Ohio Department of Transportation

John R. Kasich, Governor

Jerry Wray, Director

Processes DOTs Use For Noise Wall Final Design

Traffic Noise Practitioner Summit
Noel Alcala, OhioDOT

June 2018

ODOT Noise Wall Design/Construction plans
What do we follow?

- ODOT'S Traffic Noise Manual dated April 2015
- Noise Barrier Specification (NBS-1-09)
- Bridge Design Manual (Section 800)

ODOT'S Traffic Noise Manual

- Conference call requirement
- 20' max height
- 4' aesthetic step downs at ends
- 1' max change in top of wall elevation from bay to bay
- Bottom panel's min buried depth of 6"
- Absorptive vs reflective barriers
- Review and approval process; 3 Stages of review. Stage 1-3.

ODOT'S Traffic Noise Manual

- **Noise wall design BMPs**
  - Confirm placement of noise barrier with maintenance, utility and construction experts
  - Same noise wall texture and/or color on both sides of wall
  - Using no colored sealer on the posts for proposed new noise walls at the edge of shoulder to avoid the issue. Apply a waterproofing admixture to the posts.

Noise Barrier Specification (NBS-1-09)

- Panel Heights
- Post Spacings
- Typical fill, cut, and sloped sections
- Post and drilled shaft requirements
- Control panel requirement

Noise Barrier Specification (NBS-1-09)

- Material specs
- Sound absorptive material (SAM) requirements
- Construction methods
- Tolerances
- Acceptance requirements
- Sealer specs and requirements

Bridge Design Manual (Section 800)

- Drilled shaft design
- Aesthetics
- Noise wall plan requirements
- Review and approval process

ODOT Noise Wall Design Philosophies

- We want smooth top of wall profiles
- We prefer our noise walls placed at the ROW
- Different colors and textures kept to a minimum
- Show the adjacent roadway or ramp profile on the plan and profile sheet
- Minimize post spacings

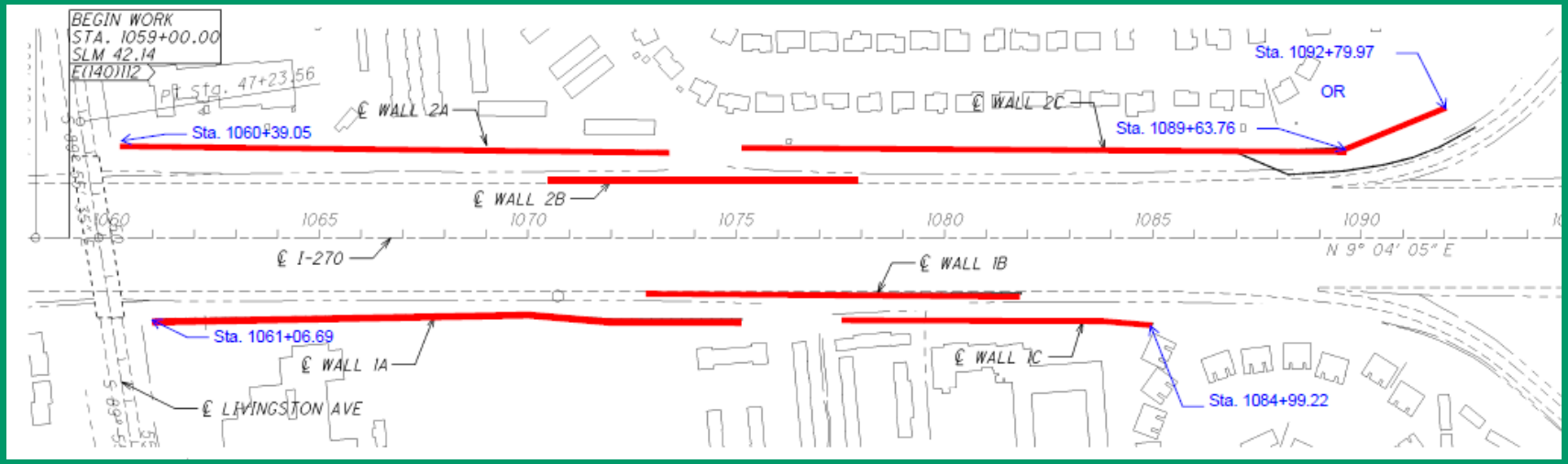
Major Components of a Noise Wall Design

- Schematic
- Typical Sections
- General Notes
- Summary of Pay Items
- Plan and Profile Sheets
- Maintenance of Traffic (MOT)

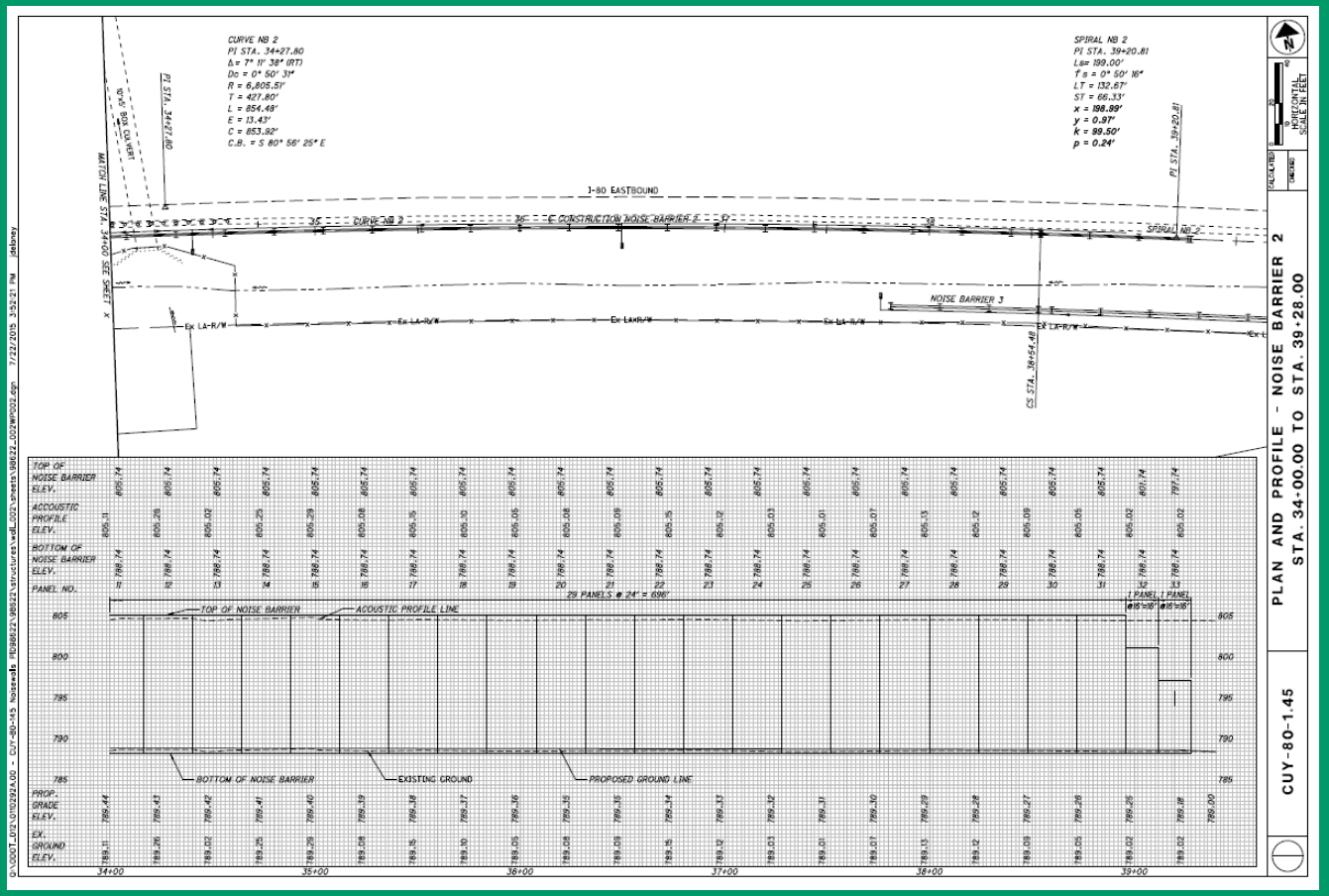
Major Components of a Noise Wall Design

- Cross Sections
- Colors and Textures
- Special Aesthetic Treatments (icons, etc)
- Special Detail Sheets
- Noise Wall Data Tables
- Soil Profile and Foundation Investigation Results

