47006 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

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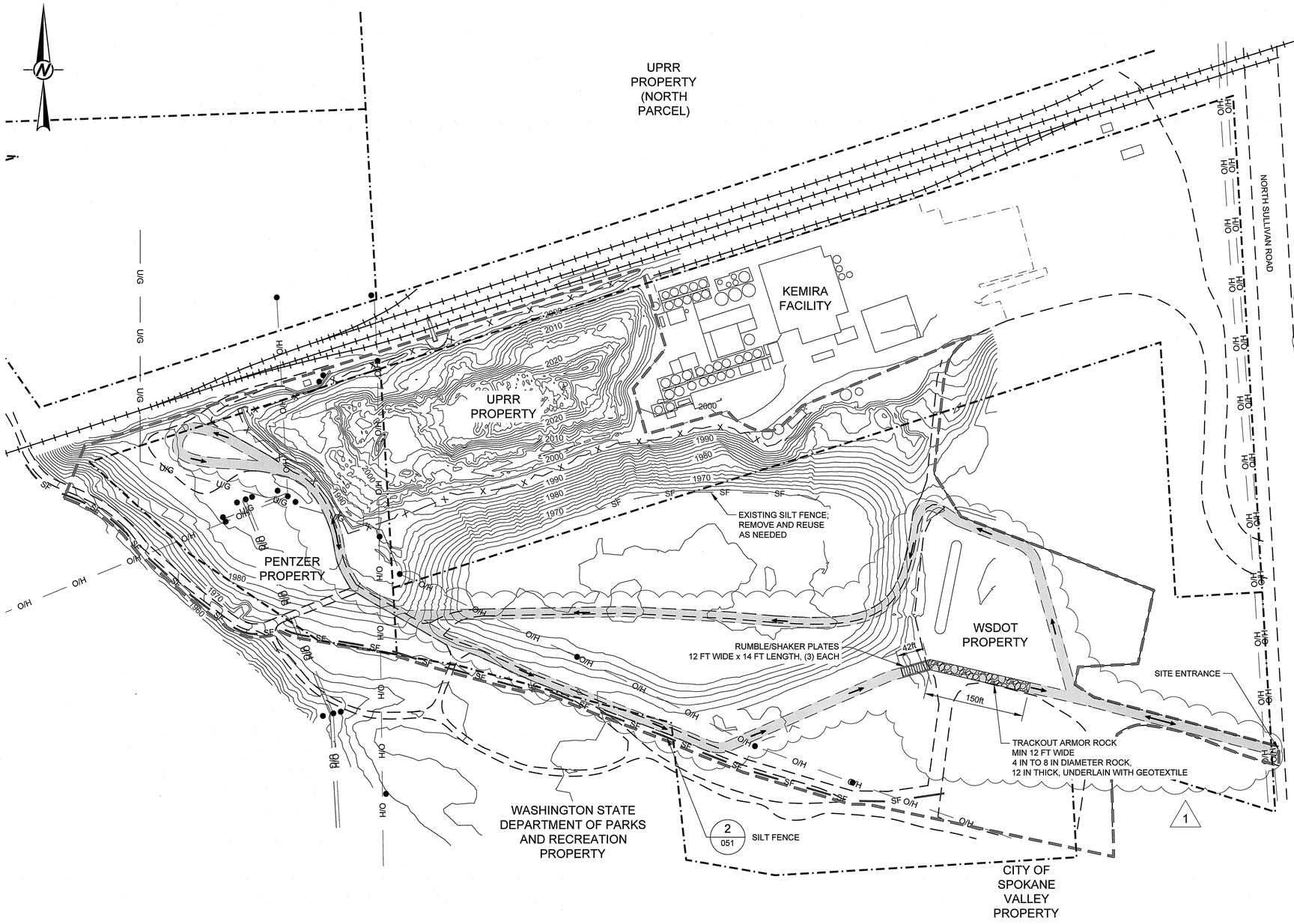
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SITE OVERVIEW

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		030

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



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
- RUMBLE/SHAKER PLATES
- TRACKOUT ARMOR ROCK
- CONTRACTOR PROPOSED TRUCK ACCESS
- TRAFFIC DIRECTION

1

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.

City of Spokane Valley Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 80 160
1" = 80' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 21008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

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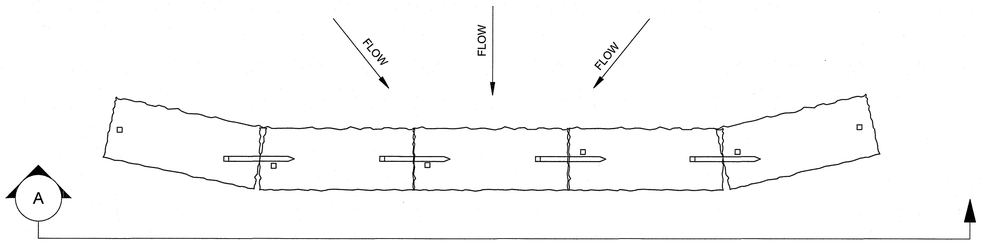
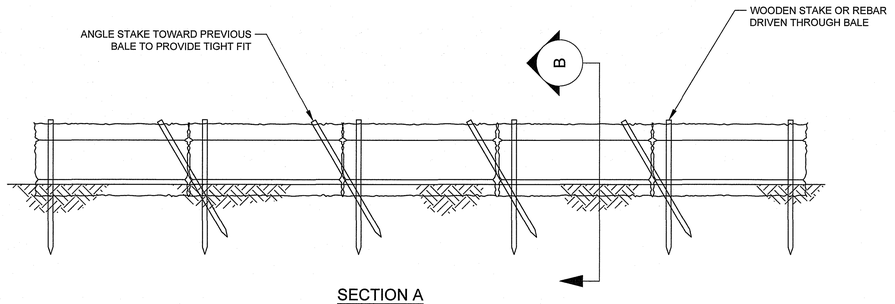
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
EROSION AND SEDIMENT CONTROL PLAN

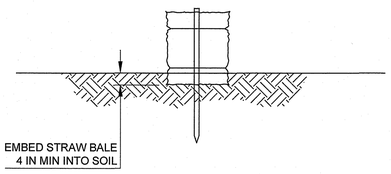
PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		050



PLAN



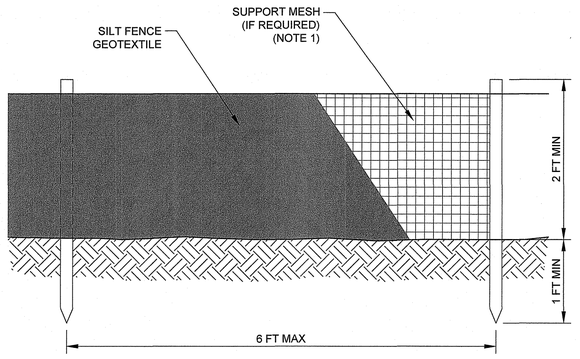
SECTION A

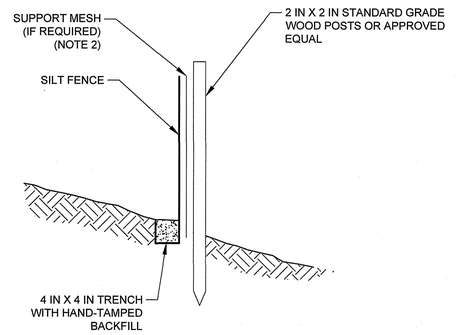


SECTION B

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

City of Spokane Valley
Development Engineering

Reviewer: CSZ
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
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0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

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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.	of	SHEET
19119180	1000B	1		051

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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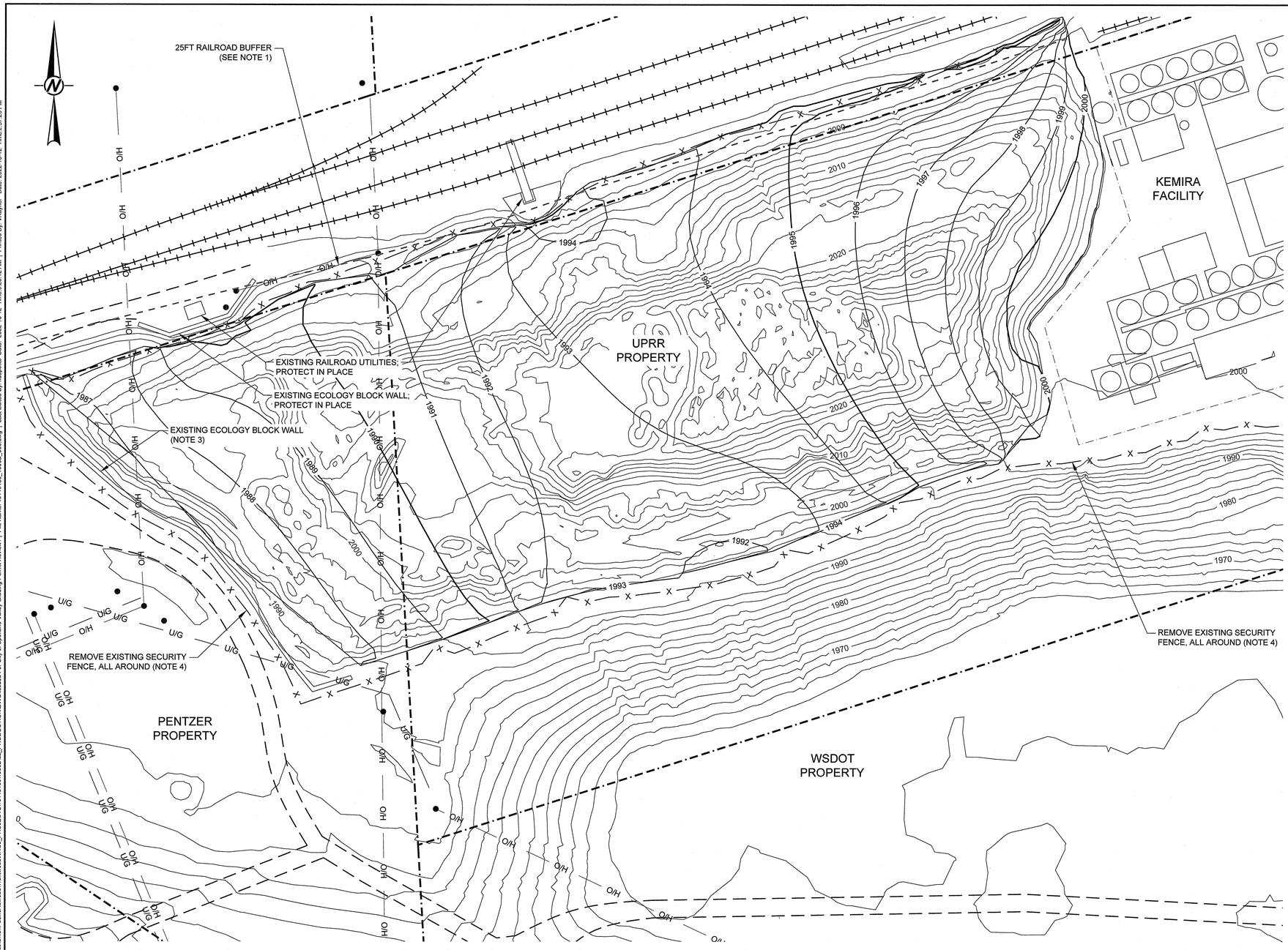

LEGEND

- 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
- 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.

City of Spokane Valley
Development Engineering

Reviewer: CSZ
New Street Miles - Public:

☐ Not Reviewed
☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 30 60
1" = 30' FEET

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0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

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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.	of	SHEET
19119180	1000B	1		100

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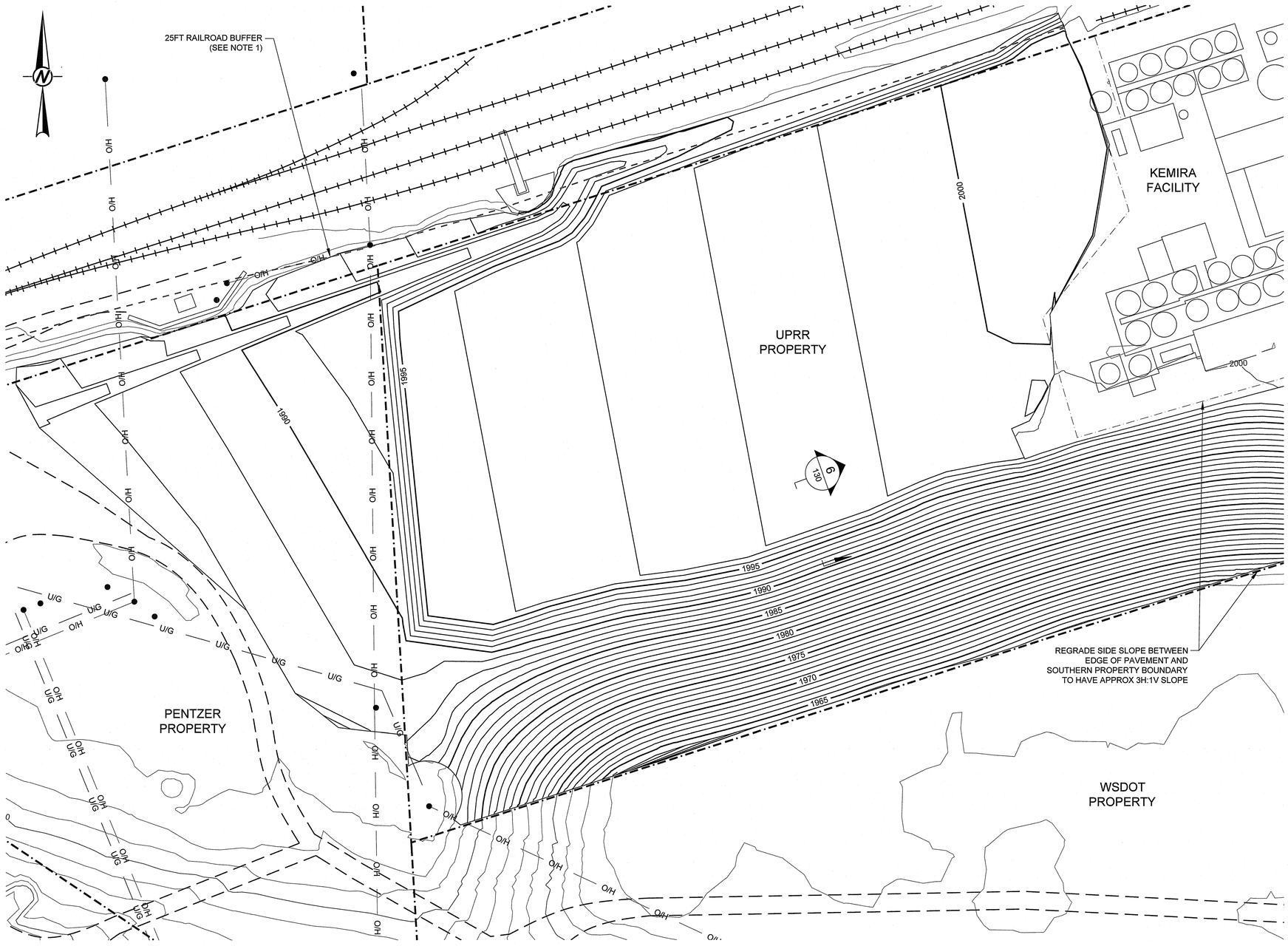

LEGEND

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- 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.

City of Spokane Valley
Development Engineering

Reviewer: CAR
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 30 60
1" = 30' FEET

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SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

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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.	of	SHEET
19119180	1000B	1		110

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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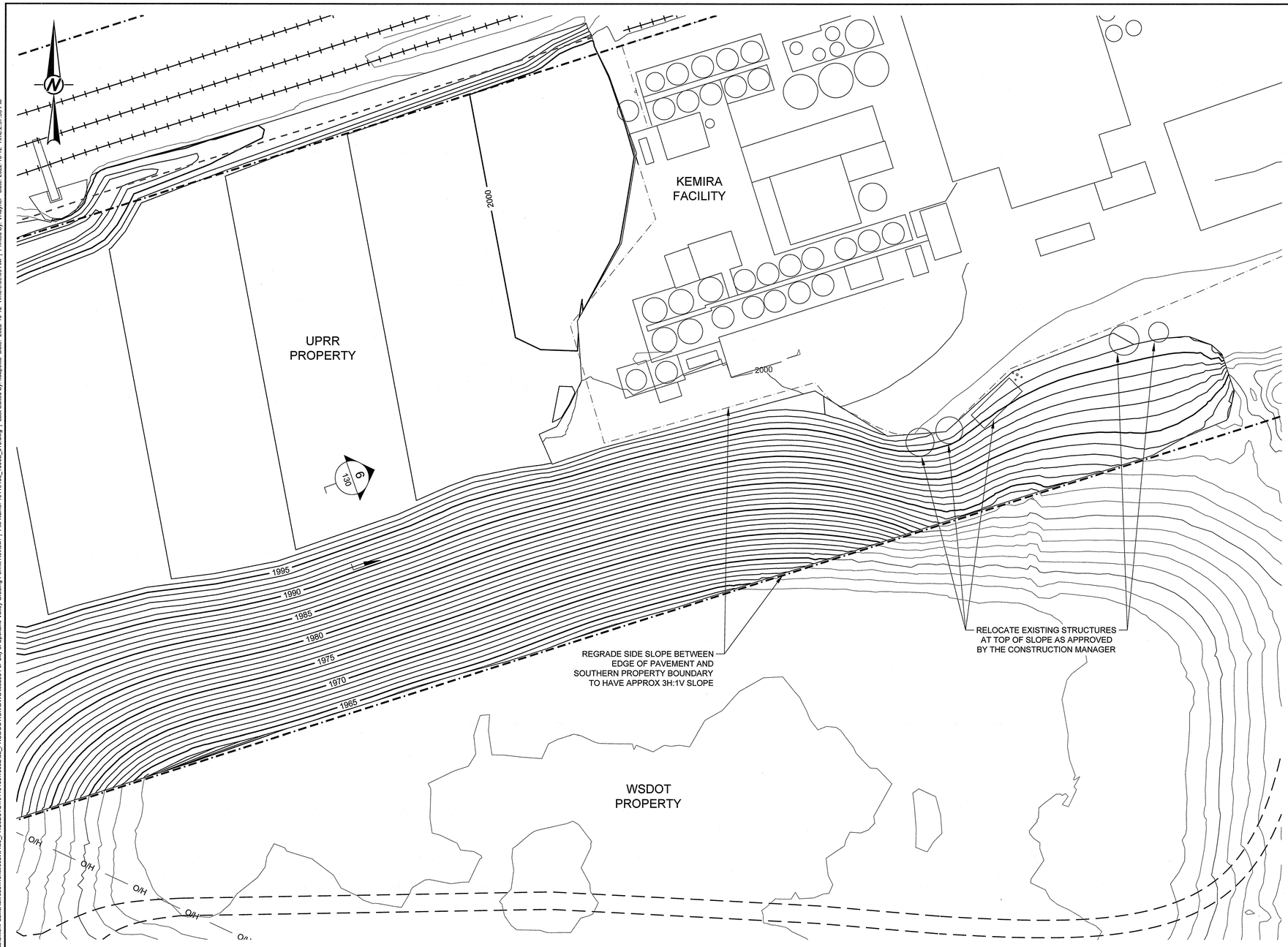

LEGEND

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- PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
- PROPOSED MINOR CONTOUR (1-FT INTERVAL)

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

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SEAL

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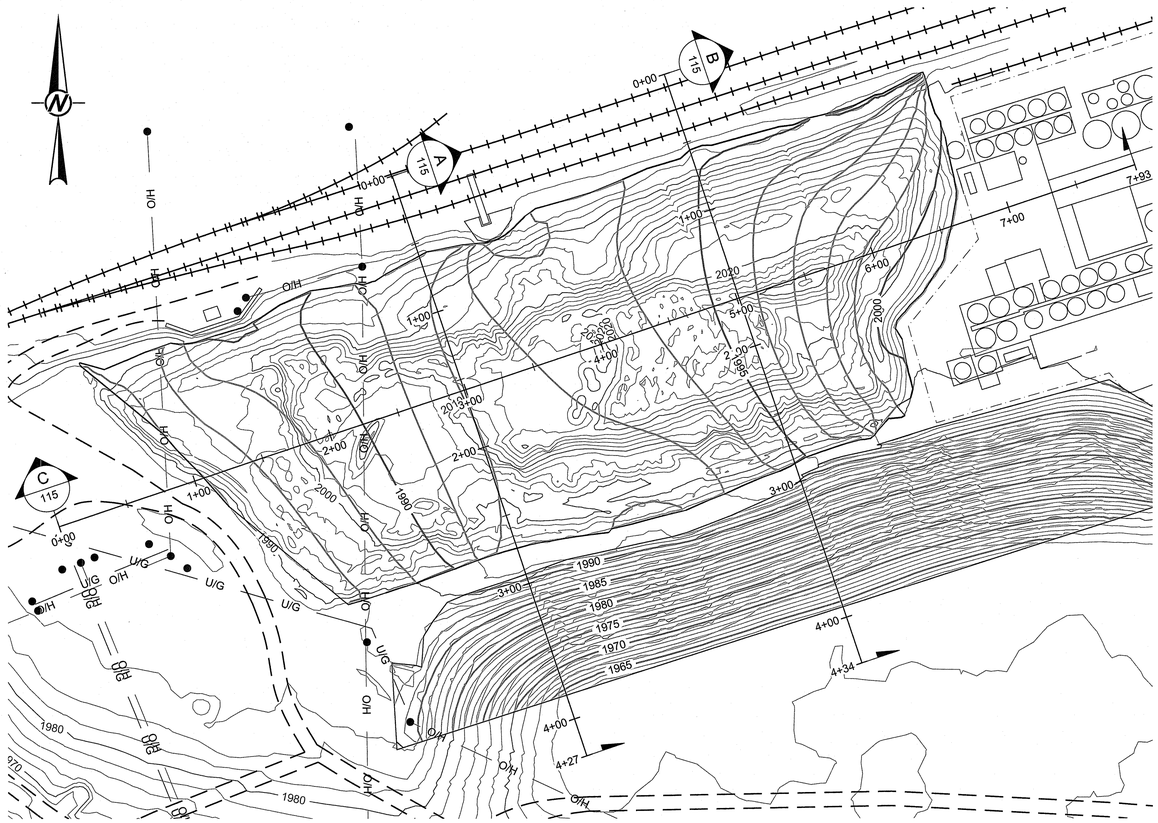
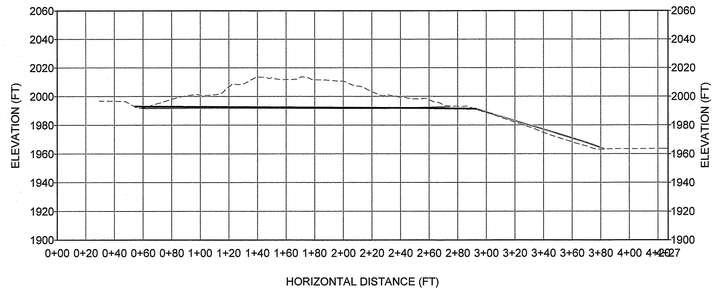
PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE
SUBGRADE PLAN (2 OF 2)

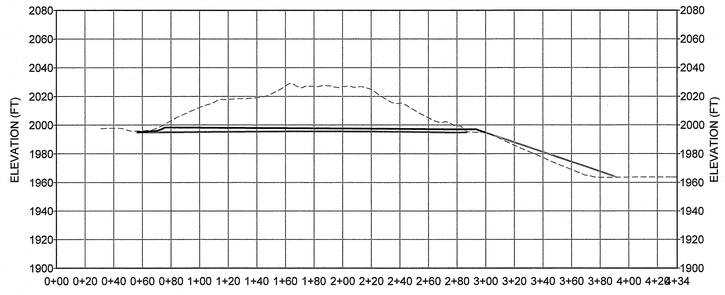
PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		111

0 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

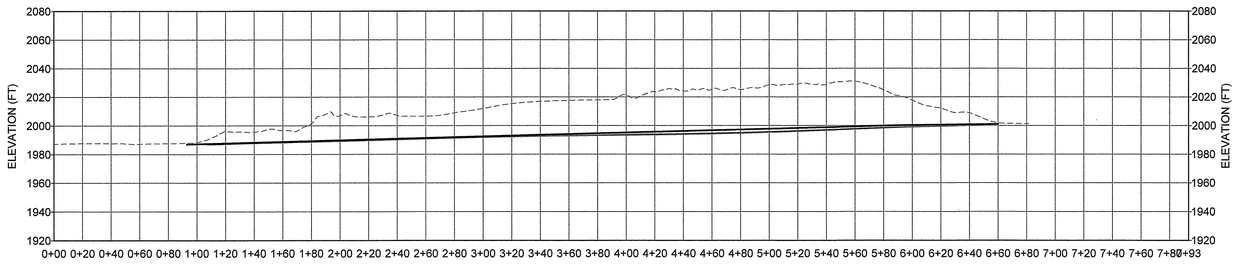




SCALE 1" = 50' / VERT. SCALE 1:1 — A 115 — DROSS STOCKPILE NW-SE SECTION



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

0 50 100
1" = 50' FEET

LEGEND

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

City of Spokane Valley
Development Engineering

Reviewer: CAL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER — 10/12/2022

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UNION PACIFIC RAILROAD CO.

