

## Sound Transit – Capitol Hill Transit Oriented Development Sites Tunnel Easements

### Sound Transit's Retained Tunnel Easement Rights

For the Capitol Hill TOD sites, Sound Transit will retain Tunnel Easement property rights. Sound Transit's Tunnel Easement document will legally describe a Tunnel Easement Envelope that has both horizontal and vertical limits that will encompass Sound Transit's underground structures. For the Capitol Hill TOD sites the Tunnel Easement Envelope has not yet been legally defined, but the attached drawings show a typical Tunnel Easement Envelope for both a bored tunnel section and a cut and cover tunnel section.

### Engineering Considerations in the Vicinity of a Sound Transit Tunnel Easement

The attached Right-of-Way Engineering documents describe Sound Transit's typical engineering concerns related to private excavation and construction in the vicinity of a Sound Transit Tunnel Easement Envelope. The documents also address common private developer concerns related to:

1. What restrictions does the tunnel easement place on the property?
2. What load can be placed on the tunnel?
3. What Sound Transit reviews are required of the proposed development?

### Sound Transit Review of Construction in the Vicinity of a Sound Transit Tunnel Easement

For typical developments in the vicinity of a Sound Transit underground structure, Sound Transit will review the proposed developments at least twice, once early in design and again just prior to permits. However, for the Capitol Hill TOD sites, Sound Transit has not yet set the design review requirements.

Sound Transit's typical early design review is for identifying fatal flaws related to hydraulic elevators, heat pumps, building cores, foundations, datums, construction shoring, tiebacks, and crane foundations. Sound Transit will check the design of these items and their construction allowances.

Sound Transit's typical last review is related to permits. It is Sound Transit's experience that during the permitting process the City will note that Sound Transit has a tunnel easement and the City will require the developer to get a letter from Sound Transit stating that the developer's project does not interfere with, obstruct, or endanger Sound Transit's facility. This review should happen just prior to, or simultaneously with, the application for permits so that Sound Transit can have the letter ready for the city when it is requested.

Attached are 5 documents:

1. 20120628 Private Development above ST Tunnel Easements  
This document describes Sound Transit's typical concerns for any development that occurs in the vicinity of a Sound Transit bored, mined, or cut and cover tunnel easement.
2. 20120628 ST Typ Tunnel Easement  
This section illustrates the different construction elements that can be a concern for Sound Transit as described in document #1 above.
3. Tunnel Easement Revised 052912 Document  
The form of Sound Transit's subsurface Tunnel Easement document.
4. Tunnel Easement Envelope - Bored Tunnel Easement Section  
Typical bored tunnel easement envelope that will be described and depicted in Sound Transit's Tunnel Easement Document.
5. Tunnel Easement Envelope - Cut and Cover Tunnel and Station Sections  
Typical cut and cover tunnel easement envelope that will be described and depicted in Sound Transit's Tunnel Easement Document.

## **Private Construction in the Vicinity of a Sound Transit Tunnel Easement**

Sound Transit acquires tunnel easements on properties in order to construct and operate the twin Link Light Rail train tunnels. The Tunnel Easement document describes an easement area that encompasses the twin tunnels and has both vertical and horizontal limits. This area is referred to as the Tunnel Easement Envelope.

### **Work within the Tunnel Easement Envelope:**

Absolutely no temporary or permanent element of a proposed construction project may at any time enter the Tunnel Easement Envelope without prior written approval of Sound Transit. Sound Transit's written approval will require a Sound Transit engineering review of the proposed construction project.

### **Work outside the Tunnel Easement Envelope:**

The property owner may use the area outside of the Tunnel Easement Envelope for any use that does not interfere with, obstruct, or endanger the Sound Transit tunnels. Things that might interfere with, obstruct, or endanger the tunnels include, but are not limited to: loading placed on the tunnels, construction methods, and temporary or permanent elements that the property owner may not realize can enter the Tunnel Easement Envelope.

While it is not required, Sound Transit recommends that property owners have Sound Transit review any proposed construction project to ensure that the proposed project does not interfere with, obstruct, or endanger the tunnels. Sound Transit's first review should be done early in the project's design process.

At a minimum Sound Transit will review the plans a second time during the permit process. It is Sound Transit's experience that during the permit process the City will require the property owner to get a letter from Sound Transit stating that the proposed development does not adversely affect the Sound Transit tunnel.

