City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	**Eastside Rail Corridor Rail Removal and Interim Trail**
Proposal Address:	**City-Wide**
Proposal Description:	Approval of a Critical Areas Land Use Permit for work within steep slope critical area buffers and structure setbacks to remove existing railroad infrastructure and establish an interim trail. Work includes removal of railroad ties and ballast; and placement of new gravel, fencing, bollards, and signage.
File Number:	**16-146244-LO**
Applicant:	**Erica Jacobs, King County Parks**
Decisions Included:	Critical Areas Land Use Permit (Process II. LUC 20.30P)
Planner:	**Drew Folsom**, Planner
State Environmental Policy Act Threshold Determination:	**Exempt per WAC 197-11-800**
Director's Decision:	**Approval with Conditions**

Carol V. Helland, Land Use Director
Development Services Department

Critical Areas Application Date:	November 9, 2016
Notice of Application Publication Date:	January 26, 2017
Decision Publication Date:	March 9, 2017
Project Appeal Deadline:	March 23, 2017

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

CONTENTS

Attachments

1. Site Plans
2. SEPA exemption
3. Geotechnical Evaluation

I. Proposal Description

The project proposes to remove existing railroad infrastructure and establish an interim trail within a public right of way. Work includes removal of railroad ties and ballast; and placement of 4 inches new gravel, fencing, bollards, and signage. All permanent disturbance will occur within developed rail corridor right of way.

The Eastside Rail Corridor is part of a 42-mile rail corridor that stretches from Renton to Snohomish. The corridor has been brought into public ownership to provide a potential route for trail, transit, and utilities. Currently, only a portion of ERC is planned for trail use – a segment of the former railroad mainline between Renton and Woodinville, and a spur connecting Woodinville and Redmond. This proposal will convert a section of the rail corridor beginning at the Bellevue and Renton city limits and ending on the West side of I-405 near the SE 18th block from rail ties to an interim trail.

The interim trail will be constructed of gravel. Sections of the trail will include wood and chain link safety fencing. Temporary construction staging will occur at various stages. The staging locations are in paved areas or disturbed areas with minimal vegetation. The staging locations avoid disturbance of critical areas and require no tree removal.

A Critical Areas Land Use permit is required because the project will be located within steep slope buffer and structure setbacks. The project is an allowed activity per LUC 20.25H.055.C3.

Figure 1

II. Site Description, Zoning, Land Use and Critical Areas

A. Site Description

The project is located within an approximately 100 foot wide King County public right of way formerly owned by the Burlington Northern Santa Fe Railway Company (BNSF) and developed as a train rail corridor, known as the Lake Washington Beltline. The corridor has been developed with existing rail ties and ballast. Extensive historical grading occurred in the construction of the rail corridor and many sections have been artificially raised with ballast to provide a level rail corridor. The proposal will occur within these sections removing the existing rail ties and converting the area to a gravel trail. This conversion will occur over several miles of the corridor within South and Central Bellevue. Sections of the trail are bordered by critical area wetlands, streams, steep slopes and within Shoreline Jurisdiction. No work is proposed within these areas or buffers beyond the developed rail corridor. The work within the developed rail corridor is within regulated steep slope buffers and structure setbacks.

B. Zoning and Land Use Context

The development is located in single family, multi-family, and commercial zoning districts. The interim trail is within a 100 foot wide north-south King County owned right of way. This area has been heavily modified with extensive embankments, engineered drainage features, and managed vegetation. The interim trail is located within multiple single family and multi-family zoning districts and within a light industrial commercial zoning district.

C. Critical Areas Functions and Values

i. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when commercial, residential, or industrial development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided (WAC 365-190).

Steep slopes may serve several other functions and possess other values for the City and its residents. Several of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provides a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a "green" backdrop for urbanized areas enhancing property values and buffering urban development.

III. Consistency with Land Use Code Requirements:

A. Zoning District Dimensional Requirements:

The site is located in single family, multi-family, and commercial zoning districts. Development of public right of way is permitted within the underlying zoning districts.

B. Critical Areas Requirements LUC 20.25H:

i. Performance Standards for Specific Uses or Development LUC Section 20.25H.055

New and Expanded Uses or Development. LUC 20.25H.055.C.2.a

New or expanded facilities and systems are allowed within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical area or critical area buffer exists. A determination of technically feasible alternatives will consider:

1. **The location of existing infrastructure;**
2. **The function or objective of the proposed new or expanded facility or system;**
3. **Demonstration that no alternative location or configuration outside of the critical area or critical area buffer achieves the stated function or objective, including construction of new or expanded facilities or systems outside of the critical area;**
4. **Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of proposed disturbance; and**
5. **The ability of both permanent and temporary disturbance to be mitigated**

Finding: The interim trail is proposed in an area previously developed for rail road use. There is no feasible alternative location or configuration within the ERC that would have less impacts to critical areas or buffers. There is no new permanent disturbance to critical areas proposed and any temporary disturbance will be mitigated with the planting of native vegetation. **See Conditions of Approval in Section IX**

New and Expanded Uses or Development. LUC 20.25H.055.C.2.b
If the applicant demonstrates that no technically feasible alternative with less impact on the critical area or critical area buffer exists, then the applicant shall comply with the following:

1. **Location and design shall result in the least impacts on the critical area or critical area buffer;**
   The project will take place in an area already developed for rail road use. The proposal will remove existing railroad ties and install gravel and fencing for an interim trail.

2. **Disturbance of the critical area and critical area buffer, including disturbance of vegetation and soils, shall be minimized;**
   The design will protect the most critical areas by locating the interim trail within an already disturbed area and control public access to steep slope areas with protective fencing.

3. **Disturbance shall not occur in habitat used for salmonid rearing or spawning or by any species of local importance unless no other technically feasible location exists;**
   Alignment has been designed to avoid removal of native vegetation and modifying existing contours by placing the interim trail within an area already disturbed by prior rail use.

4. **Any crossing over of a wetland or stream shall be designed to minimize critical area and critical area buffer coverage and critical area and critical area buffer disturbance, for example by use of bridge, boring, or open cut and perpendicular crossings, and shall be the minimum width necessary to accommodate the intended function or objective; provided, that the Director may require that the facility be designed to accommodate additional facilities where the likelihood of additional facilities exists, and one consolidated corridor would result in fewer impacts to the critical area or critical area buffer than multiple intrusions into the critical area or critical area buffer;**
   The trail will be located in an area of existing disturbance and development. No new crossing over of a wetland or stream is proposed.

5. **All work shall be consistent with applicable City of Bellevue codes and standards;**
   All work proposed is consistent with applicable City of Bellevue codes and standards found in Titles 20 and 23.

6. **The facility shall not significantly change or diminish overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod**;

No changes to aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod are anticipated.

7. **Associated parking and other support functions, including, for example, mechanical equipment and maintenance sheds, must be located outside critical area or critical area buffer except where no feasible alternative exists; and;**
   No associated parking or support functions are proposed.

8. **Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.**
   The interim trail proposes no permanent disturbance because it is located within an already developed section of the corridor. Mitigation and restoration work will occur in an areas disturbed by construction staging.
   See Conditions of Approval in Section IX

C. Consistency with Land Use Code Critical Areas Performance Standards:

Performance Standards for Steep Slopes – 20.25H.125
In addition to generally applicable performance standards set forth in LUC 20.25H.055 and 20.25H.065, development within a landslide hazard or steep slope critical area or the critical area buffers of such hazards shall incorporate the following additional performance standards in design of the development, as applicable. The requirement for long-term slope stability shall exclude designs that require regular and periodic maintenance to maintain their level of function.

1. **Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to existing topography;**
   Trail placement and design will utilize natural contours to the greatest extent. Minimal grading is proposed in sections where the natural contours do not allow for safe trail gradient.

2. **Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation**;
   Improvements have been designed to be located within area already disturbed and developed by rail use.

3. **The proposed development shall not result in greater risk or a need for increased buffers on neighboring properties;**
   The proposed development will not result in greater risk or need for increased buffers on neighboring properties as stated in the King County Geotechnical Evaluation prepared by Doug Waters, Senior Geotechnical Engineer, dated January 24, 2017 (See Attachment 3)

4. **The use of retaining walls that allow the maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining wall**;
   Grading will be minimal and no retaining walls are necessary or proposed.

5. **Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer**;
   No increase in impervious surface is proposed. Trail materials will consist of 4 inches of gravel.

6. **Where change in grade outside the building footprint is necessary, the site retention system should be stepped and regrading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with this criteria;**
   No structures are proposed.

7. **Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation;**
   No structures are proposed.

8. **On slopes in excess of 40 percent, use of pole-type construction which conforms to the existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and to minimize topographic modification**;
   No structures are proposed.

9. **On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill-based construction types**;
   No parking or garage structures are proposed.