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USA
[+1] (425) 883 0777
www.golder.com

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

TITLE
DROSS STOCKPILE REMOVAL SECTIONS

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		115

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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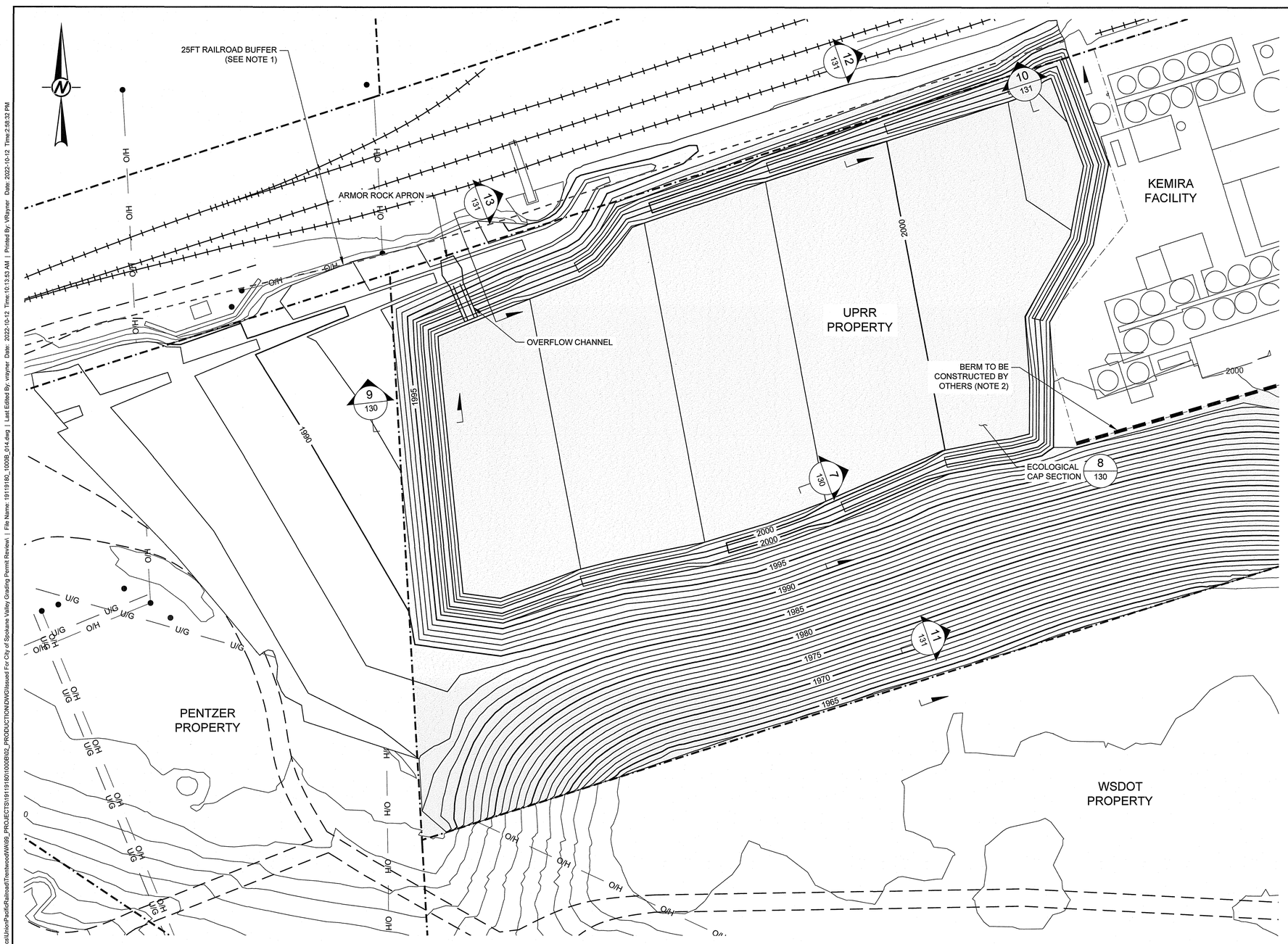

LEGEND

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

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 30 60
1" = 30' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47006 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

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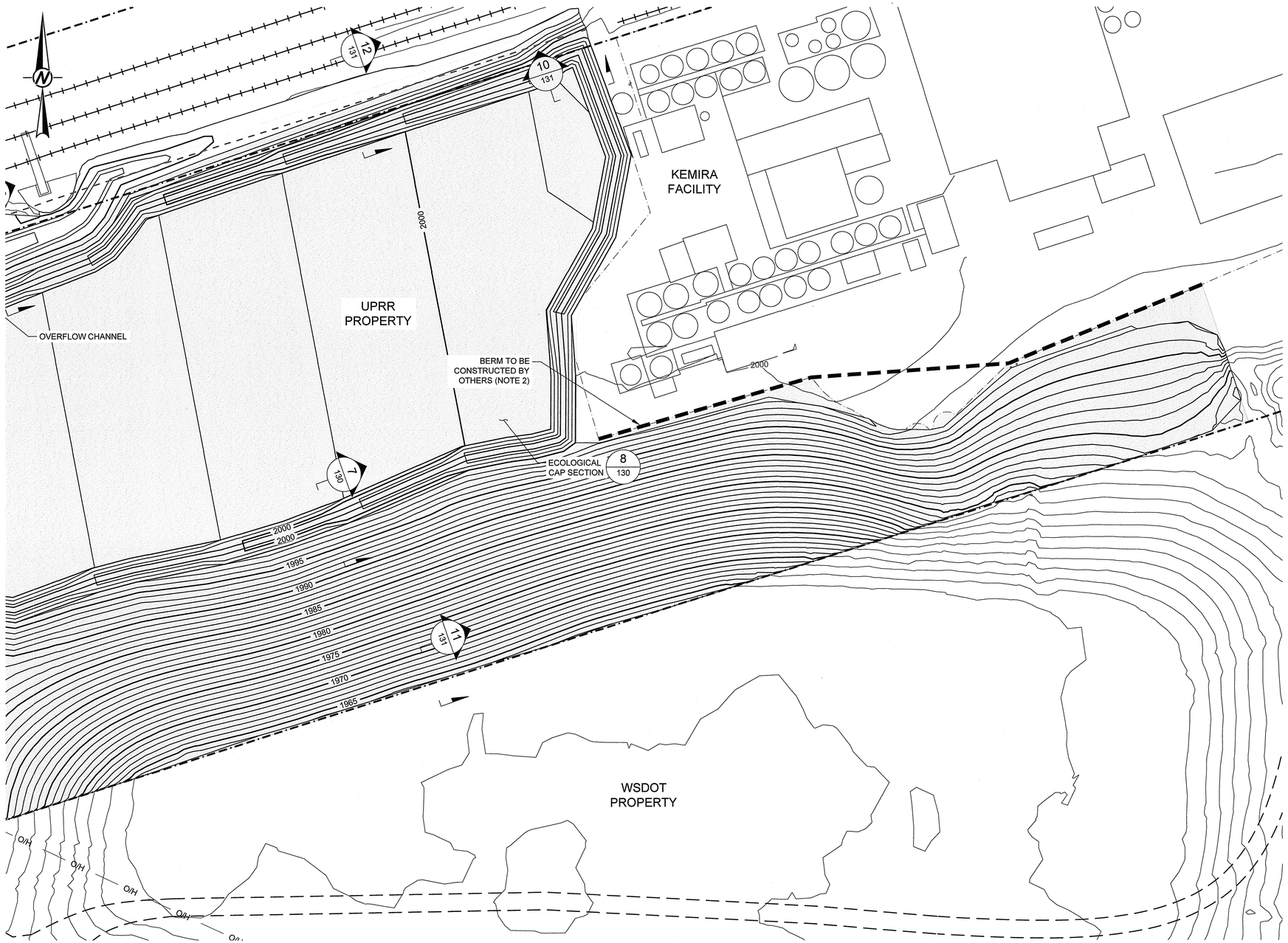
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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.	of	SHEET
19119180	1000B	1		120

0 1 in
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



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.

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 30 60
1" = 30' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
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REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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.	of	SHEET
19119180	1000B	1		121

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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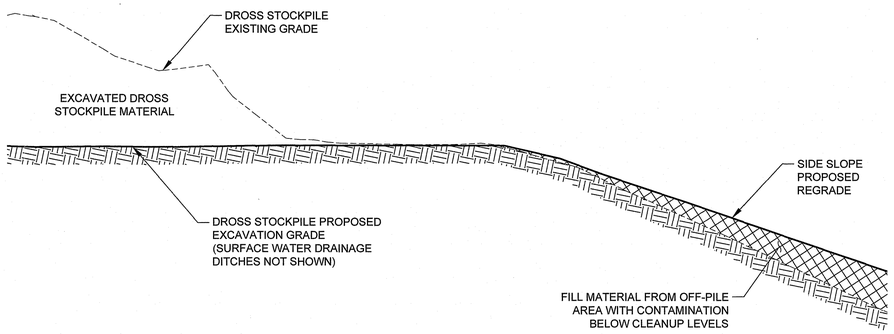
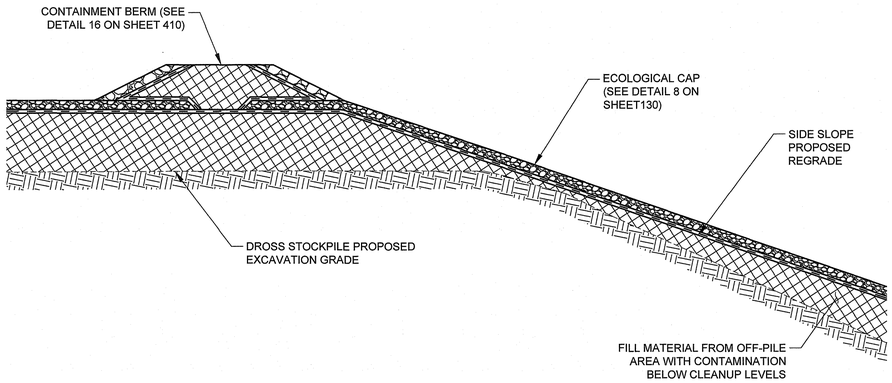
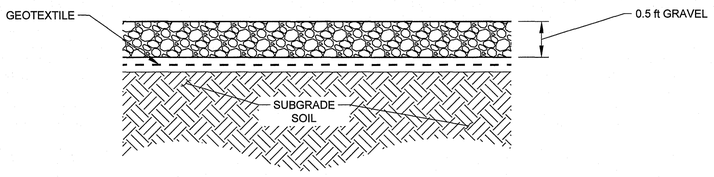


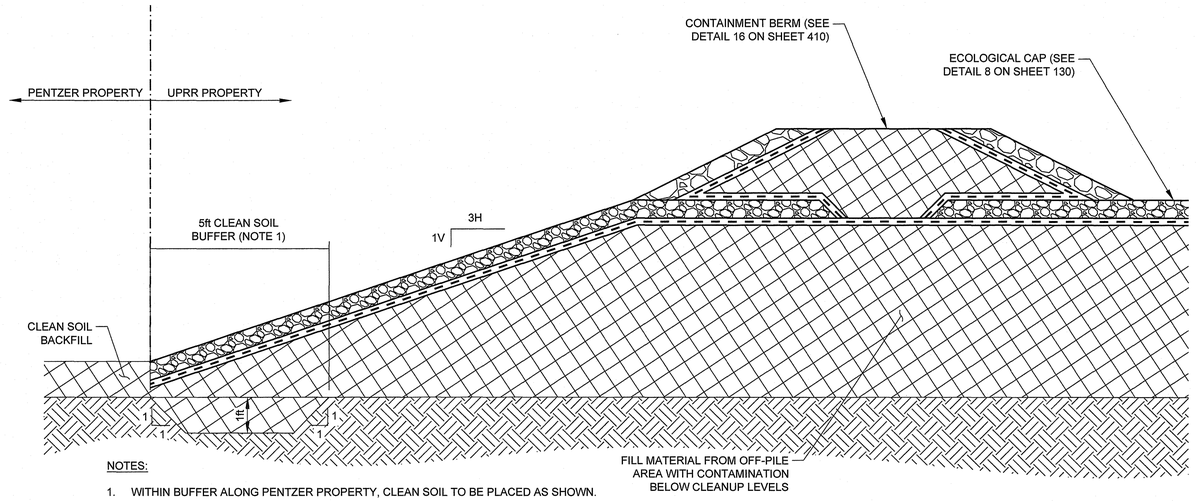
SCALE 1" = 4' (6) DROSS STOCKPILE AND SIDE SLOPE REGRADE EXCAVATION TIE-IN



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



SCALE 1" = 1' (8) ECOLOGICAL CAP SECTION



NOTES:

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

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

City of Spokane Valley
Development Engineering

Reviewer: CAL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

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
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

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

10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

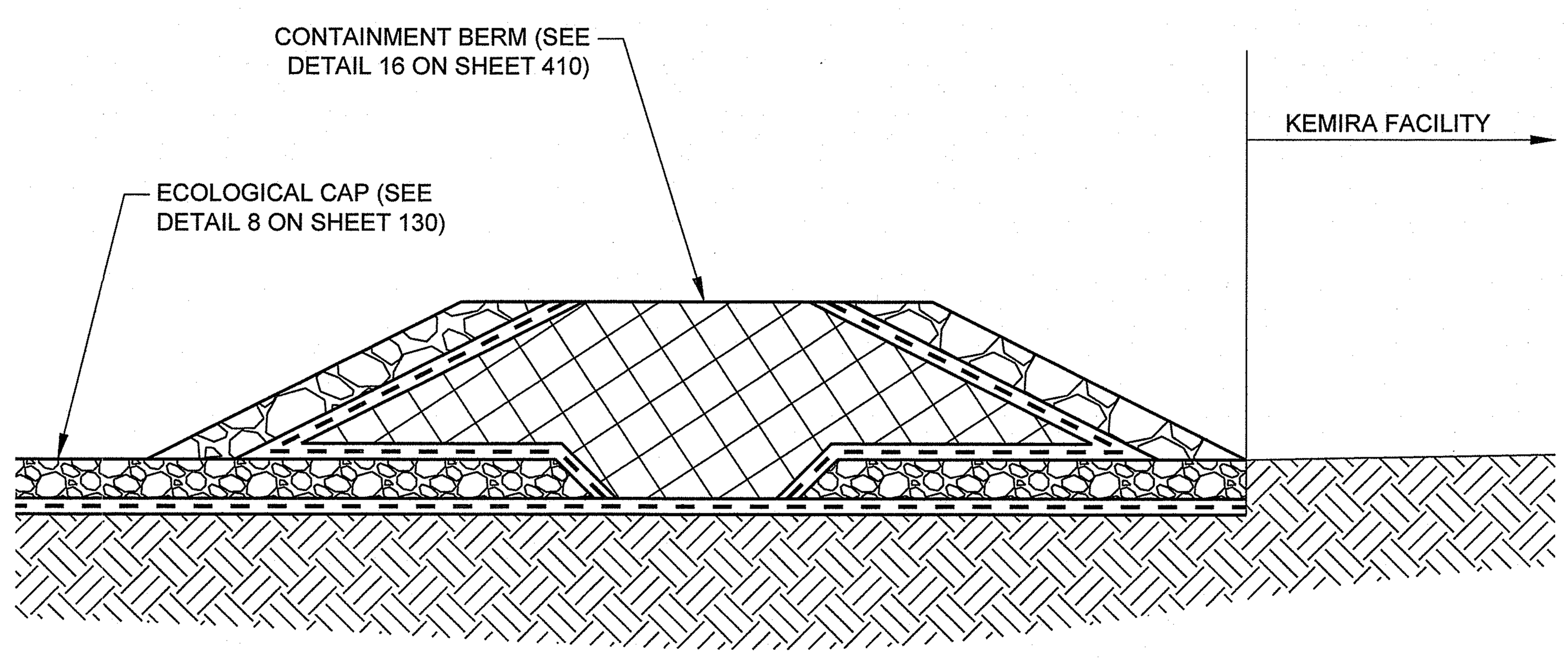
CONSULTANT
WSP GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

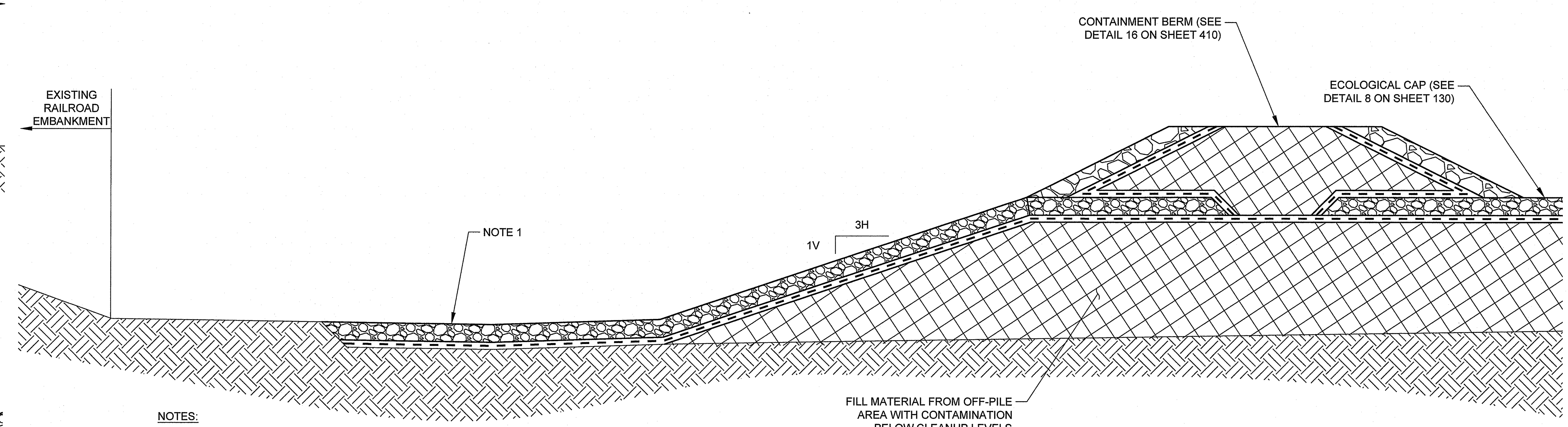
TITLE
ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (1 OF 2)

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		130

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



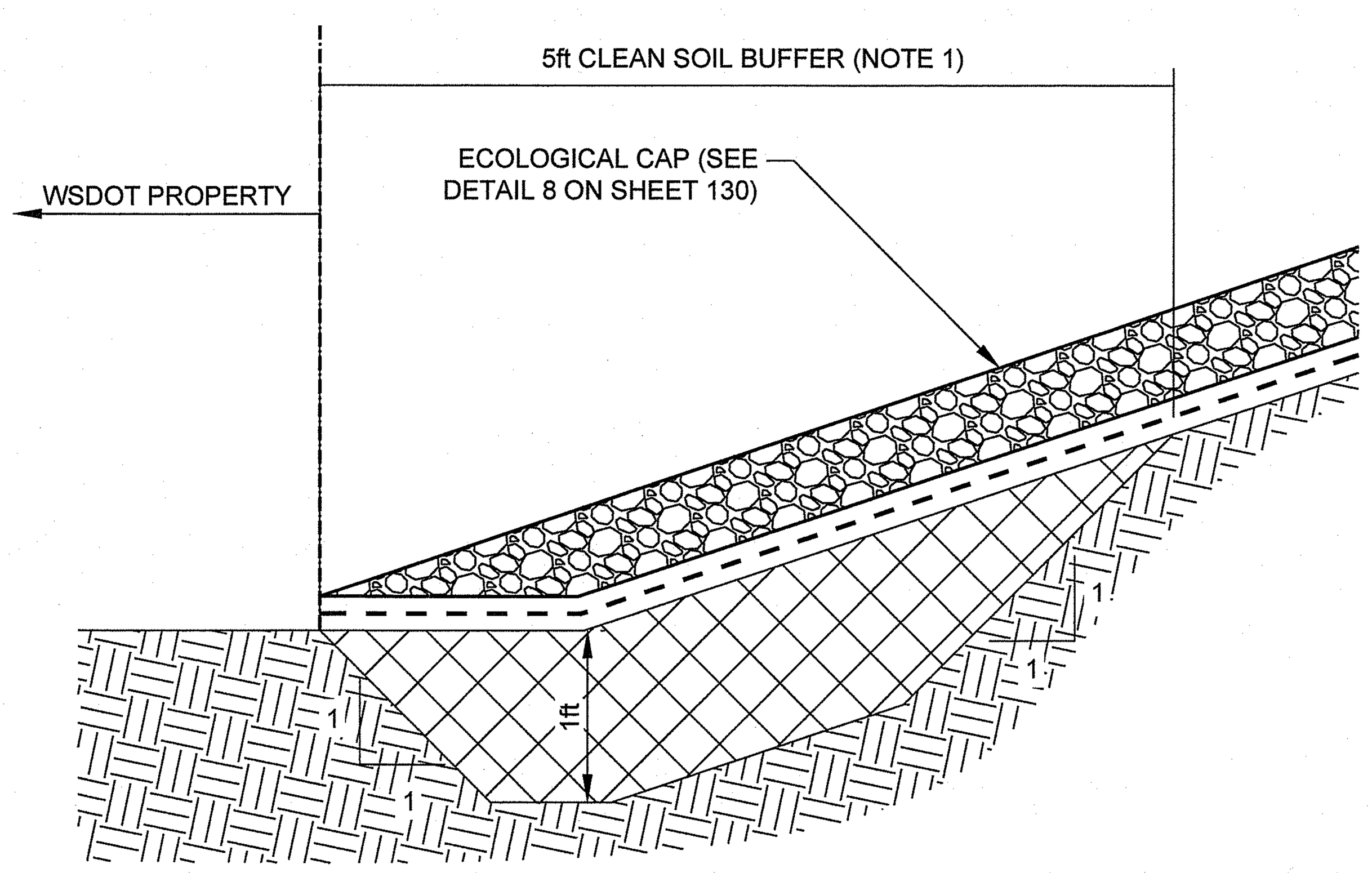
SCALE 1" = 2' (10 / -) ECOLOGICAL CAP TERMINATION - EAST



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

City of Spokane Valley Development Engineering

Reviewer: CS?

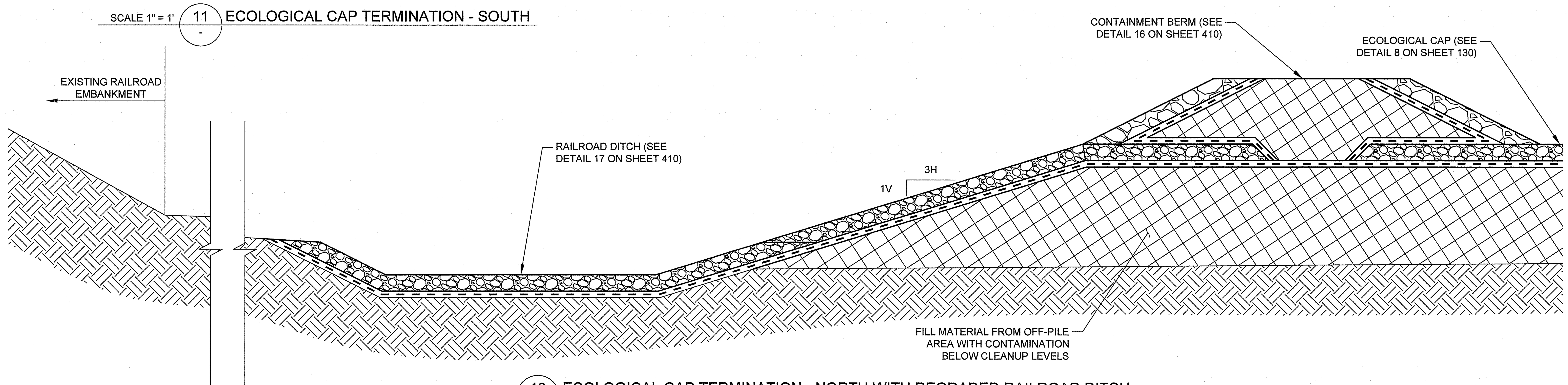
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:



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

0 1 2 — 1" = 1' FEET

0 2 4 — 1" = 2' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47005 — REGISTERED PROFESSIONAL ENGINEER — 10/12/22

CLIENT

UNION PACIFIC RAILROAD CO.

CONSULTANT

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18300 NE UNION HILL RD, SUITE 200
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USA
[+1] (425) 883 0777
www.golder.com

PROJECT

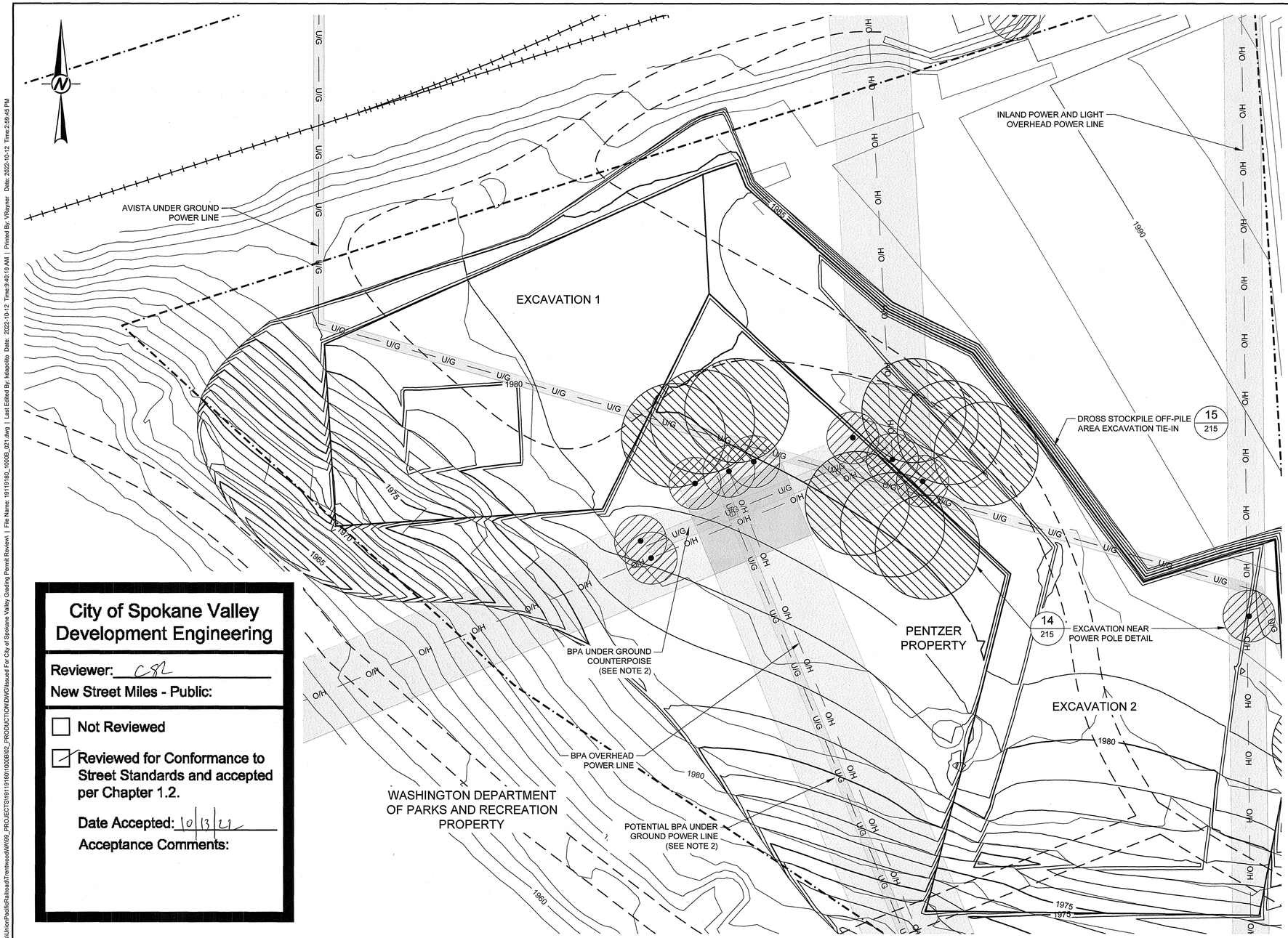
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

TITLE

ECOLOGICAL CAP AND CONTAINMENT BERM DETAILS (2 OF 2)

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		131

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

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)
- 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. ACTUAL HORIZONTAL AND VERTICAL EXTENTS OF SOIL REMOVAL TO BE CONFIRMED IN FIELD BY CONSTRUCTION MANAGER.
2. LOCATIONS OF ALL UTILITY FEATURES TO BE FIELD VERIFIED. ALL POLES, GUY WIRES, AND OTHER UTILITY FEATURES MAY NOT BE SHOWN ON THESE DRAWINGS.
3. UTILITY PROTECTION FOR POWER COMPANY SERVICES TO FOLLOW SAFETY REQUIREMENTS OUTLINED BY UTILITY COMPANIES. USE THE DISTANCES IN THE BELOW TABLE FOR UTILITY COORDINATION FOR ALL UTILITY FEATURES LOCATED IN THE FIELD.