Major Components of a Noise Wall Design



Major Components of a Noise Wall Design



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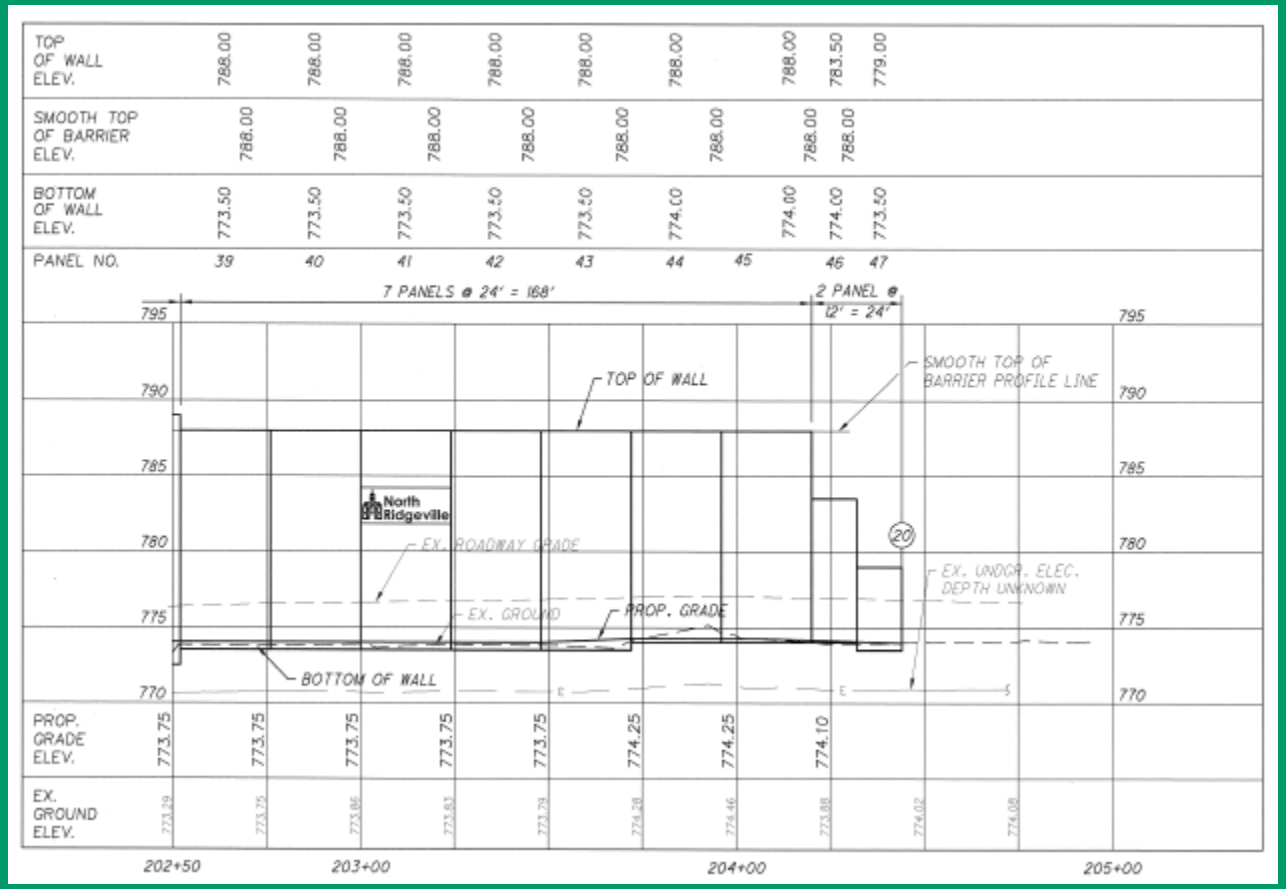

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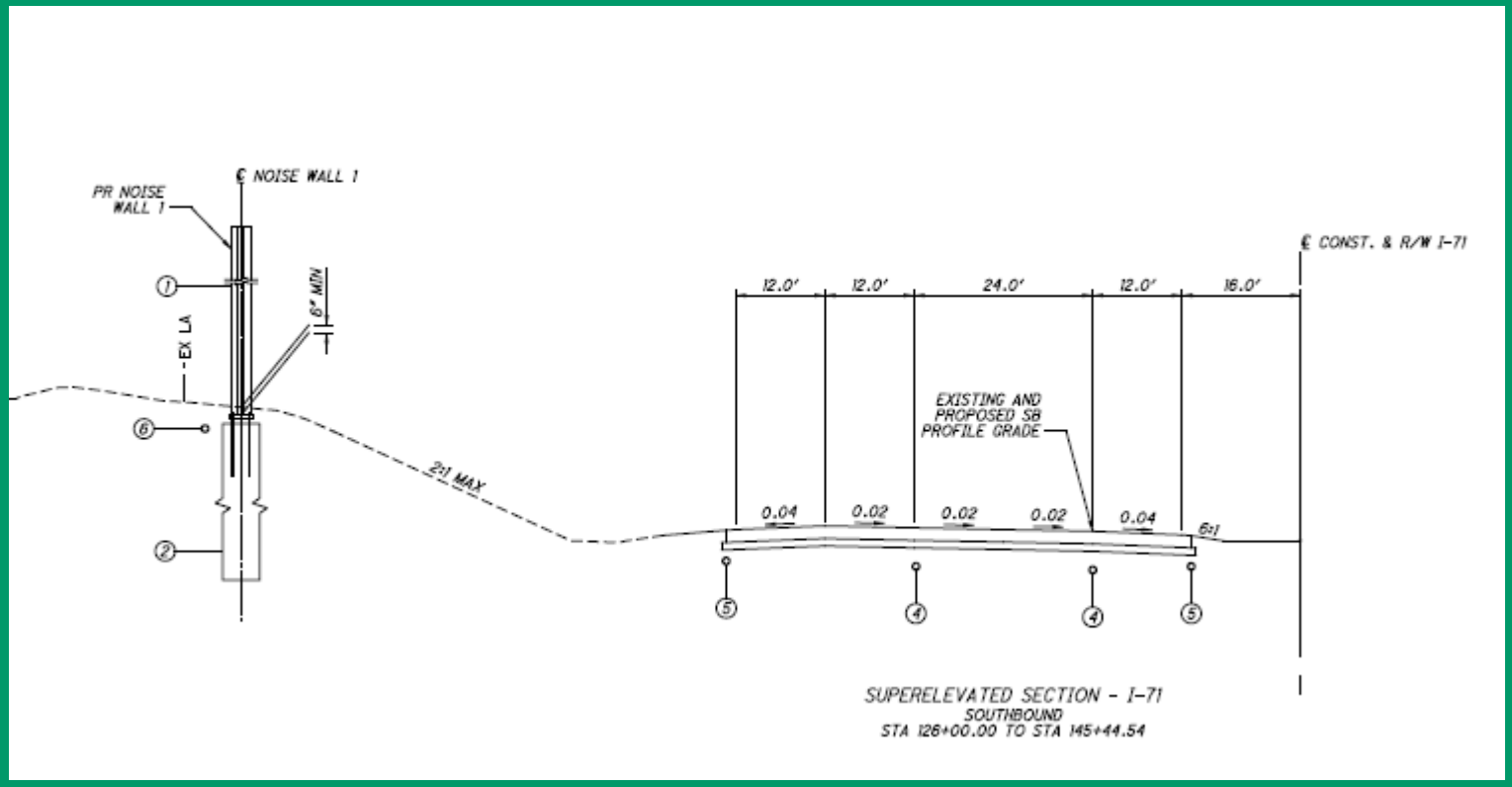
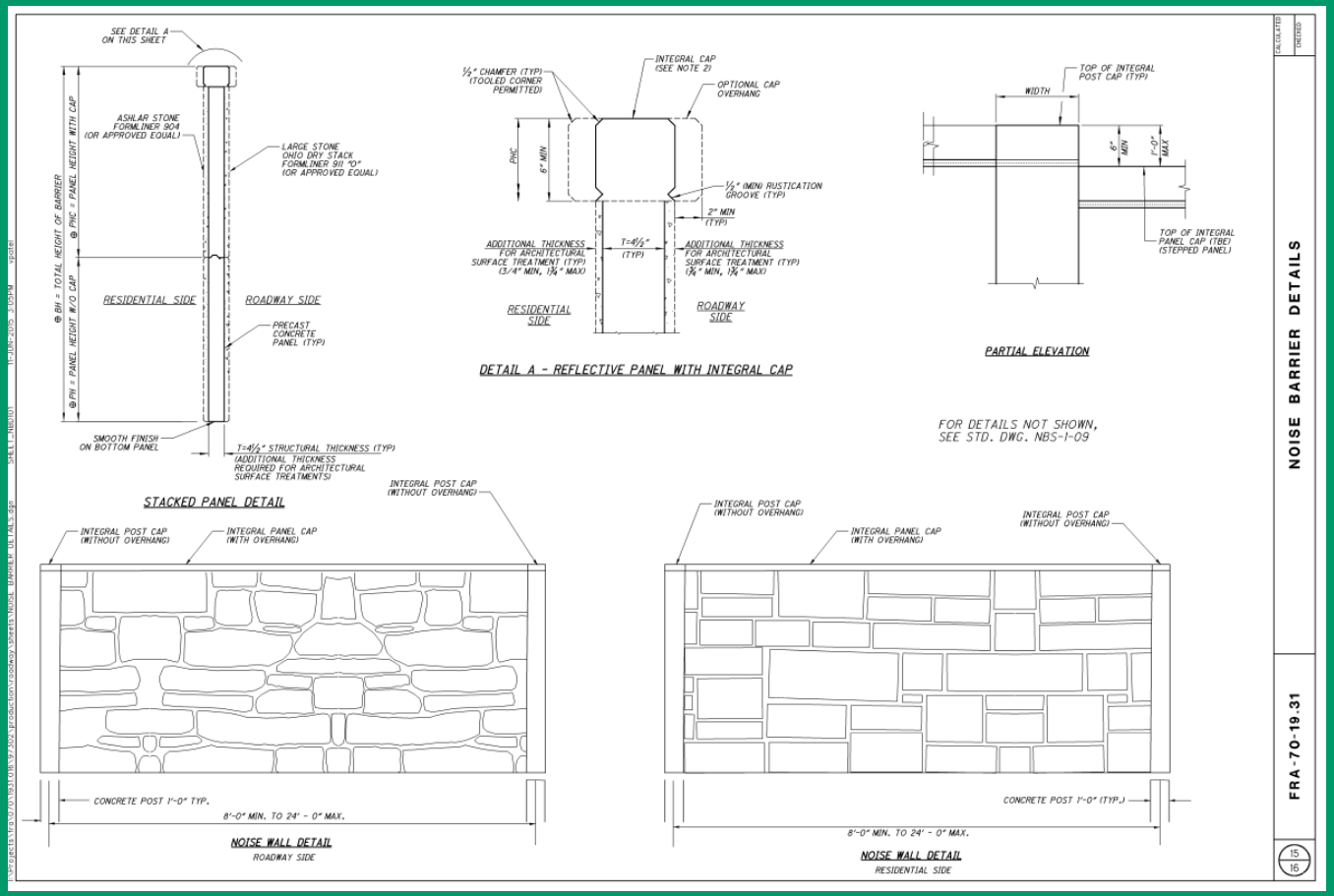