10. **Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.**
    The interim trail proposes no new permanent disturbance because it is located within an already developed section rail corridor. To the extent feasible, construction staging will not be occurring within a critical area or critical area buffer. However, if temporary construction disturbance occurs in these areas, they shall be restored with native vegetation,
    See Conditions of Approval in Section IX

IV. Public Notice and Comment

Application Date:	November 9, 2017
Public Notice (500 feet):	January 26, 2016
Minimum Comment Period:	February 9, 2016

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on January 26, 2017. It was mailed to property owners within 500 feet of the project site. Several comments have been received from the public relating to as of the writing of this staff report.

Summary of Comments: Several of the comments were related to concerns over impacts to the trail and surrounding area in sections not included in this proposal. One comment expressed concern for several dogwood trees near the interim trail.

City Response: None of these trees mentioned are proposed to be disturbed or removed as part of this proposal.

V. Summary of Technical Reviews

Clearing and Grading:
The Clearing and Grading Division of the Development Services Department has reviewed the proposed development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development.

VI. State Environmental Policy Act (SEPA)

The Final Environmental Impact Statement for the Eastside Rail Corridor was issued on July 18, 2016.

The proposal is categorically exempt from SEPA review per WAC 197-11-800 for repair, remodeling and maintenance activities. As determined by Kevin Brown, Director, King County Parks, the SEPA responsible official (See attachment 2, SEPA Exemption)

VII. Decision Criteria

A. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

1. The proposal obtains all other permits required by the Land Use Code;

Finding: The proposal will obtain the required Clearing & Grading permit and all other required permits. **See Conditions of Approval in Section IX**

2. **The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;**

   Finding: The proposal utilizes to the maximum extent the best available construction, design, and development techniques within reason to provide a result that has the least impact on the critical area and critical area buffer. Work includes removal of railroad ties and ballast; and placement of 4 inches new gravel, fencing, bollards, and signage. All permanent disturbance will occur within developed rail corridor right of way. Construction staging locations were chosen to minimize disturbance. No tree removal is proposed.

   The applicant shall submit as part of the required Clearing and Grading Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices". **See Conditions of Approval in Section IX**

3. **The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and ;**

   Finding: As discussed in Section III – Consistency with Land Use Code Requirements, the proposal incorporates all relevant performance standards found in 20.25H.

4. **The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;**

   Finding: No increased need will be placed on the existing public facilities.

5. **The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and**

   Finding: The interim trail proposes no new permanent disturbance because it is located within an already developed section of rail corridor. Mitigation and restoration work will occur in an areas disturbed by construction staging.
   See Conditions of Approval in Section IX

6. **The proposal complies with other applicable requirements of this code.**

   Finding: As discussed in Section III and V of this report, the proposal complies with all other applicable requirements of the Land Use Code. **See Conditions of Approval in Section IX**

VIII. Conclusion and Decision

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of the Development Services Department does hereby **approve with conditions** the proposal to remove railroad infrastructure and construct a nonmotorized interim trail within the Eastside Rail Corridor public right of way.

Note- Expiration of Approval: In accordance with LUC 20.30P.150 a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Clearing and Grading Permit or other necessary development permits within one year of the effective date of the approval.

IX. Conditions of Approval

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Savina Uzunow, 425-452-7860
Land Use Code- BCC 20.25H	Drew Folsom, 425-452-4441
Noise Control- BCC 9.18	Drew Folsom, 425-452-4441

The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:

1. **Mitigation for Areas of Temporary Disturbance:** A mitigation plan for all areas of temporary disturbance is required to be submitted for review and approval by the City of Bellevue prior to issuance of the Clearing and Grading Permit. The plan shall document the total area of temporary of the critical area and critical area buffer and provide mitigation and restoration with native vegetation.

   Authority: Land Use Code 20.25H.220
   Reviewer: Drew Folsom, Land Use

2. **Maintenance & Monitoring:** The mitigation and restoration areas shall be self-maintained and self-monitored for three (3) years. Annual monitoring reports are to be submitted to Land Use each of the three years at the end of each growing season or October 31st. Photos from selected points, determined by the City during the pre-construction inspection, will be included in the monitoring reports to document the

planting. The following schedule and performance standards apply and are evaluated in the report each year:

Year 1 (from date of plant installation)
90% survival of all install plants or replanting in following dormant season to reestablish 100%
10% maximum coverage of invasive plants in planting area

Year 2 (from date of plant installation)
85% survival of all install plants
20% minimum vegetative coverage
10% maximum coverage of invasive plants in planting area

Year 3 (from date of plant installation)
80% survival of all install plants
35% minimum vegetative coverage
10% maximum coverage of invasive plants in planting area

The reports along with a copy of the planting plan can be sent to Drew Folsom at dfolsom@bellevuewa.gov or to the address below:

Environmental Planning Manager
Development Services Department
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

Authority: Land Use Code 20.30P.140; 20.25H.220
Reviewer: Drew Folsom, Land Use

3. **Land Use Inspection:** Land Use inspection and approval is required prior to receiving Clearing & Grading Final inspection.

   Authority: Land Use Code 20.25H.220
   Reviewer: Drew Folsom, Land Use

4. **Rainy Season restrictions:** Due to the proximity to steep slopes and Lakehurst Creek, no clearing and grading activity may occur during the rainy season, which is defined as October 1 through April 30 without written authorization of the Development Services Department. Should approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

   Authority: Bellevue City Code 23.76.093.A,
   Reviewer: Savina Uzunow, Clearing and Grading

5. **Pesticides, Insecticides, and Fertilizers:** The applicant shall submit as part of the required Clearing and Grading Permit information regarding the use of pesticides, insecticides, and fertilizers in accordance with the City of Bellevue's "Environmental Best Management Practices".

   Authority: Land Use Code 20.25H.220.H
   Reviewer: Drew Folsom, Land Use

6. **Noise Control:** Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

   Authority: Bellevue City Code 9.18
   Reviewer: Drew Folsom, Land Use

NOTES:

1. CHAIN LINK FENCE. SEE DETAIL A, SHEET 33
2. SPLIT RAIL FENCE. SEE DETAIL B, SHEET 34
3. EXISTING BOULDER. RELOCATE TO 10' OFFSET E.O.P., 5' CLEAR SPACE BETWEEN
4. BOULDER, 3 MAX: 5' CLEAR SPACE BETWEEN BOULDER OR TO BOLLARD
5. REMOVABLE BOLLARD, SEE DETAIL C, SHEET 38.
6. GRAVEL PAD. TRANSITION FOR ROAD-RAIL VEHICLES, SEE DETAIL B, SHEET 32
7. FINISHED TRAIL TO CATCH GRADE AT THE EDGE OF THE EXISTING PAVED ROAD/DRIVEWAY CROSSINGS. GRADE SHALL NOT EXCEED 5% LONGITUDINAL SLOPE.
8. REMOVE RAILS AND WOOD TIMBERS AT DRIVEWAY GRADE CROSSING. PLACE AND COMPACT ⅝" MINUS PER SPECIFICATIONS
9. TRASH RECEPTACLE/ PET WASTE STATION SEE DETAIL

SEE SHEET 2 FOR GENERAL NOTES
SEE SHEET 3 FOR LEGEND

811 KNOW WHAT'S BELOW. CALL 2 BUSINESS DAYS BEFORE YOU DIG (UTILITY LOCATIONS ARE APPROX)

EASTSIDE RAIL CORRIDOR			PROJECT MANAGER: ERICA JACOBS				DESIGN TEAM	
PROJECT #	1129319	DATE	REV #	REVISION	BY	DATE	ARCH.	
ISSUED							STRUCT. ENG.	S. JIANG, S.E./ Z. ZHOU, S.E.
APPROVED				90% PROGRESS COPY			CIVIL ENG.	T. ONG, P.E./ W. KAMEDA, P.E.
REVIEWED				10/31/2016			LAND. ARCH.	N.A.
DRAWN	K. KITAMURA	10/2016						

King County
Department of Natural Resources and Parks
Parks and Recreation Division
Capital Projects Section
201 S. Jackson St., Suite 700, Seattle, WA 98104
Christie True, Director

