



**FEASIBILITY STUDY OF RAILROAD SOUND WALL SOUTH OF FURGUSON DR. IN THE CITY  
LIMITS**

**FOR THE CITY OF COMMERCE  
May 1, 2017**

**BY TRANSTECH ENGINEERS INC.**

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## EXECUTIVE SUMMARY

This report assesses the feasibility, design options, constraints and costs associated with a sound wall located on the north side of the Union Pacific (UP) railroad between the city limits of the City of Commerce. The south side of the railroad was not considered in this report as land use is exclusively commercial or industrial. This report was compiled with information obtained directly from UP's Real Estate and Permitting unit located in Nebraska.

## SECTION 1 - COST ANALYSIS

### SITE BUILT OPTION (CalTRANS STANDARD)

Total Cost: Averages about \$600 per lineal foot or \$3.2 million per mile.

Type of Wall: Usually reinforced concrete, reinforced concrete block or combination earth mound/wall.

Footings: Trench, spread or pile footings are used as appropriate.

Typical Height: 16 to 20 feet, depending on specific design needs.

Aesthetic Treatment: Decorative concrete block, e.g. color split face, slumpstone, fluted is used.

Engineering of Plans: Typically 3 to 6 months.

Construction Project: Typically 12 months.

**\$1,980,000 not including the following costs:**

- Contingency
- UPRR Permit, Insurance, Flagman and other RR related fees, charges and costs
- Surveying
- Design
- Construction Management, Inspection, Testing.

Generally, the above costs may be in the range of 40%.

### PRE-CAST CONCRETE PANELS (JENSEN PRE-CAST)

Total Cost: Averages about \$650 per lineal foot or \$3.4 million per mile.

Type of Wall: pre-cast wall panels slotted between embedded steel posts.

Footings: Pile footings.

Typical Height: 16 to 20 feet, depending on specific design needs.

Aesthetic Treatment: Decorative pre-cast panels.

Engineering of Plans: Typically 1 to 3 months.

Construction Project: Typically 3 months.

**\$2,145,000 Total**

- Contingency
- UPRR Permit, Insurance, Flagman and other RR related fees, charges and costs
- Surveying
- Construction Management, Inspection, Testing.

Generally, the above costs may be in the range of 30%.

## ALTERNATE MATERIAL (AIL SOUND WALLS)<sup>1</sup>

Total Cost: Averages about \$585-664 per lineal foot or \$3.1-3.5 million per mile.

Type of Wall: Tuf-Barrier(reflective STC 31) or Silent Protector(absorptive STC 31 / NRC 1.0).

Footings: Pile footings.

Typical Height: 16 to 20 feet, depending on specific design needs.

Aesthetic Treatment: See brochure attached starting on page 22

Engineering of Plans: Typically 1 months.

Construction Project: Typically 1 to 3 months.

**\$1,930,500 to \$2,191,200**

- Contingency
- UPRR Permit, Insurance, Flagman and other RR related fees, charges and costs
- Surveying
- Construction Management, Inspection, Testing.

Generally, the above costs may be in the range of 30%.

## SECTION 2 - SCOPE

Figure 1 below shows the limits of the section of the Union Pacific railroad in the City of Commerce, and marks limits (in red) of where the railroad is directly adjacent to residential areas that do not currently have the benefit of a sound wall. The total length of railroad frontage is 3.67 miles (Approx. 19,378 feet).

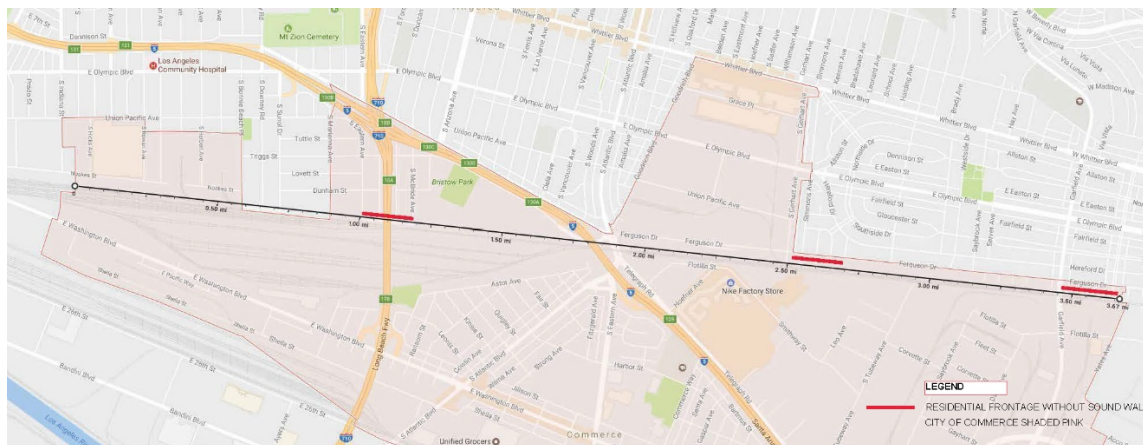


Figure 1: FEASIBILITY STUDY BOUNDARY<sup>2</sup>

The following table show a breakdown this frontage into discrete sections where the city can choose to include or exclude based on the overall budget or needs of the constituents.

Total length of northside railroad frontage .....	19,378 LF
Industrial use from western border to S. Eastern Ave.....	5,808 LF
Industrial use from S. McBride Ave. to S. Gerhart Ave.....	6,864 LF
Industrial use from Elton Ave. to Saybrook Ave. ....	2,050 LF
Existing 18'-0" high wall from Saybrook Ave, to S. Garfield Ave. (See Figure 2) .....	<u>1,752 LF</u>

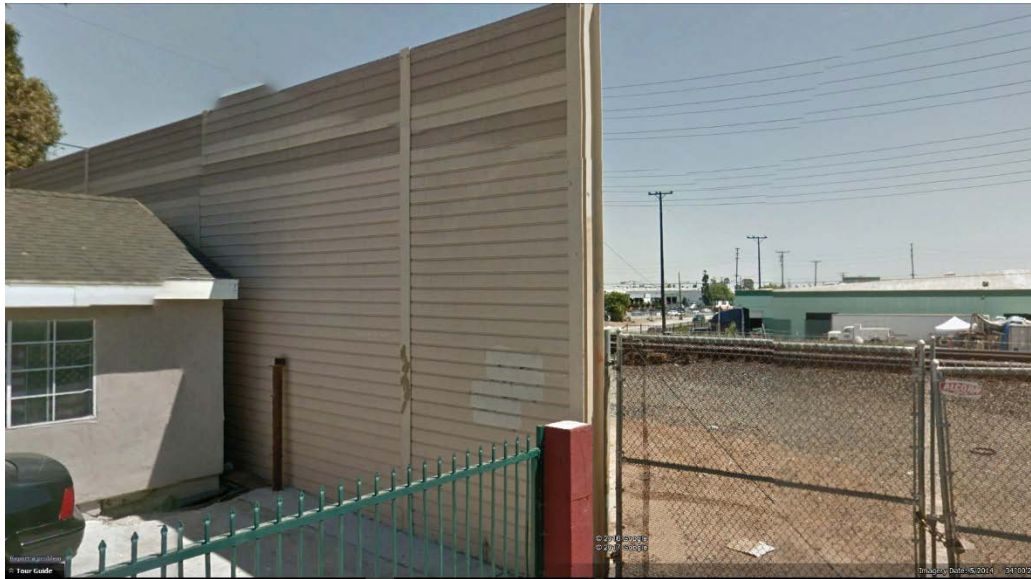
<sup>1</sup> See AIL Brochure attached on page 22

<sup>2</sup> Larger index map on page 8



\*Total length of residential frontage needing sound wall.....2,904 LF

\*The actual measured length of wall is approximately **3300 LF** minus the length for vehicular access gates.



*Figure 2: EXISTING SOUND WALL (GARFIELD TO SAYBROOK)*

Figure 2 shows an image of the existing sound wall between Saybrook Ave., and S. Garfield Ave. This pre-fabricated wall system was built by UP in 2006, it is in good condition, and it is recommended that this section of wall be left in place instead of being replaced. The photograph also illustrates how close some buildings are to the railroad right-of-way, and potentially impact new construction of sound walls. Special foundations will be needed where proximate to adjacent foundations. Waivers of liability and rights of entry will need to be executed in these cases.

Most existing residential fences include chain link, wood and wrought iron fences; mostly overgrown with vegetation. Removal of existing fencing would not pose too much of a problem, except where adjacent buildings are built up to the property lines. There will be added clearing and grubbing adjacent to the construction and in existing UP right-of-way. There is however as section of approximately 970 LF of existing 6'-0" high split faced CMU along Noakes St. from S. Eastern Ave to S. McBride on either side of the 710 freeway which needs to be demolished and a new sound wall built instead. This existing wall is shown in Figure 3.