Major Components of a Noise Wall Design



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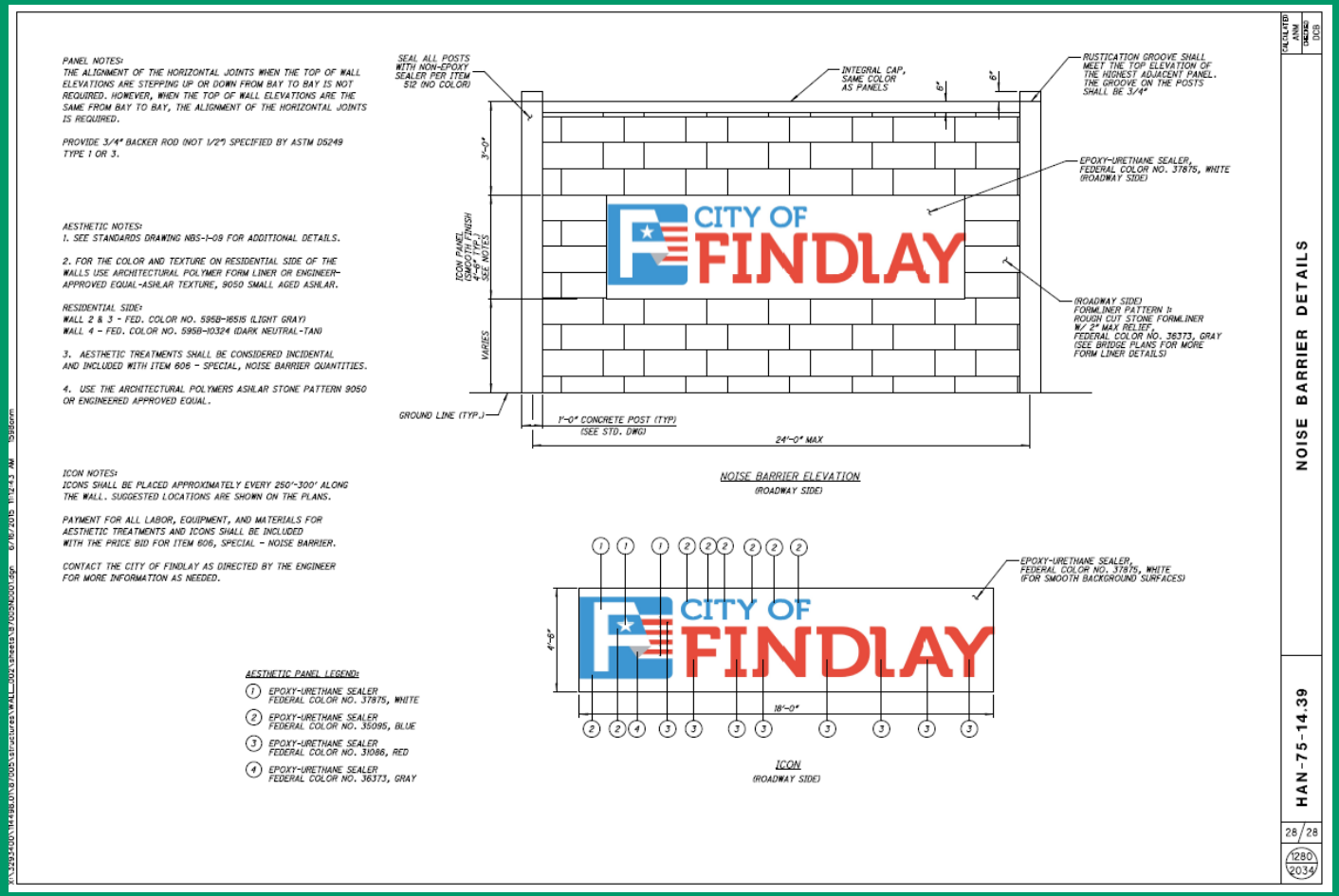
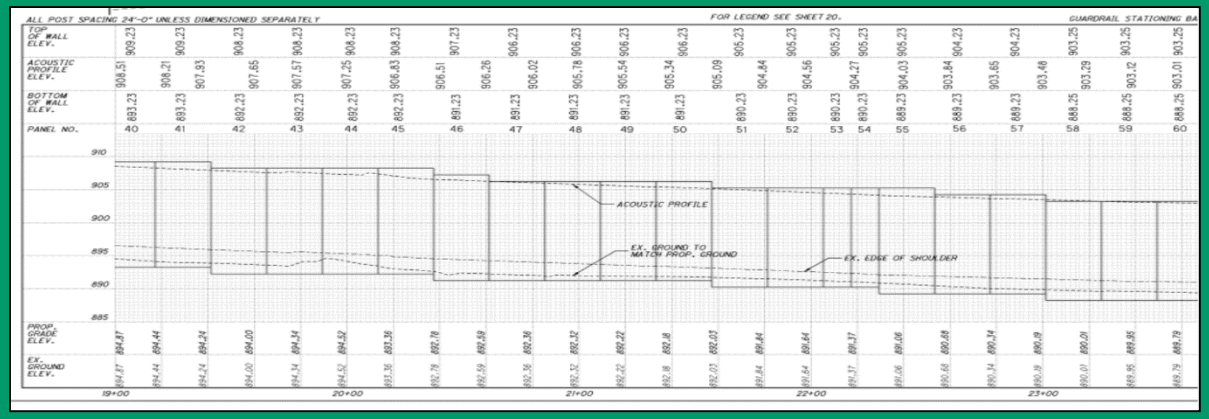