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

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED — PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

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REDMOND, WA
USA
[+1] (425) 883 0777
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PROJECT
ALUMINUM RECYCLING TRENTWOOD SITE
REMEDIAL ACTION - DROSS REMOVAL PROJECT
SPOKANE VALLEY, WASHINGTON

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

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		203

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

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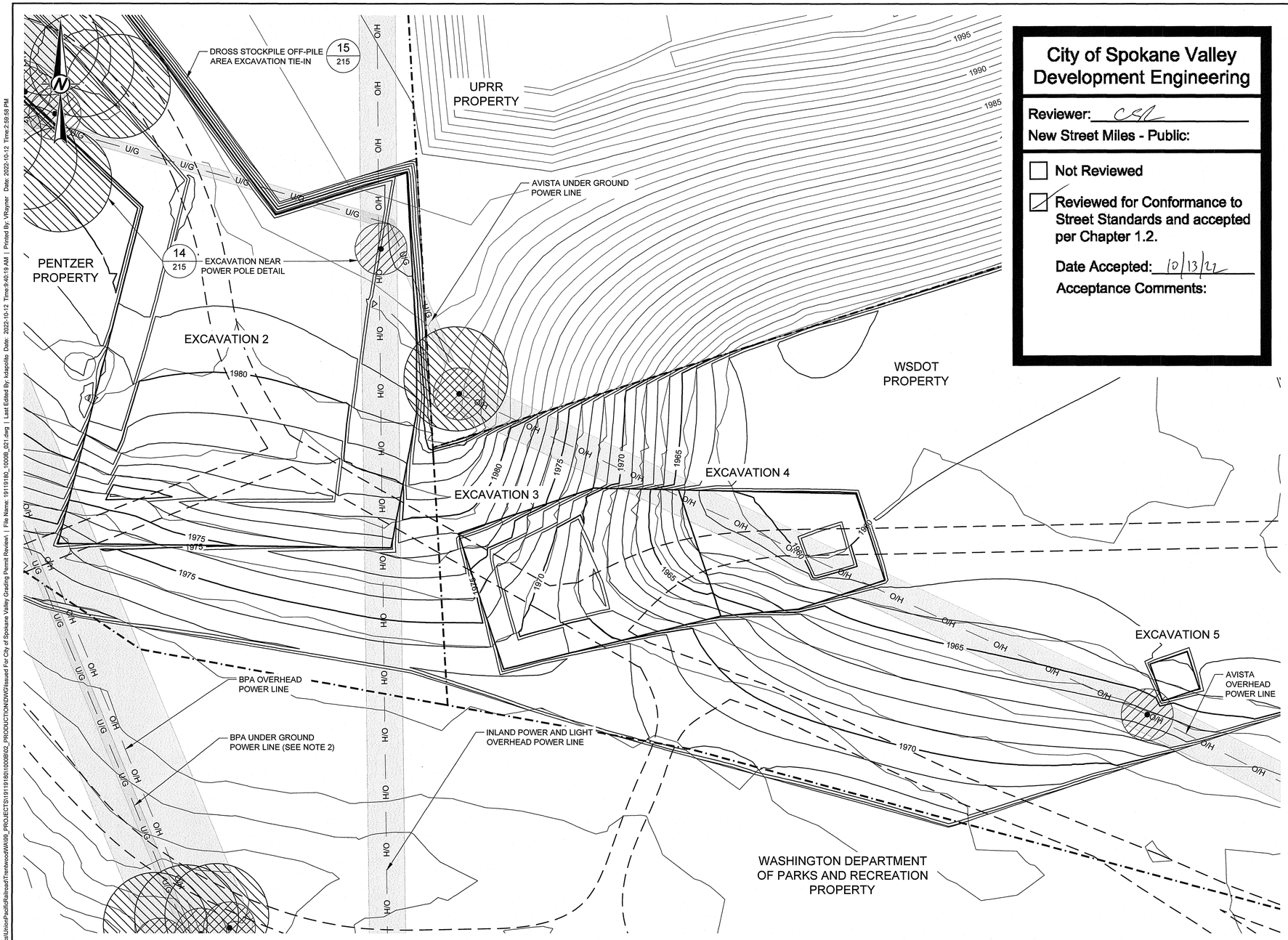

City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

LEGEND

- PROPERTY BOUNDARY
- ACCESS ROAD
- RAILROAD TRACK
- POWER POLE
- O/H — OVERHEAD POWER LINE
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- 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)
- 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. ACTUAL HORIZONTAL AND VERTICAL EXTENTS OF SOIL REMOVAL TO BE CONFIRMED IN FIELD BY CONSTRUCTION MANAGER.
2. LOCATIONS OF ALL UTILITY FEATURES TO BE FIELD VERIFIED. ALL POLES, GUY WIRES, AND OTHER UTILITY FEATURES MAY NOT BE SHOWN ON THESE DRAWINGS.
3. UTILITY PROTECTION FOR POWER COMPANY SERVICES TO FOLLOW SAFETY REQUIREMENTS OUTLINED BY UTILITY COMPANIES. USE THE DISTANCES IN THE BELOW TABLE FOR UTILITY COORDINATION FOR ALL UTILITY FEATURES LOCATED IN THE FIELD.

UTILITY COMPANY REQUIREMENTS

UTILITY	UTILITY COORDINATION ZONE
BONNEVILLE POWER ADMINISTRATION (BPA)	
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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

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

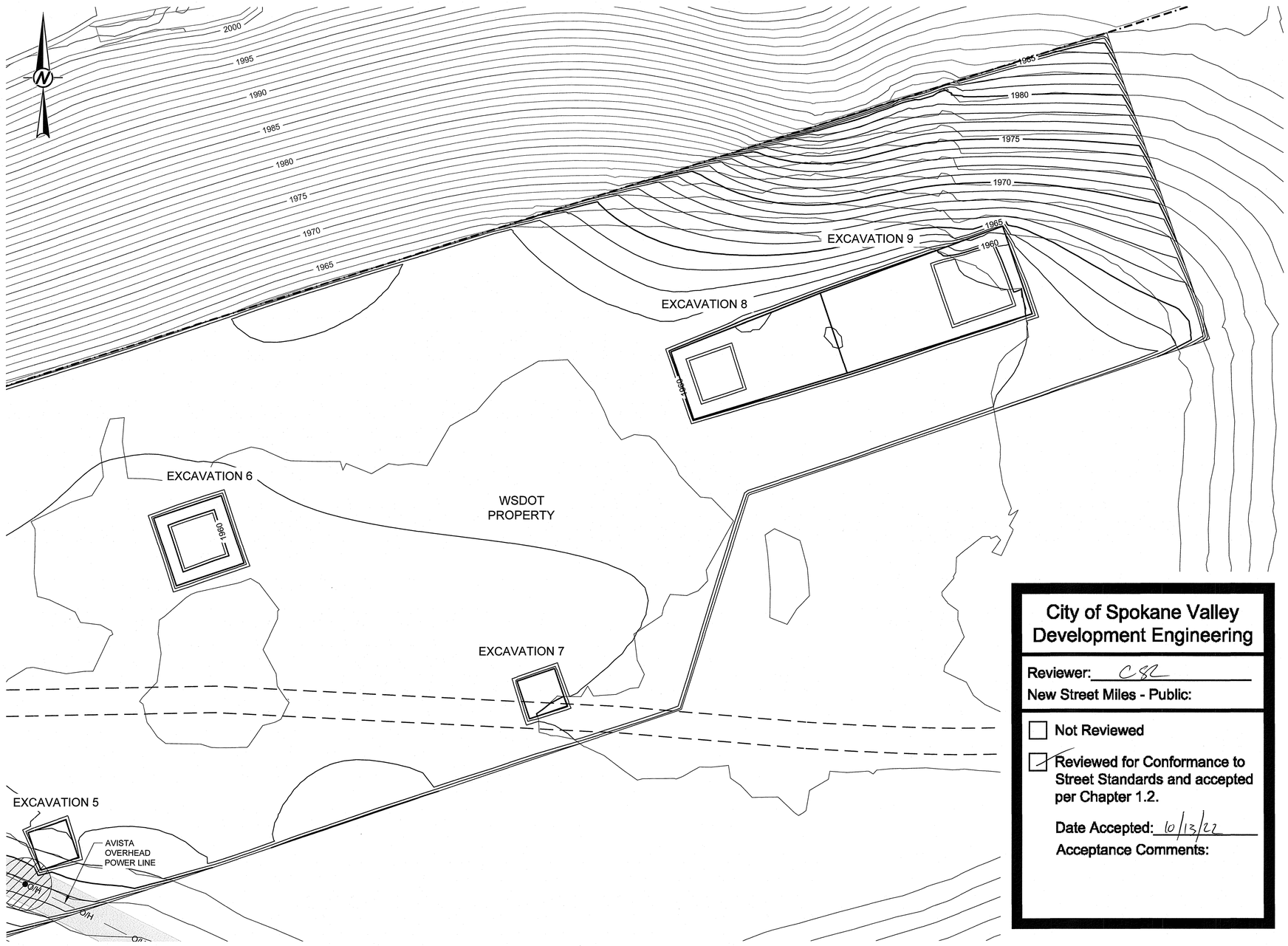
CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

PROJECT
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.	of	SHEET
19119180	1000B	1		204



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)
- 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. ACTUAL HORIZONTAL AND VERTICAL EXTENTS OF SOIL REMOVAL TO BE CONFIRMED IN FIELD BY CONSTRUCTION MANAGER.
2. LOCATIONS OF ALL UTILITY FEATURES TO BE FIELD VERIFIED. ALL POLES, GUY WIRES, AND OTHER UTILITY FEATURES MAY NOT BE SHOWN ON THESE DRAWINGS.
3. UTILITY PROTECTION FOR POWER COMPANY SERVICES TO FOLLOW SAFETY REQUIREMENTS OUTLINED BY UTILITY COMPANIES. USE THE DISTANCES IN THE BELOW TABLE FOR UTILITY COORDINATION FOR ALL UTILITY FEATURES LOCATED IN THE FIELD.

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

City of Spokane Valley
Development Engineering

Reviewer: CSZ

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

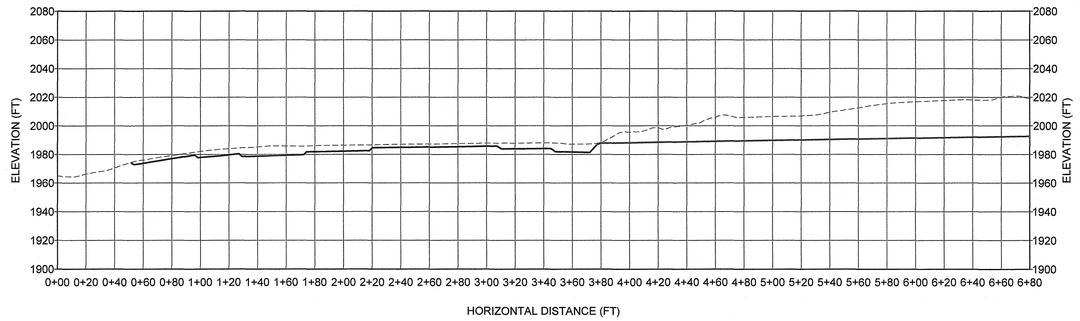
TITLE
OFF-PILE AREAS SOIL REMOVAL CONTOURS (3 OF 3)

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		205

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 1" 1 in

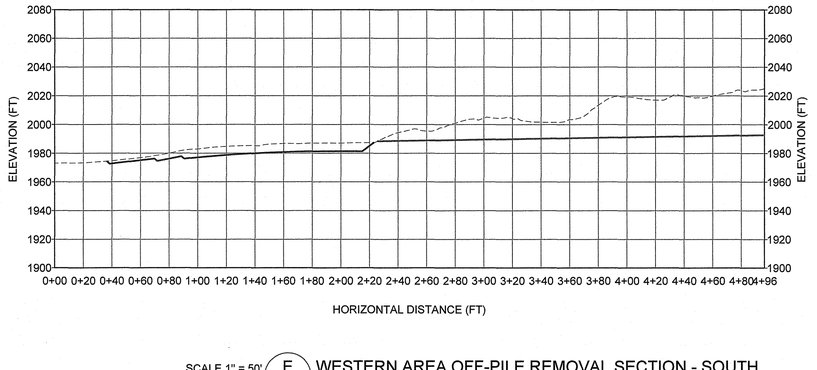
Path: \\golder.gds\comp\kodata\office\Redmond\geomatics\Union\Pacific\Railroad\Trentwood\WA\B_PROJECTS\19119180\1000B\02_PRODUCTION\DWG\Issued For City of Spokane Valley Grading Permit Review\ | File Name: 19119180_1000B_021.dwg | Last Edited By: kdapolito Date: 2022-10-12 Time:9:40:19 AM | Printed By: VRayner Date: 2022-10-12 Time:3:00:04 PM



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

City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 50 100
1" = 50' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47000 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

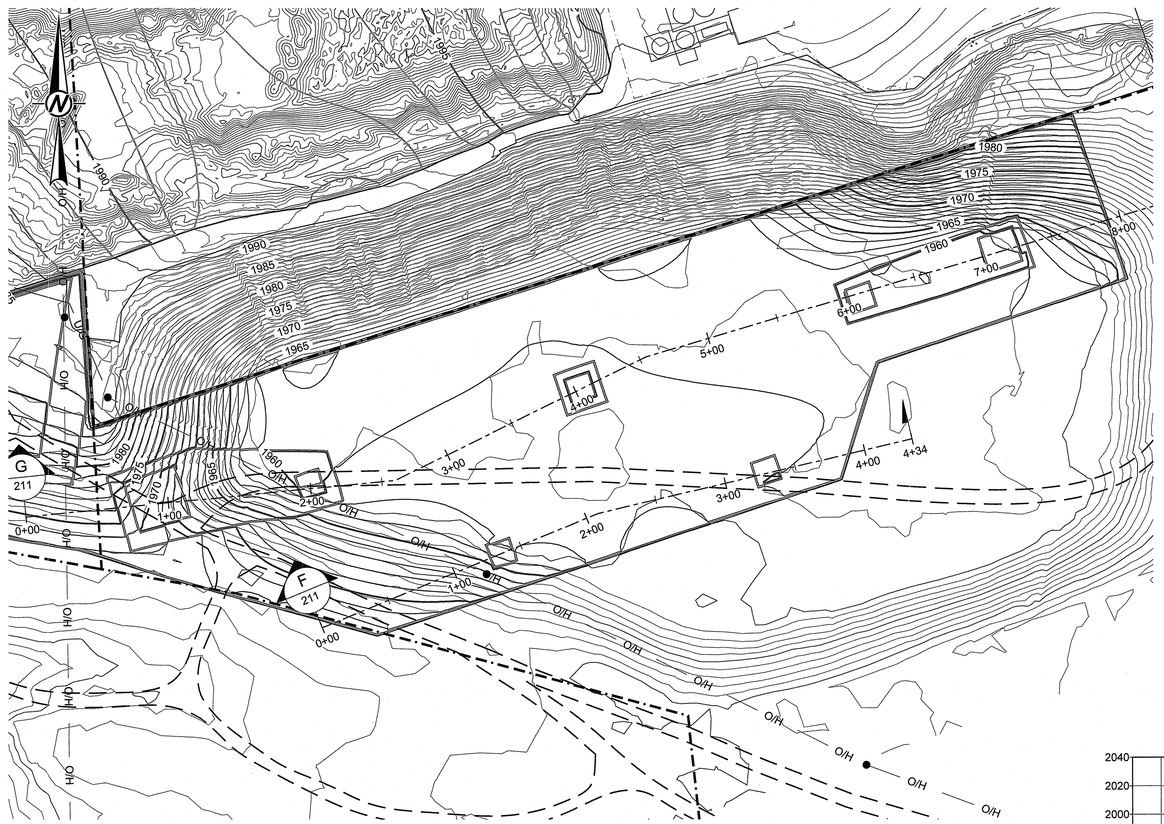
TITLE
OFF-PILE AREAS SOIL REMOVAL SECTIONS (1 OF 2)

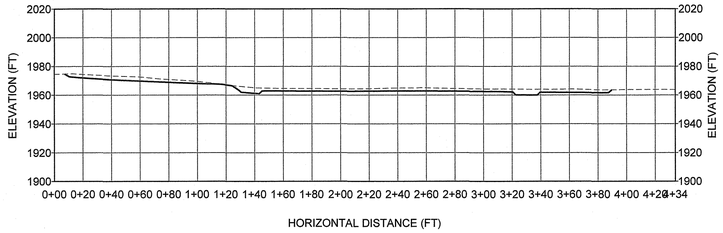
PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		210

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

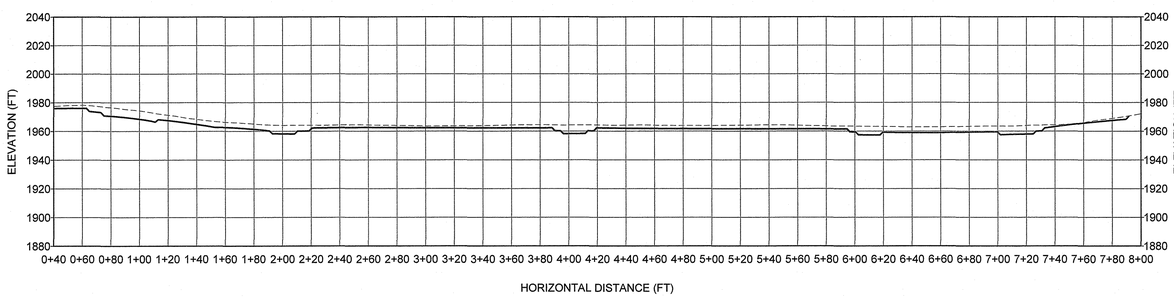
1 in

Path: \\golder.gdi\complexdata\office\Redmond\geomatics\Union\PacificRailroad\Trentwood\WA99_PROJECTS\19119180\1000B\02_PRODUCTION\DWG\issued For City of Spokane Valley Grading Permit Review\ | File Name: 19119180_1000B_012.dwg | Last Edited By: kdapollo Date: 2022-10-12 Time:8:43:55 AM | Printed By: VRaynor Date: 2022-10-12 Time:3:00:28 PM





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

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed
☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 50 100
1" = 50' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47008 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

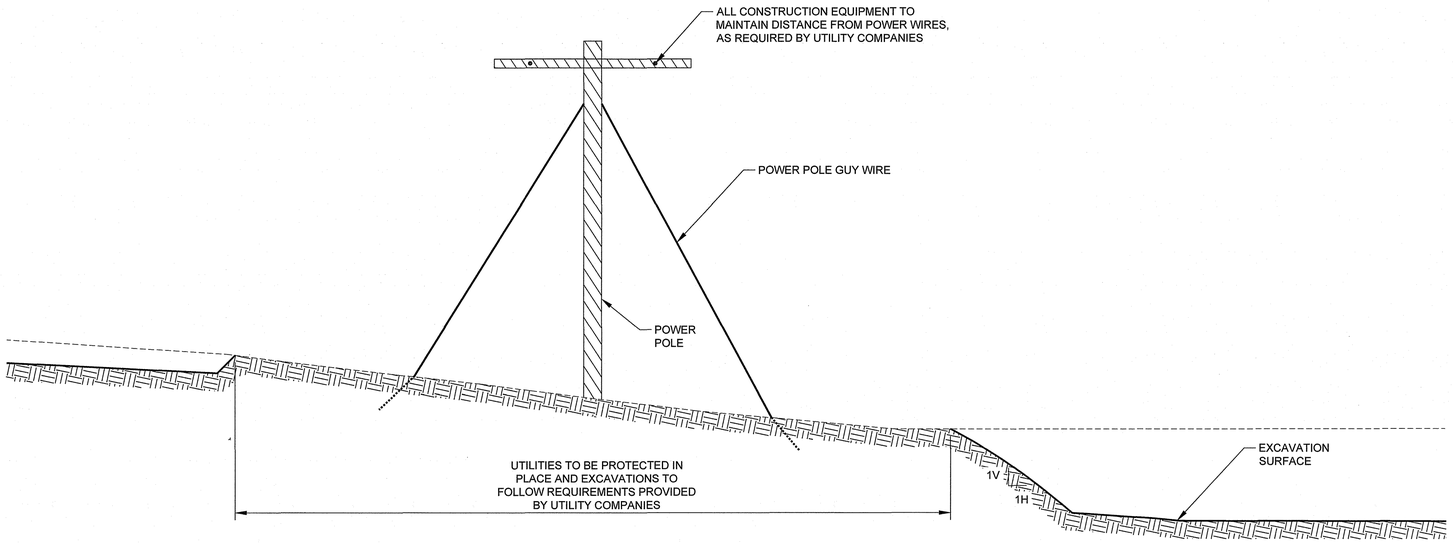
TITLE
OFF-PILE AREAS SOIL REMOVAL SECTIONS (2 OF 2)

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		211

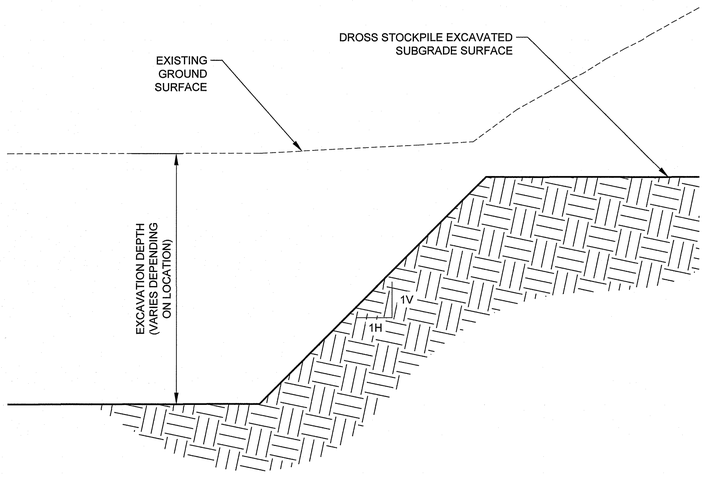
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

0 1 in

Path: \\golder.gds\complexdata\office\Redmond\geomatics\Union\PacificRailroad\Trentwood\WA99_PROJECTS\19119180\1000B\02_PRODUCTION\DWG\Issued For City of Spokane Valley Grading Permit Review\ | File Name: 19119180_1000B_012.dwg | Last Edited By: kdapolito Date: 2022-10-12 Time:9:43:55 AM | Printed By: vRayner Date: 2022-10-12 Time:3:00:39 PM



SCALE 1" = 4' (14) EXCAVATION NEAR POWER POLE



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

City of Spokane Valley
Development Engineering

Reviewer: CSL
New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22
Acceptance Comments:

0 2 4
1" = 2' FEET

0 4 8
1" = 4' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 47006 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
GOLDER

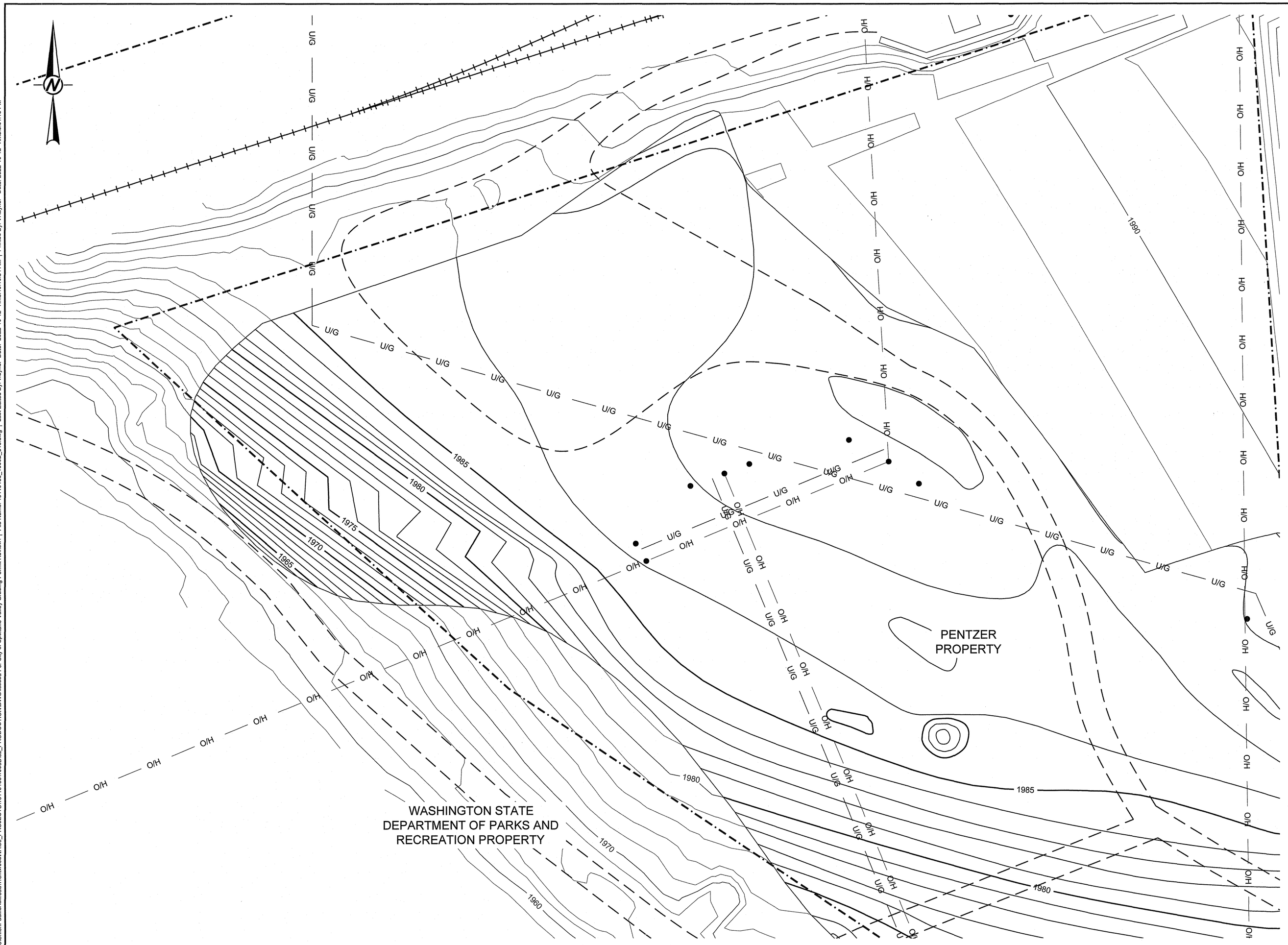
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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

TITLE
OFF-PILE AREAS SOIL REMOVAL DETAILS

PROJECT NO.	PHASE	REV.	of	SHEET
19119180	1000B	1		215

1 in
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



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.

City of Spokane Valley
Development Engineering

Reviewer: CSL

New Street Miles - Public:

☐ Not Reviewed

☒ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW — STATE OF WASHINGTON — 17006 — REGISTERED PROFESSIONAL ENGINEER
10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
GOLDER

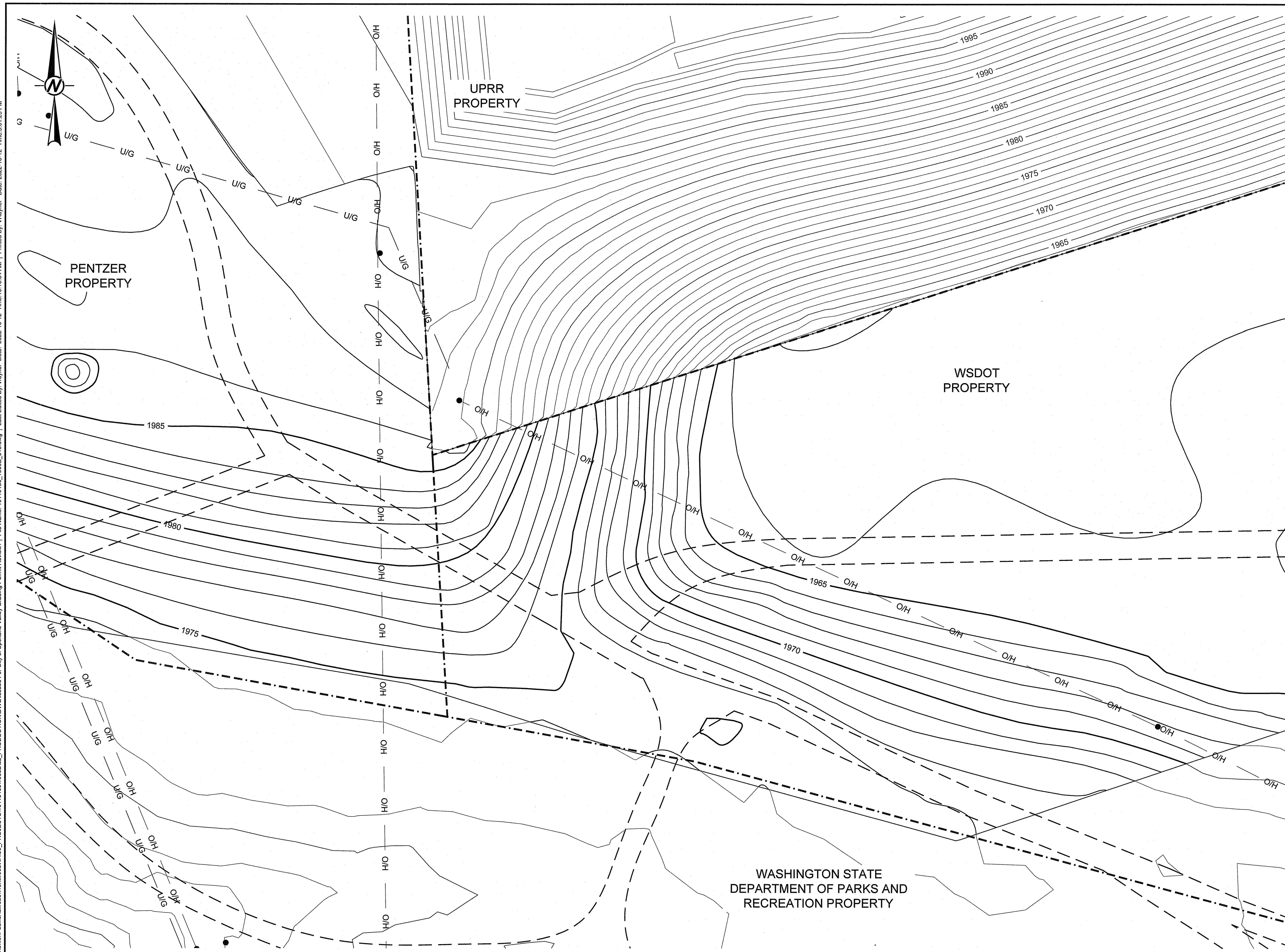
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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.	of	SHEET
19119180	1000B	1		220

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



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.