Below is some discussion of the individual items that Sound Transit may review:

### **Weight and loading of property above the ST Tunnel Easement Envelope**

New buildings that have underground parking typically will have 1 or 2 floors of underground parking. Generally speaking the weight of the soil removed is greater than the weight of the new building being constructed. Therefore just the fact that a new building is being constructed above the tunnel easement envelope is not typically, by itself, a concern for the Sound Transit tunnels.

### **Footing Designs and Load Distribution**

Sound Transit will review the structural plans to see how the loads of the building are distributed onto the foundations. In particular the review will look for concentrated loads.

Slab foundations distribute the loads from a building over a wide area and are generally not a concern for the tunnels. Discrete spread footing foundations arranged in a typical grid pattern also distribute loads over a wide area and are also generally not a concern for the tunnels.

Sound Transit's review will look for items that might concentrate the loads such as unusually long structural spans in a building. Long spans can put more load on a particular footing. Note, however, that long spans also typically have larger foundations which help spread out and mitigate the additional loading.

One method of construction utilizes concrete cores. These cores can concentrate the loads from a building onto a relatively small area and Sound Transit will review the design to assess impacts, if any, to the tunnel.

Piles, caissons, or other types of deep foundations can also create concentrated loads at depth in close proximity to the tunnel. Care must be taken when configuring deep foundations above or adjacent to the Tunnel Easement Envelope.

### **Work elements in close proximity to the Tunnel Easement Envelope**

If the elevation of the lowest floor of a new development is in close proximity to the Tunnel Easement Envelope then Sound Transit recommends that property owners have Sound Transit review the footing design, shoring design, and Datums.

#### **Footings:**

Even slab foundations often have thickened edges and loading points. These can be 1 or 2 feet thicker than the rest of the slab. Also, elevator pits can extend 4 or 5 feet below the lowest slab. Discrete foundation elements such as piles or other deep foundations can be significantly lower than the bottom slab.

#### **Shoring:**

Shoring is typically driven lower than the lowest point of excavation, may be contractor designed, or, the contractor may have leeway to drive shoring deeper than is shown in the contract plans. The shoring design and construction plan needs to be reviewed to make sure that there is no possibility of the shoring entering the Tunnel Easement Envelope.

#### **Tiebacks/Soil Nails:**

Tiebacks and Soil Nails are often used as part of a shoring system. They are typically installed in horizontal rows and they angle downward and outward from the shoring. These need to be checked to make sure that they do not enter the Tunnel Easement Envelope.

#### **Datums:**

The City of Seattle has a historic vertical datum that is offset vertically by more than 10 feet from the current standard vertical datum of NAVD 88. Plans for older buildings and older street and utility improvements are often in the historic datum. Some institutions, like colleges, choose to build new structures in the historic vertical datum because all of their adjacent structures are in the historic vertical datum. The datums that are used must be identified and coordinated.

### **Exceptionally deep design and construction elements**

Sound Transit will check for design elements that are exceptionally deep, with a higher potential for entering the Tunnel Easement Envelope.

**Hydraulic Elevators:**

Hydraulic Elevators typically have a hydraulic cylinder inserted into an 18 inch diameter drilled and cased shaft. The depth of this shaft is equal to the length of travel of the elevator plus 5 to 10 feet. And the length of shaft is measured from the bottom of the elevator pit. For example a 3 story building with one basement level will have a shaft that extends 50 feet below ground level.

(2x10' floors + 10' basement = 30 feet of travel. Therefore 35 feet of shaft starting 15 feet below ground level for a tip of shaft elevation 50 feet below ground level)

**Ground Sourced Heat Pumps:**

GSHPs typically use a cluster of wells that are each on the order of 300 feet deep.

**Crane Foundations:**

Crane foundations are almost never shown on the design and permit drawings. They can be either shallow and wide, or, narrow and up to 20 feet deep below the bottom of the excavation.