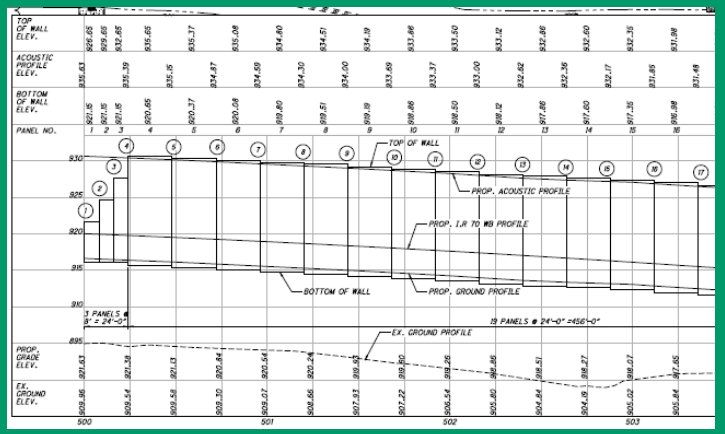
Common Plan Review Comments

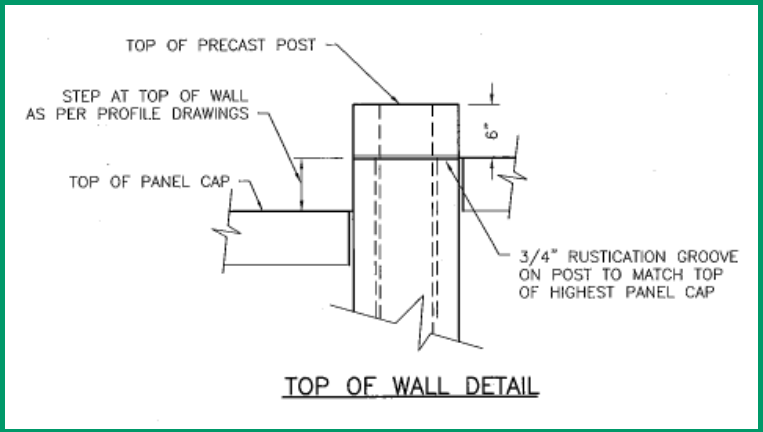
- Add color and texture details
- Smoothen top and bottom of wall profiles (TOWP and BOWP)
- Eliminate sudden major elevation changes to the top of wall profile
- Eliminate any “valleys” in the TOWP



Common Plan Review Comments

- Overlap walls are 3:1
- Show the roadway profile
- Use an integral post cap and match the post rustication groove with the top of the highest adjacent panel
- Number each bay





Recently Designed and Constructed Noise Wall Projects

Recently Designed and Constructed Noise Wall Projects

Recently Designed and Constructed Noise Wall Projects

Thank you! Questions?

- **Contact Info**

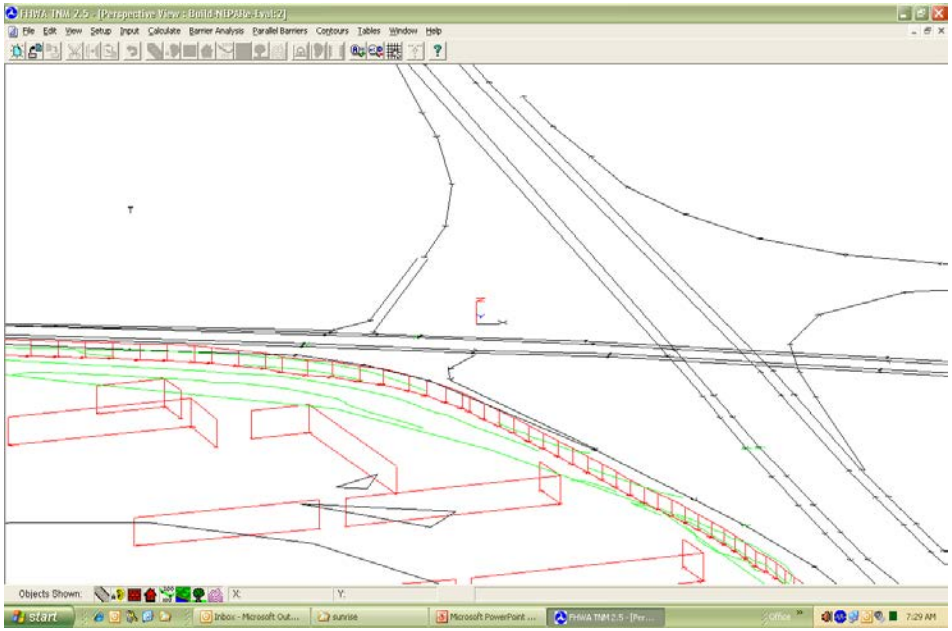
  Noel Alcala, PE

  Noise and Air Quality Coordinator

  Noel.alcala@dot.state.oh.us

  614-466-5222

Noise Wall Final Design



Oregon DOT Process

Carole Newvine/OR DOT

Noise Wall Final Design

- Statement of Work
- Meetings: consultant and roadway designer
- Reporting

Statement of Work

TASK 11 - Final Design: Noise Wall Height/Location Analysis

Task 11.1- Review previous NTR to Confirm Findings **Step 1**

Consultant shall complete the following to confirm the earlier analysis and mitigation recommendations conducted for the Project are still applicable for current Project work. Work for this task includes consulting with ODOT Roadway Designer and Traffic Engineer to determine if there are significant changes to previous design and traffic data that would affect the traffic noise impact results and locations of recommended abatement from the previous NTR for the area. Work to include:

Comparisons of traffic volumes/vehicle classification from previous to current as percent differences.

Comparisons of previous to current roadway design to determine if recommended noise abatement locations could change.

If significant design changes have occurred, Consultant shall discuss with Agency's Noise Specialist and prepare a summary Memorandum on the status of proposed mitigation to document whether or not those changes have the capacity to affect the originally proposed noise mitigation (i.e. render it ineffective or unnecessary.)

Depending on the outcome of this subtask, Agency could authorize Contingency Task 11.2.

Deliverables and Schedule:

Memorandum summarizing the findings of the review due to Agency ten (10) business days after NTP or as directed by the APM.

Statement of Work

Contingency TASK 11.2 – Updates to Build Scenario due to Significant Design Changes Step 2 (possibly)

(Note: this task is not necessary for all projects with recommended abatement – may not be needed or could be a contingency task, depending on Project timing. Results from Task 11.1 will determine need for Task 11.2)

If the design has significantly changed (Task 11.1), Consultant shall re-analyze (via TNM modeling) the Build (or Preferred) Alternative to determine if the number and locations of the traffic noise impacts have changed. The findings from this task will determine if noise walls that were previously proposed are still feasible and reasonable. Work in Task 11.3 determines final noise barrier design. Impact analysis work under this task is defined in Task 7.

Consultant shall confer with APM and Project Team if locations and numbers of receivers previously analyzed have changed. Using TNM, Consultant shall re-create the Build Scenario using the updated design and traffic data as appropriate. The Consultant shall report modeling results in Status of Proposed Mitigation Memorandum. Consultant shall provide preliminary noise wall design revision recommendations to Agency if necessary.

Deliverables and Schedule:

Status of Proposed Mitigation Memorandum (if warranted by design changes) due three (3) weeks after NTP or as directed by the APM.

All TNM modeling files to be submitted with Memorandum

Statement of Work

Task 11.3 Final Noise Wall Height/Location Analysis **Step 3**

This task is intended to cover the work required to analyze the various wall iterations that may be required for decision-making purposes by the Agency Project Team for final location of noise barrier(s) and for incorporation into the Project's final design. Task 11.3 may follow Tasks 11.1 and 11.2; it may also be a stand-alone task.

Note: The original noise impact analysis and proposed mitigation for noise impacted properties where it was determined to be both reasonable and feasible. The product of that work (the NTR) was then summarized in the environmental document and the noise technical report. This task may require that the Consultant work with the roadway designer to finalize dimensions and footprint for the noise barrier(s).

Consultant shall:

Add more modeling receivers as appropriate to TNM barrier modeling so that noise reductions at each receptor, particularly in the area of wall termini, are well identified. If not done so under another Task in this SOW, Consultant shall identify via mapping, receptors assigned to each modeling receiver.

Consultant shall work with Agency staff to model up to six (6) noise wall iterations for each final wall analysis. Iteration means one wall alignment with multiple heights analyzed.

Each height iteration analyzed must be summarized in spreadsheets that show insertion loss at each receiver for each wall height analyzed, number of receptors benefited by the representative receiver, impacted receivers that meet feasibility requirements, impacted receivers that do not benefit from the proposed wall, benefited receivers that meet Agency's noise reduction design goal, and cost per benefited receptor so that each wall height demonstrates how it meets or fails Agency feasible and reasonable criteria. (APM to provide sample spreadsheet if necessary.) Spreadsheets/tables data must be presented so that insertion loss comparisons can be made among wall heights for each modeled receiver.

Statement of Work

Wrap around features added to wall termini must be considered a separate iteration. Final wall height for each location must be optimized if necessary and as directed by the APM. .