ERC - RAIL REMOVAL PHASE 1

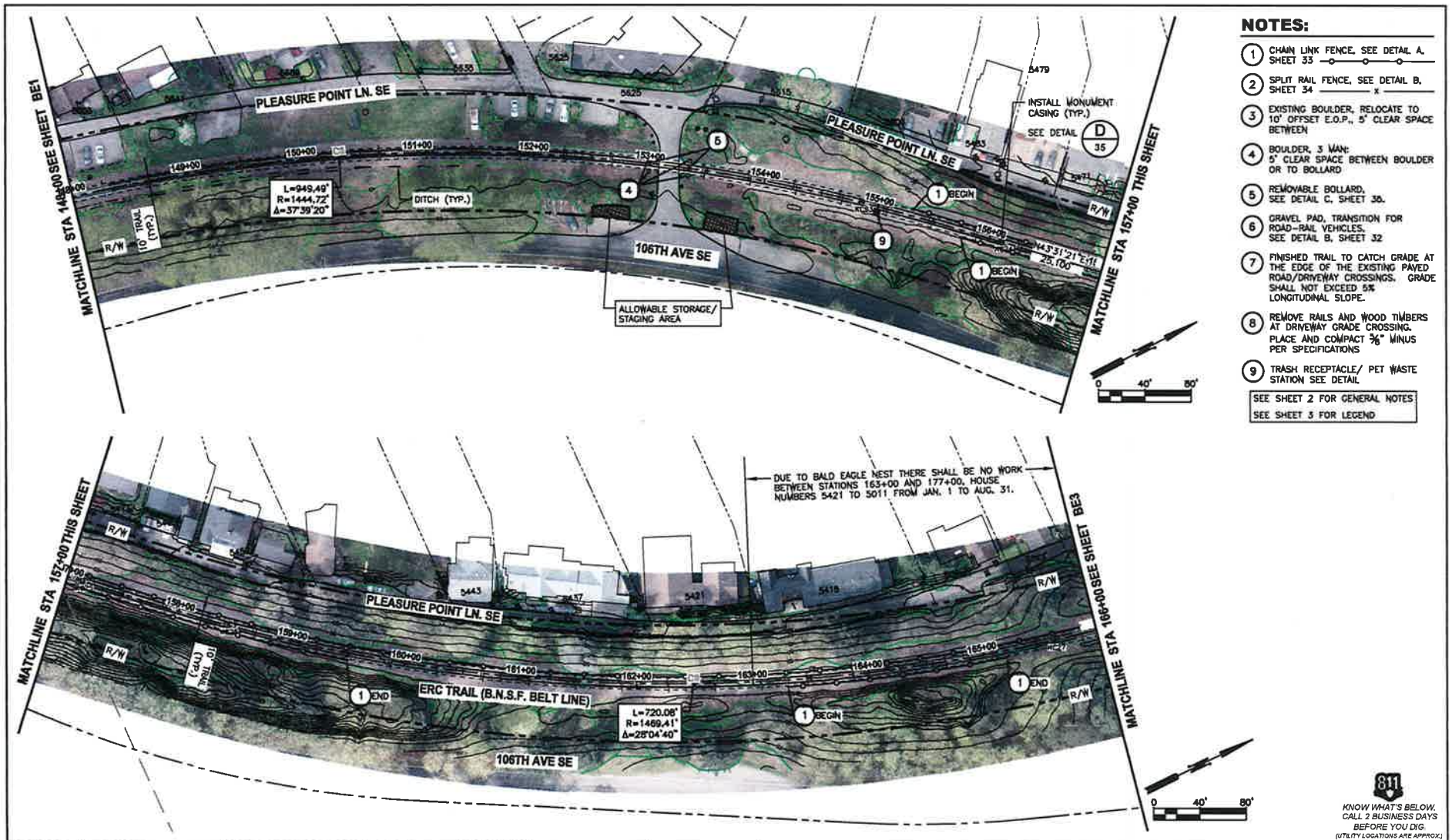
RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 14 OF 45 SHEETS

BE1

Attachment 1



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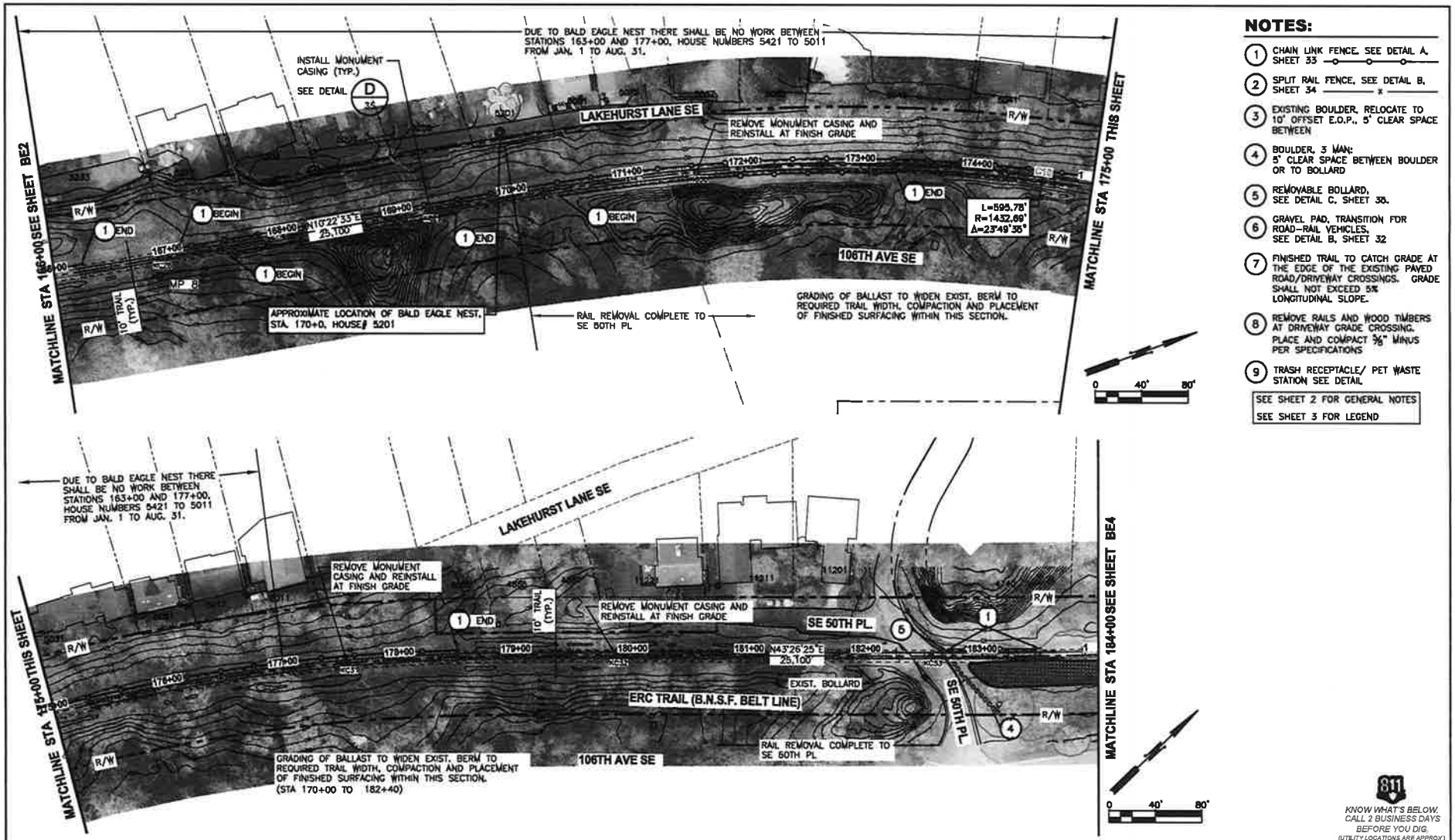