City of Spokane Valley Development Engineering

Reviewer: C82

New Street Miles - Public:

☐ Not Reviewed

☑ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted: 10/13/22

Acceptance Comments:

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

VANESSA M. NANCARROW, STATE OF WASHINGTON, 47008, REGISTERED PROFESSIONAL ENGINEER
Vanessa Nancarrow 10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER

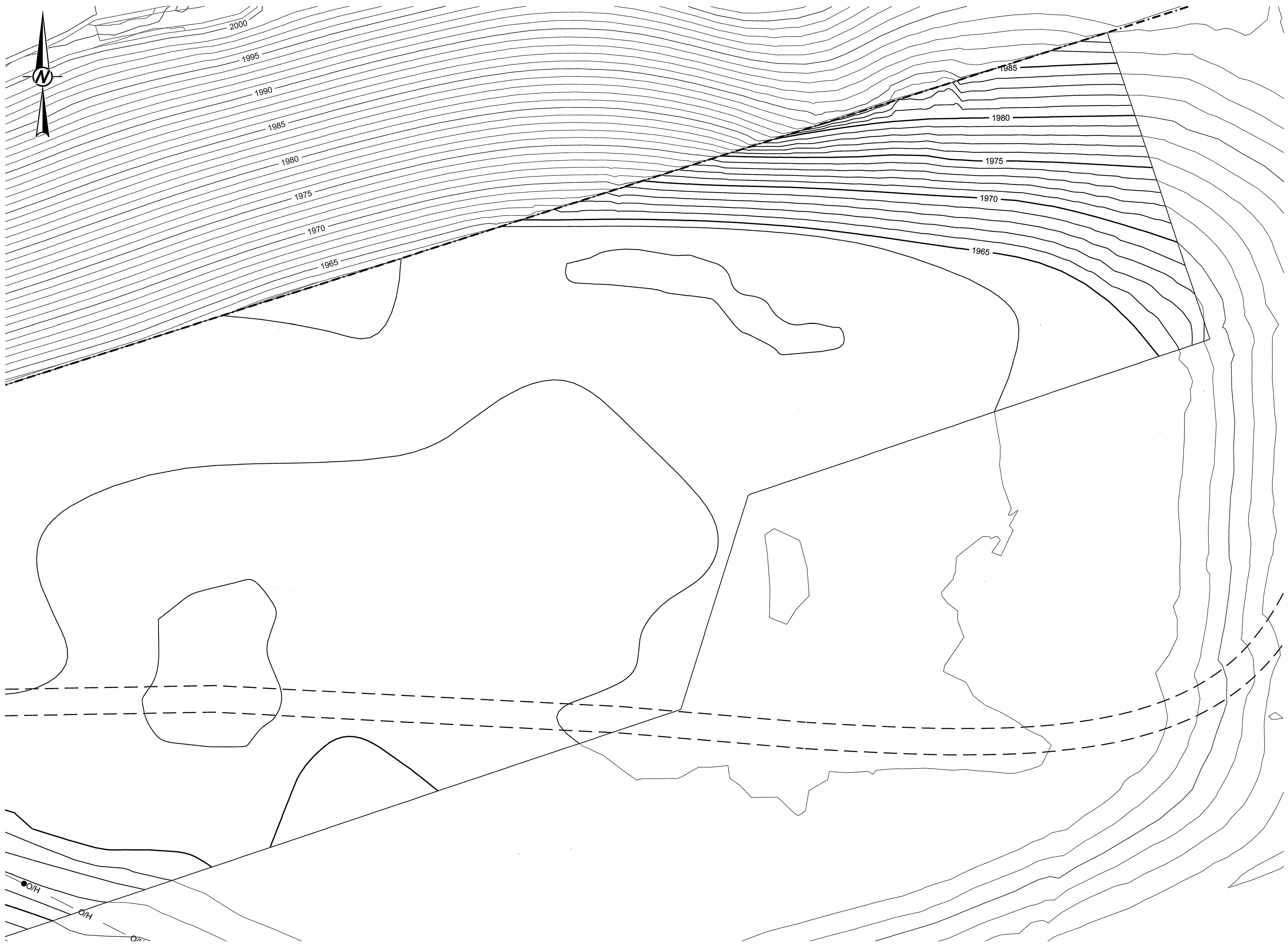
REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
www.golder.com

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.	of	SHEET
19119180	1000B	1		221

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D



LEGEND

Symbol	Description
(dash-dot box)	PROPERTY BOUNDARY
(dashed lines)	ACCESS ROAD
(tick-marked line)	RAILROAD TRACK
●	POWER POLE
— O/H —	OVERHEAD POWER LINE
— U/G —	UNDERGROUND POWER LINE
(dash-dot line)	APPROXIMATE EDGE OF PAVEMENT
(line)	EXISTING MAJOR CONTOUR (10-FT INTERVAL)
(line)	EXISTING MINOR CONTOUR (2-FT INTERVAL)
(heavy line)	PROPOSED MAJOR CONTOUR (5-FT INTERVAL)
(line)	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.

City of Spokane Valley Development Engineering

Reviewer:________________

New Street Miles - Public:

☐ Not Reviewed

☐ Reviewed for Conformance to Street Standards and accepted per Chapter 1.2.

Date Accepted:____________

Acceptance Comments:

0 20 40
1" = 20' FEET

REV.	YYYY-MM-DD	DESCRIPTION	DESIGNED	PREPARED	REVIEWED	APPROVED
1	2022-10-12	ISSUED FOR CITY OF SPOKANE VALLEY ENGINEERED GRADING PERMIT NO. EGR-2022-0081	VMN	REDMOND	FSS	TJN
0	2022-06-10	ISSUED FOR CONSTRUCTION	VMN	REDMOND	FSS	TJN

SEAL

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

10/12/22

CLIENT
UNION PACIFIC RAILROAD CO.

CONSULTANT
WSP GOLDER

REDMOND
18300 NE UNION HILL RD, SUITE 200
REDMOND, WA
USA
[+1] (425) 883 0777
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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.	of	SHEET
19119180	1000B	1		222

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

APPENDIX H

Well Decommissioning Logs

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☐ Construction
☒ Decommission ⇨ Original NOI No. RE05095

Ecology Well ID Tag No. BBH 845

Site Well Name MW-2

Consulting Firm Gray Man Environmental

Was a variance approved for this well/boring? ☐ Yes ☒ No

If yes, what was the variance for? _____

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

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Cantrall, James

Driller/Engineer/Trainee Signature _____

License No. 2936

Company Name Northern Lights Drilling LLC

If trainee box is checked, sponsor's license number: _____

Sponsor's signature _____

Notice of Intent No. AE 75276

Type of Well:

☒ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Union Pacific Railroad

Well Street Address 2317 N Sullivan Rd

City Spokane County Spokane

Tax Parcel No. 45114.9030

Location (see instructions): WWM ☐ or EWM ☒

NW ¼-¼ SE ¼, Section 11 Town 25N Range 44

Latitude (Example: 47.12345) _____

Longitude (Example: -120.12345) _____

(WGS 84 Coordinate System)

Borehole diameter 6 5/8 inches Casing diameter 2" inches

Static water level 67 ft below top of casing Date 10/25/22

☐ Above-ground completion with bollards ☐ Flush monument

↳ Stick-up of top of well casing _____ ft above ground surface

Start Date 10/25/22 Completed Date 10/25/22

Construction Design	Well Data	Driller's Log
	MW-2 Decomission well, Chip in Place. 120 lbs Bentonite Chips Removed Monument & Dalland Cut Casing 5' below grade	

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☐ Construction
☒ Decommission ⇨ Original NOI No. RE 05094

Ecology Well ID Tag No. BBH- 846

Site Well Name MW-3

Consulting Firm Gray Mac Environmental

Was a variance approved for this well/boring? ☐ Yes ☒ No

If yes, what was the variance for?

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

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Cantrall, James

Driller/Engineer/Trainee Signature

License No. 2936

Company Name Northern Lights Drilling LLC

If trainee box is checked, sponsor's license number:

Sponsor's signature

Notice of Intent No. AE 75276

Type of Well:

☒ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other

↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Union Pacific Railroad

Well Street Address 2317 N Sullivan Rd

City Spokane County Spokane

Tax Parcel No. 45114.9030

Location (see instructions): WWM ☐ or EWM ☒

NW ¼-¼ SE ¼, Section 11 Town 25N Range 44

Latitude (Example: 47.12345)

Longitude (Example: -120.12345)

(WGS 84 Coordinate System)

Borehole diameter 6 5/8 inches Casing diameter 2 inches

Static water level 64 ft below top of casing Date 10/25/22

☐ Above-ground completion with bollards ☐ Flush monument

↳ Stick-up of top of well casing ____ ft above ground surface

Start Date 10/25/22 Completed Date 10/25/22

Construction Design	Well Data	Driller's Log
	MW-3 Decomission well, chip in place. 120 lbs bentonite chips Removed monument & bollards Cut casing 5' below grade	

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☐ Construction
☒ Decommission ⇨ Original NOI No. RE05094

Ecology Well ID Tag No. BBH - 847

Site Well Name MW-1

Consulting Firm Gray Mar Environmental

Was a variance approved for this well/boring? ☐ Yes ☒ No

If yes, what was the variance for?

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

☒ Driller ☐ Trainee ☐ Engineer

Name (Print Last, First Name) Cantrall, James

Driller/Engineer/Trainee Signature

License No. 2936

Company Name Northern lights drilling LLC

If trainee box is checked, sponsor's license number:

Sponsor's signature

Notice of Intent No. AE 75276

Type of Well:

☒ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Union Pacific Railroad

Well Street Address 2317 North Sullivan

City Spokane County Spokane

Tax Parcel No. 45114 9030

Location (see instructions): WWM ☐ or EWM ☒

NE ¼-¼ SE ¼, Section 11 Town 25N Range 44

Latitude (Example: 47.12345)

Longitude (Example: -120.12345)

(WGS 84 Coordinate System)

Borehole diameter 6 5/8 inches Casing diameter 2" inches

Static water level 63 ft below top of casing Date 10/25/22

☐ Above-ground completion with bollards ☐ Flush monument

↳ Stick-up of top of well casing ____ ft above ground surface

Start Date 10/25/22 Completed Date 10/25/22

Construction Design	Well Data	Driller's Log
	MW-1 Decomission well, CHIP in place. Remove monuments Cut PVC 5' below grade. Used 120 lbs Bentonite CHIPS	

DEPARTMENT OF ECOLOGY
State of Washington

Resource Protection Well Report

Submit one well report per well installed. See page two for instructions.

Type of Work:

☐ Construction
☒ Decommission ⇨ Original NOI No. _____

Ecology Well ID Tag No. NO tag
Site Well Name MWX-4
Consulting Firm Gray Man Environmental
Was a variance approved for this well/boring? ☒ Yes ☐ No
If yes, what was the variance for? Missing well log & tag. Variance For CHip in Place Per Patrick Cabbage

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

☒ Driller ☐ Trainee ☐ Engineer
Name (Print Last, First Name) Cantrall, James
Driller/Engineer/Trainee Signature _____
License No. _____
Company Name _____

If trainee box is checked, sponsor's license number: _____
Sponsor's signature _____

Notice of Intent No. AE 75276

Type of Well:

☒ Resource Protection Well ☐ Injection Point
☐ Remediation Well ☐ Grounding Well
☐ Geotechnical Soil Boring ☐ Ground Source Heat Pump
☐ Environmental Boring ☐ Other _____
↳ ☐ Soil- ☐ Vapor- ☐ Water-sampling

Property Owner Union Pacific Railroad
Well Street Address 2317 N Sullivan Rd
City Spokane County Spokane
Tax Parcel No. 45114.9030

Location (see instructions): WWM ☐ or EWM ☒
NE ¼-¼ SE ¼, Section 11 Town 25N Range 44
Latitude (Example: 47.12345) _____
Longitude (Example: -120.12345) _____
(WGS 84 Coordinate System)

Borehole diameter 6" inches Casing diameter 2" inches
Static water level 56 ft below top of casing Date 10/25/22
☐ Above-ground completion with bollards ☐ Flush monument
↳ Stick-up of top of well casing _____ ft above ground surface
Start Date 10/25/22 Completed Date 10/25/22

Construction Design	Well Data	Driller's Log
	MWX-4 Decomission well, CHip in Place well Depth 58' SWL 56' 115 lbs Bentonite CHips Remove Monument & Cut Casing 5' below grade	

Gmail

Jr Cantrall <jr@northernlightsdrilling.com>

Contact Info

4 messages

Cabbage, Patrick (ECY) <PCAB461@ecy.wa.gov> Thu, Oct 13, 2022 at 2:49 PM
To: "jr@northernlightsdrilling.com" <jr@northernlightsdrilling.com>

JR,

My contact info is below.

Patrick

Patrick Cabbage, LHG (he/him)

Technical Unit Supervisor

Water Resources Program, Department of Ecology

4601 N Monroe, Spokane, WA 99205-1295

(509) 834-9985 • patrick.cabbage@ecy.wa.gov

Jr Cantrall <jr@northernlightsdrilling.com> Fri, Oct 14, 2022 at 7:46 AM
To: "Cabbage, Patrick (ECY)" <PCAB461@ecy.wa.gov>

Good Morning Patrick,
Attached are the wells that need to be decommissioned over off Sullivan and the river. The well logs for MW 1,2 and 3 are attached. MWX4 on the map does not have a well log. It is 58ft deep with a static water level of 56ft. I am requesting a variance to decommission MWX4 with a chip in place method since it is located on the same property as the other three monitoring wells. MWX4 is also drilled shallower than the other 3 wells, so it is almost a dry well with only 2ft of water in the well. Let me know if you have any questions for me. Have a great day!
[Quoted text hidden]
--
James "JR" Cantrall
Northern Lights Drilling
208-755-0699

Kemira wells.pdf
961K

Cabbage, Patrick (ECY) <PCAB461@ecy.wa.gov> Mon, Oct 17, 2022 at 6:40 AM
To: Jr Cantrall <jr@northernlightsdrilling.com>

JR,

It seems that a variance for a chip in place for monitoring well 4 is appropriate. You may proceed with the decommissioning.

Thank you,

Patrick

[Quoted text hidden]

Jr Cantrall <jr@northernlightsdrilling.com> Mon, Oct 17, 2022 at 7:52 AM
To: "Cabbage, Patrick (ECY)" <PCAB461@ecy.wa.gov>

Great! Thank you for getting back to me so quickly. Have a great day!
[Quoted text hidden]

APPENDIX I

Subconsultant Reports

Local Office
18809 10th Ave NE
Shoreline, WA, 98155
206-536-2977

Corporate Headquarters
295 South Water Street
Kent, OH 44240
800-828-8312

October 27, 2022

Golder & Associates Inc
% Ted Norton
Associate/Environmental Consultant
206-755-4970
Ted_Norton@golder.com

RE: Trentwood Arborist Report and Tree Removals

This letter serves as a supplemental analysis for the DRG Arborist Report provided in October 2022. The initial report did not provide any analysis regarding tree planting or replacement requirements as may be required by Spokane Valley Municipal Code (SVMC). The review of municipal code requirements revealed two sections where the proposed actions might require mitigation planting; SVMC 21.40 (Critical Areas) and SVMC 24.50 (Land Disturbing Activities).

Where there are critical areas, according to SVMC 21.40.022, this project must stay alert to the intent of this code which is to minimize impacts to critical areas through the use of buffers. According to SVMC 21.40.024 (A)2; any impacts to buffers shall be mitigated at a 1:1 ratio. Offsite mitigation options may be acceptable.

Where there are no critical areas, SVMC 24.50 should apply. This section of the code regulates land disturbance. According to SVMC 24.50.050(A)4., the project can remove up to 6 trees per acre per parcel without requiring any clearing permits. Although replanting of removed trees is not explicitly required, the project should consider replacing trees at least 1:1 in order to mitigate the changes in environmental benefits provided by trees at the site.

This letter pertains to municipal code interpretations from an arboricultural perspective and does not represent a legal analysis of Spokane Velley Municipal Code. The client should consult with the City during the permit application process to confirm activities are in compliance with local ordinances. Should you have any further questions, please feel free to contact our office.

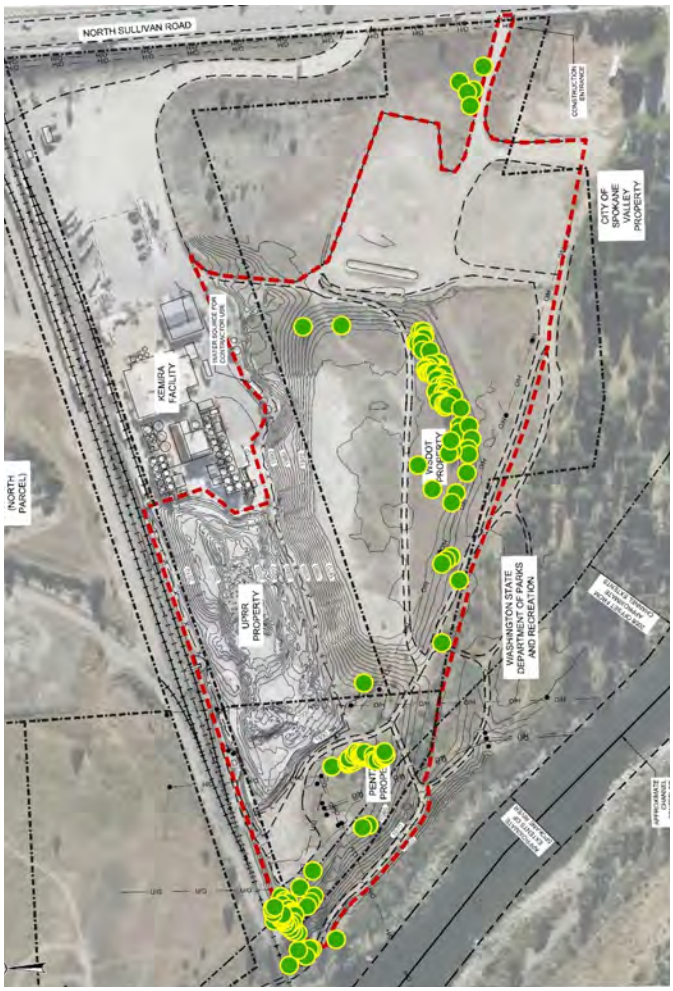
Sincerely,

IAN SCOTT

Area Manager
Davey Resource Group, Inc.
ISA Board Certified Master Arborist® (PN-5408BUM)
ASCA Registered Consulting Arborist #698
www.daveyresourcegroup.com

Arborist Report

Trentwood (Spokane Valley)
October 2022



Prepared For:

Golder & Associates Inc.

% Ted Norton
Associate/Environmental Consultant
206-755-4970
Ted_Norton@golder.com

Prepared By:

Davey Resource Group Inc.

18809 10th Ave NE
Shoreline, WA, 98155
Contact: Todd Beals
Todd.Beals@Davey.com
Local Office: 774.278.0354
Corporate Office: 800.966.2021

Notice of Disclaimer

Assessment data provided by Davey Resource Group is based on visual recording at the time of inspection. Visual records do not include testing or analysis and do not include aerial or subterranean inspection unless indicated. Davey Resource Group is not responsible for discovery or identification of hidden or otherwise non-observable risks. Records may not remain accurate after inspection due to variable deterioration of surveyed material. Risk ratings are based on observable defects and mitigation recommendations do not reduce potential liability to the owner. Davey Resource Group provides no warranty with respect to the fitness of the trees for any use or purpose whatsoever.

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Appendix A: Maps **14**

Appendix B. Inventory Table **20**

Introduction

Golder Associates contracted Davey Resource Group, Inc. (DRG) to complete a tree inspection and prepare an arborist report on the health, size, and location of the trees as well as identify tree protection and retention measures to guide the Trentwood Remedial Action Project as it pertains to tree preservation at the site at 2100 North Sullivan Road, Spokane Valley, WA 99216. Only trees within or near the limits of disturbance as defined by the supplied site map were inspected.

Using a pen tablet computer, the arborist visited all planted trees and/or trees ≥4" diameter at breast height (dbh) , affixed an aluminum numbered tag (where access was not restricted), and assigned a GPS location. Then each tree was visually assessed and the required tree data was collected within a GIS database. Following data collection, specific tree preservation plan elements were calculated that identified each tree's Critical Root Zone (CRZ) and Tree protection Zone (TPZ) and the measures required to help ensure survivability during planned development.

The arborist assessment included the following procedures:

- A numbering system of all existing significant trees (with corresponding tags on trees)
- Tree type or species.
- Size (DBH);
- Brief general health or condition rating of these trees (i.e.: poor, fair, good, excellent, etc.);
- Proposed tree status (tree recommended to be removed or retained);
- Determination of the Critical Root Zone and Tree Protection Zone (TPZ).

The data and observations were used to prepare an arborist report to guide the maintenance and preservation of the trees and includes the following:

- A complete description of each tree's health, condition, and viability
- A description of the methods used to establish a Tree Protection Zone (ie. Critical Root Zone (CRZ)).
- Any special instructions for tree care when work may be required within the CRZ.
- Map illustrations of tree locations.
- Any trees recommended for removal along with justification.
- Any trees requiring pruning prior to construction.
- A discussion of timing for installation of tree protection measures

Limits of the Assignment

There are many factors that can limit specific and accurate data when performing evaluations of trees, their conditions, and values. The determinations and recommendations presented here are based on current data and conditions that existed at the time of the evaluation and cannot be a predictor of the ultimate outcomes for the trees. A visual inspection was used to develop the findings, conclusions, and recommendations found in this report. Values were assigned to grade the attributes of the trees, including structure and canopy health, and to obtain an overall condition rating. No physical inspection of the upper canopy, sounding, root crown excavation, and resistograph or other technologies were used in the evaluation of the trees.

Methods

Data was collected in September 2022 by an ISA Certified Arborist (Todd Beals - NE-6913A). A visual inspection was used to develop the findings, conclusions, and recommendations found in this report. No physical inspection of the upper canopy, sounding, root crown excavation, and resistograph or other technologies were used in the evaluation of the trees. The results will be used to determine the CRZ, Tree Protection Zone (TPZ) and any other tree protection measures required during construction.

The following attributes were collected for each site:

Tree ID Number: A tree ID number was assigned and a numbered aluminum tag affixed to the tree.

Stems: The number of stems was recorded.

Location and Unique ID: An X and Y coordinate was generated for each tree site.

Species: Trees were identified by genus and species, cultivar if evident, and by common name.

Diameter at Breast Height (DBH): Trunk diameter was recorded to the nearest inch at 4.5 feet (standard height) above grade except where noted. When limbs or deformities occurred at standard height, the measurement was taken below 4.5 ft. The DBH of multi-trunk trees was recorded for each stem.

Height: Tree Height estimated to the nearest <5ft.

Avg. Crown Radius: Average dripline distance was measured.

Condition: The general condition of each tree was recorded in one of the following categories adapted from the rating system established by the International Society of Arboriculture:

- **Good:** A fully branched and leafed canopy; branches over 2 inches in diameter exhibit little to no dieback; little to no epicormic growth (i.e., sprouting from the trunk, limbs, or roots); and little to no aesthetic damage from insects or disease. The tree displays a growth habit characteristic of the species. The wood has no major structural problems and no significant mechanical damage.
- **Fair:** The canopy is thinning and there is less than average new growth present; or there is noticeable dead wood over 2” diameter or dieback throughout the majority of the crown; or there is significant mechanical damage to the trunk or root system; or the tree is otherwise exhibiting significant signs of stress and potential decline. The following signs or symptoms may be present in the tree: significant damage from non-fatal or disfiguring diseases, minor crown imbalance or thin crown, and/or stunted growth compared to adjacent trees. This condition also includes trees that have been topped but show reasonable vitality and no obvious signs of decay.
- **Poor**: The tree is in obvious decline or poses a significant risk which requires immediate mitigation. There are significant amounts of dieback or dead/dying limbs greater than 2” diameter; there is minimal to no growth; or there is extensive decay to the trunk or root system, raising concerns of structural integrity. A tree in this category may also have severe mechanical damage or poor vigor threatening its ability to thrive.
- **Critical**: The tree is dying and/or presents an unacceptable risk which necessitates removal.
- **Dead**

Tree Preservation Priority: In order to capture the priority for preservation of an individual tree as it relates to planning for development projects, DRG utilized a rating scale of one to four, with one being the highest priority for protection and four being of least concern. The condition rating of an individual tree is an important component of the priority rating, but several other variables are factored in: species

desirability, species longevity, species sensitivity to root loss and construction impacts, uniqueness, and aesthetics both of the tree itself and its relation to the site. It is important to note that these are qualitative ratings based solely on the site, individual tree, and existing conditions at the time of the inventory. Proposed development and construction plans are not considered when assigning ratings. The following criteria constituted the basis of tree placement in a particular category of priority**:**

- **Priority 1:** Highest priority for protection (i.e. particularly good condition, unique tree and/or should be protected at all reasonable cost).
- **Priority 2:** Good or fair condition tree well worth protecting though not uniquely valuable.
- **Priority 3:** Poor condition average tree that will not be missed if it were gone, not worth any special protection measures.
- **Priority 4:** Trees that should be removed under most or any circumstances (i.e., invasive or undesirable species, poor condition or critical trees, particularly high-risk situations, etc.).

Observations

Tree condition is important to evaluate prior to construction because healthy trees can better withstand construction impacts and partial root loss. In addition, it may not be of value to try to preserve trees in poor condition through construction when removal is a better option for the aesthetic value and health of the tree population as a whole.

A total of one-hundred-and-thirty-nine (139) trees were inventoried at the site. The most abundant species was ponderosa pine (*Pinus ponderosa,* 108 trees) followed by black locust (*Robinia pseudoacacia,* 27 trees). There were three (3) apples (*Malus spp.)* and one (1) linden (*Tilia spp*,) The majority of the trees were in good condition (102 trees). Ten (10) trees were in fair, sixteen (16) were in poor, and seven (7) trees were in critical condition. Four (4) trees were dead.

Table 1. Tree species by condition

Species	Good	Fair	Poor	Critical	Dead	Total
Pine, Ponderosa (Pinus ponderosa)	99	3	1	1	4	108
Locust, Black (Robinia pseudoacacia)	2	6	13	6		27
Apple (Malus spp.)	1	1	1			3
Linden (Tilia spp.)			1			1
Total	102	10	16	7	4	139

Tree Preservation Priority

In order to evaluate the priority for the preservation of an individual tree as it relates to planning for development projects, DRG utilized a rating scale of one to four, with one being the highest priority for protection and four being of least concern. The condition rating of an individual tree is an important component of the priority rating, but several other variables are factored in: species desirability, species longevity, species sensitivity to root loss and construction impacts, uniqueness, and aesthetics both of the tree itself and its relation to the site. It is important to note that these are qualitative ratings based solely on the site, individual tree, and existing conditions at the time of the inventory. Proposed development and construction plans are not considered when assigning ratings. The following criteria constituted the basis of tree placement in a particular category of priority**:**

- **Priority 1:** Highest priority for protection (i.e. particularly good condition, unique tree and/or should be protected at all reasonable cost).
- **Priority 2:** Good or fair condition tree well worth protecting though not uniquely valuable.
- **Priority 3:** Poor condition average tree that will not be missed if it were gone, not worth any special protection measures.
- **Priority 4:** Trees that should be removed under most or any circumstances (i.e., invasive or undesirable species, poor condition or critical trees, particularly high-risk situations, etc.).

Table 2. Tree Preservation Priority by species.