*Figure 3: EXISTING NOAKES ST. WALL*

## SECTION 3 - DESIGN & CONSTRUCTION CONSIDERATIONS

1. Field survey to establish right-of-way boundaries and height of track. This will determine how high the sound wall needs to be at any section.

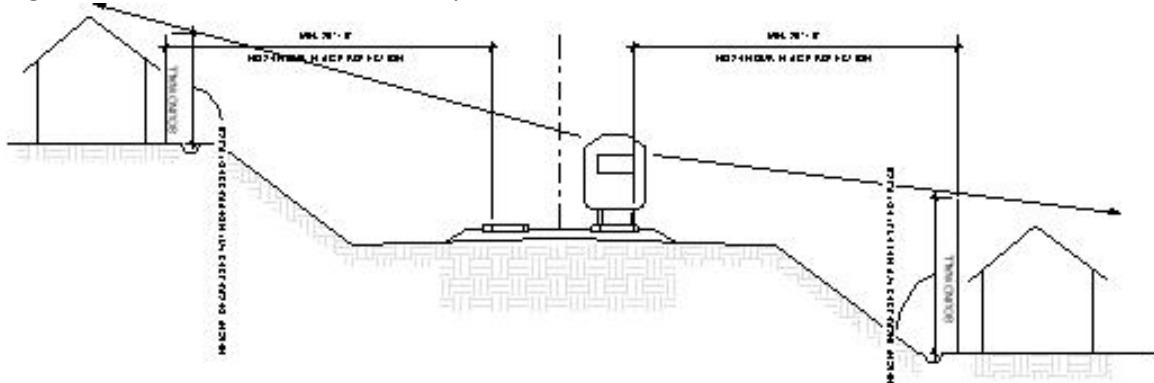


Figure 4: HIGHER WALLS FOR ELEVATED TRACK

2. Notification & waivers of liability and rights of entry will need to be executed in cases where adjacent buildings are affected.
3. Special foundations will be needed where proximate to adjacent foundations.
4. Type of wall needs to be selected by the City
  - a. Concrete (high cost, long installation)
  - b. Masonry (high cost, long installation)
  - c. Pre-fabricated concrete panels (moderate cost and faster installation)
5. UP and the City will determine where emergency and maintenance access opening will need to be located.
6. Flagman are needed where construction occurs less than 25 feet from railroad. This will create additional costs for the entire duration of construction (\$1600 to \$1800 per day for flagger)
7. Engineering design will have to be provided by the city if it is not provided by the design-build contractor.
8. All construction staff need to be railroad safety certified
9. Must apply for a special temporary construction easement. (covers parking, materials storage, survey and construction)
10. Daniel Moreno will need a Preliminary Engineering Letter in order to consult with us during design and construction (cost recovery for UP)

Daniel Z. Moreno

Manager Industry and Public Projects - Union Pacific Railroad

2015 S. Willow

Bloomington, CA 92316

Office: 909.685.2288

dzmorano@up.com

11. Do not pay the Rush/Expedite Fee!

## SECTION 4 – TEMPORARY USE OF RAILROAD RIGHT-OF-WAY AND PERMITTING PROCEDURES

The permitting process for temporary use of railroad property is as follows:

1. A non-refundable application fee in the amount of \$545.00 must accompany the completed application<sup>3</sup> for Right of Entry form sent to the appropriate Real Estate Manager. The check should be made payable to Union Pacific Railroad Company, with the Federal Tax Identification No. 94-6001323. There is a licensee fee that will be charged on top of the application fee. The manager will only be able to provide you with fee information after the application has been reviewed and approved.
  2. Provide a city, county or topographical map of the area, showing the proposed installation. If you require a railroad right of way map to locate your right of way use location, such a map may be obtained (a fee may be required) from:  
Engineering Map Area  
Union Pacific Railroad Company  
Phone: (402) 501-4941  
Fax: (402) 501-4932
  3. When using a street name on the application, which has been changed, please include the current name as well as any previous name. Many of the old railroad company maps do not reflect these name changes.
  4. Refer to the information on Fixed Object Identity<sup>4</sup> for examples to assist you in locating "fixed objects."
  5. Locating mile post markers to establishing the location of the proposed site or installation.
  6. Union Pacific's Real Estate Department is the initial contact for all right of entry requests. Applications should be submitted by U.S. mail, or express mail to:  
Valerie Harrill (402) 544-8801 or Justin Mahr 402-544-2623 – office  
Manager - Real Estate  
Union Pacific Railroad  
1400 Douglas Street, Stop 1690  
Omaha, NE 68179
- Call USA and Steve Stevenson, UP Fiber Optic Lines in the right-of-way
7. The application should be accompanied by all of the items listed below before your request can be given an initial review. Incomplete applications will halt processing:
    - a. Completed Application for Right of Entry (Include a check in the amount of \$545.00 for the application fee.)<sup>5</sup>
    - b. Contractor's Information (Required in all cases where a contractor will be used.)

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<sup>3</sup> See application on page 12

<sup>4</sup> See Fixed Object Identity on page 13

<sup>5</sup> See Page 14

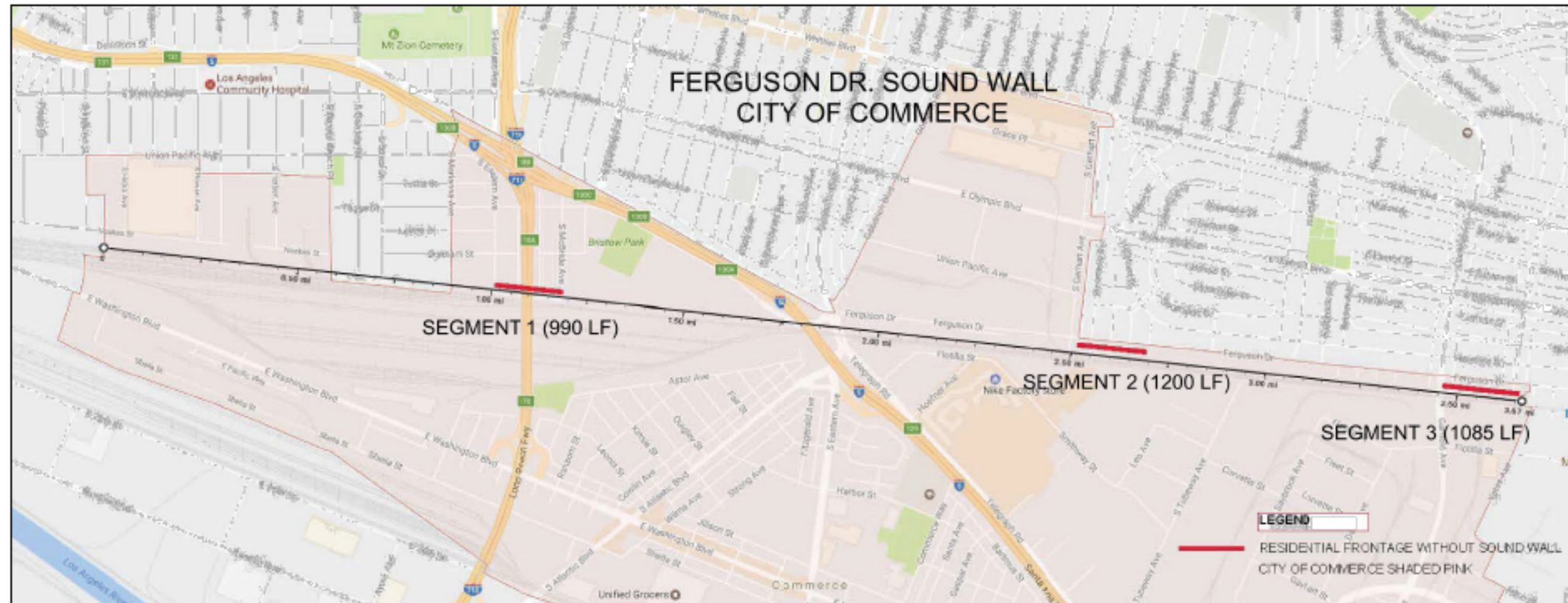
- c. Site/Project Plan (Showing locations of all property you wish to enter (including all proposed bore holes and all other testing locations and/or facilities) to identify the specific location of the Right of Entry area.)
  - d. USGS Map (An expanded view showing the work area and street names.)
  - e. Railroad Protective Liability Insurance<sup>6</sup> (Railroad protective insurance can be obtained from your commercial insurance carrier. In certain cases, Railroad Protective Liability Insurance is also available from Union Pacific Railroad Company. In all cases, general public liability insurance, automobile liability insurance, and workers' compensation insurance will also be required. You do not need to submit insurance information or certificates at the time of application, but you will need to submit proof of all required coverage with the agreement we send for your execution.)
8. The normal turn-around time for processing applications is now running between 30-45 days. They request not call within the initial 30 days of receipt of your request for the status of your application.
9. Before you enter the railroad company's right of way, the following must be completed:
- a. All agreements must be executed by the applicant and the railroad company. A copy of the executed agreement must be within the applicant's possession before entering the railroad company's right of way.
  - b. Verbal Authorizations will not be permitted or granted. Generally, a minimum of 48 hours' advance notice after execution of an agreement will be required prior to entry.
  - c. License fees and insurance certificates, if required, must be submitted at the time you execute and return the agreement.
  - d. Clearance and approval from the railroad company's Fiber Optic Cable Hotline (800) 336-9193.
  - e. Arrangements must have been made with the railroad company's local manager of track maintenance, as listed in the agreement, for flagging protection (if required).
  - f. You will be required to obtain Railroad Protective Liability Insurance. This may be purchased from an insurance agent of your choice, or you may be eligible for inclusion in UPRR's Railroad Protective Liability Insurance program.
  - g. If a Contractor is employed by the Licensee to perform any of the agreed to activities under the Right of Entry Agreement, that Party will need to complete and return the Contractor's Endorsement Form and submit along with a \$500 Administrative Fee and a copy of their General Liability Insurance certificate meeting the specified coverages as shown in the License Agreement. A Railroad Protective Liability Insurance policy must be in procured by the Licensee OR its Contractor.
10. The terms of the railroad company's standard agreements are non-negotiable. Please do not attempt to make any changes to the agreement or request alteration to any of the terms and/or provisions to the agreement.