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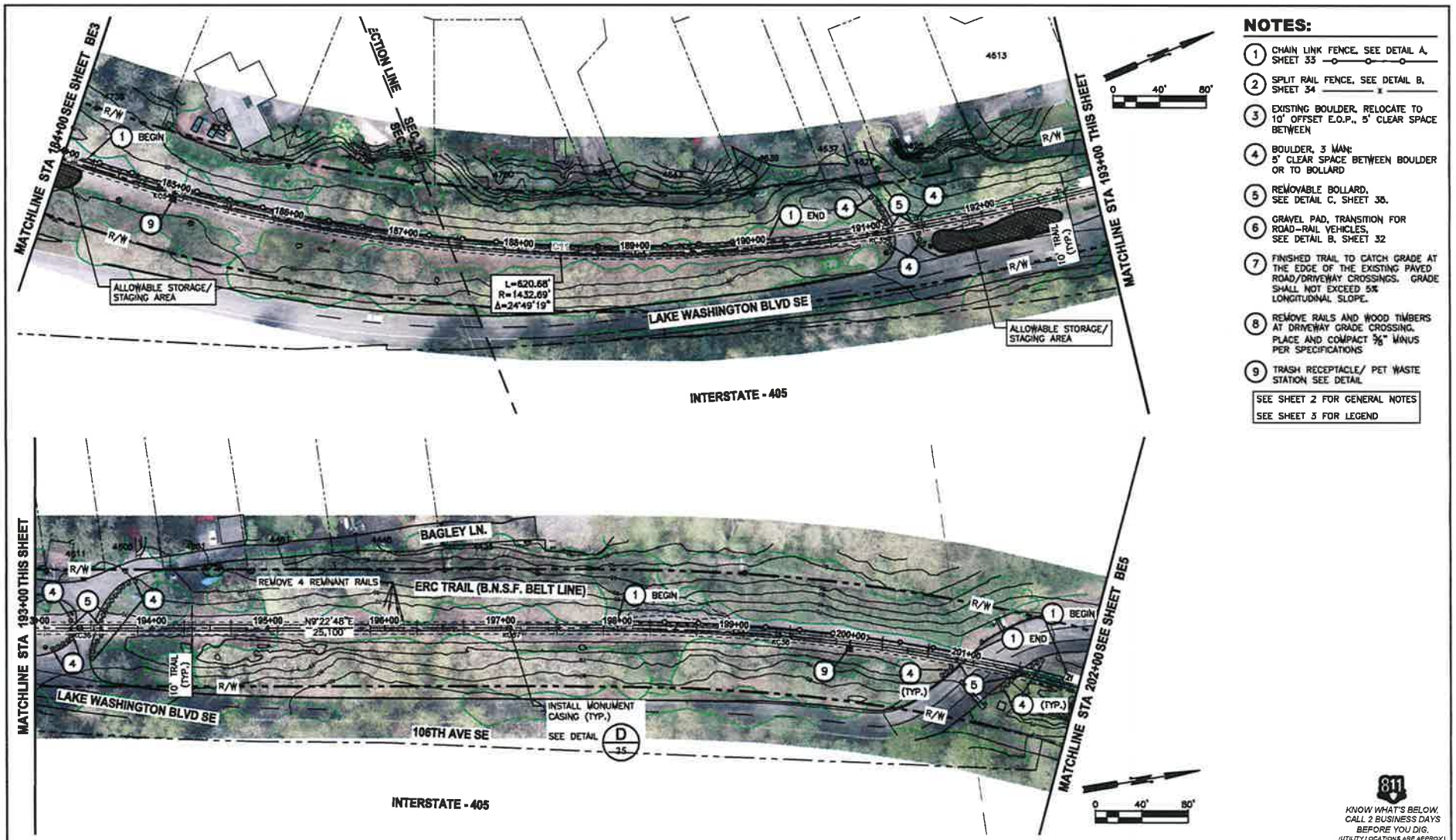

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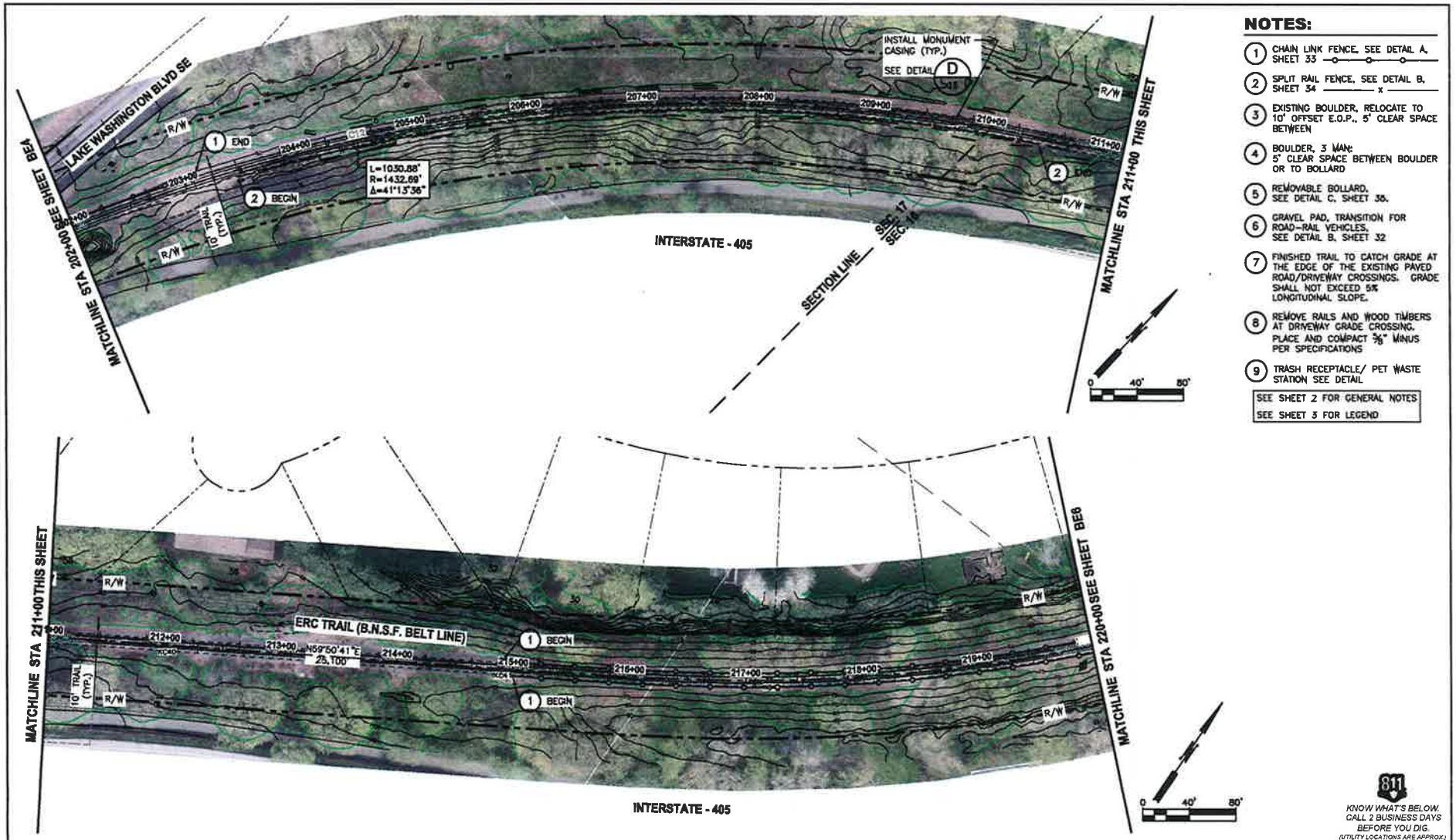

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9. TRASH RECEPTACLE/ PET WASTE STATION SEE DETAIL

SEE SHEET 2 FOR GENERAL NOTES
SEE SHEET 3 FOR LEGEND

811 KNOW WHAT'S BELOW. CALL 2 BUSINESS DAYS BEFORE YOU DIG. (UTILITY LOCATIONS ARE APPROX.)

EASTSIDE RAIL CORRIDOR			PROJECT MANAGER: ERICA JACOBS			DESIGN TEAM	
PROJECT #	1129319	DATE	REV #	REVISION	BY / DATE	ARCH.	
ISSUED						STRUCT. ENG.	S. JIANG, S.E./ Z. ZHOU, S.E.
APPROVED						CIVIL ENG.	T. ONG, P.E./ W. KAMEDA, P.E.
REVIEWED						LAND. ARCH.	N.A.
DRAWN	K. KITAMURA	10/2016					

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King County
Department of Natural Resources and Parks
Parks and Recreation Division
Capital Projects Section
201 S. Jackson St., Suite 700, Seattle, WA 98104
Christie True, Director

ERC - RAIL REMOVAL PHASE 1

RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 18 OF 45 SHEETS

BE5

NOTES:

