

**MEMORANDUM**

**To:** Joe Deering, TDOT  
Lia Obaid, TDOT  
Clint Butler, Arcadis

**From:** Darlene Reiter

**Date:** December 26, 2017

**Re:** Noise Barrier Designs  
I-440 from I-40 to I-24, Davidson County  
PIN 125325.00; Project #19014-1169-04

I have attached the updated information for the new and replacement barriers including approximate locations, design tables, and profiles. The designs have been updated to reflect the current project stationing and include some modifications to two replacement barriers:

- NAA 13: The barrier replacement now ends at STA 1103+70 and the barrier heights to the west have been increased.
- NAA 23A: The barrier on the bridge over Craig Avenue will not be replaced.

Please let me know if you have any questions or concerns.

# NAA 11 (The Grove at Whitworth Apartments) New Barrier



<b>Project:</b>	Interstate 440 from I-40 to I-24
<b>County:</b>	Davidson
<b>PIN:</b>	125325.00
<b>Noise Analysis Area:</b>	11 (The Grove at Whitworth Apartments Buildings 9 and 10)
<b>Design Year:</b>	2040
<b>Barrier Type:</b>	New Ground-Mounted Barrier
<b>Barrier Location:</b>	ROW
<b>Date:</b>	12/22/2017

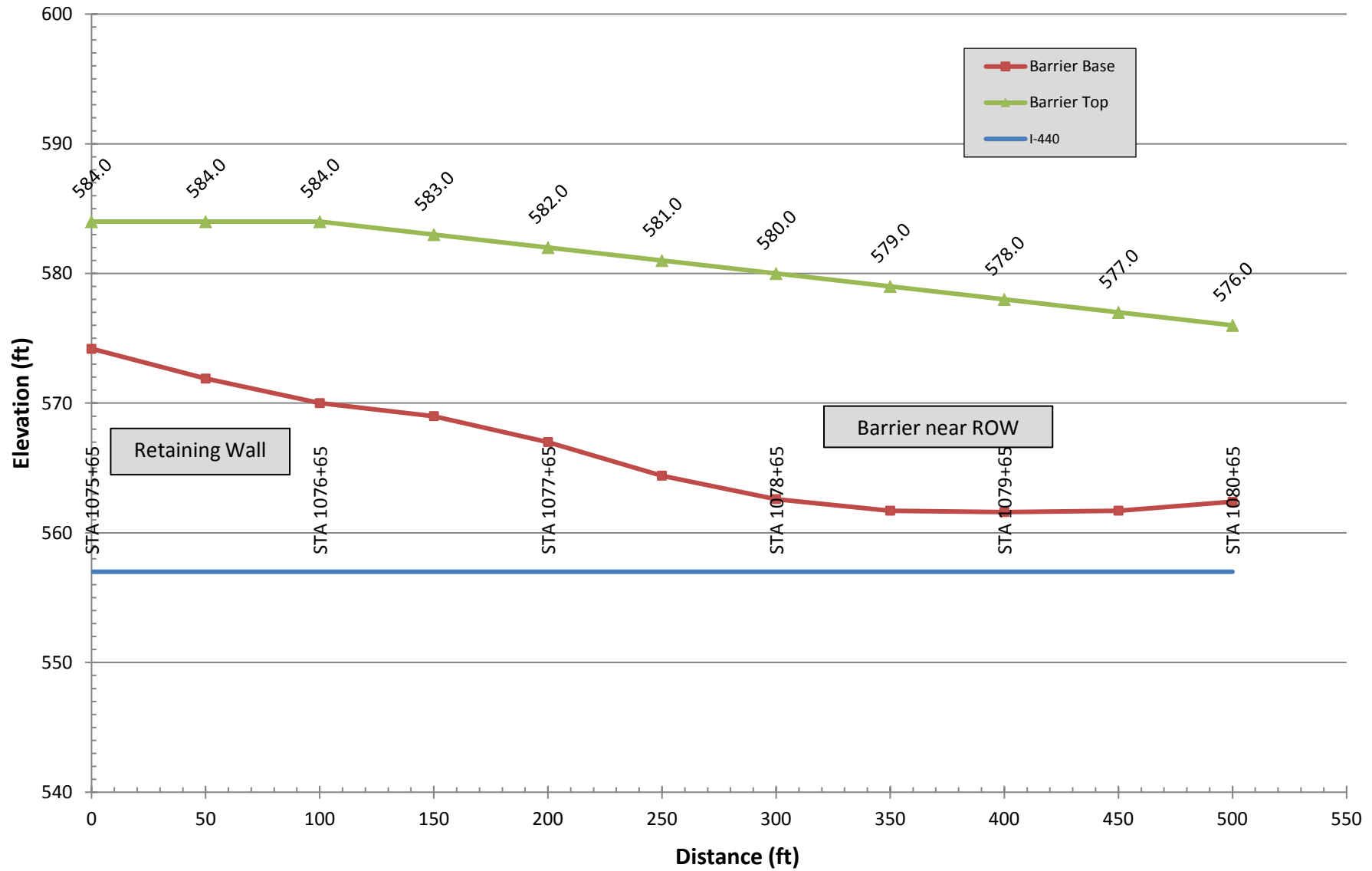
From	To	Approximate Segment Length (ft.)	Wall Type <sup>(1)(2)</sup>	Approximate Barrier Base Elevation (ft) <sup>(2)</sup>	Barrier Top Elevation (ft) <sup>(2)</sup>	Barrier Height (ft) <sup>(2)</sup>	Approximate Barrier Area (sq ft)	
1075+65	1076+15	50	F (ROW)	574.2	584.0	9.8	490	
1076+15	1076+65	50	F (ROW)	571.9	584.0	12.1	605	
1076+65	1077+15	50	F (ROW)	570.0	584.0	14.0	700	
1077+15	1077+65	50	F (ROW)	569.0	583.0	14.0	700	
1077+65	1078+15	50	F (ROW)	567.0	582.0	15.0	750	
1078+15	1078+65	50	F (ROW)	564.4	581.0	16.6	830	
1078+65	1079+15	50	F (ROW)	562.6	580.0	17.4	870	
1079+15	1080+65	50	F (ROW)	561.7	579.0	17.3	865	
1079+65	1080+15	50	F (ROW)	561.6	578.0	16.4	820	
1080+15	1080+65	50	F (ROW)	561.7	577.0	15.3	765	
1080+65	Barrier End	---	F (ROW)	562.4	576.0	13.6	---	
		<b>Length (ft.):</b>	<b>500</b>				<b>Barrier Area (sq. ft.):</b>	<b>7,395</b>
							<b>Average Height:</b>	<b>14.8</b>