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<sup>6</sup> Railroad Protective Liability Insurance Application Page 16





# INDEX MAP OF ALL THREE SOUND WALL SEGMENTS



<b>Underground Service Alert</b>  Call: TOLL FREE 811	DATE: 4/28/2017		 1201 BOND AVENUE CHINO, CA 91710 (909) 595-0500	APPROVED: _____ 2018	<b>FERGUSON AVE. SOUND WALL</b>
	DATE: _____ REVISIONS: _____ BY: _____ DATE: _____			DESIGNED BY: _____ CHECKED BY: _____ DRAWN BY: _____ DATE: _____ COMMENTS: _____	<b>CITY OF COMMERCE</b>
SCALE: 1" = 100' DATE: 12-15-18			FOR CITY USE ONLY: PLAN NO. _____ W.D. NO. _____		

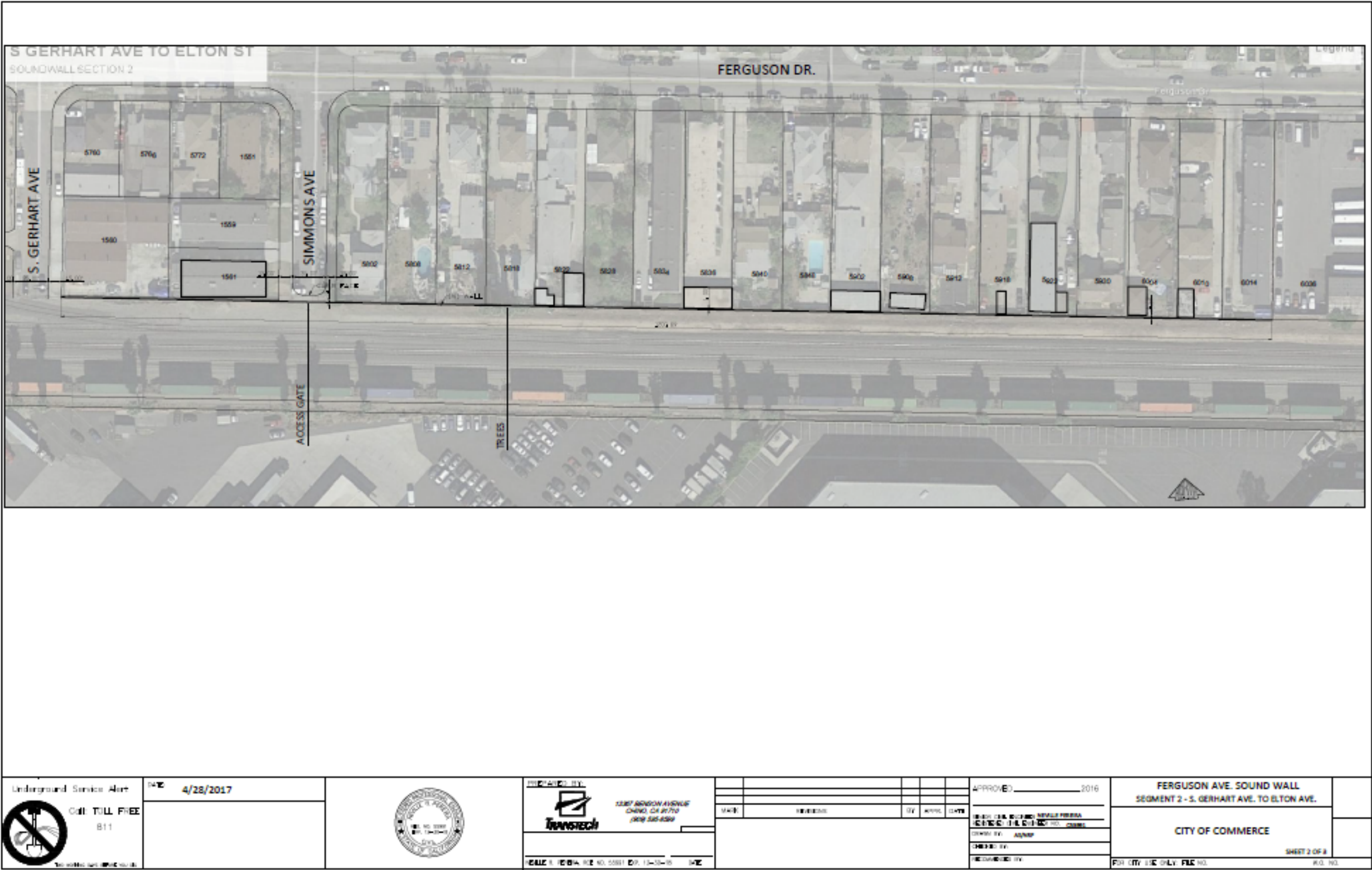
### PLAN VIEW OF SEGMENT 1



 <p>Underground Service Alert CALL TOLL FREE 811</p>	<p>4/28/2017</p>		<p>TRANS TECH 12057 BRADON AVENUE CHINO, CA 91710 (909) 595-9399</p>	<table border="1"> <tr> <td>DATE</td> <td>TIME</td> <td>OFF</td> <td>ATTN</td> <td>DATE</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	DATE	TIME	OFF	ATTN	DATE						<p>APPROVED _____ 2017</p> <p>FOR THE CITY OF COMMERCE</p> <p>DATE: _____</p> <p>BY: _____</p>	<p>FERGUSON AVE. SOUND WALL SEGMENT 1 - S. EASTERN AVE. TO S. MCBRIDE AVE.</p> <p>CITY OF COMMERCE</p> <p>SHEET 2 OF 3</p> <p>FOR CITY USE ONLY (RUC) (RUC)</p>
DATE	TIME	OFF	ATTN	DATE												