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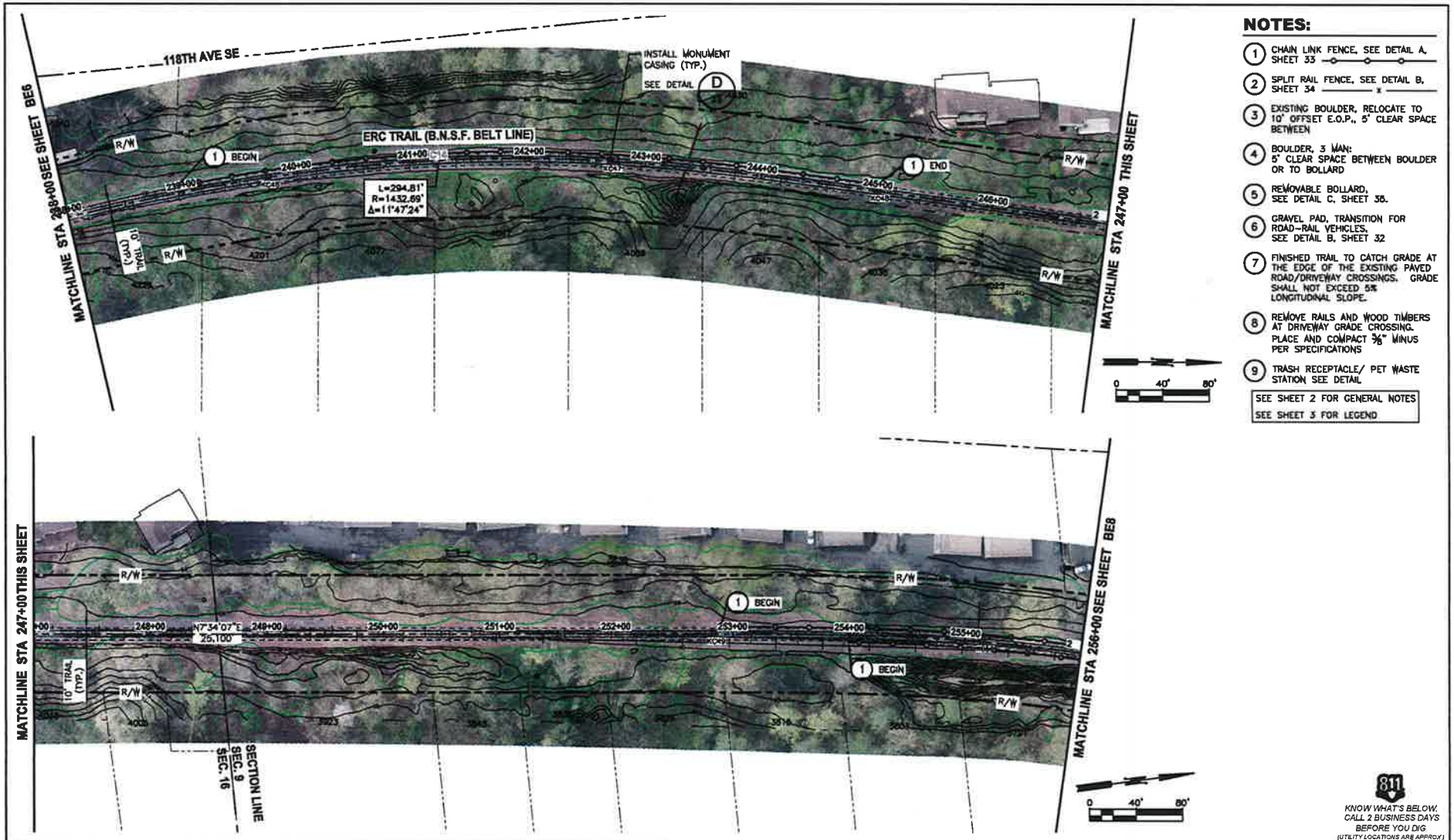
RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 19 OF 45 SHEETS

BE6



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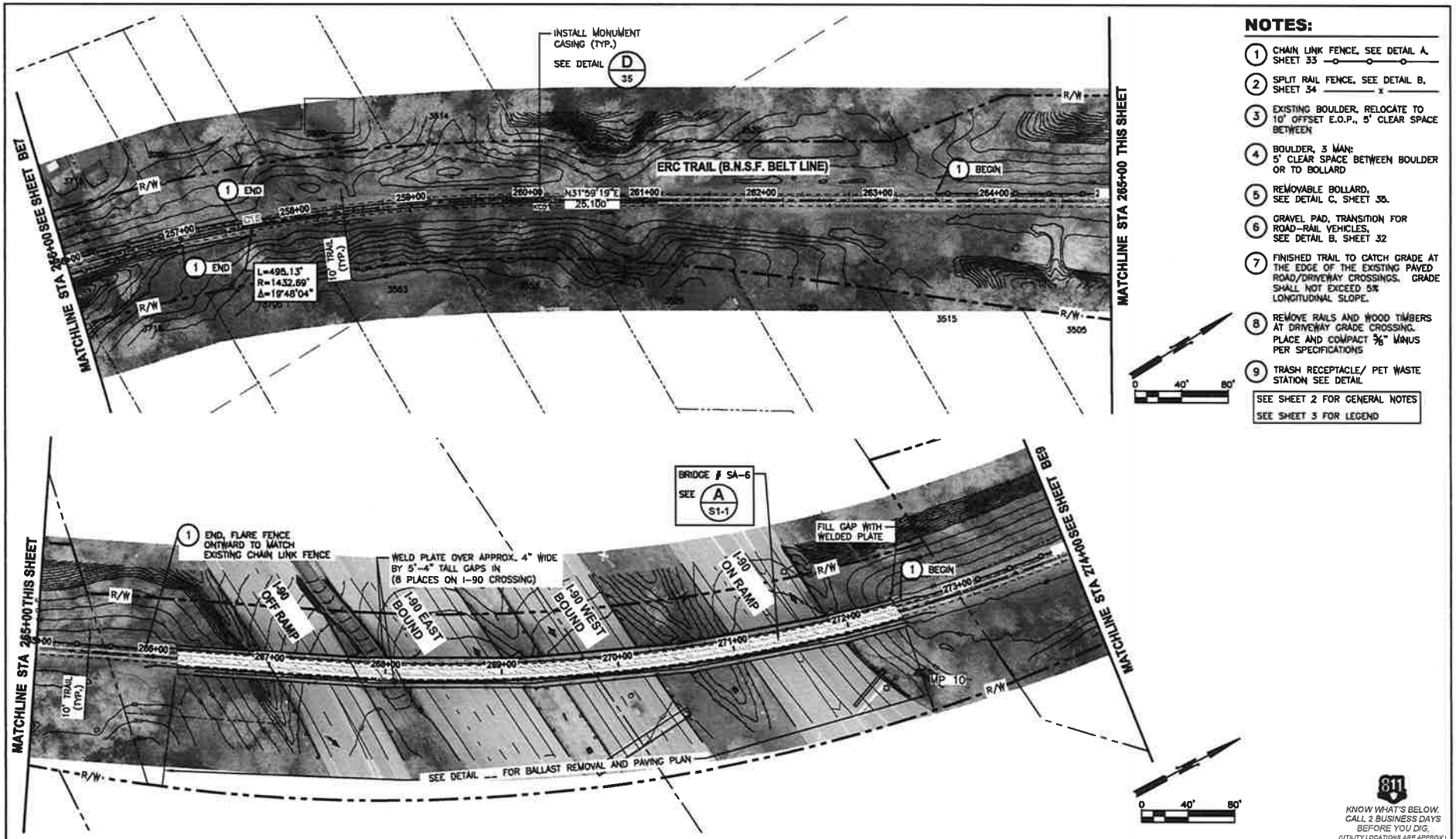
ERC - RAIL REMOVAL PHASE 1

RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 20 OF 45 SHEETS

BE7



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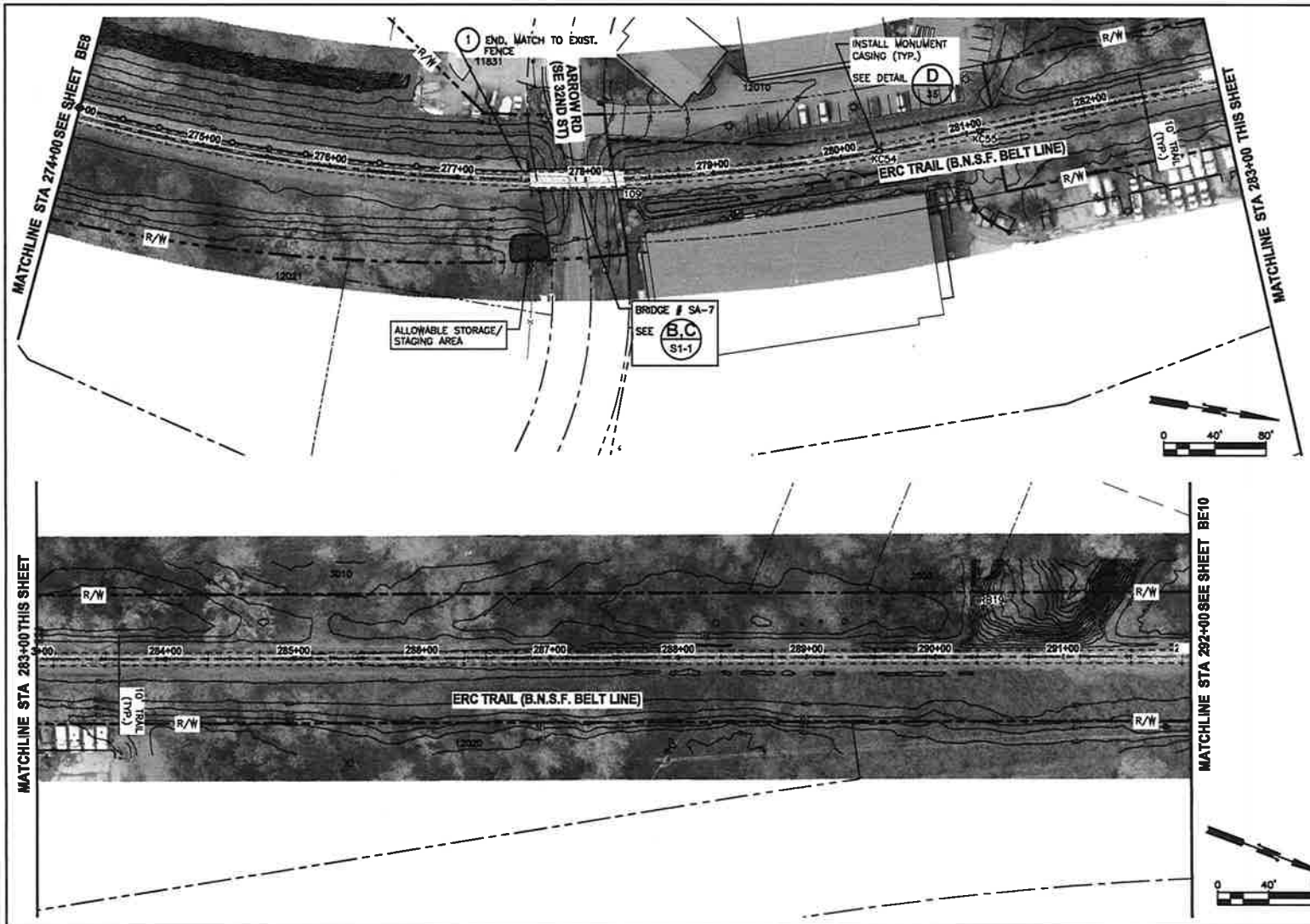
ERC - RAIL REMOVAL PHASE 1

RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 21 OF 45 SHEETS

BE8



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ERC - RAIL REMOVAL PHASE 1

RENTON/ BELLEVUE/ UNINCORPORATED KING COUNTY

RAIL REMOVAL PLANS

SHEET 22 OF 45 SHEETS

BE9

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RAIL REMOVAL PLANS

SHEET 23 OF 45 SHEETS

BE10

King County
Department of Natural Resources and Parks
Parks and Recreation Division

SEPA Categorical Exemption

Project Name **ERC Rail Removal Ph. 1**

Project Number 1129319

Project Location

This project is located on Eastside Rail Corridor (ERC), a former freight rail corridor formerly owned by BNSF and currently owned and maintained by King County Parks and Recreation Division. The project limits is from the County's ownership in Renton at MP 5.0 (adjacent to the north end of Gene Coulon Park) to 108th Ave NE in Bellevue (at Kirkland boundary) and crosses the City of Renton, City of Bellevue and unincorporated King County jurisdictions. See vicinity map on plan sheet.

Project Description

Since acquiring portions of the corridor in 2013 for non-motorized transportation, King County Parks has maintained the corridor by clearing invasive and hazardous vegetation, preventing illegal dumping, preventing encroachment, cleaning culverts, hand placing quarry spalls for scour protection, and addressing graffiti problems. However regular and heavy maintenance equipment cannot access all areas of the corridor due to the old railroad rails and ties. Removal of the rail infrastructure will improve access, efficiency and safety for maintenance and operations and, in the interim, improve safety in the corridor pedestrians and wide tired bicycles until the corridor can be developed into a regional trail.

This maintenance and repair project includes rails and timber ties removal, minor grading to even out the railbed, minor timber trestle repair at SE 32nd Street, and capping the railbed with 4-inches of ADA crushed gravel material to enhance maintenance access and user safety. All work will be done within the existing footprint of the railbed. The project will also include appropriate safety signage at crossings, placement of removable bollards and boulders at crossings, installation of chain link fencing for fall protection in the vicinity of steep slopes, and installation of low split rail fencing along sensitive areas (wetland) to prevent encroachment.

Appropriate best management practices (BMPs) will be used during all work to avoid and minimize potential impacts, including the application of appropriate BMPs (i.e. wattle, silt fence, stabilized construction entrance, seeding, water for dust control, etc.) in the Washington State Department of Ecology Stormwater Management Manual for Western Washington (2012) and King County Surface Water Design Manual (2016). Construction equipment will not operate in the water, wetland or outside clearing limits and erosion control measures will be used to prevent and minimize silt, sediment and muddy water from entering waterbodies or adjacent areas. Disturbance of vegetation will be limited to that necessary to access the work area and impacted vegetation will be restored or improved with native vegetation after the work is complete.

No in-water work will occur, no critical areas will be impacted by the project, no activities will occur within 660 feet radius of the bald eagle nest (Jan 1 to August 31).

SEPA Exemption

King County has determined that this project is categorically exempt from the State Environmental Policy Act (SEPA) under WAC 197-11-800 Subsection 3 Repair, Remodeling and Maintenance Activities.

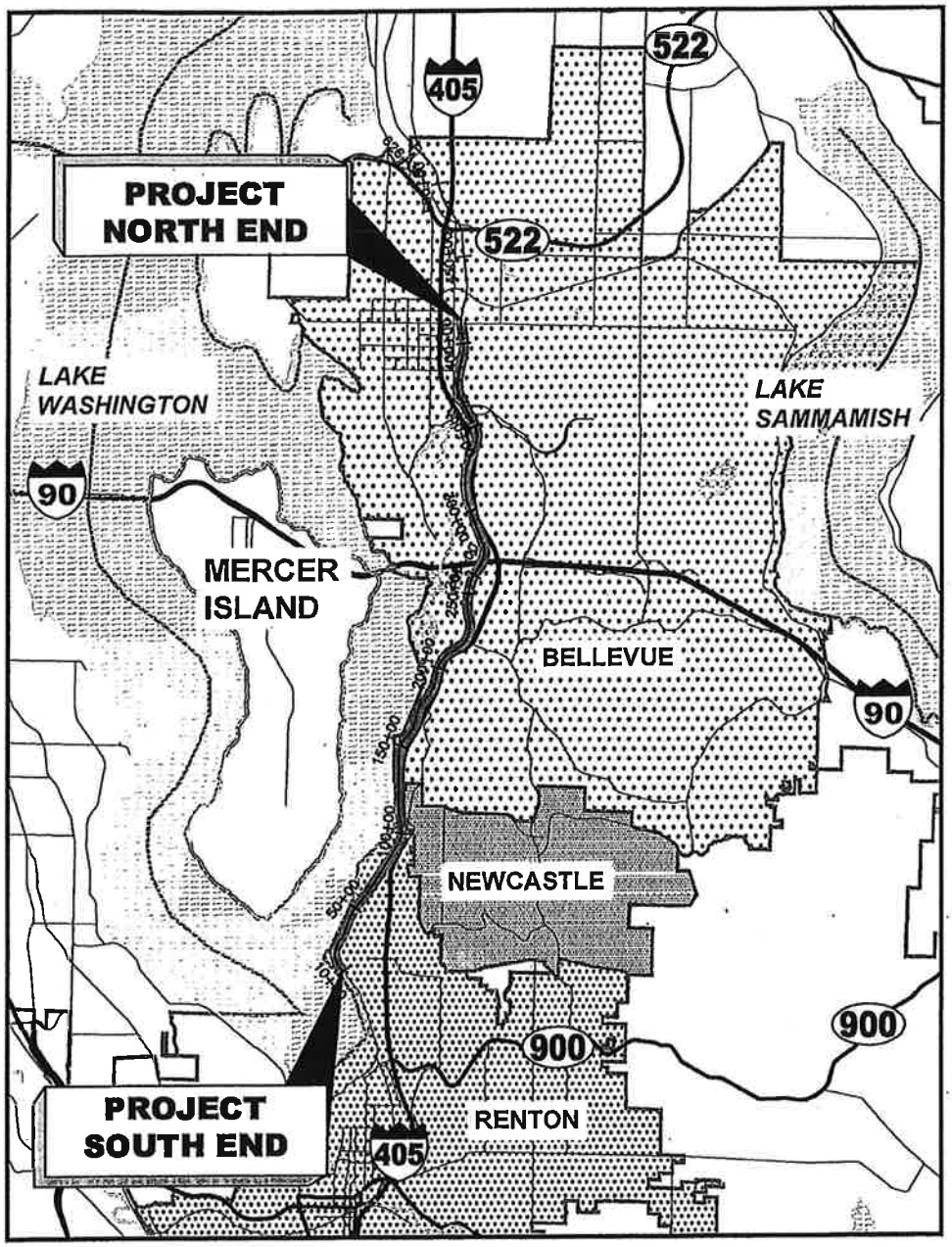
Determination Completed on October 6, 2016 **By**

Kevin Brown

Division Director
King County Parks and Recreation Division

Signature

cc: Frank Overton, Capital Project Managing Supervisor
Capital Project Section, King County Parks Division, DNRP



VICINITY MAP

NTS

5000 2500 0 5000 10000

SCALE IN FEET

Figure 1: Vicinity Map

King County
Department of Transportation
Road Services Division

January 24, 2017

TO: Tri Ong, P.E., Capital Project Manager III, Capital Planning, Department of Natural Resources and Parks

VIA: Alan D. Corwin, P.E., Materials Engineer, Materials Laboratory, Traffic and Engineering Section, RSD/DOT

FM: Doug Walters, P.E., Senior Geotechnical Engineer, Materials Laboratory, Traffic and Engineering Section, RSD/DOT

RE: Eastside Rail Corridor Rail Removal Phase 1
Geotechnical Evaluation-Final Revision

Ref: *Eastside Rail Corridor: Rail Removal Phase 1 Geotechnical Evaluation*, October 17, 2016, King County Materials Laboratory

1.0 INTRODUCTION

1.1 Project Description

The Eastside Rail Corridor (ERC) is a former freight rail corridor previously owned by Burlington Northern Santa Fe (BNSF) railroad and currently owned and maintained by King County. King County proposes to remove the railroad track (rails and timber ties) from the ERC and create a soft surface interim trail that is safe for pedestrians and wide tired bicycles. The soft surface trail will consist of 4-inches of ADA crushed gravel material on top of the existing railroad ballast. The gravel surface will be graded and no greater than 10 feet wide. The trail will match the existing railbed ballast cross section with a cross slope of less than 2%. The project limits are from MP 5.0 in Renton, adjacent to the north end of Gene Coulon Memorial Beach Park, north to 108th Ave NE in Bellevue at the Kirkland boundary. The general project location is shown in Figure 1 following the conclusion of the text.