(1) F = free standing barrier; R = Retaining Wall; S = Structure; EOP = location at shoulder; ROW = located at/near right-of-way; Trans = located in transition between EOP and ROW.

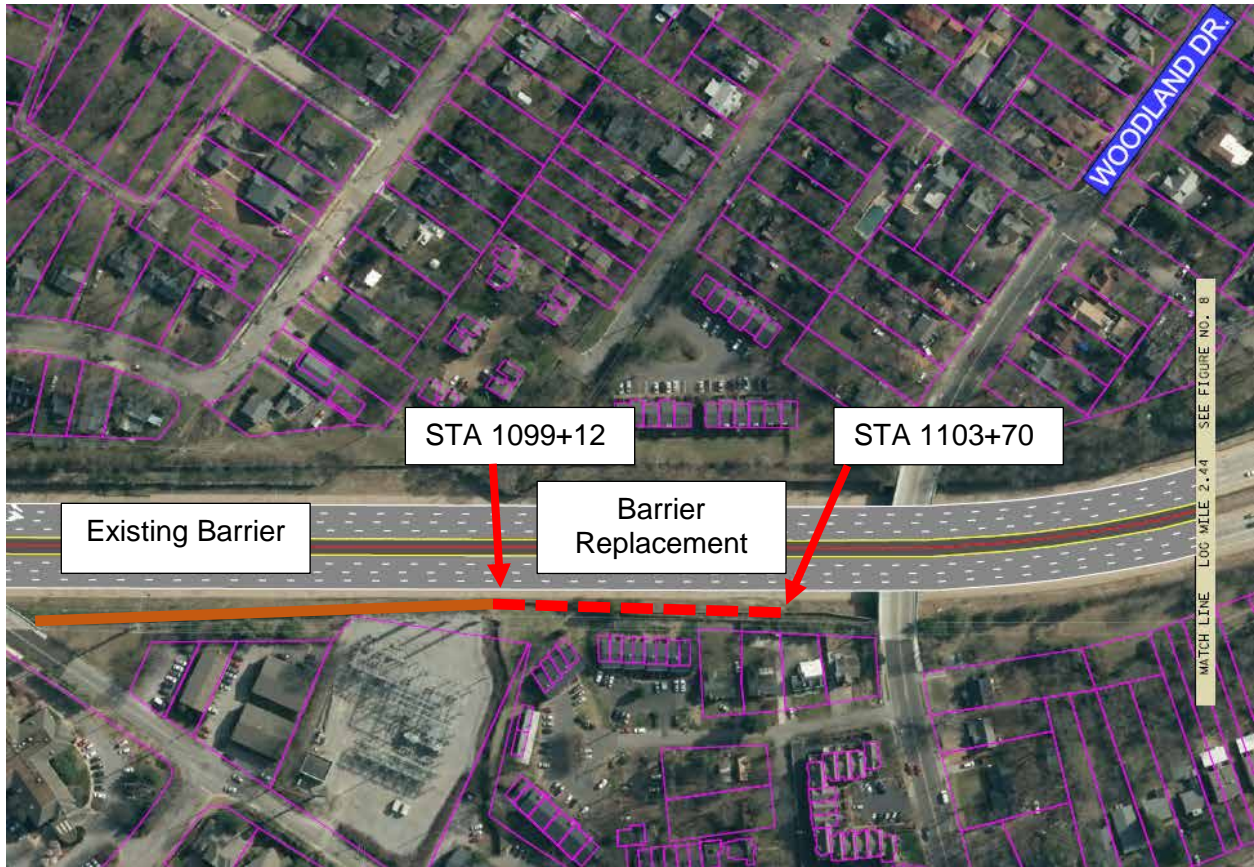
(2) At beginning station.