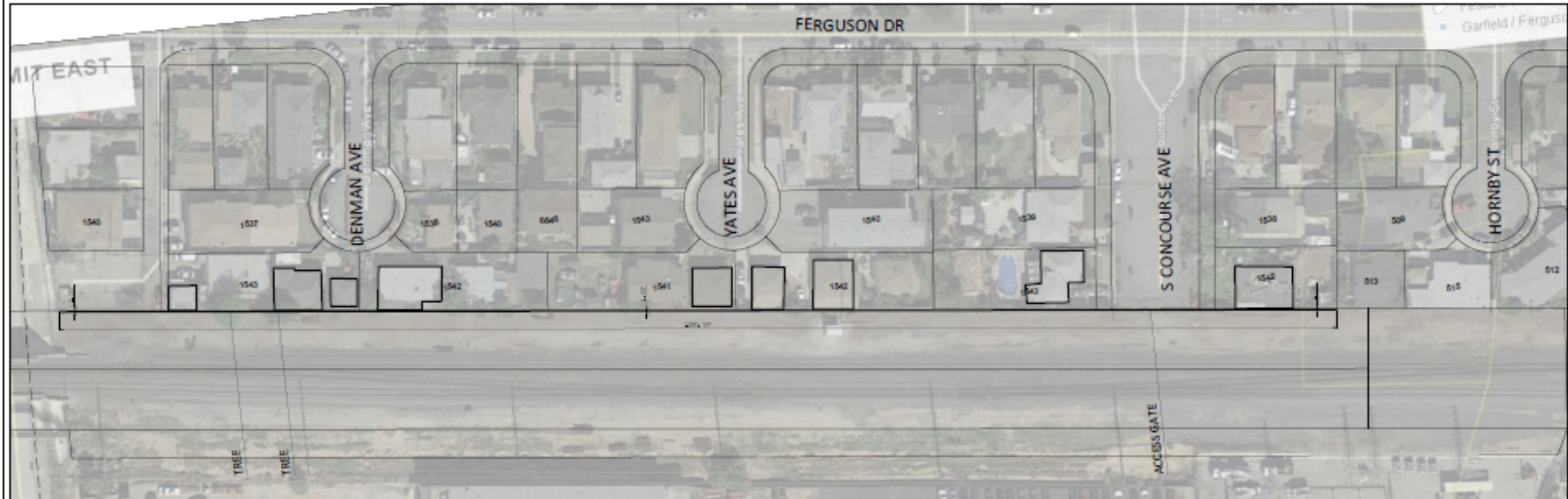


PLAN VIEW OF SEGMENT 2





### PLAN VIEW OF SEGMENT 3



 <p><b>Underground Service Alert</b></p> <p>Call TOLL FREE 811</p> <p><small>NO DIGGING ONE INCH OR DEEPER</small></p>	DATE <b>4/28/2017</b>		DESIGNED BY:  <b>TRANSARCH</b> 13007 BARDON AVENUE CHINA, CA 91709 (909) 586-6369	DATE <b>4/28/2017</b>	BY <b>APRIL DATE</b>	APPROVED _____ 2016	<b>FERGUSON AVE. SOUND WALL SEGMENT 3 - S. GARFIELD AVE. TO EAST CITY LIMIT</b>  <b>CITY OF COMMERCE</b>  SHEET 2 OF 3
	CHECKED BY: _____ DRAWN BY: <b>APRIL</b> REVISIONS BY: _____ FOR CITY USE ONLY FILE NO. _____ R.O. NO. _____						

# PROPERTY SALE APPLICATION - UNION PACIFIC RAILROAD COMPANY

**PLEASE NOTE THAT ALL INFORMATION REQUESTED BELOW MUST BE PROVIDED FOR REVIEW:**

Location of Sale area: \_\_\_\_\_

Is Sale area adjacent to active/operating Railroad tracks? \_\_\_\_\_

Nearest cross streets \_\_\_\_\_

City \_\_\_\_\_ County \_\_\_\_\_

State \_\_\_\_\_

*Section, Township and Range* \_\_\_\_\_

*\*If property is rural and you do not know the Section, Township and Range, please contact your local county assessor's office. Also, please include any parcel # information and plat maps.*

Will Trackage be required? Yes \_\_\_\_\_ No \_\_\_\_\_ If Yes, Contact **Industrial Development**

**\*\*Note: Land ownership does not include use of trackage**

**\* Please provide an aerial photo, street map and print of the location (ie: city, street, railroad mile post) of the proposed sale area with dimensions. Also, show any planned improvements on the sale site with dimensions from nearest track and provide drawings, if available.**

Other comments pertinent to sale: \_\_\_\_\_

## PLEASE PRINT ALL INFORMATION

Name of purchaser \_\_\_\_\_

If a Corporation, State of Incorporation \_\_\_\_\_

If a Partnership, Type \_\_\_\_\_

or, dba \_\_\_\_\_

Mailing Address \_\_\_\_\_

Name of Purchaser's Contact \_\_\_\_\_

Phone No. (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ Fax No. (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ Cell No./E-Mail \_\_\_\_\_

Detailed Description of Intended Use of Sale area \_\_\_\_\_

Offer price: \_\_\_\_\_

**This application is not to be construed as a commitment to sell property. Railroad management approval is required for all transactions. Buyer is responsible for survey, title search, appraisal, closing fees, excise taxes, etc. associated with any sale.**

## **FORWARD APPLICATION & PRINT TO:**

\_\_\_\_\_ - Real Estate

Union Pacific Railroad Co.  
1400 Douglas Street, Stop 1690  
Omaha, NE 68179-1690 or  
fax to: (402) 501-0340  
e-mail: realestate@up.com

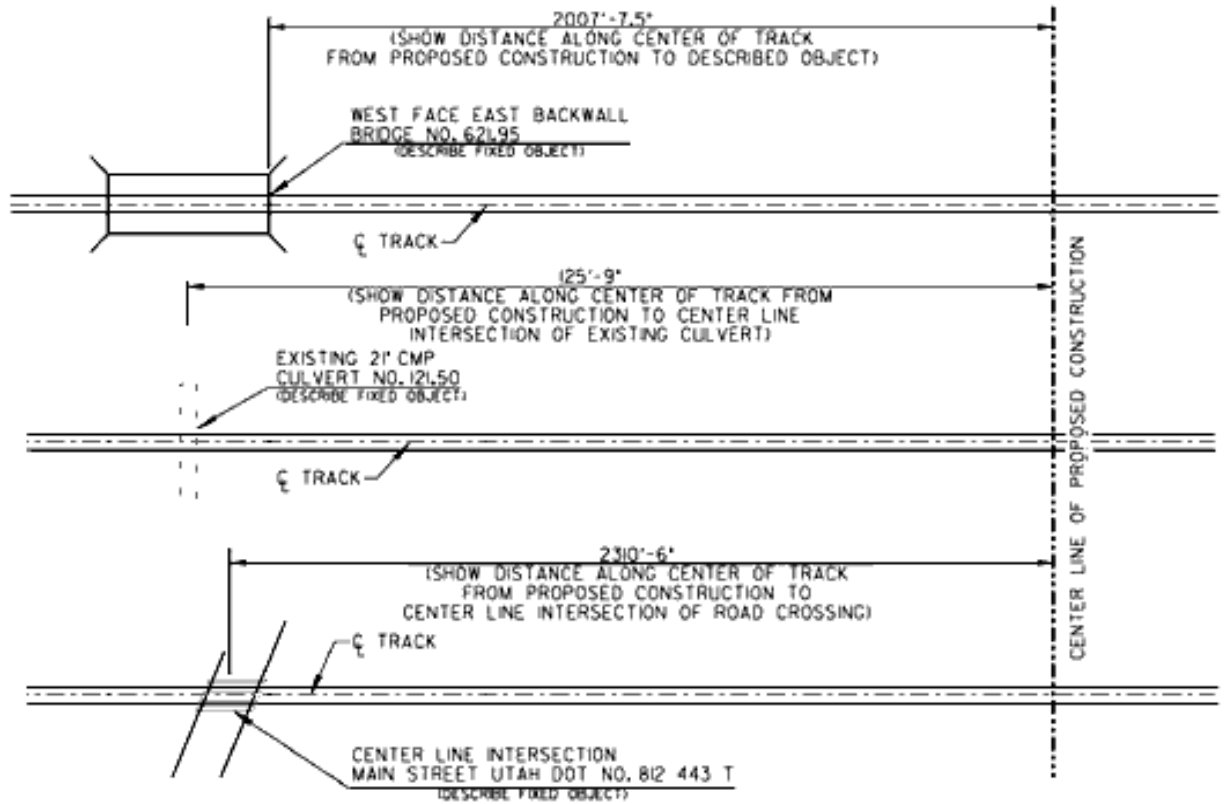
X \_\_\_\_\_

(signature of applicant)