Since acquiring portions of the corridor in 2013, KC Parks Division has worked to clear invasive and hazardous vegetation, illegal dumping, encroachment, clean culverts, and address graffiti problems. However, the rails and ties in place along the County-controlled segments of the rail banked ERC prevent Parks' regular and heavy maintenance equipment from accessing all areas of the corridor. Removal of the rail infrastructure will improve access, efficiency and safety for maintenance and operations in the corridor. The County is planning to install a paved regional trail in

the corridor in the future. For now, the existing rails and ties are still in place but no longer in use by any freight operation.

The corridor has been rail banked for interim trail use under the National Trails System Act (Rails to Trails). Removal of the railroad infrastructure and replacement with ADA crushed surfacing will create a safe soft surface interim trail condition and improve maintenance access. The project will also include appropriate signage at crossings, installation of fencing for fall protection in the vicinity of steep slopes, placement of removable bollards and boulders at crossings, and installation of low split rail fencing along sensitive areas (wetlands) to prevent encroachment. Where feasible, trestles will have an interim walkable decking surface and railings installed. No work will occur in wetlands, streams or sensitive areas.

1.2 Purpose of Report

The purpose of this report is to provide a geotechnical evaluation of the proposed trail construction based on site observation, experience, and document review. Information provided within the geotechnical evaluation is intended to meet review and permitting requirements of the various jurisdictions including the City of Renton, the City of Bellevue, and unincorporated King County.

1.3 Project Setting

The project area is a linear corridor of King County right-of-way that generally parallels Interstate 405 (I-405) within the Cities of Renton and Bellevue. As previously stated, the project corridor is a former railroad right of way that we understand is 100 feet in width. Beginning at the south end of the project in the City of Renton (STA. 8+00) and extending north to Interstate-90 (I-90) in South Bellevue (~STA. 275+00), the corridor is located between the eastern shoreline of Lake Washington and I-405. Uphill through this area is generally to the east. Therefore, the trend of the ERC within this portion of the corridor consists of fill sections to the west, and cut sections to the east. The majority of the ERC through the City of Renton to I-90 is surrounded by single family residential land use.

The project area north from I-90 to 108th Avenue NE still parallels I-405. However, there is not a general trend to the topography. Therefore, the corridor consists of fill and cuts that follow the area terrain. Land use within this ERC section is a mix of residential and commercial.

2.0 SUBSURFACE CONDITIONS

2.1 Geologic Setting

The ERC is located within the central portion of the Puget Lowland physiographic province of the Puget Sound Basin. Within the Puget Sound Basin, the Puget Lowland occupies a north-south trending depression that is situated between the Olympic Mountains to the east and the western slopes of the Cascade Mountains.

The Puget Lowland extends north to the San Juan Islands and as far south as the lower Columbia River along the Washington-Oregon border.

During the Pleistocene Epoch, the Puget Lowland was subject to at least several periods of extensive glaciation of the Cordilleran Ice Sheet that flowed repeatedly from ice originating in the mountains of British Columbia. The last major glaciation of the Cordilleran Ice Sheet, known as the Fraser Glaciation, started about 20,000 years ago and lasted about 10,000 years. It consisted of several stades (ice advances) and interstades (ice retreats). The largest and most significant glacial episode, termed the Vashon Stade of the Fraser Glaciation, advanced into the Puget Lowland as far as 15 miles south of Olympia, WA.

By about 14,000 years ago, the ice had retreated to where Seattle is now, leaving areas to the south covered by recessional outwash sands and gravels. At about the same time, thinning ice allowed marine waters to return to the Puget Lowland, lifting the ice and causing it to break into berg ice over the entire region. Approximately 10,000 years ago, after a short-lived re-advance into the northern Puget Lowland, the Cordilleran ice sheet disappeared, bringing the Ice Age to a close in this region. Over the next 10,000 years of the Holocene Epoch, rivers and streams eroded valleys and deposited sediments in low-lying areas. Depressions left by the glaciers filled in with sediment and organic material to form peat and wetland deposits. Overall, the sequencing of glacial and non-glacial sediments in the Puget Lowland is complex due to the partial erosion and reworking of previous deposits during the repeated glacial episodes.

Pre-Fraser sediments were overridden by glacial ice and are characterized by dense to very dense granular soils or very stiff to hard cohesive soils. Deposits from the Vashon Stade include loose to medium dense ice contact deposits along the glacial margins and loose to medium dense recessional outwash deposited by meltwater streams in front of the glaciers. Over the past 10,000 years, alluviums consisting of loose to medium dense sands and gravels or soft to medium stiff silts were deposited over the glacial and interglacial sediments in lower lying areas. Recent human activities over the last 150 years have further modified the land surface along the ERC alignment. The most significant being cuts and fills during the construction of the original rail line and other grading activities associated with road and home building. Therefore, the native soils are often mantled with fill or topsoil.

2.2 GEOLOGIC MAPPING

Online geologic mapping of the project area was accessed from the Washington State Department of Natural Resources Subsurface Geology System and the United States Geologic Survey (USGS) databases. Mapping indicates the following surficial geologic units generally underlie the ERC. Project stationing is utilized below to designate approximate boundaries of the soil units. STA. 8+00 marks the beginning of the project at MP 5.0 adjacent the north end of Gene Coulon Park in Renton. The north end of the project limits is at 108th Ave. NE in Bellevue at about STA. 411+00.

Undifferentiated Outwash (Qgo): Mostly Vashon Stade outwash consisting of recessional and proglacial stratified deposits of sand, gravel, and cobbles with minor interbeds of silt and clay. Mapping indicates Qgo is the predominant surficial soil underlying the ERC from about STA. 8+00 to STA. 50+00.

Quaternary Alluvium (Qa): Unconsolidated sediments deposited in streambeds and alluvial fans consisting of combinations of silt, sand, and gravel. This unit locally may also include lahar and lacustrine deposits. Qa is mapped as the primary surficial unit from STA. 50+00 to STA. 100+00.

Undifferentiated Deposits (Qgpc): Pre Fraser non-differentiated deposits of older clay and till. Clay and till may stand in steep cuts though may also be subject to landsliding when in oversteepened condition. Qgpc is shown to underlie portions of the trail from about STA. 100 to STA. 210 and STA. 240 to STA. 270.

Advanced Outwash (Qga): Glaciofluvial sand and gravel deposited during the advance of glaciers. Sand unit commonly thick and fined grained with interbedded layers of coarser grained sand, gravel and cobbles. Locally may contain non-glacial lacustrine silt and clay. Qga is mapped as the predominant surficial unit along with Qgpc underlying the trail corridor from approximately STA. 100 to STA. 210.

Continental Glacial Till (Qgt): Mostly Vashon Stade till deposits consisting of a thin ablation till overlying a lodgment till. Ablation till in the project area is comprised of a loose- to medium-dense, unsorted mixture of sand with varying amounts of silt and gravel, deposited by the retreating glacier. Lodgment till, is similar in composition to the ablation till but much denser since the material was deposited in front of, and overridden, by the massive weight of the advancing glacier. Based on mapping, till is the predominant near surface geologic unit underlying the project from about STA 210+00 to STA. 240+00 and from around STA. 270+00 to STA. 411+00.

3.0 CRITICAL AREAS

At the local level, county and city codes regulate activities that may impact critical areas such as flood hazard areas, geologically hazardous areas, habitat conservation areas, wellhead protection areas, and streams, lakes, and wetlands. The local regulations vary slightly from city to city, but the code generally specifies which activities require permits, and indicates mitigation for impacts to these resources. For this project, sections of the ERC are located in the City of Renton, Unincorporated King County, and the City of Bellevue and will be regulated according to the following codes for each jurisdiction.