Species	1	2	3	4	Total
Pine, Ponderosa (Pinus ponderosa)	100	2	1	5	108
Locust, Black (Robinia pseudoacacia)				27	27
Apple (Malus spp.)	1		2		3
Linden (Tilia spp.)			1		1
Total	101	2	4	32	139

Analysis & Recommendations

Construction activities can have significant impacts on nearby trees for many reasons. Roughly one half of a tree's biomass is underground in the form of structural and absorptive roots. These roots take up water and nutrients that trees need to survive, so minimizing impact to these roots is crucial to reducing tree impacts during construction. Roots can be damaged by even light-weight equipment being driven in the root zone, an impact that may not be visible until the tree begins to show signs of stress months or years later. Another root impact occurs when materials are improperly stored or disposed of in the root zone. This can injure tree roots and contaminate the soil. Finally, an obvious impact can occur when equipment damages trunks and branches. To avoid these impacts, it is a best management practice to establish fenced tree protection zones to exclude any grading, trenching, soil compaction, material storage, or mechanical damage. These tree protection zones are based on calculated critical root zones (CRZs). Any tree that will have major encroachments into the CRZ that will cause the tree to become hazardous are recommended for removal, rather than tree protection.

There are two considerations when evaluating tree root disturbance during construction; the removal of absorption roots and anchoring roots. Removal (or compaction in the area) of the feeder roots can cause immediate water stress and a significant decline in tree health. The ability of a tree to survive root removal depends on its tolerance of drought, tree health, and the ability to form new roots quickly. Removal of the larger anchoring roots can lead to structural instability.

Based on the findings, the following recommendations are provided:

- **Retain and protect** the healthy ponderosa pines that will not be negatively impacted by construction activities. Ponderosa pine is native to the region and one of the keystone tree species in the Spokane Valley.
- **Remove** all trees designated as Priority 4 as soon as feasible.
    - All black locust are recommended for removal despite condition or proximity to construction activities. Black locust is an invasive species in Washington state as it can negatively impact and out compete native plant communities forming dense monoculture stands. Control of this species is recommended where natural resources are being protected or as part of a stewardship plan.
- **Remove** those trees that will have a significant portion of their CRZ impacted by the construction activities.
- **Prune** all protected trees for vehicle clearance and deadwood prior to construction activities.
- **Replant** disturbed areas with a mix of native plants and trees to discourage the growth of invasive species. Routine maintenance and supplemental watering should occur for a period of 3-5 years until establishment to help ensure survivability.

Critical Root & Tree Protection Zones

The trunk diameter (DBH) of the surveyed trees was used to determine the **potential** Critical Root Zone (CRZ) of each tree. The CRZ is considered the ideal preservation area of the root zone of a tree. It is equal to one (1) foot of radius for every inch of trunk diameter measured at 4.5 feet from grade. For example; a tree with a DBH of 27 inches has a calculated CRZ radius of 27 feet (diameter of 54 feet) from the trunk. The CRZ represents the typical minimum rooting area required for tree health and survival. Minimal impact (25% or less) within this zone is typically acceptable for average to good condition trees with basic mitigation/stress reduction measures.

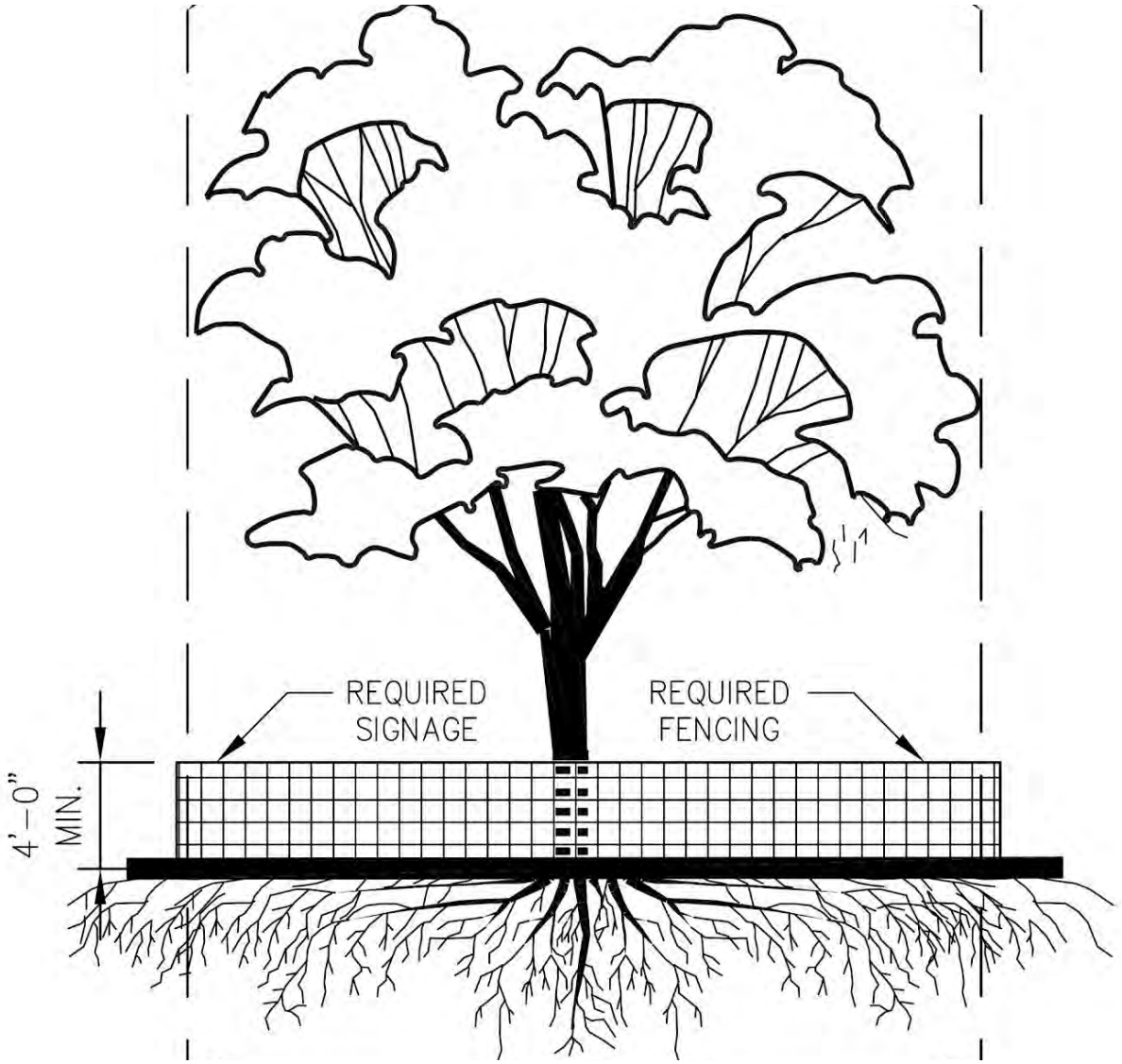
CRZ measurements are calculated from DBH and may not be an accurate representation of the actual dimensions of the root zone of the trees in the field. Many factors can limit root growth and expansion such as degree of slope, present hardscape or heavily compacted areas, and/or tree health.

- All excavation work within the CRZ of trees to be retained should be done by hand and/or using an air spade under the direct supervision of ISA Certified Arborist.
- Construction activities should be limited near or in the CRZ of any tree to be retained. This includes but is not limited to the storage of materials, parking of vehicles, contaminating soil by washing out equipment, (concrete, paint, etc.), or changing soil grade.
- Wood chip mulch shall cover the CRZ at a depth of 6 inches. A six inch area around the trunk shall be free of mulch.

Tree Protection Zone (TPZ) fencing shall delineate the protected area of the trees at the site. The size of the protected area around the tree shall be, at a minimum, the extent of the CRZ. Access into the TPZ shall not be allowed unless determined to be necessary by and under the supervision of the site architect or arborist.

- Where proper excavation and root pruning takes place, the TPZ fencing may be installed closer to the trunk and will need to be determined by the site arborist at the time of installation.
- TPZ shall be a minimum of 4 feet high, constructed of chain link or polyethylene laminar safety fencing or similar material subject to approval by an ISA Certified Arborist.
- “Tree Protection Area - Keep Out” or similar signs shall accompany the TPZ fencing at regular intervals.
- TPZs shall be constructed in such a fashion as to not be easily moved or dismantled.
- TPZs shall remain in place for the entirety of the project and only removed, temporarily or otherwise, by an ISA Certified Arborist after submission and approval of intent.

An example illustration of a Tree Protection Zone barrier. Contact information of the site manager or consulting arborist should also be included on the sign.



Pre-Development

Successful tree preservation efforts begin in the planning and design phase. In order to select the appropriate trees for preservation and then incorporate those trees into future development plans, site managers and designers need detailed information on the health and status of the existing trees. This report satisfies the conditions of the critical first step in the preservation process: a tree inventory, assessment, and analysis conducted by a qualified professional. The resulting findings guide the beginning stages of the preservation process.

Condition rating and preservation priority rating help nominate potential candidates for preservation. Final selections for preservation are largely determined by the percentage of Critical Root Zone impacted and whether or not the Structural Critical Root Zone is impacted. Development plans should ensure that no impact or root damage occurs within the SRZ, and plans should take into consideration the significant reduction in likelihood of tree survival when greater than 25% of the CRZ is impacted. After individual trees are selected for preservation, the following action-steps are recommended prior to development activities:

- **Prune** all selected trees, as necessary, to remove existing deadwood and stubs. This eliminates potential future vectors of decay. Clean cuts made at branch collars allow the tree to undergo its natural process of compartmentalizing wounds, preventing the spread of decay. During the pruning process, remove as minimal amount of live foliage as possible and no more that 25% removal in anyone season while allowing for the safe and unimpeded operation of construction activities.
- **Install Tree Protection Zone** (TPZ) fencing out to the furthest possible radius distance from the tree, encompassing as much of the Critical Root Zone as is allowable by the development plans. Prospects for tree survival diminish when greater than 25% of the CRZ is impacted.
- If the soil within the TPZ is compacted, then **aerate the soil** using an air spade to alleviate compaction and promote the flow of oxygen and water to the roots.
- **Soil inoculations** are recommended within affected Critical Root Zones. Formulations should include all necessary macro and micronutrients and include enzymes to help stimulate microbial activity in the soil and promote plant cell division and new lateral root development.
- **Add a 2- to 4-inch layer of mulch** to the portion of the root zone protected by the TPZ. Be sure not to cover/bury the tree root collar. Mulch aids the soil in water retention and also helps insulate the soil from hot and cold weather extremes.
- Where possible, **add a 12-inch layer of wood chips** over any parts of a Critical Root Zone not protected by the TPZ. This aids in reducing the impact of soil compaction from heavy equipment during the upcoming construction activities.

During Development

Once development begins, several measures are necessary to help ensure optimal outcomes for all trees selected for preservation:

- **Retain a Certified Arborist** on site to monitor activities and assess impacts to trees. The arborist can make as-needed recommendations to improve tree preservation activities throughout the development process. This is particularly important in order to make a timely response when a preserved tree is accidentally damaged or otherwise impacted during development.
- **Signage** instructing site workers not to enter Tree Protection Zones should be posted throughout the job site. Signage should be posted in both English and Spanish as well as any other language as deemed necessary by site managers.
- **Discuss tree protection** regularly at required staff meetings. Reiterate the importance of respecting the Tree Protection Zone as critical to the safety of staff working on site and the success of tree preservation efforts.
- Strictly **enforce** the Tree Protection Zones as “No-Go” zones. No activity, human or machinery, should breach the established TPZ.
- **Root prune** where any grading or trenching occurs within a Critical Root Zone.
- Ensure CRZ’s receive the **weekly watering** equivalent to the amount of average natural rainfall for the specific development site. When the amount of natural rainfall received is less than the historical average, manual watering methods should be employed. The on-site Certified Arborist can make the determination when additional manual watering is necessary.
- Where possible, within the CRZ only **operate low-impact tracked machinery**.
- Where possible, **do not raise or lower the soil grade within a Critical Root Zone**. A tree relies upon small, non-woody roots called feeder roots for the absorption of water and nutrients. These roots predominantly reside in the upper several inches of soil, just below grade. Lowering the soil grade, even just a few inches, will sever these feeder roots and compromise tree health. Raising the soil above existing grade, such as through the addition of fill soil, buries feeder roots too deep and restricts feeder root access to water and oxygen.

Post-Development

A successful tree preservation effort continues well past the conclusion of development activities:

- The preserved trees should be **re-inspected** for signs of impact that may have gone undetected during construction and mitigation measures assigned accordingly.
- Any soil compaction that occurred within a CRZ should be remedied with **aeration**.
- The preserved trees should be placed on a **seasonal care plan** for two years that includes both monitoring and routine soil inoculation treatments designed to stimulate new root growth.
- Annual monitoring should continue for several years, as the effects of construction may take anywhere from 3 to 7 years to become visibly apparent.

Concluding Remarks

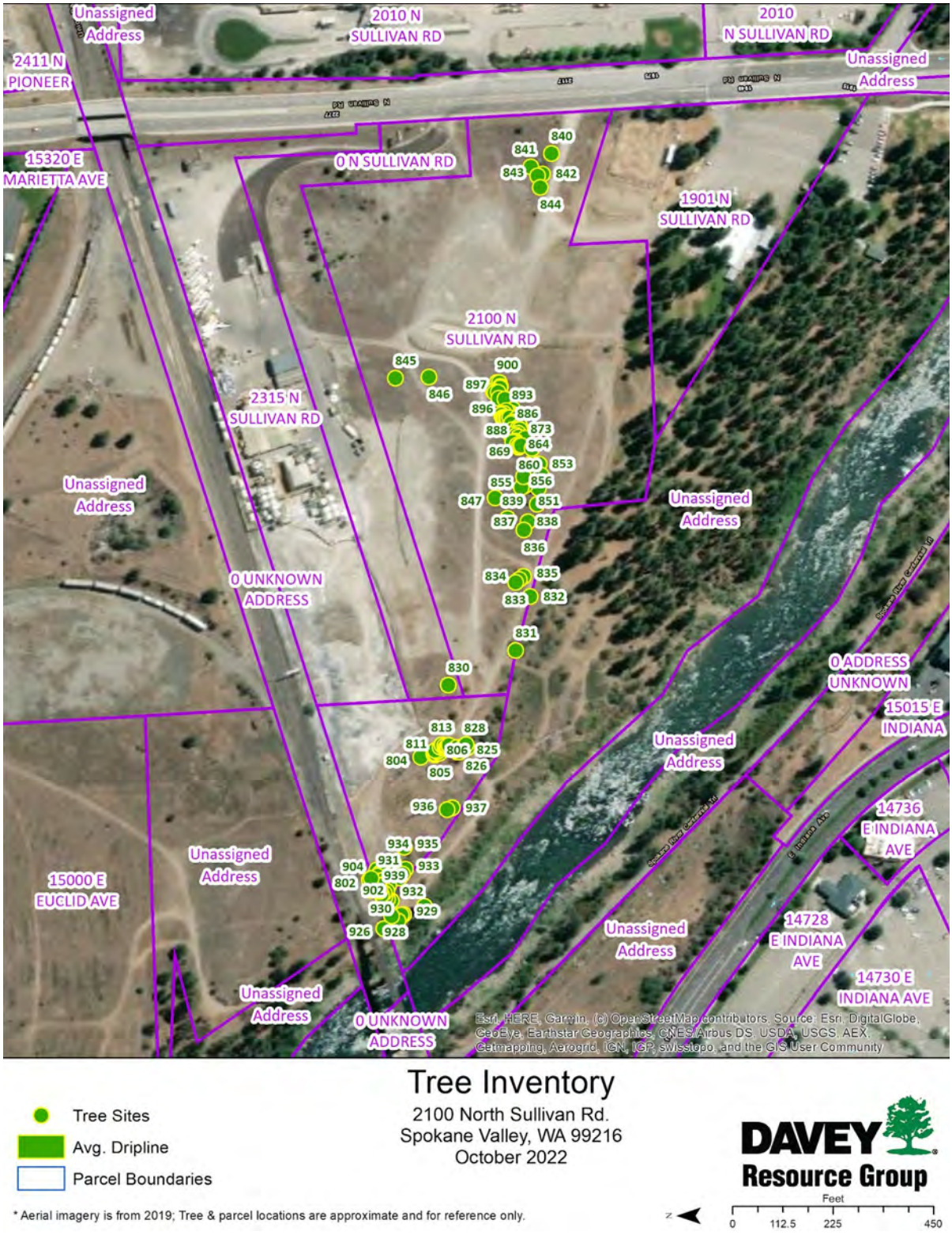
This report, along with the tree inventory, is the first step in preserving the health, function, and value of the trees on the site during and after development. Trees and green spaces provide benefits and add value to residential properties. Tree preservation starts with a basic understanding of the health and structure of the trees on the site. With proper care and protection, these trees can continue to thrive. Tree protection guidelines and strategies should be shared with contractors and employers prior to any disturbance at the site.

The suitability of a tree for preservation is a qualitative process based on the interaction of a variety of influencing factors. A tree inventory and arborist report provides a snapshot in time of each individual tree assessed across many of the most important observable factors relative to preservation. Healthy, vigorous trees better tolerate impacts from construction and more readily adapt to the new site conditions that exist after completion of development. Additionally, tolerance to impact from construction activities varies across species and sites. The percentage impact to the Critical Root Zone also greatly influences the suitability of a particular tree for preservation.

Successful tree preservation requires a team effort to find the right balance and select the appropriate trees. Using the findings of this report as a guiding foundation, planners are equipped to design, prepare, and implement a tree preservation plan tailored to achieving the optimal outcome.

Appendix A: Maps

Map A1. Site map showing site overview.



Tree Inventory

2100 North Sullivan Rd.
Spokane Valley, WA 99216
October 2022

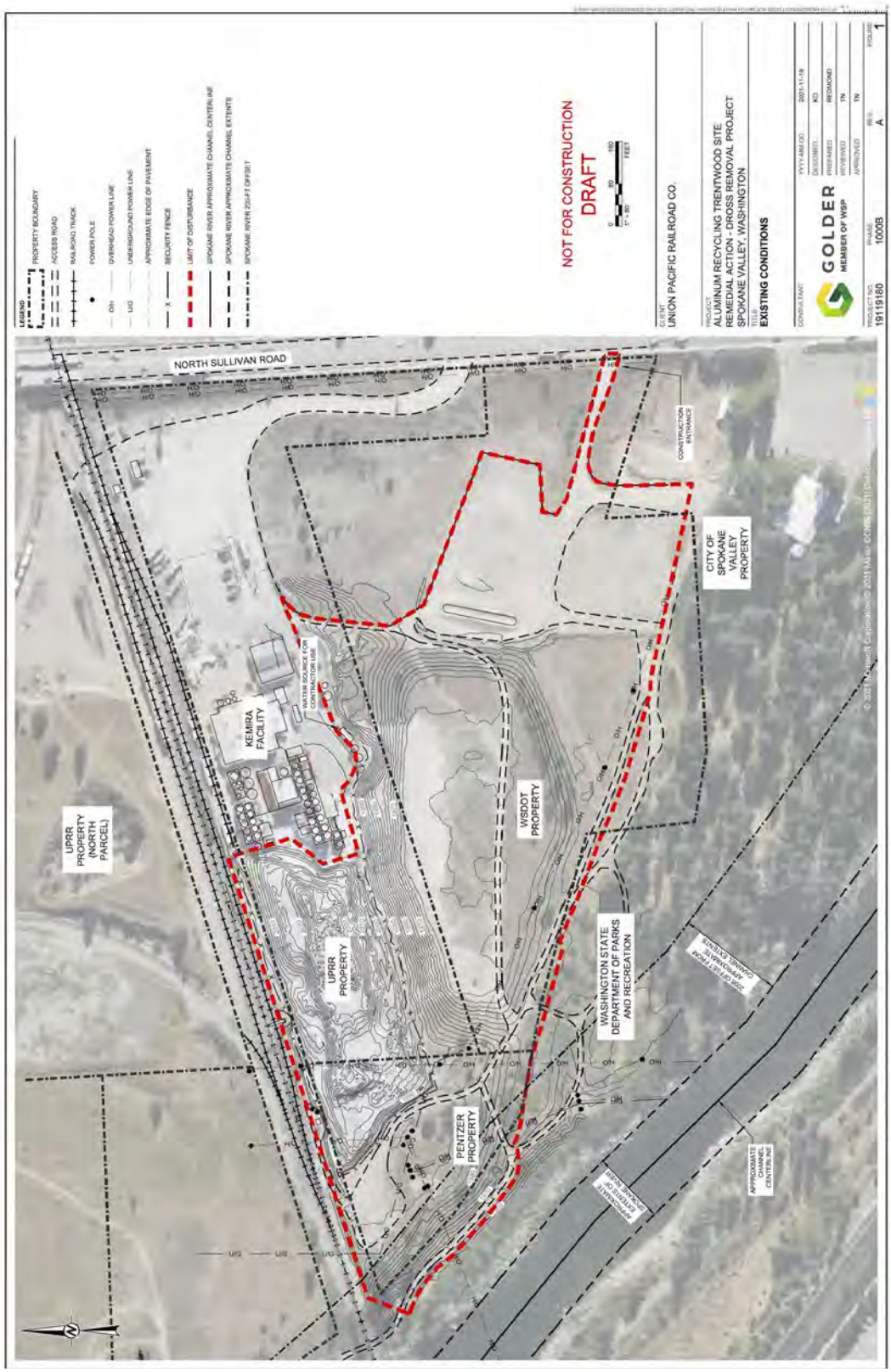
Tree Sites
Avg. Dripline
Parcel Boundaries

* Aerial imagery is from 2019; Tree & parcel locations are approximate and for reference only.

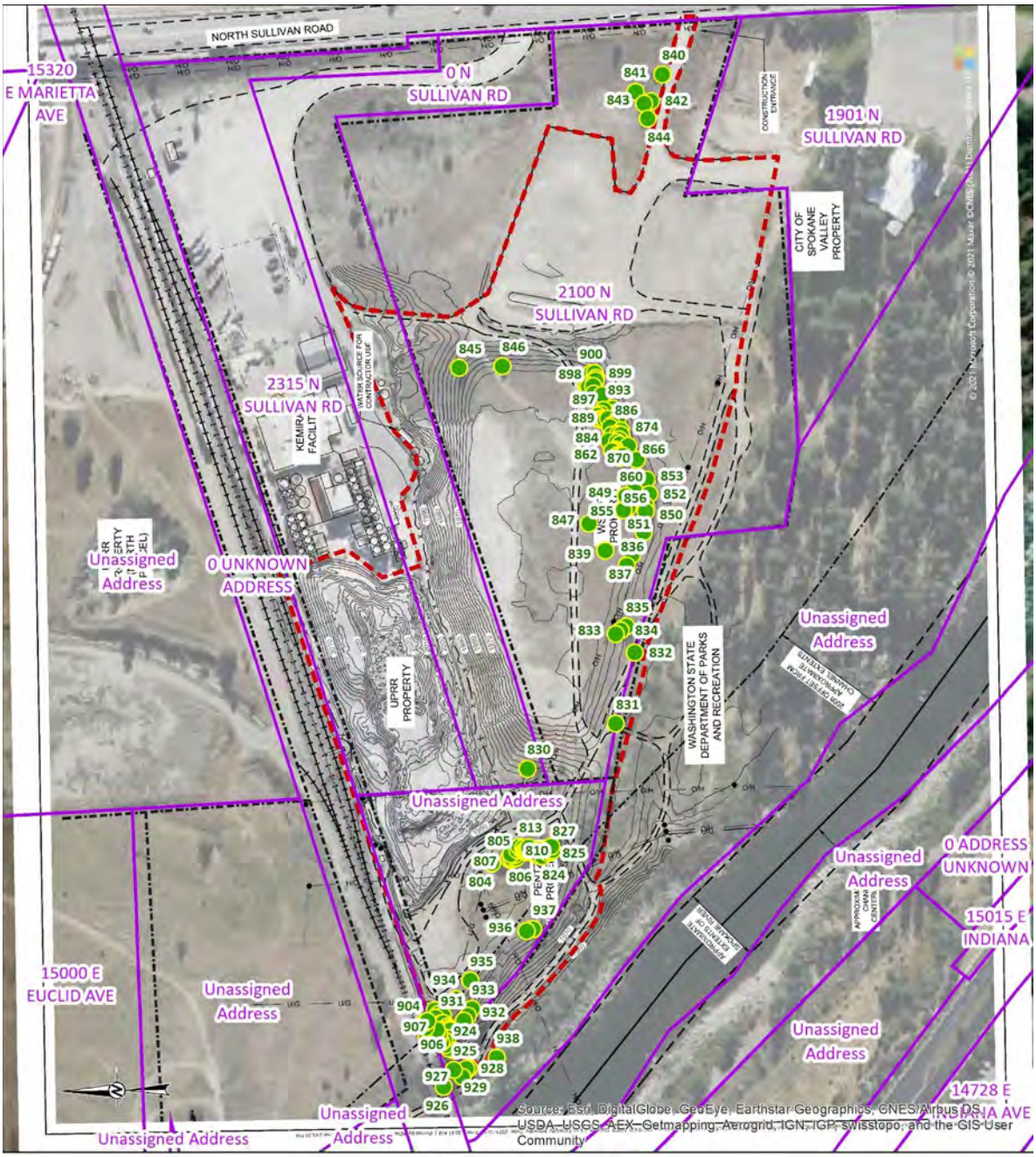
DAVEY Resource Group

Feet
0 112.5 225 450

Map A2. Site map showing limits of disturbance, property ownership, and construction access.



Map A3. Site map showing tree locations, parcel boundaries, and limits of disturbance. The trees along the south limits of disturbance is a pure ponderosa pine stand. The trees to the west are predominantly black locust. The trees to the northwest are a mix of ponderosa pine and black locust.



Tree Inventory

2100 North Sullivan Rd.
Spokane Valley, WA 99216
October 2022

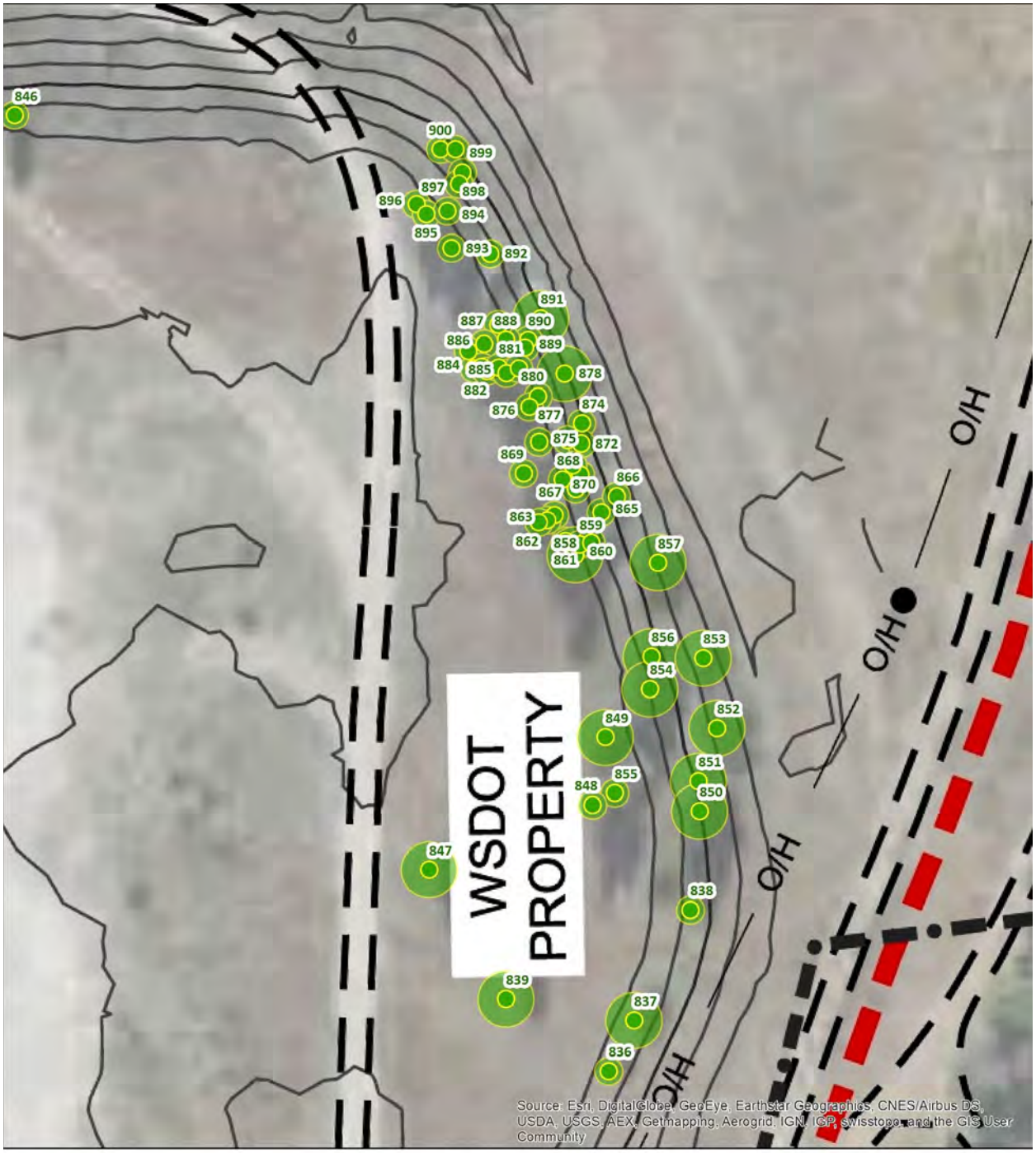
Tree Sites
Avg. Dripline
Parcel Boundaries

* Aerial imagery is from 2019; Tree & parcel locations are approximate and for reference only.