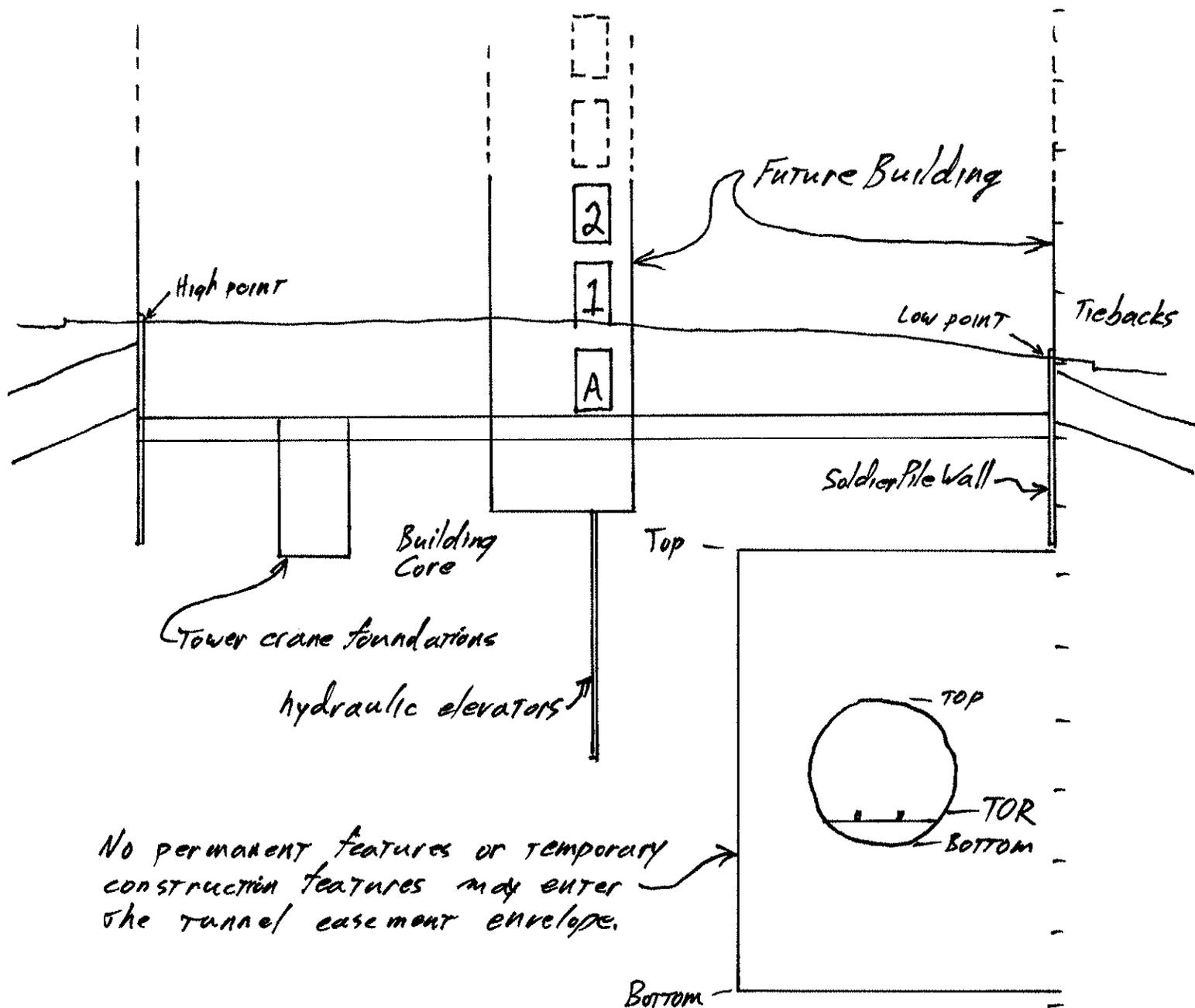
**Construction Schedules**

Sound Transit will review the private development schedule and compare it to the tunnel construction schedule. If the development is built before the tunnels pass beneath the private development then settlement impacts will need to be analyzed. If the development is built after the tunnels have been excavated then settlement impacts are not typically an issue.

**Sound Transit Inspection During Private Development Construction**

Sound Transit does not have a requirement to inspect private projects during their construction phase. However, Sound Transit is available anytime during a construction project if the private property owner has concerns about conflicts with Sound Transit improvements.

NAV88



No permanent features or temporary construction features may enter the tunnel easement envelope.