After final wall location and dimensions are agreed upon, Consultant to provide Agency roadway designer with wall alignment coordinates and top-of-wall elevations.

After final wall analyses are complete, Consultant will provide Agency with a draft Noise Wall Analysis Memorandum. Draft and final Memorandum, at a minimum, shall include:

- **spreadsheets comparing wall heights for receivers (described previously in this task);**
- **Recommendation for final wall dimensions;**
- **wall coordinates;**
- **top-of-wall elevations for all final walls;**
- **final wall locations shown on mapping;**
- **benefited properties shown on mapping and tabular form with street addresses. (Consultant shall provide Agency with location of properties that would benefit from the mitigation so that residents and owners can be surveyed as to their wishes concerning mitigation. The number of benefited receptors may vary depending on the barrier scenario. Consultant shall determine number of benefited properties for each wall scenario. Agency is responsible for survey/voting process unless specified under specific task authorization.);**
- **if a receiver represents more than one receptor, Consultant shall indicate graphically receptors represented by each receiver; and**
- **TNM modeling files.**

Spreadsheets for each wall location must be included in the appendices of the draft and final Memorandum, showing modeled receivers, number of receptors represented by each receiver, receiver noise levels with build alternative, receiver noise levels for each barrier height being considered, and insertion losses for each receiver. In addition each wall height must demonstrate how it meets or fails Agency feasible and reasonable criteria. (APM to provide sample spreadsheet if necessary.)

After Consultant receives Agency's comments on the draft Noise Wall Analysis Memorandum, Consultant shall submit a final Noise Wall Analysis Memo to APM.

Consultant shall conduct quality assurance/quality control (QA/QC) checks on all submittals to the Agency. This includes checking all modeling input and output, and tables and figures in draft and final Memorandum for errors. These checks will be performed by someone other than the noise analyst. Submittals to the Agency will be reviewed by senior Consultant staff other than the analyst, who is proficient in TNM, traffic noise impact and abatement analyses. Submittals to the Agency will be edited to eliminate grammatical errors, and to ensure consistency and readability.

Consultant shall submit the draft NTR for review by Agency. Consultant shall respond to Agency review comments and incorporate responses into the final NTR.

Upon approval by Agency staff, the final NTR must be stamped by a Registered Professional Engineer, employed full-time by the Consultant, licensed to practice in the State of O[illegible] with sufficient knowledge to review the NTR. Once the final NTR has been stamped, electronic and hard copies of the finished product will be submitted to Agency.

Statement of Work

Deliverables and Schedule:

Data from each wall iteration to be summarized in table(s) showing receiver, build noise level, insertion loss, dimension of subject wall, cost, number of benefited properties, benefited properties meeting Agency noise reduction design goal, impacted properties meeting feasibility goal. Final location of wall(s) to be presented and discussed in draft and final Memorandum, other wall iterations and heights to be included in appendix material.

Location of properties that would benefit from noise mitigation due with draft and final Noise Wall Analysis Memo. Street addresses for benefited properties must be provided as well as shown on mapping.

Draft Noise Wall Analysis memo is due within twenty-one (21) business days of NTP or as directed by APM.

Final Noise Wall Analysis Memo within seven (7) business days of receipt of draft review comments from Agency. Final Noise Wall Analysis Memorandum must be reviewed and stamped by an Oregon-licensed professional engineer.

Meetings

- OR Noise Specialist, Consultant, Project Management, (discipline leads), project designer: expectations
- Communications
- Process
- Project Management: site constraints
- Coordinate system; wall stationing
- Project Deadlines Known

Process

- Roadway designer initiates 1st iteration (locates footprint in roadway design from noise tech report)
- Consultant:
  - builds wall heights for 1st iteration (footprint) via TNM
  - checks feas/reas criteria for all iterations
  - provides figure with TNM Receivers with associated receptors
  - Provides spreadsheets for footprints/iterations
  - Optimizes wall, provides final height recommendation
- OR Ns Specialist: checks heights and ILs for each iteration

Reporting Results

- Memorandum-style - reviewed and PE-stamped
- Figures: benefited properties/associated TNM receiver; wall height changes/wall stationing
- Spreadsheets for iterations
- Top-of-wall elevations
- List of benefited: voters ID'd (ideally cross referenced with TNM Receiver)
- TNM files

Reporting: the Memo

Memo

Date:	October 30th, 2017
Project:	K18849 - I-5: Santiam Hwy – View Crest Dr. (Albany)
To:	Carol Newvine, ODOT Noise Program Coordinator
From:	Craig Milliken, HDR Engineering Inc.
Subject:	I-5: Santiam Hwy – View Crest Dr. (Albany) Final Noise Wall Design

Michael Parsons, PE

Introduction

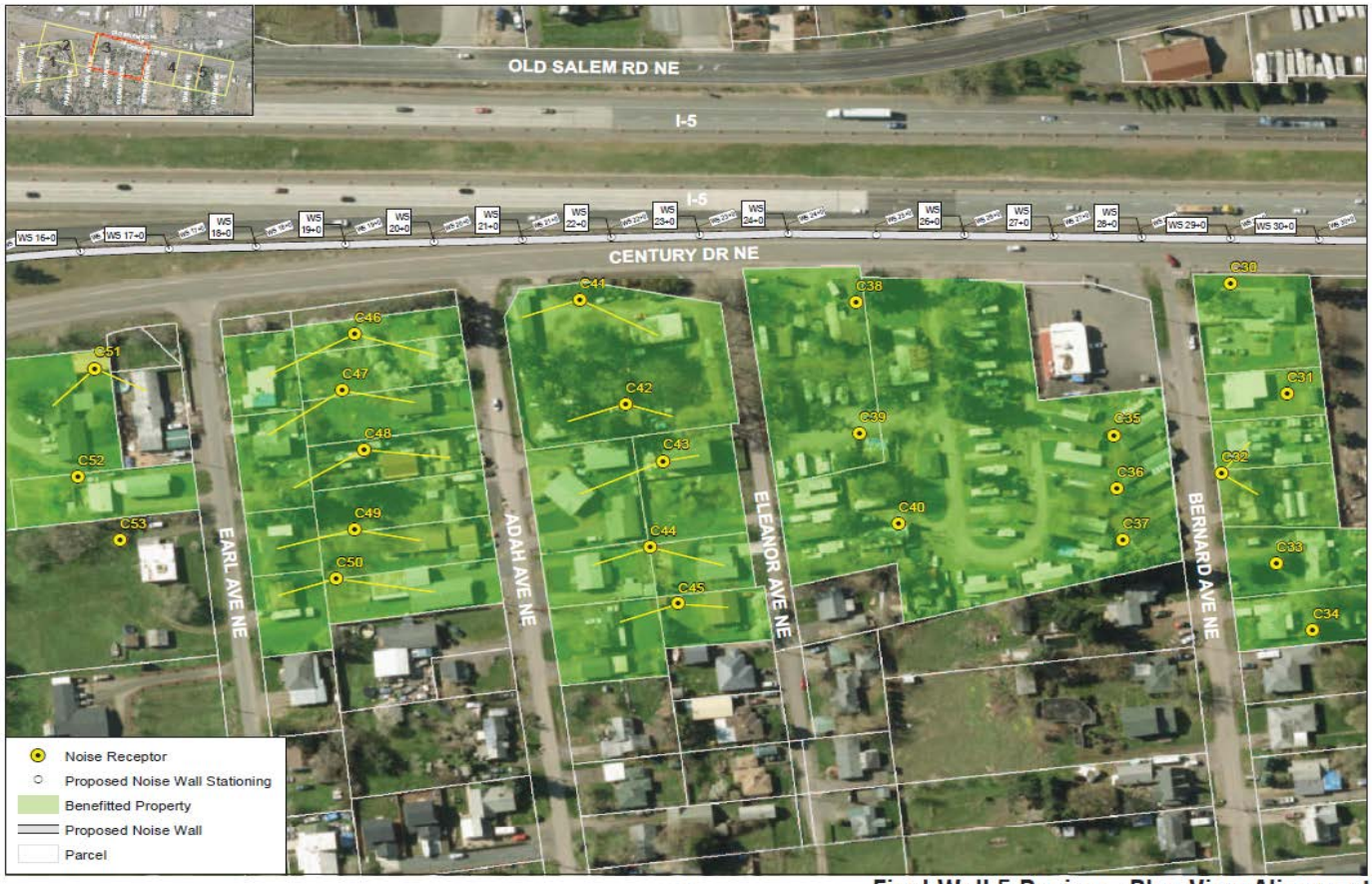
This memorandum summarizes the final noise wall design, top of wall elevations, feasibility and reasonableness calculations, and location of benefitted receptors eligible to express their viewpoint on the inclusion of noise mitigation as part of the project.