DAVEY Resource Group

Feet
0 90 180 360

Map A4. Site map showing close up of the pure ponderosa pine stand to the south of the site.



Tree Inventory

2100 North Sullivan Rd.
Spokane Valley, WA 99216
October 2022

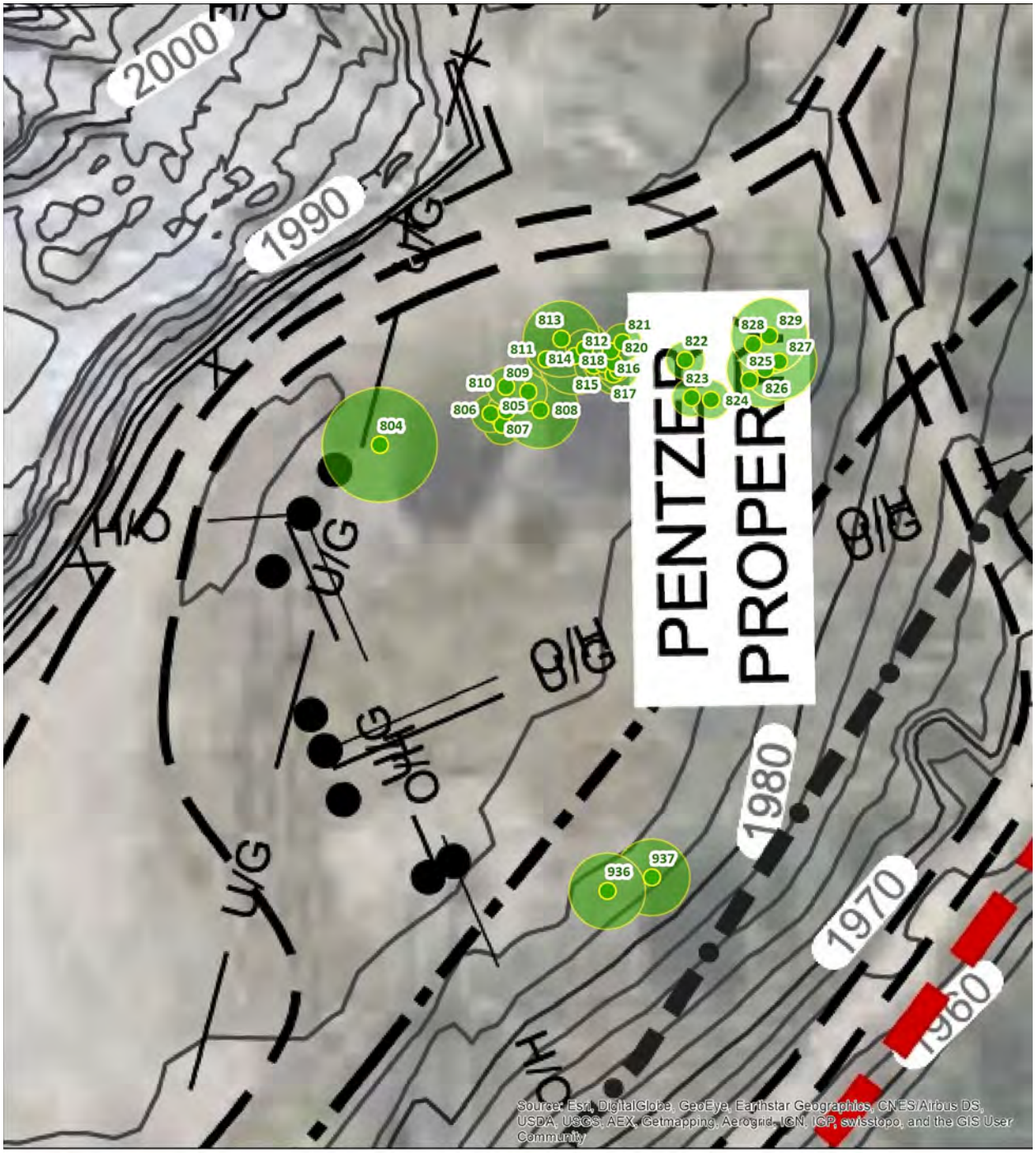
Tree Sites
Avg. Dripline
Parcel Boundaries

* Aerial imagery is from 2019; Tree & parcel locations are approximate and for reference only.

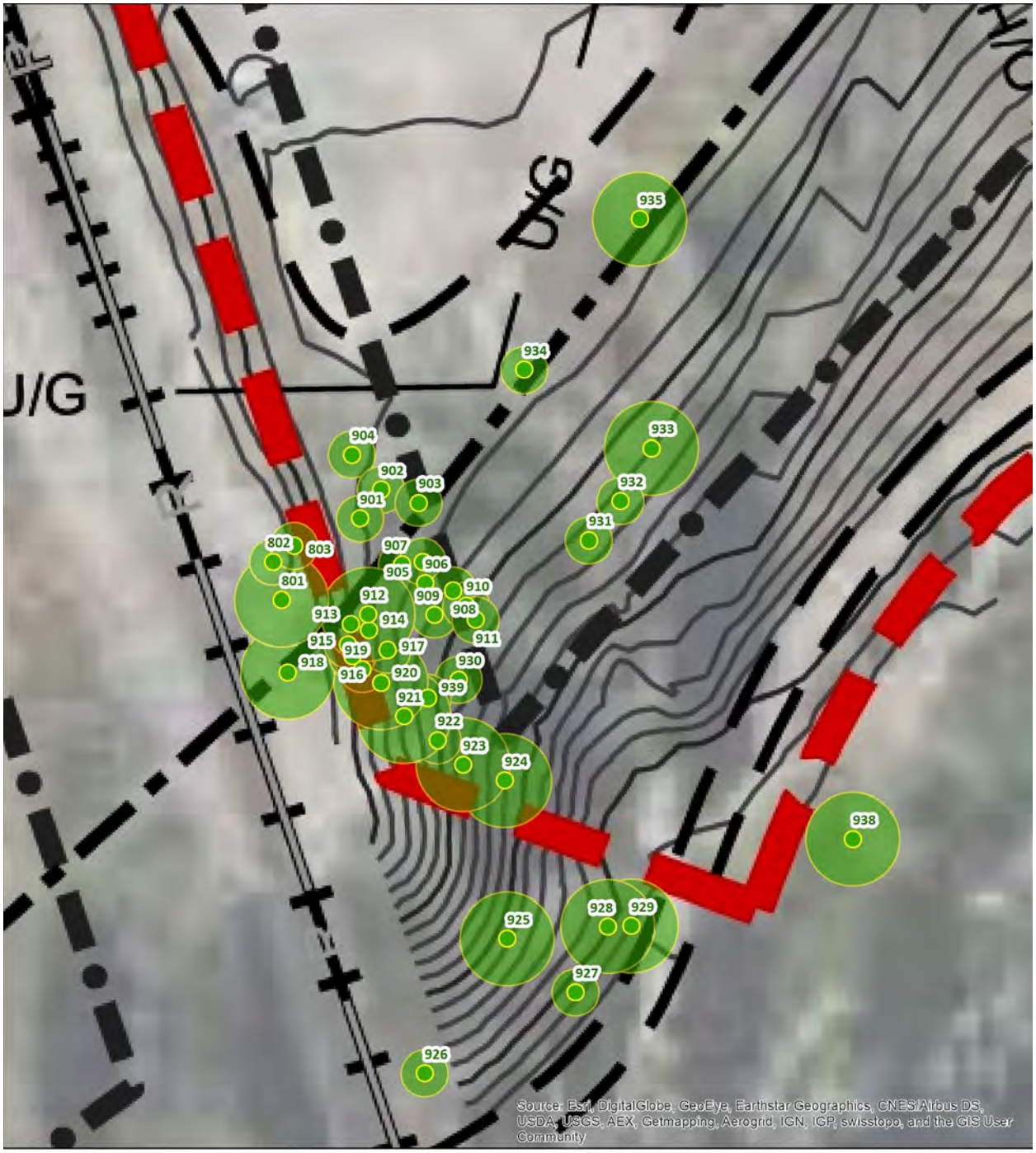
DAVEY Resource Group

Feet
0 20 40 80

Map A5. Site map showing close up of the black locust stand.



Map A6. Site map showing close up of mixed stand to the northwest.



Appendix B. Inventory Table

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
801	Pine, Ponderosa (Pinus ponderosa)	7	25	10	Good	1	7
802	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
803	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
804	Linden (Tilia spp.)	6,6,7,3,4,3,5,6,7	25	15	Poor	3	15
805	Locust, Black (Robinia pseudoacacia)	4	10	5	Poor	4	4
806	Locust, Black (Robinia pseudoacacia)	4	10	5	Poor	4	4
807	Locust, Black (Robinia pseudoacacia)	4	10	5	Poor	4	4
808	Locust, Black (Robinia pseudoacacia)	8,6	20	10	Poor	4	10
809	Locust, Black (Robinia pseudoacacia)	4	20	5	Poor	4	4
810	Locust, Black (Robinia pseudoacacia)	4	20	5	Poor	4	4
811	Locust, Black (Robinia pseudoacacia)	5	20	5	Fair	4	5
812	Locust, Black (Robinia pseudoacacia)	4	15	10	Critical	4	4
813	Locust, Black (Robinia pseudoacacia)	8,6	20	10	Fair	4	10
814	Locust, Black (Robinia pseudoacacia)	4	10	5	Critical	4	4
815	Locust, Black (Robinia pseudoacacia)	4,5	20	5	Poor	4	6

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
816	Locust, Black (Robinia pseudoacacia)	5	20	5	Fair	4	5
817	Locust, Black (Robinia pseudoacacia)	6	15	5	Critical	4	6
818	Locust, Black (Robinia pseudoacacia)	6	15	5	Fair	4	6
819	Locust, Black (Robinia pseudoacacia)	4	10	5	Fair	4	4
820	Locust, Black (Robinia pseudoacacia)	5	15	5	Critical	4	5
821	Locust, Black (Robinia pseudoacacia)	5	10	5	Poor	4	5
822	Locust, Black (Robinia pseudoacacia)	5,4,2	10	5	Poor	4	6
823	Locust, Black (Robinia pseudoacacia)	6	10	5	Critical	4	6
824	Locust, Black (Robinia pseudoacacia)	4	10	5	Fair	4	4
825	Locust, Black (Robinia pseudoacacia)	4,9,3	10	5	Critical	4	10
826	Locust, Black (Robinia pseudoacacia)	12	20	10	Poor	4	12
827	Locust, Black (Robinia pseudoacacia)	4	15	10	Poor	4	4
828	Locust, Black (Robinia pseudoacacia)	6,6	10	5	Poor	4	8
829	Locust, Black (Robinia pseudoacacia)	24	25	10	Poor	4	24
830	Pine, Ponderosa (Pinus ponderosa)	12	20	10	Good	1	12
831	Apple (Malus spp.)	5 inch average. Multistem	15	10	Poor	3	5

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
832	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Fair	2	4
833	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
834	Pine, Ponderosa (Pinus ponderosa)	8	35	5	Good	1	8
835	Pine, Ponderosa (Pinus ponderosa)	9	35	5	Good	1	9
836	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
837	Pine, Ponderosa (Pinus ponderosa)	5	15	10	Good	1	5
838	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
839	Pine, Ponderosa (Pinus ponderosa)	5,4	15	10	Good	1	6
840	Pine, Ponderosa (Pinus ponderosa)	10	15	10	Good	1	10
841	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Critical	4	4
842	Pine, Ponderosa (Pinus ponderosa)	4,5	15	5	Good	1	4,5
843	Pine, Ponderosa (Pinus ponderosa)	6	20	5	Good	1	6
844	Pine, Ponderosa (Pinus ponderosa)	7	15	5	Good	1	7
845	Pine, Ponderosa (Pinus ponderosa)	10	20	5	Good	1	10
846	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
847	Pine, Ponderosa (Pinus ponderosa)	13	20	10	Good	1	13
848	Pine, Ponderosa (Pinus ponderosa)	9	20	5	Good	1	9

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
849	Pine, Ponderosa (Pinus ponderosa)	8,7	20	10	Good	1	8,7
850	Pine, Ponderosa (Pinus ponderosa)	12	20	10	Good	1	12
851	Pine, Ponderosa (Pinus ponderosa)	11	20	10	Good	1	11
852	Pine, Ponderosa (Pinus ponderosa)	11	20	10	Good	1	11
853	Pine, Ponderosa (Pinus ponderosa)	8	20	10	Good	1	8
854	Pine, Ponderosa (Pinus ponderosa)	9	20	10	Good	1	9
855	Pine, Ponderosa (Pinus ponderosa)	9	20	5	Good	1	9
856	Pine, Ponderosa (Pinus ponderosa)	10	20	10	Good	1	10
857	Pine, Ponderosa (Pinus ponderosa)	9	20	10	Fair	1	9
858	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
859	Pine, Ponderosa (Pinus ponderosa)	4	20	5	Good	1	4
860	Pine, Ponderosa (Pinus ponderosa)	8	20	10	Good	1	8
861	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
862	Pine, Ponderosa (Pinus ponderosa)	4,3	10	5	Good	1	5
863	Pine, Ponderosa (Pinus ponderosa)	7	15	5	Good	1	7
864	Pine, Ponderosa (Pinus ponderosa)	4	15	5	Good	1	4
865	Pine, Ponderosa (Pinus ponderosa)	6	20	5	Good	1	6

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
866	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
867	Pine, Ponderosa (Pinus ponderosa)	8	20	5	Good	1	8
868	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
869	Pine, Ponderosa (Pinus ponderosa)	7	15	5	Good	1	7
870	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
871	Pine, Ponderosa (Pinus ponderosa)	7	15	5	Good	1	7
872	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
873	Pine, Ponderosa (Pinus ponderosa)	6	15	5	Good	1	6
874	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
875	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
876	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
877	Pine, Ponderosa (Pinus ponderosa)	6	20	5	Good	1	6
878	Pine, Ponderosa (Pinus ponderosa)	8	20	10	Good	1	8
879	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
880	Pine, Ponderosa (Pinus ponderosa)	4	15	5	Good	1	4
881	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
882	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
883	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
884	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
885	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
886	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
887	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
888	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
889	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
890	Pine, Ponderosa (Pinus ponderosa)	8	10	5	Good	1	8
891	Pine, Ponderosa (Pinus ponderosa)	8	20	10	Good	1	8
892	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
893	Pine, Ponderosa (Pinus ponderosa)	5	20	5	Good	1	5
894	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
895	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
896	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
897	Pine, Ponderosa (Pinus ponderosa)	6	10	5	Good	1	6
898	Pine, Ponderosa (Pinus ponderosa)	8	15	5	Good	1	8
899	Pine, Ponderosa (Pinus ponderosa)	6	15	5	Good	1	6

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
900	Pine, Ponderosa (Pinus ponderosa)	7	20	5	Good	1	7
901	Pine, Ponderosa (Pinus ponderosa)	8	10	5	Dead	4	8
902	Pine, Ponderosa (Pinus ponderosa)	6	10	5	Dead	4	6
903	Pine, Ponderosa (Pinus ponderosa)	8	10	5	Dead	4	8
904	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Dead	4	5
905	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
906	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Fair	2	4
907	Pine, Ponderosa (Pinus ponderosa)	4	15	5	Good	1	4
908	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
909	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Good	1	5
910	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
911	Pine, Ponderosa (Pinus ponderosa)	5	10	5	Good	1	5
912	Pine, Ponderosa (Pinus ponderosa)	8	25	10	Good	1	8
913	Pine, Ponderosa (Pinus ponderosa)	6	20	5	Good	1	6
914	Pine, Ponderosa (Pinus ponderosa)	4	20	5	Good	1	4
915	Pine, Ponderosa (Pinus ponderosa)	9	25	5	Good	1	9
916	Pine, Ponderosa (Pinus ponderosa)	4	20	5	Good	1	4

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
917	Pine, Ponderosa (Pinus ponderosa)	8	30	5	Good	1	8
918	Pine, Ponderosa (Pinus ponderosa)	7	30	10	Good	1	7
919	Pine, Ponderosa (Pinus ponderosa)	7	40	5	Good	1	7
920	Pine, Ponderosa (Pinus ponderosa)	10	40	10	Good	1	10
921	Pine, Ponderosa (Pinus ponderosa)	10	40	10	Good	1	10
922	Pine, Ponderosa (Pinus ponderosa)	6	35	5	Good	1	6
923	Pine, Ponderosa (Pinus ponderosa)	8	40	10	Good	1	8
924	Pine, Ponderosa (Pinus ponderosa)	9	40	10	Good	1	9
925	Pine, Ponderosa (Pinus ponderosa)	11	40	10	Good	1	11
926	Apple (Malus spp.)	4,6,4,4	10	5	Good	1	9
927	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
928	Pine, Ponderosa (Pinus ponderosa)	8	35	10	Good	1	8
929	Pine, Ponderosa (Pinus ponderosa)	10	40	10	Good	1	10
930	Pine, Ponderosa (Pinus ponderosa)	4	15	5	Good	1	4
931	Pine, Ponderosa (Pinus ponderosa)	14	35	5	Good	1	14
932	Pine, Ponderosa (Pinus ponderosa)	9	25	5	Good	1	9
933	Pine, Ponderosa (Pinus ponderosa)	19	50	10	Good	1	19

ID	Species	DBH (in)	Height (ft)	Avg. Canopy Radius (ft)	Condition	Preservation Priority	TPZ/CRZ Radius (ft)
934	Pine, Ponderosa (Pinus ponderosa)	4	10	5	Good	1	4
935	Apple (Malus spp.)	5,6,4,3,3,3	10	10	Fair	3	11
936	Locust, Black (Robinia pseudoacacia)	5	20	10	Good	4	5
937	Locust, Black (Robinia pseudoacacia)	5,4,4,5	20	10	Good	4	82
938	Pine, Ponderosa (Pinus ponderosa)	20	65	10	Good	1	20
939	Pine, Ponderosa (Pinus ponderosa)	5	15	5	Poor	3	5

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project:

Author: Margaret Corcoran, Emily L. Whistler, and David A. Harder

Title of Report: Archaeological Monitoring of the UPRR Trentwood Project, Spokane County, Washington

Date of Report: June 21, 2023

County: Spokane Section: 11 Township: 25 N Range: 44 E

Quad: Greenacres 1985 Acres: 3.32

PDF of report submitted (REQUIRED) ☒ Yes

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

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

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

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

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

DAHP Archaeological Site #:

Archaeological Monitoring for the UPRR Trentwood Project, Spokane County, Washington

By:
Margaret Corcoran, Emily L. Whistler,
and David A. Harder

PLATEAU CRM
A CULTURAL RESOURCE MANAGEMENT FIRM
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June 2023

ABSTRACT

Archaeological Monitoring for the UPRR Trentwood Project, Spokane County, Washington

Golder/WSP removed environmental contaminants from land in Spokane Valley. Excavation of areas located within the Sullivan State Park were required to mitigate contamination. As such, Washington State Parks requested monitoring of all excavation within state parks property. Due to the presence of environmental contaminants, a cultural resource survey could not be performed, and monitoring was required. As such, Golder/WSP retained Plateau Archaeological Investigations, LLC (dba Plateau CRM) to monitor all excavations within the area of potential impact. The area of potential impact covers approximately 3.32 acres and lies in Section 11 of Township 25 North, Range 44 East, Willamette Meridian.

Pre-field research included the review of known archaeological resources within a 1.0-mile radius of the area of potential impact as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP). This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), National Register of Historic Properties (NRHP) and Washington Heritage Register (WHR) properties, identified cemeteries, and previously conducted cultural resource surveys found throughout the state. The DAHP's predictive model places the area of potential impact in an area of "Very High Risk" for encountering cultural resources, stating that "survey is "highly advised" for this location.

Fieldwork was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Over the course of two days from March 16, 2023, to March 17, 2023, all excavations within the area of potential impact were monitored.

KEY INFORMATION

PROJECT

Archaeological Monitoring for the UPRR Trentwood Project, Spokane County, Washington

REPORT AUTHORS

Margaret Corcoran, Emily L. Whistler, and David A. Harder

COUNTY

Spokane County

LEGAL LOCATION OF PROJECT

Section 11 of Township 25 North, Range 44 East, Willamette Meridian

USGS QUADS

Greenacres, 1985 7.5 minute, Washington

ACREAGE

3.32 acres

PROJECT DATA

No previously recorded historic properties

No new cultural resources located and/or recorded

DAHP PROJECT NUMBER

MANAGING AGENCY

Washington State Parks

REPORT PREPARED FOR

Golder/WSP

FIELD NOTE DISPOSITION

Archived at the office of Plateau CRM, Pullman.

PRINCIPAL INVESTIGATOR

David A. Harder, M.A.

CERTIFICATION OF RESULTS

I certify that this investigation was conducted and documented according to Secretary of Interior's Standards and Guidelines and that the report is complete and accurate to the best of my knowledge.

Signature

June 21, 2023

Date

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PROJECT DESCRIPTION

Golder/WSP conducted an environmental cleanup at a site located in Spokane County, Washington (Figure 1). Excavations of areas located within the Sullivan State Park were required to mitigate contamination. As such, Washington State Parks requested monitoring of all excavations within state parks property. Plateau Archaeological Investigations, LLC (dba Plateau CRM) was retained to perform the monitoring of all excavations within the area of potential impact. The excavations measured 144 feet (ft) (44.0 meter [m]) in length, 29 ft (9 m) in width and required excavation to a maximum depth of 3 ft (0.9 m). The project included the excavation of trenches and multiple soil test pits.

The area of potential impact covers approximately 3.32 acres, and lies within Section 11 of Township 25 North, Range 44 East, Willamette Meridian (Figure 2). The area of potential impact hereafter will be referred to as the "Project Area."

The DAHP predictive model places the Project Area in an area of "Very High Risk" for encountering cultural resources.

PRE-FIELD RESEARCH

Pre-field research included the review of known archaeological resources within a 1.0-mile (mi) (1.6 kilometer [km]) radius of the Project Area as inventoried at the Washington State Department of Archaeology and Historic Preservation (DAHP) in Olympia, Washington. This review was completed using DAHP's secure electronic database known as the Washington Information System for Architectural and Archaeological Data (WISAARD). This database includes recorded archaeological resources, historic property inventories (HPIs), properties and districts on the National Register of Historic Places (NRHP) and the Washington Heritage Register (WHR), identified cemeteries, and previously conducted cultural resource surveys found throughout the state.

Plateau CRM also conducted cartographic analysis of landform, topography, proximity to water using topographic maps, and the United States Department of Agriculture (USDA) online soil survey. Secondary historic resources, on file at the DAHP and the Plateau CRM office in Pullman, were consulted to identify other potential historic resources. In addition, available survey and overview reports and ethnographic accounts of the region were consulted. This background review allows for the identification of previously recorded historic and archaeological resources within or near the Project Area.

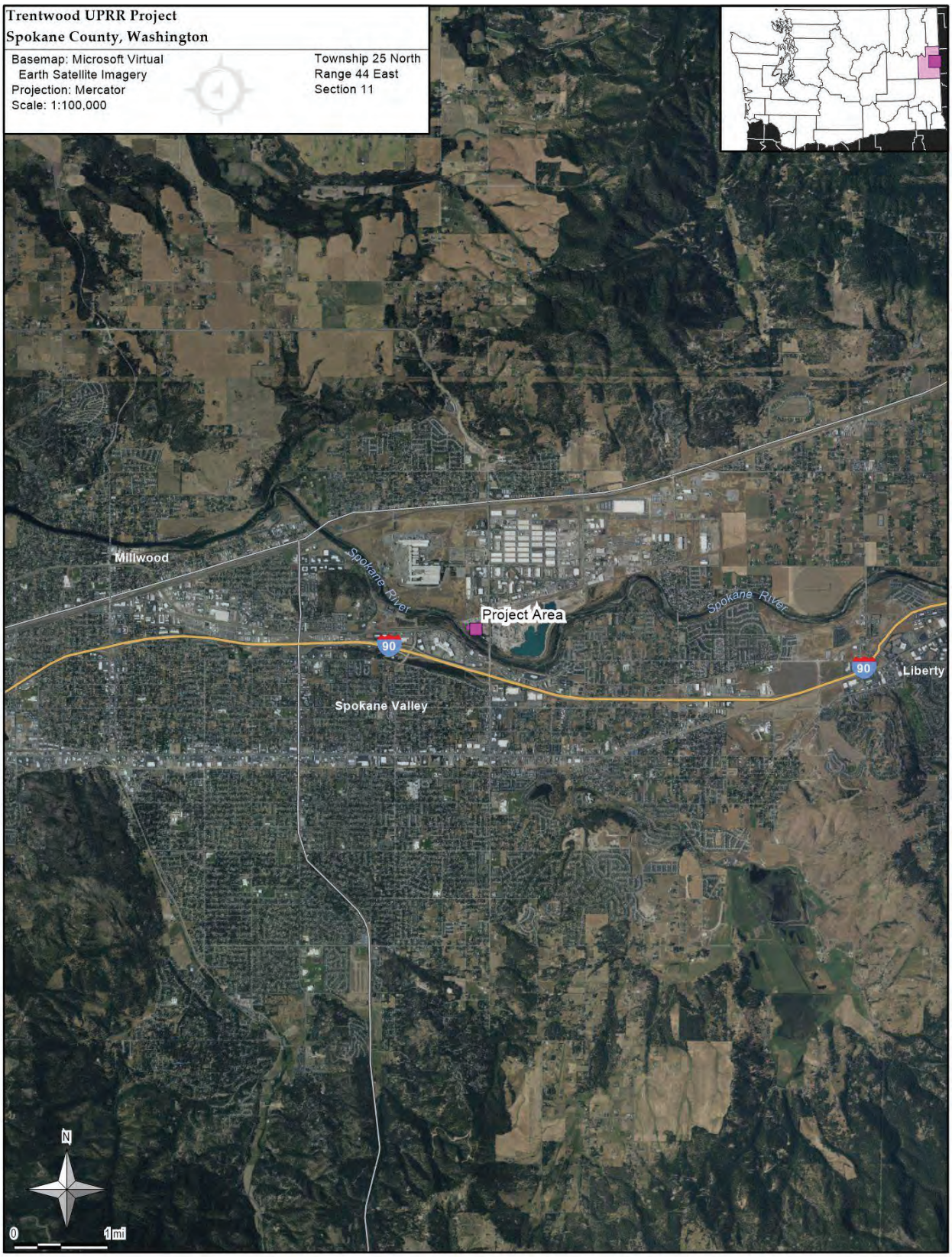

Figure 1. The location of the Project Area within Spokane County.