Typical Tunnel Easement



**WHEN RECORDED RETURN TO:**

Sound Transit Real Property  
Union Station  
401 S Jackson ST, M/S 04N-4  
Seattle WA 98104-2826

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**TUNNEL EASEMENT**

**Grantor(s):** **Insert Last name first, then first name and initials**

**Grantee:** **Central Puget Sound Regional Transit Authority**

**Abbreviated Legal Description:** **Insert Abbreviated Legal**

**Assessor's Tax Parcel No.(s):** **Insert Tax ID No(s)**

**ROW No.(s):** **Insert ROW No(s)**

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**Grant of Tunnel Easement** **Insert Grantor(s)** (“Grantor”), for and in consideration of Ten Dollars (\$10.00) and other valuable consideration in hand paid, hereby conveys and warrants to the **CENTRAL PUGET SOUND REGIONAL TRANSIT AUTHORITY** (“Grantee”), a regional transit authority of the State of Washington, for the purposes described below, an exclusive permanent subsurface easement (the “Tunnel Easement”) under the surface of and through the property as described in **Exhibit “A”** and illustrated in **Exhibit “B”** both attached hereto and incorporated herein by reference, lying between elevation **Insert top elevation footage** and elevation **Insert bottom elevation footage**, North American Vertical Datum of 1988 (NAVD88).

Grantee is authorized to purchase real property and real property interests under the provisions of RCW 81.112.080, and has the right of eminent domain under the provisions of RCW 81.112.030. By its Resolution No. **Insert Resolution No**, Grantee’s Board of Directors authorized acquisition of the Tunnel Easement by negotiation or by exercise of eminent domain. In order to carry out its statutory duties and obligations under RCW 81.112, Grantee intends to acquire the Tunnel Easement for public purposes, i.e., for implementation of its Link light rail project (the “Project”) through exercise of its power of eminent domain and has threatened to file a condemnation action unless Grantor agrees to sell the Tunnel Easement to Grantee. Therefore, this Tunnel Easement is granted in lieu of, but under threat and imminence of condemnation.

**Purpose of Tunnel Easement** Grantee shall have the right to use the Tunnel Easement area for all purposes necessary or incidental to Grantee’s construction, operation, maintenance, use, modification, repair and replacement of underground tunnels and related public transportation facilities, including but not limited to the right to construct, operate, maintain, modify, repair, replace, improve, remove and use said tunnels, tunnel supports, roof, floor, and all utility lines or wires within said tunnels, together with the right to operate light rail trains and other public transportation vehicles and equipment within said tunnel, and for any related uses as Grantee may now or hereafter deem appropriate. All structures, materials, facilities, mechanical and electrical systems, utilities, equipment, furnishings or improvements of any kind that are acquired, constructed or installed in or upon the Tunnel Easement area shall be and shall at all times remain the property of Grantee.

**Grantor’s Use of Tunnel Easement** Grantor may use the property as it is now being used and for other purposes not requiring subsurface rights that would interfere with Grantee’s use of the Tunnel Easement area. Grantor shall at all times conduct activities on the property so as not to interfere with, obstruct or endanger the usefulness of any improvements, or other facilities, now or hereafter maintained by Grantee in the Tunnel Easement area, or in any way interfere with, obstruct or endanger the Grantee's use of the Tunnel Easement. **[Delete highlighted paragraph if not needed:]**

ROW #: **Insert ROW No(s)**

Tunnel Easement  
Form approved by Legal 11/10/11  
Last saved by Dayle Fujii on 8/6/12

**Prior to any construction, work or any other activity by Grantor within the Tunnel Easement area, notification and plans for the same shall be submitted in writing to the Grantee by Grantor and no such construction, work or activity by Grantor shall be commenced without Grantee's prior written agreement that the Grantor's proposed construction, work or activity will not interfere with Grantee's Tunnel Easement granted herein. The Grantee's review and approval of Grantor's plans, however, will not be evidence of adequacy or sufficiency of Grantor's plans and designs nor whether Grantor's construction, work or activity is in conformance with other applicable plans, codes and regulations.**

**Grantee's Use of Tunnel Easement** Grantee may use the Tunnel Easement area for the purposes and in the manner described herein. Grantee's normal operation of the Project is not anticipated to cause noise or vibration noticeable upon the property. Grantee shall repair any physical damage to the property caused by the exercise of Grantee's easement rights at any time. Grantee shall implement, at its expense, a settlement-monitoring program during construction of the tunnel. Grantee agrees to compensate, pay, indemnify, hold harmless and defend Grantor(s) for, from and against all damages, claims and liabilities to the extent resulting from Grantee's use of the easement, including attorney's fees and costs of suit, including any appeals thereof, except to the extent any of such damages, claims or liabilities result from the negligence or willful act of Grantor(s). Grantee will maintain claims processes substantially similar to those attached thereto as Exhibits "C" and "D" in order to administer claims described in this paragraph.