# I-440 Reconstruction, PIN #125325.00

## New Eastbound Barrier Approx. STA 1075+65 - 1080+65 (NAA 11)



# NAA 13 (Linmar Avenue) Barrier Replacement



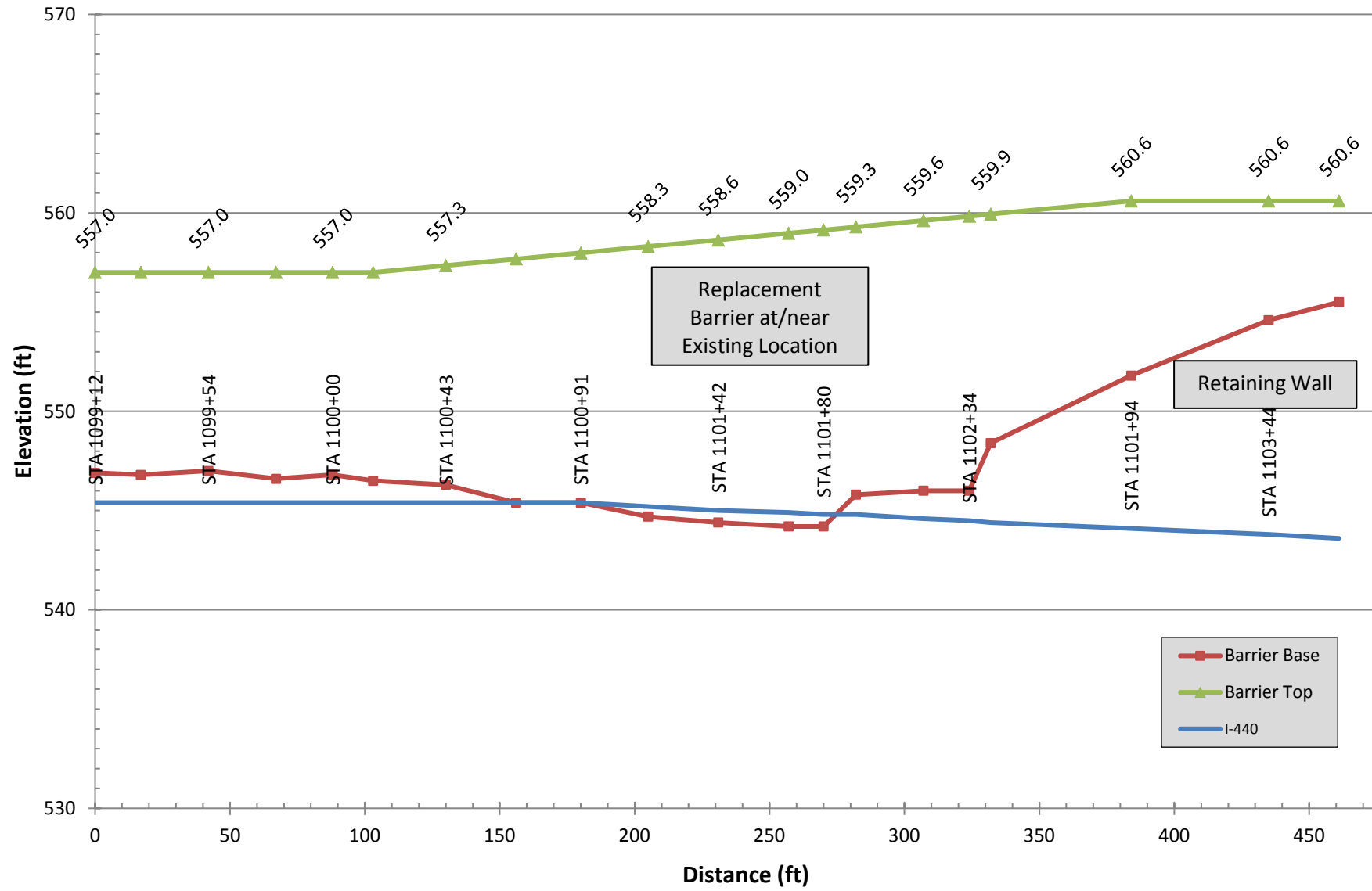
<b>Project:</b>	Interstate 440 from I-40 to I-24
<b>County:</b>	Davidson
<b>PIN:</b>	125325.00
<b>Noise Analysis Area:</b>	13 (Condominiums and single-family residences on Linmar Avenue)
<b>Design Year:</b>	2040
<b>Barrier Type:</b>	Ground-Mounted Replacement Barrier
<b>Barrier Location:</b>	Existing Location
<b>Date:</b>	12/22/2017