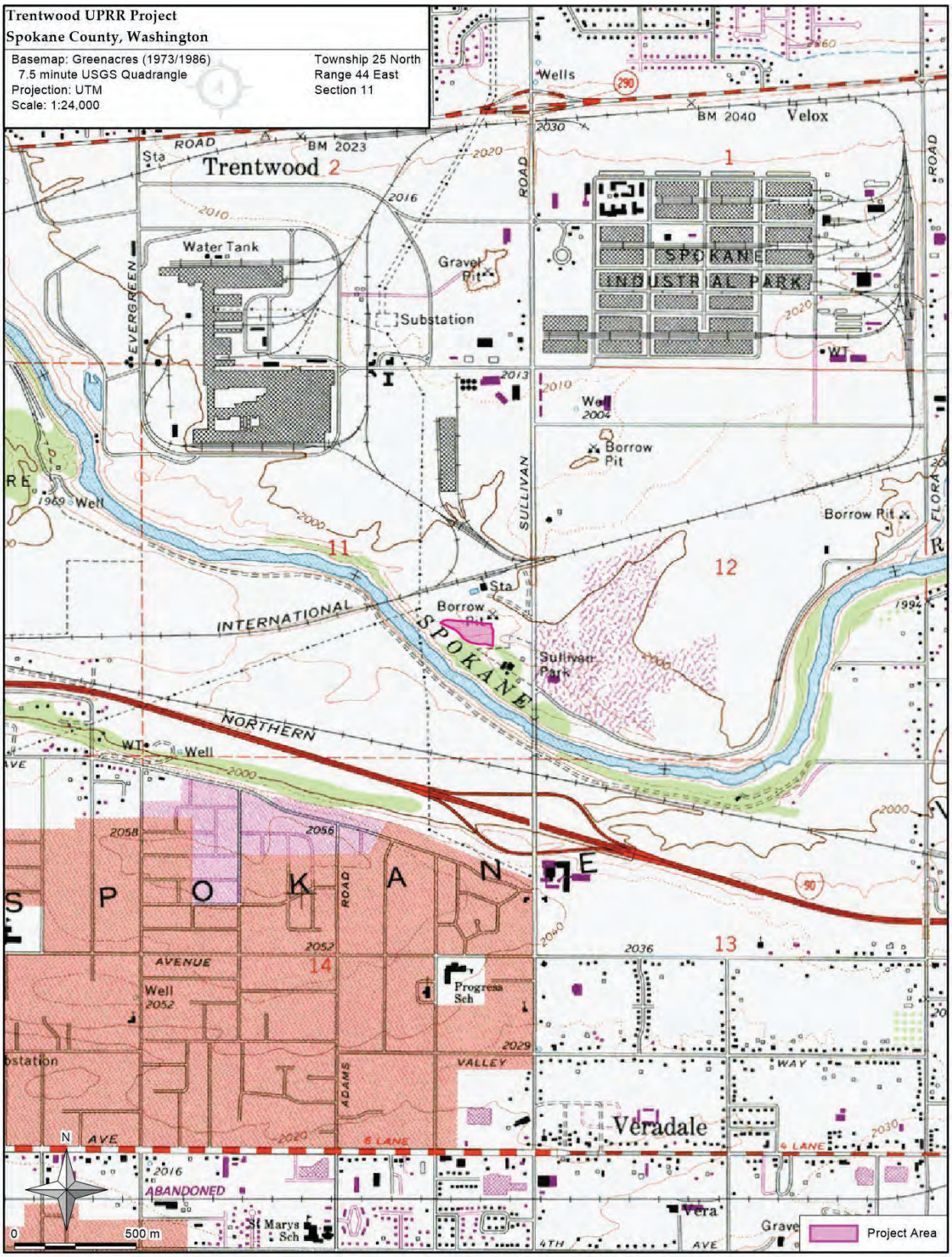

Figure 2. The Project Area shown on a portion of the Greenacres USGS map.

ENVIRONMENTAL SETTING

The Project Area lies within the Spokane Valley Outwash Plains, within the Northern Rockies ecoregion (McGrath et al. 2010). The Northern Rockies ecoregion transitions from the Okanagan Highlands of Washington to expanses of high mountains and low valleys extending across northern Idaho. The Spokane Valley Outwash Plains consist of gently rolling plains that include the southern portion of the Purcell Trench, Rathdrum Prairie, and Spokane Valley. Elevations range from 2,100 to 2,800 ft (640.1–853.4 m). The geology of the region is characterized by Pleistocene glacial outwash, flood gravels, and terrace gravels overlain in the south by lacustrine sediments.

According to the Natural Resources Conservation Service (2023), the Project Area contains one soil type: Garrison very gravelly ashy loam (Table 1).

Table 1. NRCS Soil Descriptions within Project Area.

Soil Name	Parent Material	Horizons	% P/A
Garrison very gravelly ashy loam	Sandy and gravelly glaciofluvial deposits with minor amounts of volcanic ash and loess in the upper part	Horizon I (0-4 in): very gravelly ashy loam Horizon II (4-16 in): very gravelly ashy loam Horizon III (16-24 in): very gravelly loam Horizon IV (24-60 in): extremely gravelly loamy coarse sand	100%

The predominant draw for Native American and European American populations in this region was, and still is, the extensive river systems and lakes, and the abundance of resources these waterways support. The most significant hydrological feature is the Columbia River, which flows for more than 1,200 mi (2,000 km) from the base of the Canadian Rockies in southeastern British Columbia to the Pacific Ocean at Astoria, Oregon, and drains a 259,000 mi^2 (431,670 km^2) basin. Nine major tributaries to the Columbia—Clark Fork River, Clearwater River, Flathead River, Kettle River, Kootenai River, Pend Oreille River, Priest River, Saint Joe River, and the Spokane River—flow within the ecoregion. Four major lakes—Flathead Lake, Lake Pend Oreille, Payette Lake, and Priest Lake—also contribute to the hydrological network. The Spokane River/Nine Mile Reservoir runs 0.07 mi (0.11 km) southwest of the Project Area.

The Project Area and surrounding regions contained an abundance of life. It is likely, though, that in the past Native Americans had access to a larger variety of species that that were integrated into aboriginal lifeways, settlement, and travel patterns in relation to the Project Area. The following lists a few of the more discernible mammals that may have been available to aboriginal populations: mule deer (*Odocoileus hemionus*), racoon (*Procyon lotor*), Nuttal cottontail (*Sylvilagus nuttalli*), mink and weasel (*Mustela* spp.), yellow-bellied marmot (*Marmota flaviventris*), woodchuck (Marmota monax), badger (*Taxidea taxus*), beaver (*Castor canadensis*), porcupine (*Erethizon dorsatum*), and several species of ground squirrels (*Citellus* spp.). Predators include red fox (*Vulpes fulva*), river otter (*Lutra canadensis*), coyote (*Canis latrans*), grizzly bear (*Ursus chelan*),

black bear (*Euarctos americanus*), and mountain lion (*Felis concolor*). Several other species may have been present in the region in the past such as wolves (*Canis lupus*) and even the occasional bison (*Bison bison*) (Burt and Grossenheider 1961; Ingles 1965, Schroedl 1973).

Many types of fowl were also prevalent including: Swarth blue grouse (*Dendragapus obscurus pallidus*), Columbian ruffed grouse (*Bonasa umbellus affinis*), Columbian sharp-tailed grouse (*Pedioecetes phasianellus*), western sage grouse *(Centrocercus urophasianus phaios*), mallard duck (*Anas platyrhynchos platyrhynchos*), western harlequin duck (*Histrionicus histrionicus pacificus*), American common merganser *(Mergus merganser americanus*), the lesser snow goose (*Chen 5imian5ite5 5imian5ite5*), and the Great Basin Canada goose (*Branta canadensis moffitti*). Seasonal birds such as Gadwall (*Anas strepera*), wood duck (*Aix sponsa*), redhead (*Aythya americana*), and the northern ruddy duck (*Oxjura jamaicensis rubida*) resided in the region during summer. Winter game birds of the region include canvasback (*Aythya valisineria*) and American greater scaup *(Aythya marila nearctica*) (Lothson 1977).

According to Lothson (1977), several species of fish were available in the region (especially along the major river and stream drainages) such as: sturgeon (*Acipenser*), whitefish (*Prosopium*), suckers (*Pantosteus, Catostomus*), bullheads (*Cottus*) and anadromous fish such as salmon (*Oncorhynchus* spp.) and steelhead (*Salmo gairdnerii*). Ray (1942) noted that many of the fauna identified above were integrated into Native American lifeways in the region and continue to be essential for flourishing.

Vegetation in the immediate area falls within the *Pseudotsuga menziesii* vegetation zone, typically occurring between elevations of 1,800 and 3,950 feet (ft) (600 and 1,300 meters [m]) AMSL (Franklin and Dyrness 1973). The native overstory includes Douglas fir (*Pseudotsuga menziesii*), ponderosa pine (*Pinus ponderosa*), lodgepole pine (*Pinus contorta*) and western larch (*Larix occidentalis*). Understory typically consists of low shrubs, including snowberry (*Symphoricarpos albus*), oceanspray (*Holodiscus* spp.), currant (*Ribes* spp.), and various species of rose (*Rosa* spp.) (Franklin and Dyrness 1973). Brown (1982) also notes that arrowleaf balsamroot (*Balsamorhiza 5imian5it*), bluebunch wheatgrass (*Agropyron spicatum*), common yarrow (*Achillea millefolium*), kinnikinnick (*Arctostaphylos uva]ursi*), Idaho fescue (*Festuca idahoensis*), pinegrass (*Calamagrostis rubescens*), prairie junegrass (*Koeleria macrantha*), strawberry (*Fragaria* spp.), and treetip sagebrush (*Artemisia 5imian5ite*) are commonly associated with the soils within the Project Area. Many of these plants have been incorporated by Native American peoples as medicine, food, and other applications.

The climate in the Columbia Basin was cool and moist at the end of the last glacial period. Climatic conditions gradually became warmer and dryer by approximately 9,000 years before present (B.P.). The warm and dry climatic trend reached its peak around 6,500 B.P. Conditions subsequently reverted to a cooler and moister regime (Fryxell and Daugherty 1962). The present climate is comparably arid with mild moist winters and hot dry summers (Meinig 1968). The mean seasonal temperatures recorded at the Spokane weather station (#457933) between 1953 and

1983 are 39.3°Fahrenheit (F) in winter and 59.8°F in the summer. Extreme temperatures of 23.9°F and 85.8°F have been recorded at the same station. Yearly precipitation averages 17.62 inches (Western Regional Climate Center 2023).

REGIONAL PRECONTACT BACKGROUND

The Project Area is included in the Plateau culture area, which corresponds roughly to the geographic region drained by the Fraser, Columbia, and Snake Rivers. The Plateau culture area is bordered on the west by the Cascade Mountains and on the east by the Rocky Mountains. The northern border of the culture area is in Canada where it gives way to Arctic culture patterns. The southern border of the Plateau culture area mixes gradually with the Great Basin culture area (Walker 1998:1–3).

A cultural chronology provides a timeline describing the adaptation, material culture, subsistence, and sometimes settlement patterns of the people who inhabit a specific area. A culture chronology for the Eastern Plateau was compiled by Roll and Hackenberger (1998), which covers the 9,000 years of human occupation within the area created by the drainage systems of the Kootenai, Pend Oreille, Spokane, Clearwater, and Salmon Rivers. While variation is exhibited between the drainages (specifically the Salmon and Clearwater which support anadromous fish populations, and the Kootenai, Pend Oreille, and Spokane [above Spokane Falls] which do not contain anadromous fish species) three overarching phases were defined for the Eastern Plateau as a whole: the Early Prehistoric (6,000 to 3,000 B.P.), the Middle Prehistoric (3,000 to 1,500 B.P.), and the Late Prehistoric (1,500 to 200 B.P.). The culture chronology of the Eastern Plateau has been discussed at length In Roll and Hackenberger (1998), and, if pertinent, will be discussed further within the results of this report.

Ethnography

Ethnographic sources that depict the geographic distribution of Native American traditional territories provide a general guide for identifying the range of occupation for Indigenous groups in the precontact and historic eras. However, these boundaries are oversimplified and should not be viewed as rigid considering that they are arbitrarily defined, with sharp lines that neither depict joint or disputed occupations nor historical changes in range distributions prior to and after the early- to mid-19th century (Walker, ed. 1998:viii). While these ethnographic sources provide a baseline for recognizing the ancestral homes of the groups that originally occupied the Project Area, it is important to recognize the variability in the geographic distribution of groups on the Plateau and the broader relationships between people and place that make these boundaries permeable (see Thom 2009:179). According to the DAHP, the Project Area is in an "area of interest" for the the Spokane Tribe of Indians, the Coeur ''Alene Tribe of Indians, and the Confederated Tribes of the Colville Reservation. (DAHP 2023).

The Project Area falls within the traditional territories of the Spokane and Coeur d'Alene tribes.

Spokane The Project Area falls within lands traditionally occupied by the Spokane Indians, speakers of a dialect of Interior Salish, a language shared with neighboring Coeur d'Alene, Kalispel, Pend d'Oreille, and Flathead groups (Ross 1998). Three bands of Spokane lived in eastern Washington—Lower Spokane, with a principal settlement near Little Falls; Middle Spokane, occupying Hangman or Latah Creek; and Upper Spokane, who lived along the Little Spokane River and upriver from the junction of Hangman Creek. Ross (1998:271) notes that the Middle and Upper Spokane considered themselves "all one people," and distinguished themselves from the Lower Spokane. Traditional Coeur d'Alene territory extended over the drainage and headwaters of the Spokane River (Palmer 1998).

Traditionally, food procurement activities and the establishment of villages followed a seasonal pattern. Winter habitation sites were occupied during the coldest months of the year, and likely were in place by mid- to late-October. In the subsequent four to five months, stored foods and game were the primary sources of food. In early spring, when winter supplies began to dwindle, people began making forays to gather emergent root crops (Nelson 1973). Spring, summer, and fall root and berry gathering, as well as hunting and resource processing, took place at areas away from winter villages. Task groups often went to specific areas to hunt, to quarry tool stone, to collect berries, or to gather other resources such as tules to make mats (Aikens 1993:90). The predictability of salmon runs provided a valuable resource for immediate and stored use (Schalk 1977). By the end of summer, reserves of dried salmon and prepared roots were stocked for the winter.

Ethnographically, the Spokane lived in three types of settlements: permanent winter villages, temporary summer and fall villages, and task-specific summer encampments for hunting, plant gathering, and mineral and lithic exploitation (Ross 1998:272). Winter villages, located along the Spokane River, included hunting grounds, resource gathering areas, burial grounds, and sacred sites. Conical semi-subterranean pit houses were constructed for winter villages using poles covered with layers of tule mats or a permanent double-apsidal lodge with an inverted V pole construction covered with tule mats. Summer fishing villages supported relatively large polyglot populations that came together to fish, trade, and entertain. Temporary villages were comprised of many families and were located in seasonal resource areas. Smaller temporary tule mat structures were used in summer villages and encampments (Ross 1998).

For the Spokane, fishing commenced in May at several major fisheries along the Spokane River (Ross 1998). Set nets, traps, leisters, harpoons, hooks, gaffs, and dip nets were used. In sections of narrow streams, crushed granite was used to line stream beds to afford better visibility. In the winter, the Spokane used snowshoes, toboggans, and frozen animal hides to transport heavy loads. The introduction of the horse in the mid-eighteenth century greatly increased their mobility and changed their socioeconomic patterns. Now they were able to travel greater distances and carry heavier loads, as well as having contact with remote Native American cultures.

Coeur d'Alene The Project Area lies within the traditional territory of the Coeur d'Alene people. The Coeur d'Alene call themselves the *Schitsu'umsh*, translated "The Discovered People" or "those who are found here" (Coeur d'Alene 2010). The nickname, Coeur d'Alene, was generated by the local French fur traders and was applied to Chief Stellum, delineating his harsh bartering methods as having a "Heart of an Awl" (Coeur d'Alene 2010; Stevens 1955).

Traditional Coeur d'Alene territory included four million acres of rolling Palouse prairie, foothills, mountains, and valleys (Frey 2001:7). Frey's (2001:7) Coeur d'Alene ethnography delineates western boundaries, as sanctioned by Coeur d'Alene Tribal Council, as beginning at the Spokane River continuing south along Hangman (Latah) Creek and Pine Creek drainages, to Steptoe Butte, Washington.

The Coeur d'Alene are grouped into three divisions; Spokane River and Lake Coeur d'Alene division (17 villages), the Coeur d'Alene River division (12 villages), and the St. Joe River division (nine villages) (Palmer 1998:313). Ray (1936:130–133) lists 34 villages within Coeur d'Alene territory. Boas and Teit (1930) list a total of 33 villages: six villages along the St. Joe River, 11 villages along the Coeur d'Alene River, and 16 villages along the Spokane River—Lake Coeur d'Alene.

Hunting, fishing, and gathering were practiced, and productivity was maximized through various land management practices such as burning, pruning, harvest timing, and access regulation by bands. Late summer was spent in upstream meadows of the Coeur d'Alene, St. Joe, and Palouse river drainages digging camas. Fall was spent huckleberry picking, hunting, and fishing in the uplands. During winter, people congregated in the lowlands for hunting, fish trapping, and ice fishing (Palmer 1998:315).

Sprague (2005:41) notes that the Coeur d'Alene had the greatest variety of watercraft of any Plateau group. Ethnographic accounts recognized several types of bark-covered canoes, including the flat keel sturgeon nose, curved keel sturgeon nose, and the Kalispel variant of the sturgeon-nose; the Kutenai "Eastern" type elk hide canoe; dugout canoe; tule rafts; and bull boats. Watercraft were used for basic transportation, fishing, hunting, and gathering resources such as the water potato (*Sagittaria latifolia*), which grows in soft mud underwater. Canoes were used in fun pastimes, such as canoe racing and tipping, which in turn strengthened "canoe fighting" (warfare) skills (Sprague 2005:52). The importance of the canoe is emphasized in death as it is pounded on to announce a death, much like a church bell. Fragments of canoes were used as burial markers, and the canoe makes an appearance in religion and legends—most notable is the star constellation called "the canoe" (Sprague 2005:53).

Following the introduction of the horse on the Plateau, the Coeur d'Alene actively sought to acquire many of the animals (Cebula 2003:28). Herds of horses soon became symbols of wealth and status; they eased communication, and enabled transport to and from far distant buffalo hunting grounds, leading to absence during the late fall and early spring months (Palmer

1998:315). Eventually the open prairies of the Palouse became far more suitable than the forested reaches of Lake Coeur d'Alene for equestrian life (Cebula 2003:30). Over time, horse rearing centered on the Hangman and Palouse river regions (Frey 2001:53).

The smallpox epidemic seems to have appeared among the Coeur d'Alene in 1780 when they were reported to have a population of 3,000–4,000. The population was ravished by the epidemic, and by 1853 the Tribe reportedly numbered 320 people. By 1905 the population had steadily climbed to 494 individuals. Currently Tribal enrollment totals 1,922 people (Coeur d'Alene 2010).

Chief Circling Raven's prophecy of black robes carrying sticks was realized when the Coeur d'Alene heard of the Jesuit Priests. In 1842 Pierre Jean de Smet came to the area, and in November Father Nicolas Point was sent to introduce Catholicism and begin the Sacred Heart Mission. The mission was first located along the St. Joe River, then moved north to Cataldo in 1850 where the structure built by Father Anthony Ravalli and the Coeur d'Alene still stands (Frey 2001:65). In 1877 the mission was located too close to the Mullan Road (running from Fort Walla Walla to Fort Benton, Missouri), and so was relocated near DeSmet amongst the prairies suitable for agriculture (Palmer 1998:322).

Cebula (2003:108) states the Jesuit priests aimed to convert Coeur d'Alene shaman as they had great ability in influencing tribal members. Coeur d'Alene Catholic converts visited various shaman's lodges speaking persuasion. Many Coeur d'Alene, such as Chief Peter Moctelme, followed the advice of the Catholic Fathers to farm, accruing large expanses of cultivated land that would later be taken away in 1905 and 1906 with the Dawes Allotment Act of 1891 (Ruby and Brown 1981:268).

The Executive Order of 1873, signed by President Ulysses S. Grant, began a series of land relinquishments by the Coeur d'Alene. Reservation boundaries were delineated as 590,000 acres. An 1891 act further reduced sovereign lands to 400,000 acres. In 1894, the federal government reimbursed the Coeur d'Alene Tribe $15,000 for a one-mile strip of land east of Lake Coeur d'Alene, where squatters had formed the town of Harrison. The Allotment Act of 1910 again reduced land ownership to some 104,000 acres. In 1908 and 1911, the Coeur d'Alene residents of southern Lake Coeur d'Alene were evicted, and the $11,000 compensation was used by the state to develop Heyburn State Park. Currently 70,000 acres are owned by the Tribe and Tribal members, within a reservation boundary of some 345,000 acres of sovereign land inclusive of the town centers of Benewah, DeSmet, Plummer, Sanders, Tensed, and Worley (Coeur d'Alene 2010).

While ethnographies such as those referenced above provide a useful means of understanding the traditional lifeways of Indigenous peoples, it is important to remember that Indigenous groups were, and continue to be, markedly complex, dynamic, and diverse. Uncritical applications of the ethnographic record to representations of past lifeways have the potential to produce reductionist views of tribes and bands that portray them as homogenous or static. The above depictions of the Spokane and Coeur d'Alene peoples serve as generalized portrayals of the traditional lives of these groups and should be viewed in light of these complexities.

Places of Cultural Significance

Traditional Cultural Places (TCPs) are important for the "role the property plays in a community's historically rooted beliefs, customs and practices" as stated in the *National Register Bulletin 38* (U.S. Department of the Interior 1990). Although these places can be difficult to identify and evaluate form an etic perspective, an initial search of pertinent publications can be helpful toward identifying the types of properties that may be expected. The *National Register Bulletin 38* goes on to state that "examples of properties possessing such significance include:

- a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world;
- a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents;
- an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices;
- a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and
- a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historic identity."

A review of ethnographies was undertaken to help identify any known TCPs within or near the Project Area. The works Angelo Anastasio (1972), William Bischoff (1974), Franz Boas and James Teit (1930), Stuart Chalfant and William Bischoff (1974), Joseph Feathers (1971), Rodney Frey (1995; 2001), Jay Miller (1998), Gary Palmer (1998), Jerome Peltier (1979), Verne F. Ray (1933; 1936; 1939; 1942), Gladys Reichard (1947), John Ross (1998), Robert Ruby and John Brown (1970, 1986), Robert Ruby, John Brown, and Cary Collins (2010), Joseph Seltice (1949), Mary Eldonna Shaw (1971), Allan Smith (1988), Leslie Spier (1936), Michael Striker (1995), and Deward Walker, Jr. (1978; 1980) were consulted. Palmer (1998), Ray (1936), and Ross (1998) identified 11 ethnographic locations within 8.0 mi (12.9 km) of the Project Area (Figure 3, Table 2,).

Numerous collections of published legends were consulted to identify points of legendary significance near the Project Area. These include publications by Franz Boas (1917), Franz Boas and James Teit (1930), Ella Clark (1969), Richard Erdoes and Alfonso Ortiz (1984), Rodney Frey (1995, 2001), Verne Ray (1933), Gladys Reichard (1947), M. Terry Thompson and Steven Egesdal (2008), and Deward Walker, Jr. (1980).

As narratives are living, highly functional cultural traditions, they can serve particular or varied motifs. For instance, a single story may be told in different ways in order to serve an intended purpose, such as the transmission of traditional ecological knowledge, to emphasize a moral imperative, or to explain the unexplainable. As such, the narratives identified here are not detailed, rather accounts of documented legends. For closer examination one is encouraged to seek a more nuanced understanding of the traditions through the Tribes.

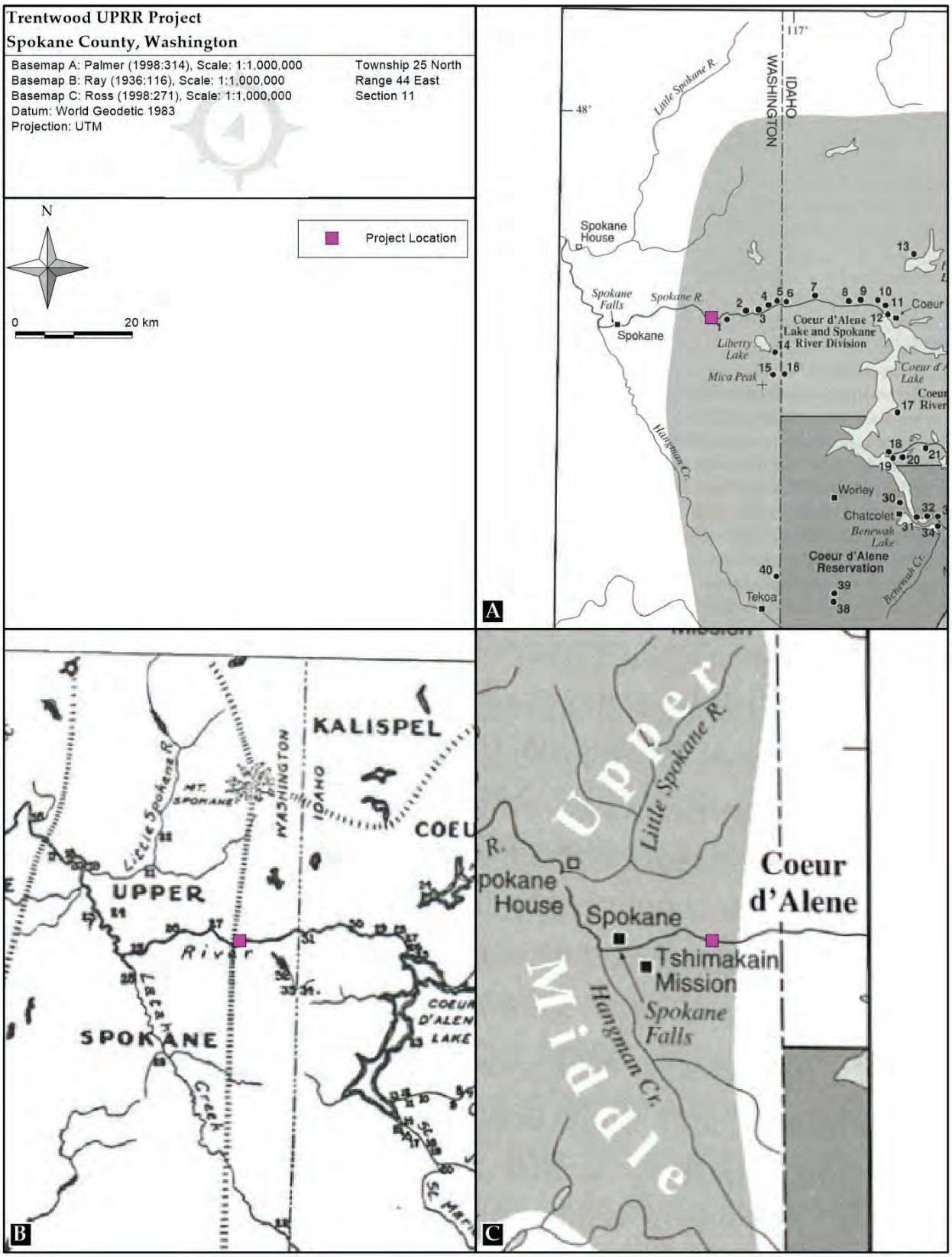

Figure 3. The Project Area shown in relation to ethnographic locations.

Table 2. Ethnographic Locations near the Project Area.

Traditional Name	Translation	Details
čatənwáχi?tpəm	"flat by dogwoods"	This village is located 2.0 mi (3.2 km) east of the Project Area (Palmer 1998:314).
sqami'n'	not available	The small winter camp was located along the north side of the Spokane River, 3.0 mi (4.8 km) northwest of the Project Area (Ray 1936:136).
neslíχum	not available	This village is located 4.0 mi (6.4 km) east of the Project Area (Palmer 1998:314).
nesxwáxwe	not available	This village is located 5.0 mi (8.0 km) east of the Project Area (Palmer 1998:314).
ntsetsakwolsákwo	not available	This village is located 6.0 mi (9.7 km) east of the Project Area (Palmer 1998:314).
mu'lc	"cottonwood"	This camp was located at the southern end of Liberty Lake, near a swamp. The camp was recorded to be home to about 30 people and lies 6.0 mi (9.7 km) southeast of the Project Area. (Ray 1936:132)
simina'tculks	"place where many crows are found"	This fall and winter village was located on the north side of the Spokane River, near the neighborhood of Hillyard, 6.0 mi (9.7 km) west of the Project Area. The village was an important location for fishing, hunting, and grazing (Ray 1936:136).
neʔəwáshalqs	not available	This village is located 8.0 mi (12.9 km) east of the Project Area (Palmer 1998:314).
múlš	"cottonwood"	This village is located 8.0 mi (12.9 km) southeast of the Project Area (Palmer 1998:314).
ntsaqe'łpanc	"fir on the banks"	This camp was a large permanent Coeur d'Alene village along the Spokane River located 8.0 mi (12.9 km) west of the Project Area.(Ray 1936:132)
Tshimakain Mission		This Christian mission is located 8.0 mi (12.9 km) southeast of the Project Area (Ross 1998: 271).