City of Renton

Critical Areas Ordinance 5137 and Municipal Code 4-3-050 define critical area regulations applicable to development and non-regulated lands. We reviewed City of Renton online mapping to determine whether the ERC is within mapped designated areas that posed geologic risk. Based on mapping, portions of the ERC lie within moderate landslide hazard areas with some slopes between 15 percent and 25

percent. Mapping also indicates high seismic susceptibility with risk of seismically induced soil liquefaction of low to high.

Unincorporated King County
The critical area designations are described and defined in the King County Critical Area Ordinances (CAO) and King County Zoning Code 21A.24. Based on online King County Interactive Mapping (IMAP), geologic hazards present in and adjacent to the project area include erosion hazard areas.

City of Bellevue
Critical Area Ordinance 5680 was added by the City of Bellevue to the land use code. Based on IMAP, geologic hazards present in and adjacent to portions of the project area include erosion and landslide hazard areas. In addition, the USGS has identified an active fault line, the Seattle Fault, which runs along the I-90 corridor through the City of Bellevue. Relevant City of Bellevue code that needs to be addressed for this report includes providing individual responses to the following code: 20.25H.145 Critical areas report – Approval of modification

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Soft Surface Trail

As previously mentioned, the proposed work will consist of removing the existing railroad track (rails and timber ties) from the ERC and construction of a safe soft surface interim trail. The soft surface trail will consist of 4-inches of ADA crushed gravel material on top of the existing railroad ballast. The ERC corridor was constructed to accommodate heavy train traffic that included significant dynamic loading and vibration. Therefore, in our opinion, controlled placement of a small static load of four inches of ADA crushed gravel surfacing over the existing railroad ballast will not cause any stability or settlement issues of the ERC corridor or surrounding properties. In addition, removing the impermeable railroad ties and rail, and placement of a thin layer of crushed surfacing will allow for surface water to be infiltrated more uniformly, thereby lessening the potential for concentrated subsurface interflow and associated slope instability.

We understand the new trail will follow the grade of the existing railroad line. Placement of the ADA crushed gravel surface will be kept to the minimum required to widen the trail to no greater than 10 feet wide. The trail will match the existing railbed ballast cross section with a cross slope of less than 2%. We also understand no work will occur in wetlands, streams or sensitive areas.

Once the rails and timber ties have been removed, we recommend regrading the existing railroad ballast to create a level base for placement of the ADA crushed surfacing. Prior to fill placement, we recommend the ballast be compacted to a firm and unyielding condition. To ensure the trail surface will be suitable for pedestrian walking and biking, proper placement and compaction of the ADA crushed surfacing will be required. We recommend placement and compaction requirements for fill meet

Section 2-03.3(14)C, Method C, of the Washington State Department of Transportation (WSDOT) the Standard Specifications.

4.2 Cut and Fill Slopes

We understand that cutting and filling of slopes will be minimal. Even so, to ensure slope stability, we recommend both cut and fill side slopes not be graded any steeper than 2 H:1V (Horizontal:Vertical). When applicable, all surfaces which will receive fill should be properly stripped of vegetation and organic matter prior to fill placement. We recommend placement and compaction requirements for all fill meet Section 2-03.3(14)C, Method C, of the Washington State Department of Transportation (WSDOT) the Standard Specifications. If fills extend beyond the top of the railroad grade, the slope shall be benched prior to backfilling per WSDOT Standard Specification 2-03.3(14).

4.3 Erosion and Sedimentation Control

Erosion and sedimentation control (ESC) is utilized to prevent the transport of sediments to wetlands, streams, lakes, drainage systems, and adjacent properties. ESC construction best management practices (BMPs) will be effective in controlling erosion and protecting critical water resources including groundwater. Typical required BMPs measures for trail construction projects may include clearing limits, cover measures, perimeter protection, traffic area stabilization, sediment retention, surface water control, and dust control. BMPs that may be implemented include:

- Restrict clearing to only those areas necessary for trail construction and minimize the duration of exposed areas. Clearing limits shall be in place prior to the start of construction.

- Thoroughly monitor the site and maintain all ESC measures throughout the life of the project. ESC facilities shall be upgraded as needed for unexpected storm events and modified to account for changing site conditions.

- Areas disturbed during construction that will not be covered by crushed surfacing should be revegetated as soon as possible by mulching or hydroseeding. Erosion-control blankets may be required on embankment areas to protect the slope until vegetation is established.

- Unsurfaced areas used by construction traffic shall be stabilized to minimize erosion and tracking of sediment offsite.

4.4 Signage and Fencing

As previously discussed, the project will include appropriate signage at crossings, installation of fencing for fall protection in the vicinity of steep slopes, placement of removable bollards and boulders at crossings, and installation of low split rail fencing along sensitive areas (wetlands) to prevent encroachment. All signage and fencing

should be placed following federal, state, and local guidelines, along with any additional manufacturer installation requirements. If properly designed and installed, all signage and fencing will be stable and not impact the stability of the ERC corridor, including the adjacent slopes, wetlands or surrounding properties.

4.5 Response to City of Bellevue 20.25h.145 Critical Areas Report

The following section includes the performance standards of 20.25h.145 and our italicized responses for work that is to occur within the City of Bellevue.

Modifications to geologic hazard critical areas and critical area buffers shall only be approved if the Director determines that the modification:

A. Will not increase the threat of the geological hazard to adjacent properties over conditions that would exist if the provisions of this part were not modified; *The ERC corridor was constructed to accommodate heavy train traffic that included significant dynamic loading and vibration. Therefore, in our opinion, controlled placement of a small static load of four inches of ADA crushed gravel surfacing over the existing railroad ballast will not cause any stability or settlement issues of the ERC corridor or surrounding properties. In addition, removing the impermeable railroad ties and rail and placement of a thin layer of crushed surfacing will allow for surface water to be infiltrated more uniformly, thereby lessening the potential for concentrated subsurface interflow and associated slope instability.*

B. Will not adversely impact other critical areas; *The proposed work will take place within the existing developed railroad corridor. No work will occur in wetlands, streams or sensitive areas so there will be no adverse impact to critical areas or adjacent critical area buffers.*

C. Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified; *Removal of the railroad rail and ties and controlled placement of a thin lift of high friction crushed surfacing will result in a rail corridor section that is as stable as the current section and will not adversely impact the stability of the surrounding properties.*

D. Is certified as safe as designed and under anticipated conditions by a qualified engineer or geologist, licensed in the state of Washington; *We certify the work as proposed will be safe and not adversely impact the stability of the existing ERC corridor or surrounding properties.*

E. The applicant provides a geotechnical report prepared by a qualified professional demonstrating that modification of the critical area or critical area buffer will have no adverse impacts on stability of any adjacent slopes, and will not impact stability of any existing structures. Geotechnical reporting standards shall comply with requirements developed by the Director in City of Bellevue Submittal Requirements Sheet 25, Geotechnical Report and Stability Analysis Requirements, now or as hereafter amended; *Completed with this report.*

F. Any modification complies with recommendations of the geotechnical support with respect to best management practices, construction techniques or other recommendations; and: *All construction will be completed within the recommendations of this report. The geotechnical engineer of record will be consulted if there are any proposed modifications during design or construction.*

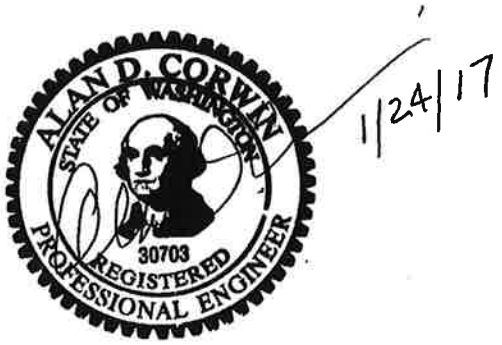
G. The proposed modification to the critical area or critical area buffer with any associated mitigation does not significantly impact habitat associated with species of local importance, or such habitat that could reasonably be expected to exist during the anticipated life of the development proposal if the area were regulated under this part. (Ord. 5680, 6-26-06, § 3) *The proposed work will take place within the existing developed railroad corridor. No work will occur in wetlands, streams or sensitive areas so there will be no adverse impact to critical areas or adjacent critical area buffers.*

5.0 CONTINUING GEOTECHNICAL SERVICES

As the design develops, when needed, we are available to provide additional geotechnical analysis and construction recommendations for specific aspects of the project.

We appreciate the opportunity to have been of service on this project and trust this report addresses your current needs. Please call Alan Corwin at (206) 477-1853 or Doug Walters at (206) 477-2112, should you have any questions, concerns, or if we may be of further assistance.

Respectfully Submitted,
King County Materials Laboratory



Alan D. Corwin, P.E.
King County Materials Engineer

6.0 REFERENCES

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