**Binding Effect** This Tunnel Easement is appurtenant to and shall run with all real property now owned or hereafter acquired by Grantee as part of the Link light rail project, which includes underground tunnels and related facilities operated by Grantee for high capacity transportation system purposes and shall inure to the benefit of Grantee, its successors and assigns and shall be binding upon the property and Grantor, and their respective heirs, successors and assigns.

**Notices** Any notices required or permitted under this easement shall be given as indicated below:

To Grantee: Sound Transit  
Real Property Division  
Union Station  
401 S Jackson ST  
Seattle WA 98104-2826

To Grantor: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

To Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Parties' Intent** The parties have agreed to certain language in the paragraph of this easement titled "Grantee's Use of the Tunnel Easement" that varies from Grantee's easement form for its Project between downtown Seattle and the University of Washington. These changes are for clarification purpose only and shall not be construed to create ambiguity or difference in meaning between this easement and Grantee's general easement form for residential properties.

Dated this \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

GRANTOR(S): **Insert Grantor(s)**

By: \_\_\_\_\_

Its: \_\_\_\_\_

(Individual)

STATE OF WASHINGTON }  
 } SS.  
COUNTY OF KING }

I certify that I know or have satisfactory evidence that \_\_\_\_\_ and \_\_\_\_\_ signed this instrument and acknowledged it to be (his/her/their) free and voluntary act for the uses and purposes mentioned in the instrument.

Dated: \_\_\_\_\_

Signature: \_\_\_\_\_

Notary Public in and for the State of Washington

Notary (print name): \_\_\_\_\_

Residing at: \_\_\_\_\_

My appointment expires: \_\_\_\_\_

(Corporate)

STATE OF WASHINGTON }  
 } SS.  
COUNTY OF KING }

I certify that I know or have satisfactory evidence that \_\_\_\_\_ and \_\_\_\_\_ (is/are) the person(s) who appeared before me, and said person(s) acknowledged that (he/she/they) signed this instrument, on oath stated that (he is/she is /they are) authorized to execute the instrument and acknowledged it as the \_\_\_\_\_ and \_\_\_\_\_ of \_\_\_\_\_ to be the free and voluntary act of such party for the uses and purposes mentioned in this instrument.

Dated: \_\_\_\_\_

Signature: \_\_\_\_\_

Notary Public in and for the State of Washington

Notary (print name): \_\_\_\_\_

Residing at: \_\_\_\_\_

My appointment expires: \_\_\_\_\_

## EXHIBIT "A" TO TUNNEL EASEMENT

(Note to Agents: Replace this page with the dated legal description as prepared by Civil. Exhibit A is both the Grantor's Entire Parcel (Servient) and the Easement Area Acquired by Grantee (Dominant). The dated legal description can be found in the hard file for the parcel.)

ROW #: Insert ROW No(s)

Tunnel Easement  
Form approved by Legal 11/10/11  
Last saved by Dayle Fujii on 8/6/12

## EXHIBIT "B" TO TUNNEL EASEMENT

(Note to Agents: Replace this page with a copy of the Parcel Map showing the Subsurface Easement as prepared by Civil. You will find it in the hard file for the parcel.)