Ray (1933:183–184) notes a Sanpoil tale near Davenport. The tale involved Kapu' collecting his horses around Davenport. As he started north toward home, he saw a roaring fire at the end of a canyon before his horses were spooked by the ghost of a crazed Spokane woman who once lived in a winter camp site in that location. The camp site was abandoned after an earthquake, circa 1874.

Clark (1969:116–117) relates *The Origin of the Spokane River*. It is said that the Spokane lived in terror of a huge monster that consumed all the fish and wildlife, was so strong as to uproot large trees with a single swipe of his hand, and no hunter could kill him. A Spokane girl was collecting berries near the location where the Spokane River now spills into the Columbia River. She came upon the monster sleeping on a hillside. She ran to alert her village and soon the people had the

sleeping monster tied up and were beating him. The monster awoke angry, broke through his bindings, and ran eastward toward Lake Coeur d'Alene. As he did, he cut the channel of the Spokane River, and when he reached the lake, the water rushed through this channel and into the Columbia River.

In the legend of Salmon up Hangman Creek, Coyote requested the hand of the Coeur d'Alene chief's beautiful daughter. Having been denied, Coyote responded by blocking the movement of salmon into Lake Coeur d'Alene by creating Post Falls and Spokane Falls (Frey 2001:120–122). In the legend of Coyote and the Salmon, Coyote brings salmon to the rivers in Nez Perce and Colville country. When Coyote asks the villages alongside Lake Coeur d'Alene, the St. Joe River, and Liberty Lake for a wife he is denied. Each time Coyote is denied he tells the salmon to stay away (Frey 2001:123–124).

It should be noted that TCPs, place names, and landscape narratives are highly sensitive and often sacred. Native American traditional knowledge and landscape narratives are extensive within their traditional territories, which extend well-beyond current reservation boundaries and include the Project Area. Due to the significance of TCPs, as well as their esoteric and sacred importance, and out of genuine and reasonable concern for their safety, tribes often do not share information regarding TCPs, and published materials often do not reveal locations of sensitive properties or narratives. If further review of TCPs is required, it is recommended that one consult with the tribes directly.

REGIONAL HISTORIC BACKGROUND

Contact with peoples on the west coast of the continent was well established by the end of the eighteenth century by British, Spanish, and Russian trading vessels that made regular visits to the coastline. These trading expeditions began the first contact between aboriginal groups and outside cultures. Written historic accounts of the area, though, really begin when Lewis and Clark journeyed through the region in 1805.

In 1809, Oregon Territory saw an influx of trappers and fur traders, beginning with the Canadian-owned North West Company as they made their way into the region and built Spokane House in 1810, located near the confluence of the Spokane River and Hangman Creek. Spokane House became the first permanent European settlement in the State of Washington (McCart and McCart 2000:213). For a time, Spokane House thrived as both a trading center and a gathering place for fur traders. Despite its successes, Spokane House was abandoned in 1816. By that time, trading routes had shifted largely to the Columbia River, leaving the Spokane House no longer logistically or economically important (Meinig 1968). In 1825, the Hudson's Bay Company closed Spokane House and moved its local operations north to Fort Colville at Kettle Falls.

Subsequent to the opening of the Oregon Trail in 1840, Euroamerican settlers flooded the area, bringing trade, religion and disease into Native-occupied areas. In 1846, the United States took control of the Oregon territory in the Oregon Treaty. With increasing population and economic

and political pressures of immigrants and the Whitman massacre, the Territory of Oregon (Oregon Territory) was officially established in 1848. By 1850, nearly 12,000 immigrants had passed through the Plateau region along the Oregon Trail (Beckham 1998; Walker and Sprague 1998). With the establishment of the Oregon Territory in 1848 and Washington Territory in 1853, federal involvement proliferated. Treaties between Native tribes and the new state and federal governments were soon underway.

Washington Governor Isaac Stevens, also appointed as Superintendent of Indian Affairs by President Pierce, worked jointly with Joel Palmer, Superintendent of Indian Affairs in Oregon, to negotiate a series of treaties between 1854 and 1855. These treaties were difficult to maintain in light of the Chinook jargon used in negotiations, rapid influx of miners following the several "rushes," and settlers who were eager for property. Almost immediately after signing the Walla Walla Council Treaty of 1855, gold was discovered on several promised reservations in the Plateau, and miners began to confiscate the mineral-rich lands. The introduction of disease, treaty violations, and other stresses introduced by the new settlers caused mistrust and eventually, warfare. Several battles took place in the area between 1855 and 1858 during the Plateau Indian War.

Of these was the Battle of Pine Creek, also known as the Battle of Tohotonimme, near modern day Steptoe Butte. In 1858, Colonel Edward J. Steptoe and 160 troops marched towards Fort Colville after learning of clashes between Native Americans and Euroamerican settlers. Steptoe and his troops invaded Coeur d'Alene and Spokane territory, resulting in a battle at Tehotomimme (Steptoe Butte) on May 17th. The troops were defeated, and Steptoe retreated the following day. As a result of this loss, Colonel George Wright marched troops from Fort Dalles to the area and defeated the tribes, burned grain fields, destroyed stored foods, and butchered over 900 head of horses. These actions ended conflict between Native American groups and Euroamerican settlers in the region. (Beckham 1998: 154).

Major smallpox epidemics in 1846 and between 1852–1853 severely impacted the Spokane population. In 1881, 154,602 acres of land were established as the Spokane Reservation with an additional 2,000 acres restored to tribal ownership in 1958 (Lahren 1998: 494). A decrease in land meant a decrease in food resources. The installation of dams beginning in 1911 at Little Falls prevented salmon, a major food source, from coming upstream. Non-Native American settlement, disease, and other factors have taken a toll on the Spokane population, and it was not until the mid-1920s that the population began to see a growth.

Spokane County

Spokane County was formed on January 29, 1858, annexed by Stevens County on January 19, 1864, and re-created on October 30, 1879. Adjacent counties are Pend Oreille County to the north, Bonner County (Idaho) to the northeast, Kootenai County (Idaho) to the east, Benewah County (Idaho) to the southeast, Whitman County to the south, Lincoln County to the west, and Stevens County to the northwest. Spokane County is the most populous county in eastern Washington and home to the second largest city (Spokane) in the state. After settlement in the 1870s, Spokane

became the hub for the mining, timber, and railroad industries of the Inland Northwest. In the surrounding areas, sheep/cattle ranching and especially wheat farming became important; some of these industries are still important today (Colford 2006).

The fire of 1889, literally destroyed a great portion of downtown Spokane, leaving no real services to the community. Slowly, tents started popping up, supplying everything from liquor to household items. Soon, construction began on more permanent, brick and stone structures, many of which are still standing today. Between 1907 and 1918, the city was booming, primarily with the rapid rise of the extractive industries, such as mining and lumber, as well as the citie'' infrastructure (Arksey 2006). Bridging the Spokane river was always a challenge. Starting with flimsy, wooden structures, then graduating to steel, the construction of a more durable, permanent span was desperately needed…enter the steel reinforced concrete arch. Between 1907 and 1915, no fewer than ten such spans were erected over the Spokane, some still in use today (Creighton 2013; Stratton 2005).

Beyond the city limits, agriculture, and other such related industries were operating full bore. With the evolution of mechanized farming, and increase of farmable acreage, most especially with the farming of dryland wheat, more wheat would be planted throughout the county. By 1925, the formation of the Caterpillar Company from the combined interests of Danial Best and Oliver Holt, revolutionized farming in the Northwest and beyond (Creighton 1996).

Though railroading, mining, lumber, and other related industries created a robust economy, by the 1920s and 1930s, this was no longer the case. Although farming was and still is a major force in Spokane County, within the city of Spokane a trend in healthcare, education, publishing, manufacturing, and in some cases, the high-tech industries have built up the economy. Spokane has always been a major convention city (at one time it was the smallest city to host a world's fair, EXPO 74), and with the recently completed downtown convention center, the entertainment sector has greatly evolved, hosting national ice skating and regional sports venues.

With a population of 523,000, Spokane County continues to thrive. As of 2021, the City of Spokane has become a top destination for living, as well as a hub for expanded national business enterprises.

Cartographic Analysis of the Project Area

The Project Area is located in the NE¼ SE¼ of Section 11 of Township 25 North, Range 44 East. The 1878 cadastral map (McMicken) shows no built environment intersecting with, or adjacent to the Project Area. The Spokane River is shown on the map, southwest of the Project Area. There is a road depicted south of the Spokane River and the Project Area. This road connects to the river (Figure 4A).

According to the 1901 Spokane USGS topographic map, there are two structures to the southeast of the Project Area. The Spokane River is to the west of the Project Area, but it is now depicted as intersecting with the Project Area (Figure 4B).

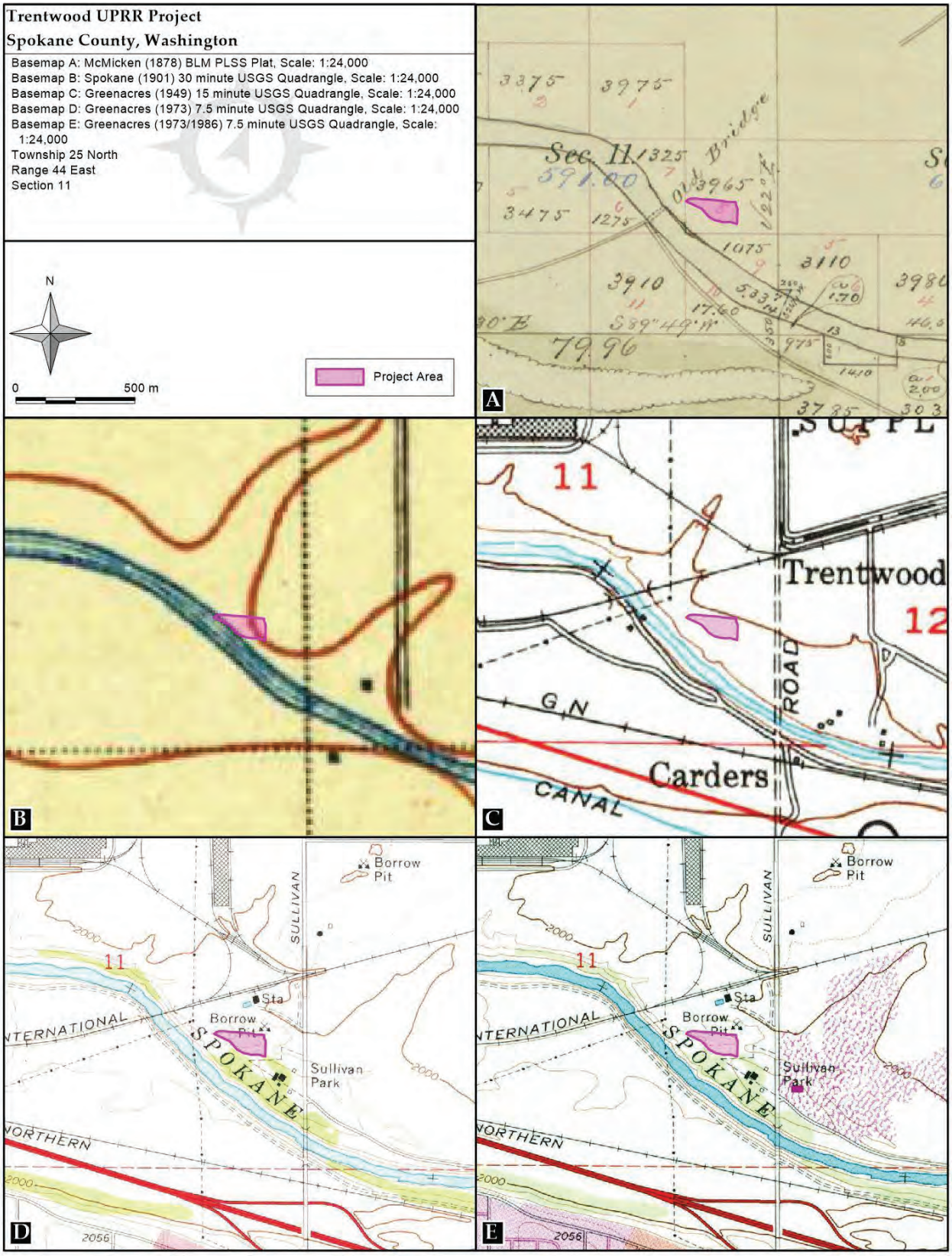

Figure 4. The Project Area shown on selected historic maps.

According to the 1949 Greenacres USGS topographic map there is more built environment in the vicinity of the Project Area compared to the previous map. Depicted are a road to the east, a railroad to the north, a highway to the south, and a trail to the northwest of the Project Area. There are new structures visible to the west, and the same structures shown to the southeast when compared to the 1901 Spokane USGS map. The Spokane River is still depicted to the west but is no longer intersecting with the Project Area (Figure 4C).

According to the 1973 Greenacres USGS topographic map, there has been little change from the previous map. The trail to the northwest now crosses the river in two places rather than one, and there is large structure visible to the north of the Project Area (Figure 4D).

The 1973/1986 Greenacres USGS topographic map shows the same features and built environment as the previous map (Figure 4E).

PREVIOUS ARCHAEOLOGY

A review of previously recorded cultural resources and archaeological surveys was completed through the WISAARD on June 6, 2023. The review covered areas within Sections 01, 02, 03, 10, 11, 12, 13, 14 and 15 of Township 25 North, Range 44 East.

There have been 20 previously conducted cultural resource surveys within 1.0 mi (1.6 km) of the Project Area (Table 3). None of these surveys intersect with the Project Area. Three of these surveys yielded newly recorded cultural resources (Gilpin and Tarman 2013, Marino and Harder 2016, Schwab and Schwab 2014).

Table 3. Previously Conducted Cultural Resource Surveys within 1.0 mi of the Project Area.

Author	Project	Distance from P/A	Results
Aymond, Burk-Hise 2020	Mirabeau Point Senior Living Facility	0–0.25 mi W	Negative
Buehner, Fisher 2013	New Antennas on Water Tank	0.75–1.0 mi SW	Negative
Corley 2017	Greenacres Ranch	0.75–1.0 mi E	Negative
Dampf, Schultze 2021	Nest Subdivision Project	0.75–1.0 mi E	Negative
Gilpin, Tarman 2013	Kaiser Trentwood Works	0.5–0.75 mi NW	45SP718, 45SP720
Hannum 2010	South Green Acres Sewer Monitoring	0.75–1.0 mi E	Negative
Harder, Hannum 2010	South Green Acres Sewer	0.75–1.0 mi E	Negative
Harder, Hannum 2012	Sullivan Bridge Drain	0–0.25 mi E	Negative
Holstine 1998	Evergreen Road Interchange	0.25–0.5 mi S	Historic-era irrigation features
Larson, Axton 2011	Argonne Road to Sullivan Road	0.25–0.5 mi SE	Negative

Table 3. Previously Conducted Cultural Resource Surveys within 1.0 mi of the Project Area (continued).

Author	Project	Distance from P/A	Results
Luttrell 1998	Sidewalk-Bicycle Path	0–0.25 mi E	Basalt rock estate entry
Marino, Harder 2016	Flora Pit Sewer Extension	0–0.25 mi E	45SP784
McClintock, Mendez, Sheldon, Price 2012	Sullivan Road Bridge	0–0.25 mi E	Negative
Oliver, Schmidt 2010	Vera Tap-Trentwood Valley	0–0.25 mi W	Negative
Pouley 2001	Ubiquitel Collocation Antenna	0.75–1.0 mi SW	Negative
Schwab, Schwab 2014	Bonneville Power Administration Transmission Line	0–0.25 mi W	45SP738
Teoh 2014	Trentwood Radio Replacement	0.75–1.0 mi N	Negative
Teoh 2015	2015 Bell District Project	0.75–1.0 mi N	Negative
Walker, Regan 1999	South Valley Corridor	0.25–0.5 mi SE	Negative
Weaver 2009	I-90 Sullivan Road Interchange	0.25–0.5 mi SE	Negative

The review revealed 17 cultural resources within 1.0 mi (1.6 km) of the Project Area (Table 4).

Table 4. Previously Recorded Cultural Resources within 1.0 mi of the Project Area.

Site Number	Site Type	Recorder(s)	Distance from P/A	Eligibility
45SP229	Pre Contact Cairn	Wyss (1989)	0.25-0.5 mi S	Undetermined
45SP230	Historic Hydroelectric	Wyss (1989)	0-0.25 mi S	Potentially Eligible
45SP231	Historic Railroad Properties	Wyss (1989)	0.25-0.5 mi W	Not Eligible
45SP232	Pre Contact Cairn	Wyss (1989)	0.5-0.75 mi W	Undetermined
45SP233	Pre Contact Camp	Wyss (1989)	0.75-1.0 mi NW	Eligible
45SP239	Pre Contact Camp	Wyss (1989)	0.75-1.0 mi SE	Eligible
45SP240	Pre Contact Camp	Wyss (1989)	0.25-0.5 mi S	Undetermined
45SP242	Pre Contact Camp	Wyss (1989)	0-0.25 mi W	Not Eligible
45SP669	Historic Isolate	Oliver (2010)	0-0.25 mi W	Undetermined
45SP670	Historic Isolate	Oliver (2010)	0-0.25 mi W	Undetermined
45SP718	Historic Bridges	Gilpin, Dampf (2013)	0.5-0.75 mi W	Not Eligible
45SP720	Pre Contact Cairn	Gilpin, Dampf (2013)	0.5-0.75 mi W	Undetermined
45SP738	Historic Structure	Schwab (2014)	0-0.25 mi W	Potentially Eligible

Table 4. Previously Recorded Cultural Resources within 1.0 mi of the Project Area (continued).

Site Number	Site Type	Recorder(s)	Distance from P/A	Eligibility
45SP784	Historic Debris Scatter/Concentration	Marino (2016)	0.5-0.75 mi E	Potentially Eligible
45SP786	Historic Debris Scatter/Concentration	Marino (2016)	0.5-0.75 mi SE	Potentially Eligible
45SP903	Historic Railroad Properties	Fitzpatrick (2021)	0.5-0.75 mi S	Undetermined
45SP936	(no report available)	Marino (2021)	0-0.25 mi NE	Not Eligible

Site 45SP738, was originally recorded in 2014 (Schwab 2014). This site is a historic structure near the Spokane River, located in Spokane Valley, Washington. The site lies roughly 0–0.25 mi (0–0.4 km) west of the Project Area. The site was evaluated and determined Potentially Eligible for inclusion on the NRHP (Schwab 2014).

Site 45SP670, was originally recorded in 2010 (DAHP 2010). This site is a historic isolate recovered near the Spokane River in Spokane Valley, Washington. The site lies 0–0.25 mi (0–0.40 km) northwest of the Project Area. Eligibility for this site to be included on the NRHP is Undetermined (DAHP 2010).

One HPI has been inventoried or derived from the Spokane County Assessor's records within 1.0 mi (1.6 km) of the Project Area and is located 0–0.25 mi (0–0.40 km) north of the Project Area.

The Spokane International Railway, designated 48419, is in Spokane Valley, Washington. The railroad was originally constructed in 1906. This railroad connected Spokane to border towns in Canada as well as larger railroads throughout the United States. The property has been determined to be Eligible for inclusion on the NRHP due to its significance in connecting Spokane to the rest of the Pacific Northwest (ENTRIX, Inc., 2005 and Gorman, 2020).

FIELD METHODS

Fieldwork was completed in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716, September 29, 1983) and under the supervision of Principal Investigator, David Harder. Over the course of two days from March 16, 2023, to March 17, 2023, all excavations within the Project Area were monitored by a Plateau CRM archaeologist.

Graymar Environmental of Moses Lake, Washington performed all excavation for the project using a Link-Belt 201x4 excavator equipped with a digging bucket with a capacity of 1.75 cubic meters (m^3) (2.29 cubic yards [yd^3]). Generally, the crew was busy on site from 6:30 a.m. to 5 p.m. and all ground disturbing activities were monitored by a Plateau CRM archaeologist during that time. During mechanical excavations, the archaeologist, outfitted with a high-visibility safety vest, a hard hat, eye protection, and gloves observed from a safe position that allowed for the best possible view of the excavated area.

The archaeologist screened spoils left outside of the trench, a safe distance from the excavator. Spoils were screened through ¼ inch wire mesh. Sediment characteristics (color, composition, and degree of compaction noted) were described by visual inspection of soil profiles in the trench walls.

All location data (control points, daily start and end points, cultural materials) were recorded with a handheld GPS unit, and the archaeologists took representative photographs of the Project Area, excavation trench, excavation equipment, and cultural materials. Monitoring log forms were filled out daily, and included such information as weather, time on site, construction equipment used, trench size, sediment characteristic, observed cultural materials, GPS points and photographs taken.

PROJECT RESULTS

Plateau CRM archaeologist Justin Fitzpatrick monitored excavations on March 16–17, 2023 (Figure 5). Soils observed throughout the Project Area were described as sandy loam with 70% coarse to fine gravel and cobbles. Observed soils were like those predicted by the NRCS soil model but were recorded as containing a higher percentage of sand. Plastics and modern debris were seen mixed in with the soil during survey of the area.

On January 25, 2023, Plateau CRM archaeologists Samantha Fulgham and Emily Whistler conducted a pedestrian survey over the Project Area. They spent an hour walking the area and observing spoils piles. Disturbance was noted on top of the hill and approximately 10 fragments of white porcelain and 15 fragments of glass with no maker's marks or any datable signatures were observed. The glass fragments had no sign of patina, which would be expected of historic glass. No items observed indicated a significant cultural signature. Fulgham and Whistler noted that the area was heavily disturbed with plastic and other modern debris.

Figure 5. The Project Area inventoried on an aerial photograph.

March 16, 2023 Fitzpatrick was on site to monitor the excavation of a trench, three soil test pits, and a pit (Figure 6). The trench measured approximately 75 ft x 8.0 ft x 3 ft (23 m x 2.4 m x 0.9 m). The soil observed in the trench was brown (10YR2/2) silty loam with 70% coarse to fine gravel and cobbles. The three soil test pits respectively measured 0.75 ft (0.22 m) in diameter by 1 ft (0.3 m) deep; 0.75 ft (0.22 m) in diameter by 0.83 ft (0.25 m) deep; and 0.75 ft (0.22 m) in diameter by 0.92 ft (0.28 m) deep. The pit measured 60 ft x 29 ft x 3 ft (18 m x 8.8 m x 0.9 m). The soil throughout the pit and test pits was brown (10YR2/2) silty loam to sandy loam with 20%–70% coarse to fine gravel and cobbles (Figure 7). Approximately 260.06 yd^3 (198.82 m^3) of soil was excavated on this day. A total of 12 soil samples were screened. Fitzpatrick recorded 15 fragments of aqua glass (Figure 8), two fragments of green glass, one fragment of purple glass, one undatable can fragment, a fragment of metal, and long bone fragments (Figure 9). None of the colored glass recovered showed patina alteration or any specific signs of age. These glass fragments did not have maker's marks, bubbles, mold seams, finishes, or closures that would indicate age. One full Anheuser-Busch bottle from the late-1980s was found and photographed (Figure 10). The Project Area was heavily disturbed, and many fragments could not be dated accurately, except for the Anheuser-Busch bottle which is considered modern. These fragments were noted but not recorded.

March 17, 2023 Fitzpatrick monitored clean up of the previous day's excavations and excavation of a secondary trench and pit (Figure 11). The trench measured 43 ft x 6.0 ft x 3 ft (13 m x 1.8 m x 0.9 m); the pit measured 19 ft x 16 ft x 3 ft (5.8 m x 4.9 m x 0.9 m). Observed soil was the same as discussed previously. Approximately 62.45 yd^3 (47.74 m^3) of soil was excavated on this day. No cultural materials were recovered.

Figure 6. Overview of the Project Area. View to the northwest.

Figure 7. Trench sidewall showing the soil profile.

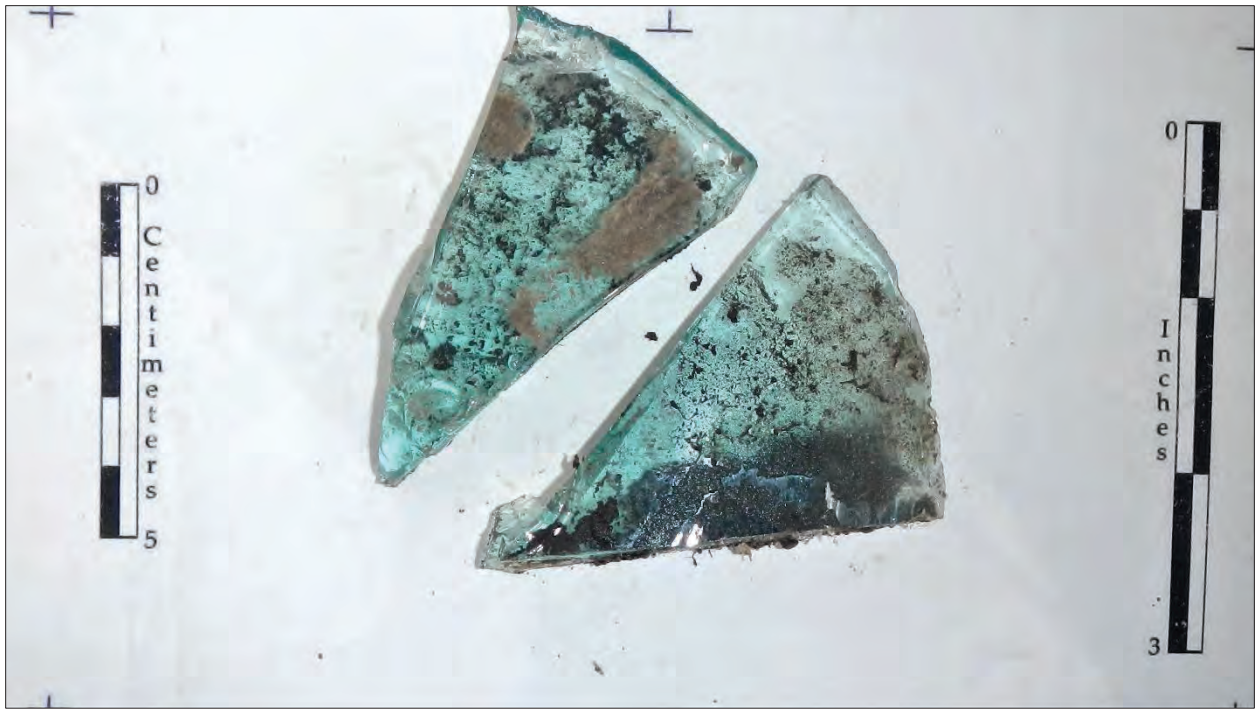

Figure 8. Fragments of aqua glass.

Figure 9. Long bone fragment.

Figure 10. Anheuser-Busch bottle.

Figure 11. Overview of the Project Area on March 17, 2023. View to the northwest.

SUMMARY AND CONCLUSIONS

Over the course of two days from March 16, 2023, to March 17, 2023, all ground disturbing activities within the Project Area were monitored by a Plateau CRM archaeologist. This monitoring covered roughly the area of excavations within Washington State Parks property, consisting of 322.51 yd^3 (246.56 m^3) of sediment.

Archaeological monitoring resulted in the identification of glass fragments, an undatable can piece, a metal fragment, mammal long bone fragments, and a 1980's Anheuser-Busch bottle, all of which were noted but not recorded due to the lack of datable material and the highly disturbed condition of soils within the Project Area.

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1989 State of Washington Archaeological Site Inventory Form: 45SP233. On file at the Department of Archaeology and Historic Preservation in Olympia, Washington.
1989 State of Washington Archaeological Site Inventory Form: 45SP239. On file at the Department of Archaeology and Historic Preservation in Olympia, Washington.
1989 State of Washington Archaeological Site Inventory Form: 45SP240. On file at the Department of Archaeology and Historic Preservation in Olympia, Washington.
1989 State of Washington Archaeological Site Inventory Form: 45SP242. On file at the Department of Archaeology and Historic Preservation in Olympia, Washington.