(title) \_\_\_\_\_

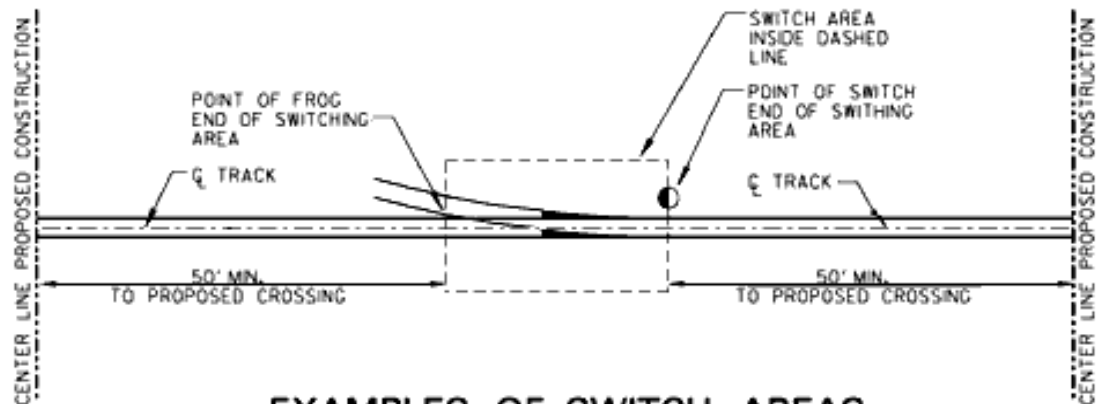
(date) \_\_\_\_\_

## RAILROAD EXAMPLES OF FIXED OBJECTS



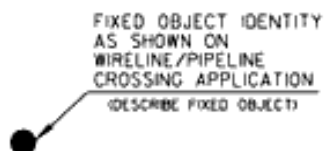
### EXAMPLES OF FIXED OBJECTS AND HOW TO IDENTIFY EACH

NO SCALE



### EXAMPLES OF SWITCH AREAS

NO SCALE



## RAILROAD RIGHT OF ENTRY APPLICATION

### APPLICATION – RIGHT OF ENTRY

(Please allow 30-45 days for processing)

1. Name of Licensee  
(Exact Name of the Owner of the Utility)

State of Incorporation; if not incorporated, please list entity's legal status

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2. Address, email, phone and Fax number of Licensee
- 

Email\_Phone\_Fax

3. Name, address and phone number of individual to whom agreement is to be mailed  
*if different than Item 2.*
- 
- 

4. Contact information for individual to contact in the event of questions.
- 

Email\_Phone\_Fax

5. Project site location:
- 

(City, County and State)

6. Railroad site location information:
- 

(Railroad Mile Post, Subdivision, or any other pertinent location detail.)

7. Time period for your project use of Railroad Company's property:

Start Date:\_\_\_\_\_ Stop Date:

8. Will there be any activity or equipment within 25 feet of a Railroad track in connection with this property?

( ) No ( ) Yes (If Yes, a Flagman will be required on site at your cost.)

9. Will there be any excavation involved?

( ) No ( ) Yes (If Yes, include shoring plans within Railroad standards.)

10. Purpose of your request:

*(This must be detailed & complete; attach engineering plans, shoring plans and any pertinent supporting details, including maps or prints.)*

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- Additional Fees and charges may be applicable to your request. These changes cannot be determined until your project is approved.

UNION PACIFIC RAILROAD  
1400 DOUGLAS STREET MS 1690  
OMAHA NE





## APPLICATION FORM \$2M/\$6M RAILROAD PROTECTIVE LIABILITY INSURANCE

**DO NOT submit unless all mandatory (\*) fields are complete.**

1. \*Name of Union Pacific Representative   
Email Address
2. \*Union Pacific assigned Project # and/or Folder #

**Note: Separate applications must be completed for each folder assigned**

3. \*Description of Project   
(example: horizontal bore / pipeline)
4. \*Please Complete Either Section A OR Section B OR Section C Below:

### Section A. Traverse Installation - Wire and Pipe

If Project is Traverse Installation

What is the largest inside diameter of the bore directly beneath the tracks?

(Note: If diameter is larger than 48" please contact for quote.)

### Section B. Longitudinal (Parallel) Installation - Wire and Pipe

Overhead or Underground, use the drop down arrow to select the linear feet

Overhead

Underground

### Section C. Other Construction Project - Total project cost cannot exceed \$10,000,000

Please answer these questions and provide a description of the project:

- C1. Does the project include any track work while active trains pass through the project area? ☐ Yes ☐ No
- C2. Will a project contract, including a hold harmless agreement, be signed by the designated contractor? ☐ Yes ☐ No
- C3. Will the railroad be named as an additional insured on the contractor's GL policy? ☐ Yes ☐ No
- C4. Is a slow order in place for the duration of the project? ☐ Yes ☐ No
- C5. Will other railroad employees (other than flagmen) be assigned or provide any direction in the project? ☐ Yes ☐ No

### TO BE COMPLETED FOR ALL PROJECTS

5. \*Please Describe Project
6. Project Cost Within 50'RR Property  Total Project Value   
(complete only for projects other than wire or pipe)
7. \*Job Location (Nearest City, State)   
(Include Project Location, County, and Zip Code)
8. \*Estimated Start and End Date of Work Within RR Right-of-Way Begin:  End:
9. \*Name on Certificate of Insurance   
(Contractor completing the project)

Mailing Address

City, State, Zip

Phone #

Fax #

E-Mail

10. Name of Involved Governmental Authority or General Contractor
11. Cost of Railroad Protective Liability Coverage for this Project:

**ONLY** enter amount from A OR B OR C above. **THIS IS YOUR TOTAL PREMIUM**

Premium includes 15% commission for Marsh USA Inc. Your payment will acknowledge acceptance of this transaction.

**\*THIS COVERAGE WILL NOT BEGIN UNTIL SIGNED APPLICATION AND CHECK ARE RECEIVED BY MARSH USA**

A Check Payable in the amount quoted in Item #11 above

Payable to: Marsh LLC

PO Box 846015

Dallas, TX 75284-0015

**Print Form**

#### FRAUD PREVENTION - GENERAL WARNING

**NOTICE:** Any person who knowingly assist another, files an application for insurance or claim containing any false, incomplete or misleading information for the purpose of defrauding or attempting to defraud an Insurance Company may be guilty of a crime and may be subject to criminal and civil penalties and loss of insurance benefits.

Applicant Signature

Applicant Phone

Date:

Please Print Applicant's Name

UPPRPLI.v.05232014

## NOTICE

**To All Prospective Insureds:** Any person who knowingly, and with intent to defraud any insurance company or other person, files an application for insurance or statement of claim containing any materially false information, or, for the purpose of misleading, conceals information concerning any fact material thereto, may commit a fraudulent insurance act which is a crime and subjects such person to criminal and civil penalties in many states.

### **To Prospective Insureds In:**

**Notice to Colorado Applicants:** It is unlawful to knowingly provide false, incomplete or misleading facts or information to an insurance company for the purpose of defrauding or attempting to defraud the company. Penalties may include imprisonment, fines, denial of insurance and civil damages. Any insurance company or agent of an insurance company who knowingly provides false, incomplete, or misleading facts or information to a policyholder or claimant for the purpose of defrauding or attempting to defraud the policyholder or claiming with regard to a settlement or award payable for insurance proceeds shall be reported to the Colorado Division of Insurance within the Department of Regulatory Agencies.

**Notice to District of Columbia and Louisiana Applicants:** “Any person who knowingly presents a false or fraudulent claim for payment of a loss or benefit or knowingly presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.”

**Notice to Florida and Oklahoma Applicants:** Any person who knowingly and with intent to injure, defraud or deceive any insurance company, files a statement of claim containing any false, incomplete, or misleading information is guilty of a felony of the third degree. (Note: In Oklahoma the language must appear on the face of the policy in 10 pt. font or larger).

**Notice to Kansas Applicants:** An act committed by any person who, knowingly and with intent to defraud, presents, causes to be presented or prepares with knowledge or belief that it will be presented to or by an insurer, purported insurer, broker or any agent thereof, any written statement as part of, or in support of, an application for the issuance of, or the rating of an insurance policy for personal or commercial insurance, or a claim for payment or other benefit pursuant to an insurance policy for commercial or personal insurance which such person knows to contain materially false information concerning any fact material thereto; or conceals, for the purpose of misleading, information concerning any fact material thereto.

**Notice to Maine, Tennessee, Virginia and Washington Applications:** It is a crime to knowingly provide false, incomplete or misleading information to an insurance company for the purpose of defrauding the company. Penalties may include imprisonment, fines and/or denial of insurance benefits.

**Notice to Maryland Applicants:** Any person who knowingly or willfully presents a false or fraudulent

claim for payment of a loss or benefit or who knowingly or willfully presents false information in an application for insurance is guilty of a crime and may be subject to fines and confinement in prison.

**Notice to New Hampshire Applicants:** Any person who, with a purpose to injure, defraud or deceive an insurance company, files a statement of claim containing any false, incomplete or misleading information is subject to prosecution and punishment for insurance fraud as provided in RSA 638:20.

**Notice to New York Applicants:** Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance or statement of claim containing any materially false information, or conceals for the purpose of misleading, information concerning any fact material thereto, commits a fraudulent insurance act, which is a crime, and shall also be subject to a civil penalty not to exceed \$5,000 and the stated value of the claim for each such violation.