ROW #: [Insert ROW No\(s\)](#)

Tunnel Easement  
Form approved by Legal 11/10/11  
Last saved by [Dayle Fujii](#) on 8/6/12

**EXHIBIT “C”**  
**Sound Transit Policy and Procedure**  
**for Claims by Owners of Property**  
**Subject to a Sound Transit Light Rail Tunnel Easement**

1. When operation of light rail commences in the Sound Transit tunnels (currently expected in 2021), if you believe your property is being damaged by noise, vibration or other impacts from Sound Transit’s use of the easement, contact the Sound Transit Risk Management Department at 206-398-5000. Or, consult the Sound Transit website at [www.SoundTransit.org](http://www.SoundTransit.org) for information about how to submit a damages claim. Sound Transit may have a form for you to complete that describes the nature and extent of your damages.
2. Sound Transit will review the information provided and agrees to pay for any decrease in the value of your property if Sound Transit is able to confirm that you are experiencing impacts from Sound Transit’s use of the easement. In that event, Sound Transit will engage a qualified appraiser and/or other appropriate professional to evaluate the damage to your property. The evaluation will be conducted pursuant to all requirements and processes ordinarily followed by Sound Transit in the determination and valuation of real property interests to be acquired.
3. Sound Transit will offer to pay you the appraised value of the decrease in your property value in exchange for an amendment to the tunnel easement that reflects Sound Transit’s right to cause that additional damage to your property. You will be eligible, up to certain limits, for reimbursement of certain costs (including your own appraiser) which you may incur to evaluate Sound Transit’s offer.
4. If you agree with Sound Transit’s payment offer, Sound Transit will make payment and record the amended tunnel easement. If we cannot agree on the amount of compensation, the mediation provisions in paragraphs 6 and 7 below will apply.
5. If Sound Transit is unable to confirm noticeable noise, vibration or other damage to your property, Sound Transit will provide you with a summary of the method used to evaluate the noise, vibration or other alleged damage, results of the evaluation, and our conclusions. If you desire to conduct noise, vibration or other tests, Sound Transit will provide reasonable cooperation, including the times when trains run beneath your property to correlate with your test results. If you choose to provide test results to Sound Transit, Sound Transit will review the information and provide further response.
6. If you remain dissatisfied with Sound Transit’s conclusions as to either the existence of damage or the amount of compensation, you may participate in mediation with Sound Transit. No attorney is required for mediation. You may suggest a mediator or Sound Transit will provide you with a list of potential mediators. Sound Transit will pay the cost of the mediation and reimburse you, up to certain limits, for other costs you incur to evaluate Sound Transit’s offer.
7. If mediation is not successful, you have the right to initiate a lawsuit and have your claim resolved in court. Or, under those circumstances, if Sound Transit agrees your property has been damaged, but we cannot agree on the amount of compensation, Sound Transit may initiate a condemnation to obtain a judicial determination of the amount of just compensation.