Noise Mitigation Design

Wall 5: Receivers C19 through C27, and C30 through C62
Receivers C19 through C27, and C30 through C62 represent 88 single-family and mobile home trailer residential properties with outside use areas, on the east side of Interstate 5 (I-5), between Dunlap Avenue NE and David Avenue NE in the City of Albany, Oregon. A noise barrier was evaluated to reduce noise at this set of receivers.

A wall was evaluated within Oregon Department of Transportation (ODOT) right-of-way as shown in the figures in Attachment 1. The modeled wall has total length of 3,322 linear feet, with a variable panel height of between 11 and 15 feet. In addition to figures showing the alignment, Attachment 1 provides detailed information related to predicted insertion losses (i.e., noise reductions due to the barrier [feasibility]) and cost-effectiveness calculations based on the number of receptors benefitted (reasonableness). The figures in Attachment 1 also indicate which specific receptors are benefitted by the proposed walls, as defined in the ODOT *Noise*

Noise Wall Final Design
Reporting: Receptors/Receivers; Benefited Identified



Spreadsheets for Wall Iterations: Feas/Reas Checks

Table 1-1: Wall 5 Wall Reasonableness and Feasibility Calculations

			Wall 5		Based on Noise Data for Wall 5				
Rec	Activity Category	Build Leq (dBA)	Leq with Mitigation (dBA)	Insertion Loss (dBA)	Number of Units	Receptors with IL >=7dBA	Number of Benefitted Units	Impacted Receptors Receiving 5 dBA IL	Impacted Receptors Not Benefitted
C19	B	65	63	2	2				2
C20	B	65	63	2	2				2
C21	B	76	68	8	1	1	1	1	
C22	B	69	63	6	1		1	1	
C23	B	64	59	5	1		1		
C24	B	63	58	5	1		1		
C25	B	62	58	4	1				
C26	B	68	61	7	1	1	1	1	
C27	B	62	58	4	2				
C30	B	77	69	8	1	1	1	1	
C31	B	69	63	6	1		1	1	
C32	B	67	61	6	2		2	2	
C33	B	64	59	5	1		1		
C34	B	63	58	5	1		1		
C35	B	68	63	5	4		4	4	
C36	B	67	61	6	4		4	4	
C37	B	66	61	5	2		2	2	
C38	B	75	67	8	7	7	7	7	
C39	B	69	63	6	4		4	4	
C40	B	66	61	5	4		4	4	
C41	B	75	68	7	2	2	2	2	
C42	B	70	64	6	2		2	2	
C43	B	68	62	6	2		2	2	
C44	B	66	61	5	2		2	2	
C45	B	65	60	5	2		2	2	
C46	B	72	65	7	2	2	2	2	
C47	B	70	63	7	2	2	2	2	
C48	B	68	61	7	2	2	2	2	
C49	B	65	60	5	2		2	2	
C50	B	64	59	5	2		2		
C51	B	72	66	6	2		2	2	
C52	B	68	63	5	1		1	1	
C53	B	66	62	4	1				1
C54a	B	67	62	5	1		1	1	

Reporting: Wall Data

C60	B	60	59	1	2				
C61	B	60	58	2	2				
C62	B	59	58	1	1				
Total Receptors					**88**	**18**	**66**	**60**	**13**
Recommended Wall Height (ft)					11-15		**Calculation of Feasible Abatement (majority of impacted receptors receive a minimum of 5 dBA IL?)**		
Length of Wall (ft)					3,322				
Wall Area (sq.ft)					45,248				
Wall Cost ($/sq.ft)					$20				
Total Cost of Selected Wall($)					$904,950				
Cost Effectiveness ($/Benefitted Residence)					$13,711				
Cost Reasonableness Criteria ($/Benefitted Residence)					$25,000		**% receiving 5 dBA IL**		82%
Cost Effectiveness< Cost Reasonableness? (yes/no)					Yes		**Feasible (>50%)?**		Yes
Noise reduction design goal - One receiver achieves the noise reduction design goal of 7 dBA? (yes/no)					Yes				

Key:		Impacted Receiver (under the Future Build Condition)
		Benefitted Receiver (>= 5 dBA)
		Receiver achieves design goal (>= 7 dBA)

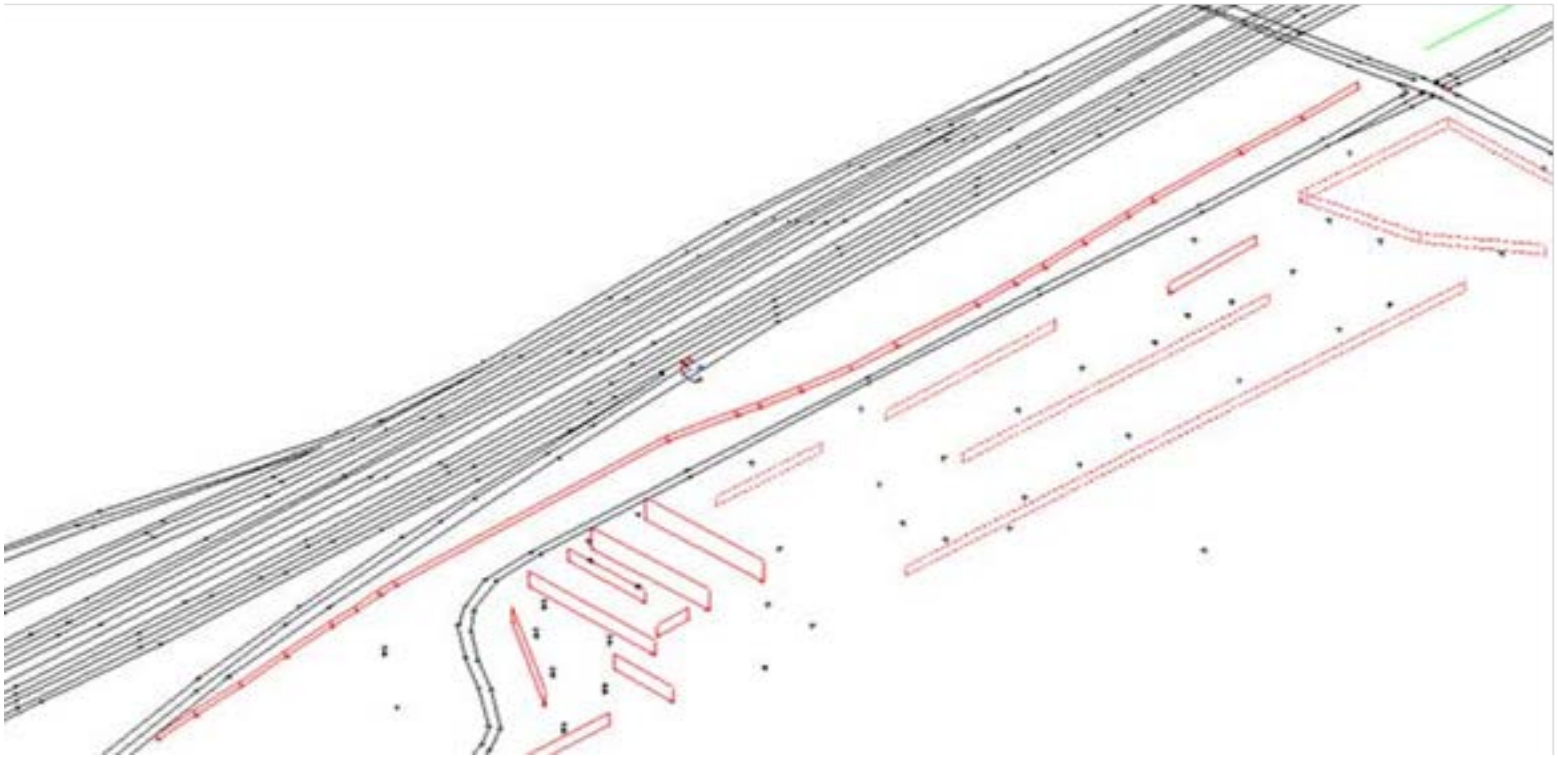
Top of Wall Elevations

Table 1-2: Top of Wall Elevations

Barrier Design Table - Wall 5 - Revision 2		
I-5: Santiam Hwy – View Crest Dr. (Albany)		
Station	Wall Height (feet)	Top of Wall Elevation
Wall 5		
8+00	11	232.2
8+12	12	233.0
8+30	13	234.0
8+78	14	235.2
11+25	15	234.8
17+26	14	233.3
20+33	13	233.0
26+23	12	232.8
27+47	13	233.0
30+90	12	232.0
32+42	13	233.0
33+52	14	233.9
40+68	13	230.9
41+95	12	229.9
41+50	11	228.8