**Notice to Pennsylvania Applicants:** Any person who knowingly and with intent to defraud any insurance company or other person files an application for insurance or statement of claim containing any materially false information or conceals for purposes of misleading, information concerning any fact material thereto commits a fraudulent insurance act, which is a crime and subjects such person to criminal and civil penalties.



# SAMPLE ONLY-RIGHT OF ENTRY

<div style="float: right; font-size: 0.8em;">DATE DATE (MM/DD/YY)</div> <b>CERTIFICATE OF INSURANCE</b>					
<b>PRODUCER</b>  <b>INSURANCE COMPANY NAME</b> <b>ADDRESS</b> <b>CITY, STATE, ZIP CODE</b>		THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.  <div style="text-align: center; background-color: #f2f2f2; border: 1px solid black; padding: 2px;">COMPANIES AFFORDING COVERAGE</div> <div style="border: 1px solid black; padding: 2px;">COMPANY LETTER A</div>			
<b>INSURED</b>  <b>Licensee's NAME</b> <b>ADDRESS</b> <b>CITY, STATE, ZIP CODE</b>		<div style="border: 1px solid black; padding: 2px;">COMPANY LETTER B</div> <div style="border: 1px solid black; padding: 2px;">COMPANY LETTER C</div> <div style="border: 1px solid black; padding: 2px;">COMPANY LETTER D</div> <div style="border: 1px solid black; padding: 2px;">COMPANY LETTER E</div>			
<b>COVERAGES</b> THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAME ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.					
CO UTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFF. DATE (MM/DD/YY)	POLICY EXP. DATE (MM/DD/YY)	LIMITS
	<b>GENERAL LIABILITY OR</b>  <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR <input type="checkbox"/> OWNERS & CONTRACTOR'S PROT. <input type="checkbox"/>				GENERAL AGGREGATE \$10,000,000 PRODUCTS-COMPPOP AGG. \$5,000,000 PERSONAL & ADV. INJURY \$5,000,000 EACH OCCURRENCE \$5,000,000 FIRE DAMAGE (ANY ONE FIRE) NA MED. EXPENSE (ANYONE PERSON) NA
	<b>AUTOMOBILE LIABILITY</b>  <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				COMBINED SINGLE LIMIT \$2,000,000  BODILY INJURY (PER ACCIDENT) PROPERTY DAMAGE
	<b>EXCESS LIABILITY</b>  <input type="checkbox"/> <input type="checkbox"/>				EACH OCCURRENCE AGGREGATE
	<b>WORKER'S COMPENSATION AND EMPLOYER'S LIABILITY</b>				<input checked="" type="checkbox"/> STATUTORY LIMITS EACH ACCIDENT \$500,000 DISEASE - POLICY LIMIT \$500,000 DISEASE - EACH EMPLOYEE \$500,000
	<b>OTHER: Pollution Liability (when required by agreement)</b>				GENERAL AGGREGATE \$10,000,000 EACH OCCURRENCE \$5,000,000
CGL Policy is endorsed to include Union Pacific Railroad as Additional Insured as required by agreement. CGL Policy is endorsed to include "Contractual Liability Railroads" as required by agreement. Auto Liability Policy is endorsed to include "Certain Operations in Connection With Railroads" as required by agreement. Auto Liability Policy is endorsed to include Union Pacific Railroad as Additional Insured as required by agreement. Policy is endorsed with Motor Carrier Aut Endorsement MC8 80 as required by agreement. Punitive damages (one of the following statements must be included): 1. Policies are silent concerning punitive damages. 2. Insurance coverage may not lawfully be obtained for any punitive damages that may arise under this agreement. 3. All punitive damages are prohibited by all states in which this agreement will be performed. Workers' Compensation Policy is endorsed waiving subrogation for Workers' Compensation and Employers Liability in favor of Union Pacific Railroad. Railroad Protective Liability as required by agreement with Railroad as named insured with limits of not less than \$2.0 million per occurrence and an aggregate of \$8.0 million. A binder stating policy is in place must be provided to Railroad until policy is forwarded to Railroad.					
CERTIFICATE HOLDER		CANCELLATION			
UNION PACIFIC RAILROAD CO Real Estate Department ATT: <@>Contract Administrator<@> 1400 Douglas St STOP 1690 OMAHA, NE 68179-1690		SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.  AUTHORIZED REPRESENTATIVE  <div style="text-align: right;">ACCORD CORPORATION 1990.</div>			
ACCORD 25-3(7/90)					

## UNION PACIFIC \$2,000,000 / \$6,000,000 RATES FOR RAILROAD PROTECTIVE LIABILITY POLICY

### Rates for Installation of Overhead Wire or Underground Wire/Pipe

Installation	Length in Ft.		Length in Ft.	Overhead Rates	Underground Rates	Open Cut
Traverse	N/A		N/A	\$1,600	\$1,800	\$1,480
Longitudinal	-	to	250	\$1,600	\$1,800	N/A
Longitudinal	251	to	500	\$1,700	\$1,900	N/A
Longitudinal	501	to	1,000	\$1,800	\$2,050	N/A
Longitudinal	1,001	to	2,000	\$2,000	\$2,250	N/A
Longitudinal	2,001	to	4,000	\$2,475	\$2,725	N/A
Longitudinal	4,001	to	6,000	\$2,700	\$3,000	N/A
Longitudinal	6,001	to	8,000	\$2,900	\$3,150	N/A
Longitudinal	8,001	to	10,000	\$3,050	\$3,350	N/A

### Rates for Construction Other Than Wire and Pipe Installation

- 1) Full Contract value shall not exceed \$10,000,000
- 2) Contract value within 50 feet of the railroad shall not exceed \$10,000,000

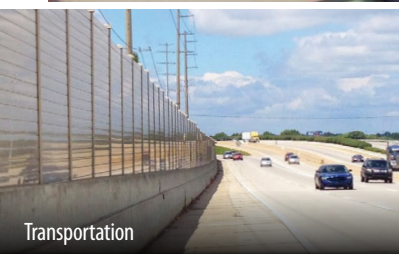
Contract Value within 50 Feet of Railroad Property			Rates
\$0	-	\$25,000	\$750
\$25,001	-	\$75,000	\$900
\$75,001	-	\$150,000	\$1,200
\$150,001	-	\$250,000	\$1,400
\$250,001	-	\$500,000	\$1,800
\$500,001	-	\$750,000	\$2,400
\$750,001	-	\$1,000,000	\$2,900
\$1,000,001	-	\$1,250,000	\$3,400
\$1,250,001	-	\$1,750,000	\$4,200
\$1,750,001	-	\$2,500,000	\$5,100
\$2,500,001	-	\$3,500,000	\$7,500
\$3,500,001	-	\$4,000,000	\$10,000
\$4,000,001	-	\$5,000,000	\$15,000
\$5,000,001	-	\$6,000,000	\$20,300
\$6,000,001	-	\$7,000,000	\$23,700
\$7,000,001	-	\$8,000,000	\$27,040
\$8,000,001	-	\$9,000,000	\$30,400
\$9,000,001	-	\$10,000,000	\$33,380

Construction includes: At-grade crossings paving, building and demolition of structures, building repair, grass cutting, landscaping, maintenance work, milling and paving, parking lot construction, potholing, rock scaling, seeding, spur construction, sign board, construction, station repair, survey work, test borings, vegetation removal, weed control. **BRIDGES** – Does cover bridge inspections, bridge maintenance, bridge painting, and bridge surface repair. **BRIDGES – DOES NOT COVER NEW BRIDGE CONSTRUCTION, STRUCTURAL REPAIRS TO BRIDGES, WIDENING OF BRIDGES AND DEMOLITION OF BRIDGES.**



# AIL SOUND WALLS

- ▶ PVC Sound Barrier Wall Systems
- ▶ Lightweight and easy-to-install
- ▶ Lower installed costs
- ▶ Sustainable and maintenance-free



Transportation



Industrial



Commercial



Roof Top Mechanical Systems

ENGINEERED SOUND MITIGATION SOLUTIONS

[ailsoundwalls.com](http://ailsoundwalls.com)

1-866-231-7867



## Build in success with AIL.

Since 1965, Atlantic Industries Limited (AIL) has been adding value to the world's most successful infrastructure projects.

AIL is a world leader in developing innovative engineered solutions in sound barrier wall systems, structural plate bridges and tunnels, prefabricated bridges, MSE retaining walls and corrugated steel pipe.

Choose an AIL infrastructure solution and get the value, experience, innovation, sustainability and support that will ensure your project's success.