**EXHIBIT “D”**  
**Sound Transit Policy and**  
**Procedure for Resolving Light Rail**  
**Tunnel Damage Claims**

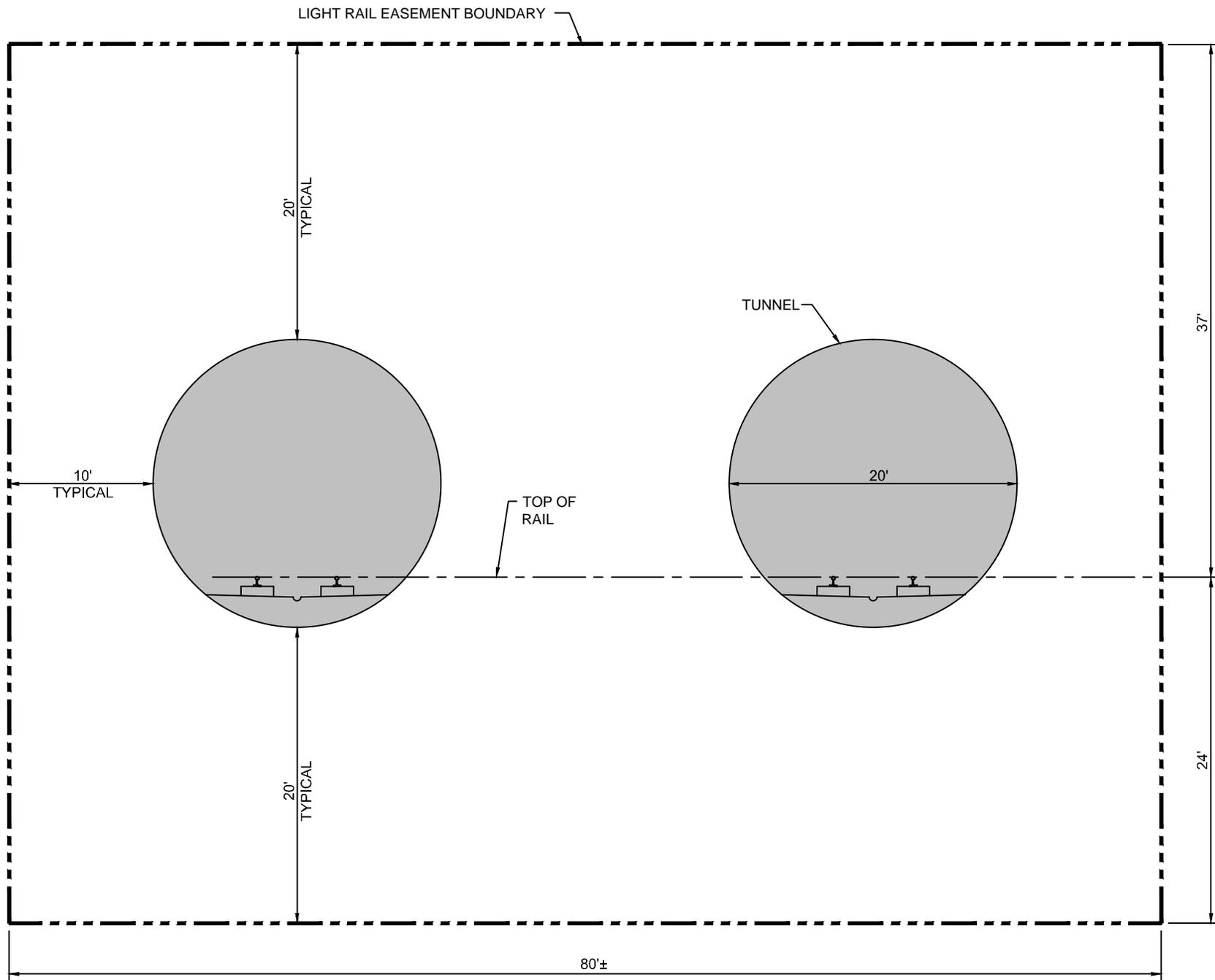
1. Prior to construction, Sound Transit is videotaping/photographing the interiors and exteriors of properties subject to acquisition for the light rail tunnel.
2. Once construction has begun, if you believe your property has been damaged, call Sound Transit’s 24-hour hotline at: 1-888-298-2395 to obtain a Damage Claim Form. You can also print the Damage Claim Form from Sound Transit’s web site at [www.SoundTransit.org](http://www.SoundTransit.org), click on “Contact Us”, scroll down to “Claim Forms”, then click on “Sound Transit Claim Form”. Print out the form.
3. Fill out the Sound Transit Claim Form and submit it to:

Risk Manager  
Sound Transit  
401 S. Jackson Street  
Seattle, WA 98104-2826

Within 10 business days of receipt of your Damage Claim Form, Sound Transit will contact you to arrange for an inspection and videotaping/photography of your property.