List of Benefited

ACTNAME	CITY	STREETNUM	STREET	DIRPRE	DIRSUF	STREETSUF	STATE	ZIP	SITUS1	SITUS2	OWNADDR1	OWNADDR2	OWNADDR3	OWNADDR4	OWNADDR5	OWNADDR6
DUNIGAN, RON C	JEFFERSON	11950	GOLDEN		S	AVE	OR	97352	1650 CENTURY DR NE	ALBANY OR 97322-0000	DUNIGAN, RON C	JOHNSTON, DANA AGT	JOHNSTON, DENISSA AGT	11950 GOLDEN AVE S	JEFFERSON OR 97352-0000	
LIPTON, NATHAN W	ALBANY	7222	FAWN RIDGE	NW		DR	OR	97321	3521 DAVID AVE NE	ALBANY OR 97322-0000	LIPTON, NATHAN W	MCCLEAN, JENNIFER J	7222 NW FAWN RIDGE DR	ALBANY OR 97321-9317		
KAISER, CYNTHIA L	ALBANY	3516	DAVID		NE	AVE	OR	97322	3516 DAVID AVE NE	ALBANY OR 97322-4318	KAISER, CYNTHIA L	3516 DAVID AVE NE	ALBANY OR 97322-4318			
KILLINGER, LYNN M	LEBANON	37603	KGAL			DR	OR	97355	1535 CENTURY DR NE	ALBANY OR 97322-0000	KILLINGER, LYNN M	KILLINGER, LOIS M	C/O LYNN M KILLINGER	37603 KGAL DR	LEBANON OR 97355-0000	
HARTER, SCOTT	ALBANY	3421	DIAN		NE	AVE	OR	97322	3421 DIAN AVE NE	ALBANY OR 97322-0000	HARTER, SCOTT	HARTER, AMANDA R	PO BOX 2763	ALBANY OR 97321-0653		
HARLSON, LEON C	ALBANY	3437	DIAN		NE	AVE	OR	97322	3437 DIAN AVE NE	ALBANY OR 97322-4321	HARLSON, LEON C	HARLSON, HELEN K	3437 DIAN AVE NE	ALBANY OR 97322-4321		
ANDERSON, ELLIOTT	ALBANY	3505	DIAN		NE	AVE	OR	97322	3505 DIAN AVE NE	ALBANY OR 97322-4323	ANDERSON, ELLIOTT	3505 DIAN AVE NE	ALBANY OR 97322-4323			
WEBER, MICHAEL	ALBANY	3515	DIAN		NE	AVE	OR	97322	3515 DIAN AVE NE	ALBANY OR 97322-4323	WEBER, MICHAEL	DEGNERE, ELECIA	C/O MICHAEL WEBER	3515 DIAN AVE NE	ALBANY OR 97322-4323	
TURNER, THOMAS A	ALBANY	3480	DIAN		NE	AVE	OR	97322	3480 DIAN AVE NE	ALBANY OR 97322-4320	TURNER, THOMAS A	TURNER, JANET R	3480 DIAN AVE NE	ALBANY OR 97322-4320		
SMITH, WILLIAM A, JR	ALBANY	3560	DIAN		NE	AVE	OR	97322	3560 DIAN AVE NE	ALBANY OR 97322-4322	SMITH, WILLIAM A, JR	SMITH, DORIS F	3560 DIAN AVE NE	ALBANY OR 97322-4322		
HADLEY, JOSEPH	ALBANY	1311	CENTURY		NE	DR	OR	97322	1311 CENTURY DR NE	ALBANY OR 97322-4358	HADLEY, JOSEPH	HADLEY, STEPHANIE	1311 CENTURY DR NE	ALBANY OR 97322-0000		
HADLEY, JOSEPH W	ALBANY	639	FIR	NE		ST	OR	97321	3437 BERNARD AVE NE	ALBANY OR 97322-4308	HADLEY, JOSEPH W	HADLEY, STEPHANIE L	639 NE FIR ST	ALBANY OR 97321-0000		
RUCKER, CHARLES E	ALBANY	3461	BERNARD		NE	AVE	OR	97322	3461 BERNARD AVE NE	ALBANY OR 97322-4308	RUCKER, CHARLES E	3461 BERNARD AVE NE	ALBANY OR 97322-4308			
WINDEN, IVAN	ALBANY	3439	BERNARD		NE	AVE	OR	97322	3439 BERNARD AVE NE	ALBANY OR 97322-0000	WINDEN, IVAN	3439 BERNARD AVE NE	ALBANY OR 97322-0000			
MUMMERY, JOYCE A	ALBANY	3481	BERNARD		NE	AVE	OR	97322	3481 BERNARD AVE NE	ALBANY OR 97322-4308	MUMMERY, JOYCE A	PO BOX 2289	ALBANY OR 97321-0000			
FISHER, ROBERT L	ALBANY	3489	BERNARD		NE	AVE	OR	97322	3489 BERNARD AVE NE	ALBANY OR 97322-0000	FISHER, ROBERT L	FISHER, Z CAROL	PO BOX 2595	ALBANY OR 97321-0640		
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	1197 CENTURY DR NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	1197 CENTURY DR NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	1197 CENTURY DR NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	3437 ELEANOR AVE NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	3437 ELEANOR AVE NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
BOWLIN, KATHIE M	ALBANY	1197	CENTURY		NE	DR	OR	97322	1197 CENTURY DR NE	ALBANY OR 97322-0000	BOWLIN, KATHIE M	1197 CENTURY DR NE SPC 36	ALBANY OR 97322-0000			
AJR PROPERTIES LLC	CLACKAMAS	14993	82ND	SE		DR	OR	97015	1101 CENTURY DR NE	ALBANY OR 97322-0000	AJR PROPERTIES LLC	14993 SE 82ND DR	CLACKAMAS OR 97015-0000			
AJR PROPERTIES LLC	CLACKAMAS	14993	82ND	SE		DR	OR	97015	1101 CENTURY DR NE	ALBANY OR 97322-0000	AJR PROPERTIES LLC	14993 SE 82ND DR	CLACKAMAS OR 97015-0000			
CALLOWAY, PIERCE SCOTT	ALBANY	3456	ELEANOR		NE	AVE	OR	97322	3456 ELEANOR AVE NE	ALBANY OR 97322-0000	CALLOWAY, PIERCE SCOTT	CALLOWAY, LARISA SHEREE	3456 ELEANOR AVE NE	ALBANY OR 97322-0000		
ALBANY AREA HABITAT FOR HUMANITY	ALBANY	1538	QUEEN		SE	AVE	OR	97322	3437 ADAH AVE NE	ALBANY OR 97322-0000	ALBANY AREA HABITAT FOR HUMANITY	1538 QUEEN AVE SE	ALBANY OR 97322-0000			
ALBANY AREA HABITAT FOR HUMANITY	ALBANY	3470	ELEANOR		NE	AVE	OR	97322	3470 ELEANOR AVE NE	ALBANY OR 97322-0000	ALBANY AREA HABITAT FOR HUMANITY	HOEF, ROBIN AGT	C/O ROBIN HOEF	3470 ELEANOR AVE NE	ALBANY OR 97322-0000	
PALMER, LEROY G	ALBANY	3447	ADAH		NE	AVE	OR	97322	3447 ADAH AVE NE	ALBANY OR 97322-4302	PALMER, LEROY G	PALMER, CAROL A	3447 ADAH AVE NE	ALBANY OR 97322-4302		
SCHUTZMAN, CHRISTOPHER	ALBANY	3488	ELEANOR		NE	AVE	OR	97322	3488 ELEANOR AVE NE	ALBANY OR 97322-0000	SCHUTZMAN, CHRISTOPHER	3488 ELEANOR AVE NE	ALBANY OR 97322-0000			
TIEMEYER, ANTHONY A	ALBANY	3471	ADAH		NE	AVE	OR	97322	3471 ADAH AVE NE	ALBANY OR 97322-4302	TIEMEYER, ANTHONY A	3471 ADAH AVE NE	ALBANY OR 97322-4302			
LEMMON, CHRISTINE	VENETA	25570	BOLTON			RD	OR	97487			LEMMON, CHRISTINE	C/O CHARLENE T PEW	25570 BOLTON RD	VENETA OR 97487-0000		