## An industry leader in sound mitigation.

### RECOMMENDED FOR

- ▶ Commercial ▶ Industrial ▶ Institutional ▶ Utilities
- ▶ Roof Top Mechanical Systems ▶ Power Generation ▶ Municipal
- ▶ Highways ▶ Railways ▶ Bridges ▶ Oil & Gas ▶ Water/Wastewater

AIL Sound Walls is a division of AIL and the manufacturer of the Silent Protector® and Tuf-Barrier® sound barrier wall systems for absorptive or reflective applications.

## Lightweight, easy-to-install, durable and cost-effective.

Lightweight and easy-to-install, AIL Sound Walls are engineered for maximum sound reduction of environmental or ambient noise such as traffic, manufacturing, industrial or commercial noise.

Our turn-key solutions, include: engineering, manufacturing, project management and site assistance.

- ▶ Meets accelerated test requirements for durability
- ▶ Impervious to rain, snow, ice and sleet
- ▶ Will not rust, rot, or stain
- ▶ Maintenance-free
- ▶ Designed to meet applicable design codes (AASHTO, IBC, CSA)
- ▶ Wind load tested for hurricane-force winds





## Silent Protector® (Absorptive)

- ▶ PVC absorptive sound barrier wall system with acoustical mineral wool
- ▶ Noise Reduction Coefficient (NRC) rating of 1.0, the highest achievable rating
- ▶ Absorbs unwanted noise
- ▶ Silent Protector Plus® offers STC 36 and NRC 0.95, ask for details

NOISE REDUCTION  
COEFFICIENT RATING  
**NRC 1.0**

All Sound Walls are made from long-lasting, UV-resistant PVC, with the highest percentage of recycled content available.



## Tuf-Barrier® (Reflective)

- ▶ PVC reflective sound barrier wall system
- ▶ Blocks and reflects unwanted noise
- ▶ Tongue and groove interlocking connection
- ▶ Textured finishes available

SOUND TRANSMISSION  
CLASS RATINGS UP TO  
**STC 36**  
WITH SILENT PROTECTOR PLUS®

**EASY-OFF  
GRAFFITI  
AND TAGGING**



## Industrial, Commercial and Institutional

### RECOMMENDED FOR

- ▶ Commercial Developments ▶ Hospitals ▶ Schools and Universities
- ▶ Loading Docks ▶ Distribution Facilities ▶ Manufacturing Plants

Noise from large commercial or industrial developments and their associated traffic is one of the most contentious environmental problems for surrounding communities.

Residents are demanding better noise abatement solutions from facilities like shopping centers, manufacturing plants, distribution hubs and utility stations.

AIL Sound Walls provide superior performance for all noise sensitive projects.



Lightweight AIL Sound Walls are perfect for roof top applications.  
Man-doors and gates are easily integrated.

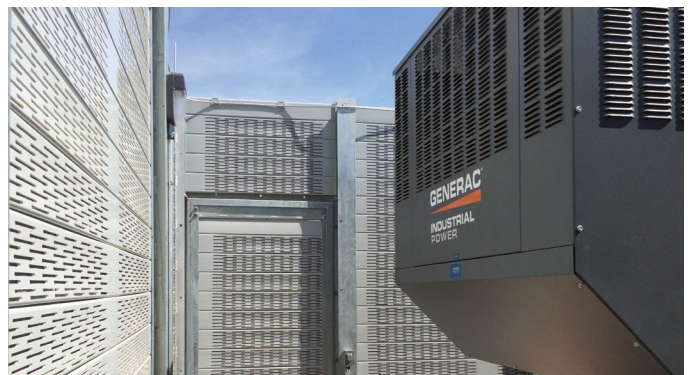
## Roof Top, Equipment and Machinery Enclosures

### RECOMMENDED FOR

- ▶ HVAC Units ▶ Generators ▶ Chillers ▶ Cooling Towers
- ▶ Oil & Gas ▶ Hydro ▶ Compressors ▶ Petro Chemical
- ▶ Sub Stations ▶ Water/Wastewater

The lighter weight of AIL Sound Walls make them ideal for roof top applications where sound mitigation is needed. The enclosure support system integrates easily with roof structures of both existing and new buildings to deliver effective sound mitigation.

Excessive noise is one of the most common occupational health hazards in today's heavy industrial or manufacturing environments. AIL Sound Walls are often used to mitigate unwanted noise caused by equipment in these types of applications. Transparent panels, utility ports and man-doors can also be integrated to allow access for routine maintenance or emergency repairs with reduced exposure to noise.





## Transportation

### RECOMMENDED FOR

- Highways
- Bridges
- Rail
- LRT
- Airports
- Bus Terminals
- Residential

With their lighter weight, lower installed costs and long-term durability, AIL Sound Walls are a perfect choice to keep the peace in neighborhoods along busy transportation corridors.

In addition to their excellent sound mitigation properties, AIL Sound Walls can be installed easily on narrow road or rail jobsites and are an efficient land use solution in urban areas. They are also available in a variety of attractive colors and configurations to satisfy important aesthetic considerations.



Maintenance-free AIL Sound Walls are impervious to rain, snow and ice. Plus, they will not rust, rot or stain.

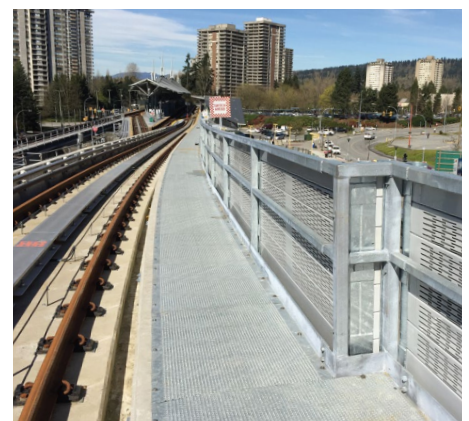
## Structure-Mounted Solutions

AIL Sound Walls are most often ground-mounted on concrete piers, but their light weight makes them ideal to mount to various types of structures such as concrete traffic barriers, bridge rail systems or MSE wall systems, including AIL Vist-A-Walls™. Our in-house engineering capability with multiple systems ensures project success.



### Transparent Walls: Full and Partial Panels Available

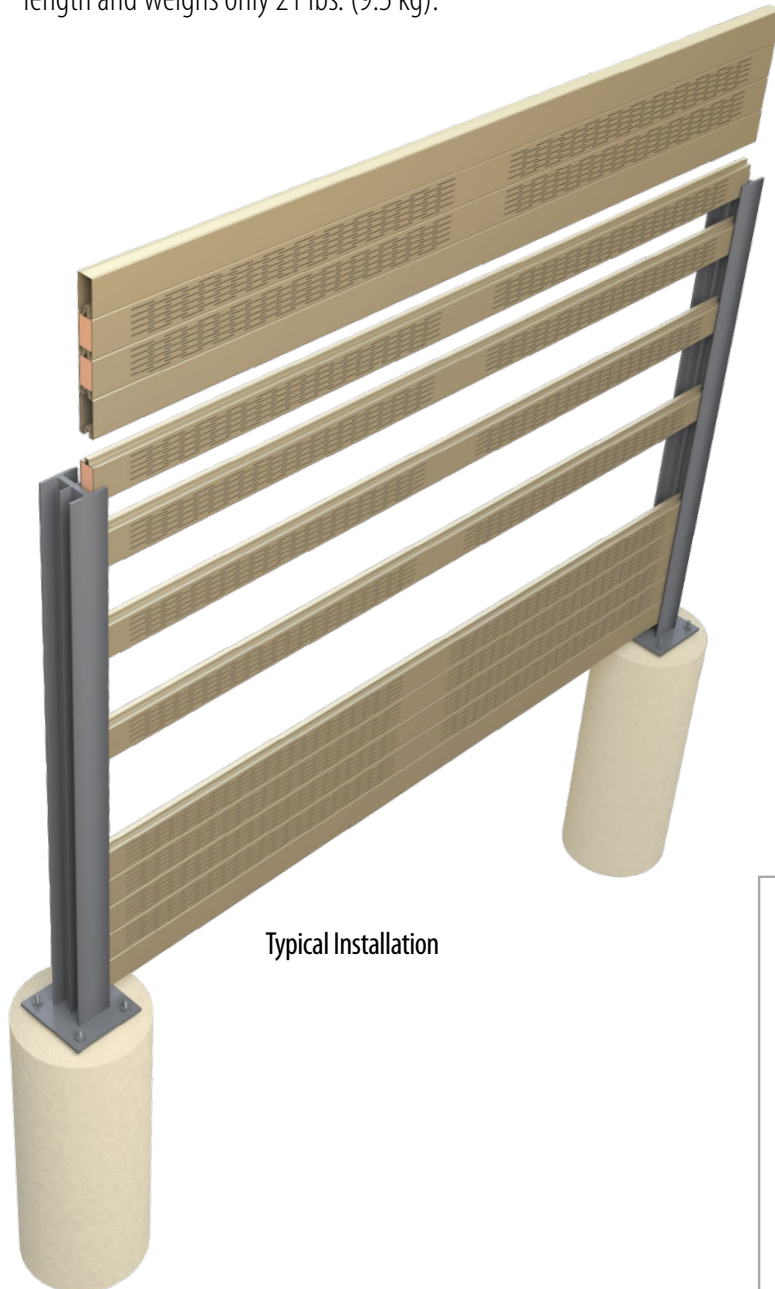
Reduce the tunnel effect and allow more natural light onto roadways or properties by incorporating ACRYLITE® Soundstop clear reflective panels into your design.