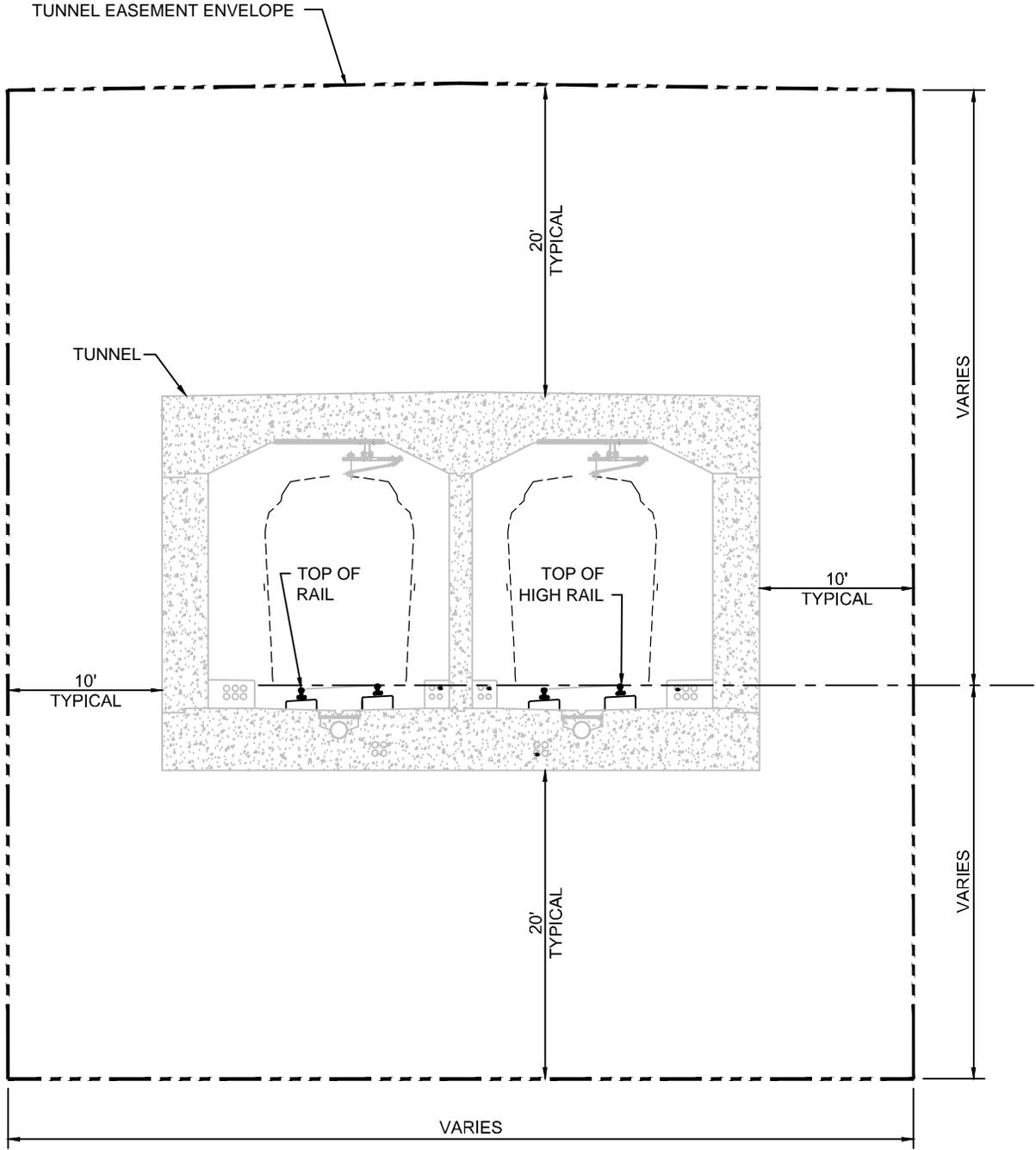
4. Sound Transit will compare its videotape/photography of your property before construction began with its videotape/photography following your damage claim and may require your cooperation in investigating other potential causes of the damage (e.g., information about construction conducted within the structure or in the vicinity). For a period of one (1) year after substantial completion of the tunnel construction if the inspection/photography show property damage, Sound Transit will presume, absent evidence to the contrary, that the damage was caused by the construction of the tunnel. Sound Transit will arrange for the repair of the damage to your property and pay for the repairs. Sound Transit will notify property owners in writing when substantial completion of the tunnel construction has been reached.
5. If you bring your damage claim more than one (1) year after the substantial completion of the tunnel construction, Sound Transit may require you to demonstrate that the property damage, if any, was caused by the construction of the tunnel. If Sound Transit agrees that the property damage was caused by the construction of the tunnel, Sound Transit will arrange for the repair of the damage to your property and pay for the repairs. If Sound Transit does not agree that the property damage was caused by the construction of the tunnel, you may mediate your claim with Sound Transit. No attorney is required for mediation. You may suggest a mediator or Sound Transit will provide you with a list of potential mediators. Sound Transit will pay the cost of mediation. If the mediation is unsuccessful, you are free to pursue all available legal remedies.

Please contact the Risk Manager at 206-398-5096 if you have any questions about this policy.



**BORED TUNNEL EASEMENT SECTION**  
NTS

**TUNNEL EASEMENT  
TUNNEL EASEMENT ENVELOPE**



**CUT AND COVER TUNNEL SECTION**

NTS