JONES, TERRY L	ALBANY	3471	EARL		NE	AVE	OR	97322	3471 EARL AVE NE	ALBANY OR 97322-4327	JONES, TERRY L	JONES, SUSAN	3471 EARL AVE NE	ALBANY OR 97322-4327		
LEMMON, CHRISTINE	VENETA	25570	BOLTON			RD	OR	97487	3418 ADAH AVE NE	ALBANY OR 97322-4301	LEMMON, CHRISTINE	C/O CHARLENE T PEW	25570 BOLTON RD	VENETA OR 97487-0000		
PULLEN, PATRICIA A	ALBANY	3428	ADAH		NE	AVE	OR	97322	3428 ADAH AVE NE	ALBANY OR 97322-4301	PULLEN, PATRICIA A	LARKIN, DAVID L	3428 ADAH AVE NE	ALBANY OR 97322-4301		
HAMMOND, ROBERT F, JR	ALBANY	3438	ADAH		NE	AVE	OR	97322	3430 ADAH AVE NE	ALBANY OR 97322-0000	HAMMOND, ROBERT F, JR	3438 ADAH AVE NE	ALBANY OR 97322-0000			
DOWNS, MARY PATRICIA, TR	ALBANY	1905	WAVERLY		SE	DR	OR	97322	3481 EARL AVE NE	ALBANY OR 97322-4327	DOWNS, MARY PATRICIA, TR	1905 WAVERLY DR SE SPC 41	ALBANY OR 97322-0000			
SMITH, MAXINE A	PACIFICA	1204	CRESPI			DR	CA	94044	3448 ADAH AVE NE	ALBANY OR 97322-0000	SMITH, MAXINE A	1204 CRESPI DR	PACIFICA CA 94044-0000			
CONNER, JAMES EARL, TR	ALBANY	3780	SPICER		SE	DR	OR	97322	3491 EARL AVE NE	ALBANY OR 97322-0000	CONNER, JAMES EARL, TR	CONNER, JEAN YVONNE, TR	3780 SPICER DR SE	ALBANY OR 97322-0000		
MURPHY, ROBERT D	ALBANY	3472	ADAH		NE	AVE	OR	97322	3472 ADAH AVE NE	ALBANY OR 97322-0000	MURPHY, ROBERT D	MURPHY, WONDA I	PO BOX 1679	ALBANY OR 97321-0000		
CONNER, JAMES E, CO TR	ALBANY	3780	SPICER		SE	DR	OR	97322	3499 EARL AVE NE	ALBANY OR 97322-0000	CONNER, JAMES E, CO TR	CONNER, JEAN YVONNE, CO TR	3780 SPICER DR SE	ALBANY OR 97322-7044		
COOPER, ARLIE B	ALBANY	817	CENTURY		NE	DR	OR	97322	837 CENTURY DR NE	ALBANY OR 97322-4316	COOPER, ARLIE B	817 CENTURY DR NE	ALBANY OR 97322-4316			
CUTRIGHT, ORIN L	ANCHORAGE	2440	TUDOR	E		RD	AK	99507	3450 EARL AVE NE	ALBANY OR 97322-0000	CUTRIGHT, ORIN L	ALLEN, STEPHANIE LYNNETTE	2440 E TUDOR RD SPC 870	ANCHORAGE AK 99507-0000		
GRILL, GEORGIA M, LE	ALBANY	3460	EARL		NE	AVE	OR	97322	3460 EARL AVE NE	ALBANY OR 97322-4326	GRILL, GEORGIA M, LE	3460 EARL AVE NE	ALBANY OR 97322-4326			
BRUNSON, STEVEN E	ALBANY	3480	EARL		NE	AVE	OR	97322	3480 EARL AVE NE	ALBANY OR 97322-4326	BRUNSON, STEVEN E	BRUNSON, MARGARET MARY	3480 EARL AVE NE	ALBANY OR 97322-4326		
COLUMBIA CREST TOWNHOMES LLC	PORTLAND	621	MORRISON	SW		ST	OR	97205	821 CENTURY DR NE	ALBANY OR 97322-0000	COLUMBIA CREST TOWNHOMES LLC	C/O NORRIS & STEVENS INC	621 SW MORRISON ST STE 800	PORTLAND OR 97205-0000		
BARNA, WILLIAM E, TR	SALEM	619	ROCKWOOD		SE	ST	OR	97306	3522 DUNLAP AVE NE	ALBANY OR 97322-0000	BARNA, WILLIAM E, TR	BARNA, FAYE I, TR	BARNA, RANDY W	619 ROCKWOOD ST SE	SALEM OR 97306-0000	
MICHAEL, HARRY W	HILLSBORO	575	BROOKWOOD	SW		AVE	OR	97123	3511 DUNLAP AVE NE	ALBANY OR 97322-6561	MICHAEL, HARRY W	FLOWERS, MARTHINE	575 SW BROOKWOOD AVE	HILLSBORO OR 97123-0000		
HOLMES, EDDIE E	ALBANY	811	CENTURY		NE	DR	OR	97322	811 CENTURY DR NE	ALBANY OR 97322-4316	HOLMES, EDDIE E	HOLMES, RITA A	811 CENTURY DR NE	ALBANY OR 97322-4316		
PAGUAGA, URSUS A	ALBANY	3513	DUNLAP		NE	AVE	OR	97322	3513 DUNLAP AVE NE	ALBANY OR 97322-6561	PAGUAGA, URSUS A	PAGUAGA, BRENDA J	3513 DUNLAP AVE NE	ALBANY OR 97322-6561		
ZOOM MOTORS INC PROFIT SHARING TR	ALBANY	3515	DUNLAP		NE	AVE	OR	97322	3515 DUNLAP AVE NE	ALBANY OR 97322-6561	ZOOM MOTORS INC PROFIT SHARING TR	3515 DUNLAP AVE NE	ALBANY OR 97322-6561			
SDS INVESTMENTS LLC	ALBANY	4845	CHESTNUT		SE	CT	OR	97322	3527 DUNLAP AVE NE	ALBANY OR 97322-6561	SDS INVESTMENTS LLC	4845 CHESTNUT CT SE	ALBANY OR 97322-0000			
UNDERWOOD, MARGARET G	ALBANY	3555	DUNLAP		NE	AVE	OR	97322	3555 DUNLAP AVE NE	ALBANY OR 97322-6561	UNDERWOOD, MARGARET G	3555 DUNLAP AVE NE	ALBANY OR 97322-6561			
MARSHALL, ELAINE LORENE, CO TR	ALBANY	3575	DUNLAP		NE	AVE	OR	97322	3575 DUNLAP AVE NE	ALBANY OR 97322-6561	MARSHALL, ELAINE LORENE, CO TR	MARSHALL, ROBERT EDWIN, CO TR	3575 DUNLAP AVE NE	ALBANY OR 97322-6561		
PETERSON, NORMAN B	ALBANY	3595	DUNLAP		NE	AVE	OR	97322	3595 DUNLAP AVE NE	ALBANY OR 97322-6561	PETERSON, NORMAN B	PETERSON, MELANIE R	3595 DUNLAP AVE NE	ALBANY OR 97322-6561		
STALEY, JESSICA R	ALBANY	3585	DUNLAP		NE	AVE	OR	97322	3585 DUNLAP AVE NE	ALBANY OR 97322-6561	STALEY, JESSICA R	STALEY, DAVID J	STALEY, ROSALIE A	C/O JESSICA R STALEY	3585 DUNLAP AVE NE	
BARNA, WILLIAM E, TR	SALEM	619	ROCKWOOD		SE	ST	OR	97306	3502 DUNLAP AVE NE	ALBANY OR 97322-0000	BARNA, WILLIAM E, TR	BARNA, FAYE I, TR	BARNA, RANDY W	619 ROCKWOOD ST SE	SALEM OR 97306-0000	
COLUMBIA CREST TOWNHOMES LLC	PORTLAND	621	MORRISON	SW		ST	OR	97205	821 CENTURY DR NE	ALBANY OR 97322-0000	COLUMBIA CREST TOWNHOMES LLC	C/O NORRIS & STEVENS INC	621 SW MORRISON ST STE 800	PORTLAND OR 97205-0000		
COLUMBIA CREST TOWNHOMES LLC	PORTLAND	621	MORRISON	SW		ST	OR	97205	821 CENTURY DR NE	ALBANY OR 97322-0000	COLUMBIA CREST TOWNHOMES LLC	C/O NORRIS & STEVENS INC	621 SW MORRISON ST STE 800	PORTLAND OR 97205-0000		
COLUMBIA CREST TOWNHOMES LLC	PORTLAND	621	MORRISON	SW		ST	OR	97205	821 CENTURY DR NE	ALBANY OR 97322-0000	COLUMBIA CREST TOWNHOMES LLC	C/O NORRIS & STEVENS INC	621 SW MORRISON ST STE 800	PORTLAND OR 97205-0000		



Discussion/Questions