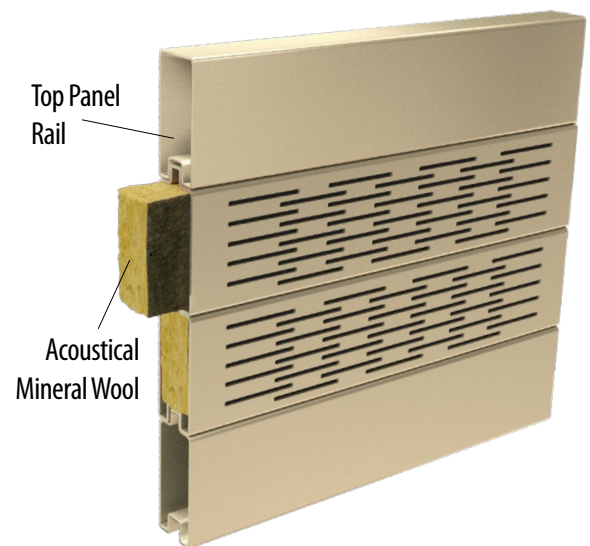


## Easy to install with local crews and reduced need for lifting equipment.

AIL Sound Walls are constructed with tongue and groove PVC panels. Panels are stacked and placed within standard steel posts to the required height and capped with a top panel. A standard panel is 10 ft. (3.0 m) in length and weighs only 21 lbs. (9.5 kg).



Typical Installation



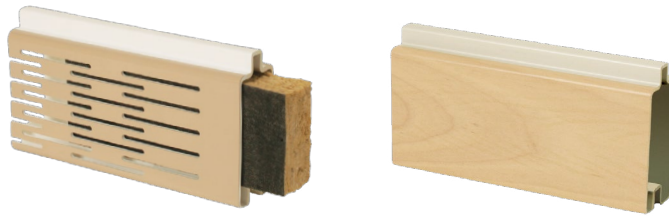
Flange Mounted Footing



Direct Bury Footing







AIL Sound Walls are available in a variety of attractive colors and textured finishes. Custom colors are also available.

## Product Specifications

### Silent Protector® (Absorptive)

### Tuf Barrier® (Reflective)

Span <sup>1</sup>	8 ft - 12 ft (2.44 m - 3.66 m)	8 ft - 14 ft (2.44 m - 4.27 m)
Panel Width	2.70 in (68.58 mm)	2.70 in (68.58 mm)
Panel Height	5.96 in ± .10 in (151.38 mm ± 0.25 mm)	5.96 in ± .10 in (151.38 mm ± 0.25 mm)
Weight	4.30 lbs/ft <sup>2</sup> (21 kg/m <sup>2</sup> ) <sup>4</sup>	Min. 4.10 lbs/ft <sup>2</sup> (20 kg/m <sup>2</sup> )
Wall Height	Greater than 30' / 9 m	Greater than 30' / 9 m
STC Rating	up to 36 <sup>2</sup>	up to 32
NRC Rating	1.0 <sup>3</sup>	n/a

For product technical specifications visit [ailsoundwalls.com](http://ailsoundwalls.com)

1. Span is governed by wind loads and varies on code requirements. Contact AIL Sound Walls for recommended panel spans for your project.
2. Standard Silent Protector has an STC rating of 31. Silent Protector Plus can achieve STC of 36.
3. Standard Silent Protector NRC 1.0. Silent Protector Plus NRC is 0.95.
4. Weight of Silent Protector Plus is 7.30 lbs/ft<sup>2</sup> (36kg/m<sup>2</sup>)

## Sound Transmission Loss ASTM E90 / E413

Octave Band Number	2	3	4	5	6	7	STC
Center Frequency (Hz)	125	250	500	1000	2000	4000	—
Silent Protector®	20	21	26	40	40	44	<b>RATINGS UP TO</b> <b>STC 36</b> <b>ASK FOR DETAILS</b>
Silent Protector® Plus	23	27	31	41	48	53	
Tuf-Barrier®	16	22	31	39	41	49	

## Sound Absorption Coefficients ASTM C423/E795

Octave Band Number	2	3	4	5	6	7	NRC
Center Frequency (Hz)	125	250	500	1000	2000	4000	—
Silent Protector®	0.41	0.84	1.19	1.06	1	0.81	1.0
Silent Protector® Plus	0.38	0.68	1.11	0.99	1.01	0.87	0.95

### STC – Sound Transmission Class

STC is an integer rating used to measure the decibel reduction through a partition. It states the number of decibels lost through that partition in a laboratory environment.

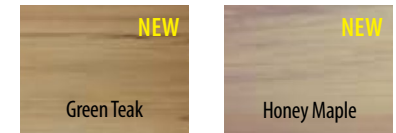
### NRC – Noise Reduction Coefficient

NRC is a rating between 0 and 1 to index how absorptive a material is. An NRC of 0 means no sound waves are absorbed whereas a rating of 1 means all of the sound waves are absorbed.

### NRC

### Qualitative

0.4 or less	Poor
0.5 to 0.6	Mediocre
0.6 to 0.7	Good
0.7 to 0.85	Very Good
> 0.85	Excellent
1.0	AIL Silent Protector®



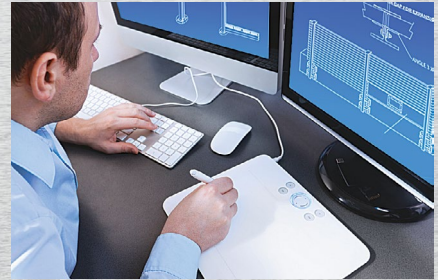
### Recent installation using Honey Maple

Color reproduction in this brochure is subject to limitations of the printing process. Please ask for actual PVC color samples.

## Save time. Save money. Choose efficient sound mitigation solutions from AIL Sound Walls.

### We support you.

- ▶ Be confident with an AIL Sound Walls solution
- ▶ Designs based on wind loading and local soil conditions
- ▶ Detailed proposals complete with installation budget estimates
- ▶ Engineer-stamped project drawings for approvals and construction
- ▶ Professional support in engineering, project management and site assistance



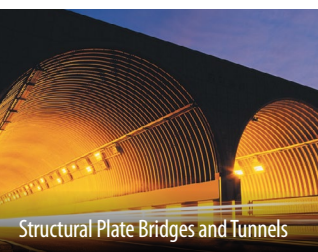
[ailsoundwalls.com](http://ailsoundwalls.com)

The information and suggested applications in this brochure are accurate and correct to the best of our knowledge and are intended for general information purposes only. These general guidelines are not intended to be relied upon as final specifications and we do not guarantee specific results for any particular purpose.

We strongly recommend consultation with an AIL Sound Walls Technical Sales Representative before making any design and purchasing decisions.



AIL products contain recycled content and are 100% recyclable.



Structural Plate Bridges and Tunnels



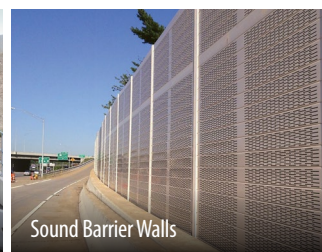
Prefabricated Bridges



Culvert Bridges



Retaining Walls and Abutments



Sound Barrier Walls

## Get AIL's innovative engineered solutions working for your better bottom line.



AIL Sound Walls is a Division of Atlantic Industries Limited and is a member of The AIL Group of Companies. The AIL Group is made up of a network of companies with technical sales teams, engineering departments, manufacturing plants and distribution centers across Canada and in the United States. AIL International and the operations of the AIL Group's licensees in Australia, Europe and Asia help extend our global reach.

A member of  
THE AIL GROUP OF COMPANIES