From	To	Approximate Segment Length (ft.)	Wall Type <sup>(1)(2)</sup>	Approximate Barrier Base Elevation (ft) <sup>(2)</sup>	Barrier Top Elevation (ft) <sup>(2)</sup>	Barrier Height (ft) <sup>(2)</sup>	Approximate Barrier Area (sq ft)	
1099+12	1099+29	17	F (Existing Location)	546.9	557.0	10.1	172	
1099+29	1099+54	25	F (Existing Location)	546.8	557.0	10.2	255	
1099+54	1099+79	25	F (Existing Location)	547.0	557.0	10.0	250	
1099+79	1100+00	21	F (Existing Location)	546.6	557.0	10.4	218	
1100+00	1100+16	15	F (Existing Location)	546.8	557.0	10.2	153	
1100+16	1100+43	27	F (Existing Location)	546.5	557.0	10.5	284	
1100+43	1100+67	26	F (Existing Location)	546.3	557.3	11.0	287	
1100+67	1100+91	24	F (Existing Location)	545.4	557.7	12.3	295	
1100+91	1101+16	25	F (Existing Location)	545.4	558.0	12.6	315	
1101+16	1101+42	26	F (Existing Location)	544.7	558.3	13.6	354	
1101+42	1101+67	26	F (Existing Location)	544.4	558.6	14.2	370	
1101+67	1101+80	13	F (Existing Location)	544.2	559.0	14.8	192	
1101+80	1101+93	12	F (Existing Location)	544.2	559.1	14.9	179	
1101+93	1102+17	25	F (Existing Location)	545.8	559.3	13.5	337	
1102+17	1102+34	17	F (Existing Location)	546.0	559.6	13.6	231	
1102+34	1102+43	8	F (Existing Location)	546.0	559.8	13.8	111	
1102+43	1101+94	52	F (Existing Location)	548.4	559.9	11.5	600	
1101+94	1103+44	51	F (Existing Location)	551.8	560.6	8.8	449	
1103+44	1103+70	26	F (Existing Location)	554.6	560.6	6.0	156	
1103+70	---	---	F (Existing Location)	555.5	560.6	5.1	---	
		<b>Length (ft.):</b>	<b>461</b>				<b>Barrier Area (sq. ft.):</b>	<b>5,207</b>
					<b>Average Height:</b>			<b>11.3</b>

(1) F = free standing barrier; R = Retaining Wall; S = Structure; EOP = location at shoulder; ROW = located at/near right-of-way; Trans = located in transition between EOP and ROW.  
(2) At beginning station.

# I-440 Reconstruction, PIN #125325.00

## Eastbound Barrier Replacement Approx. STA 1099+12 - 1103+70 (NAA 13)



# NAA 23A (Battlefield Drive) Barrier Replacement





<b>Project:</b>	Interstate 440 from I-40 to I-24
<b>County:</b>	Davidson
<b>PIN:</b>	125325.00
<b>Noise Analysis Area:</b>	23A (Battlefield)
<b>Design Year:</b>	2040
<b>Barrier Type:</b>	Ground-Mounted and Structure-Mounted Replacement Barriers
<b>Barrier Location:</b>	Shoulder and Lealand Bridge
<b>Date:</b>	12/22/2017

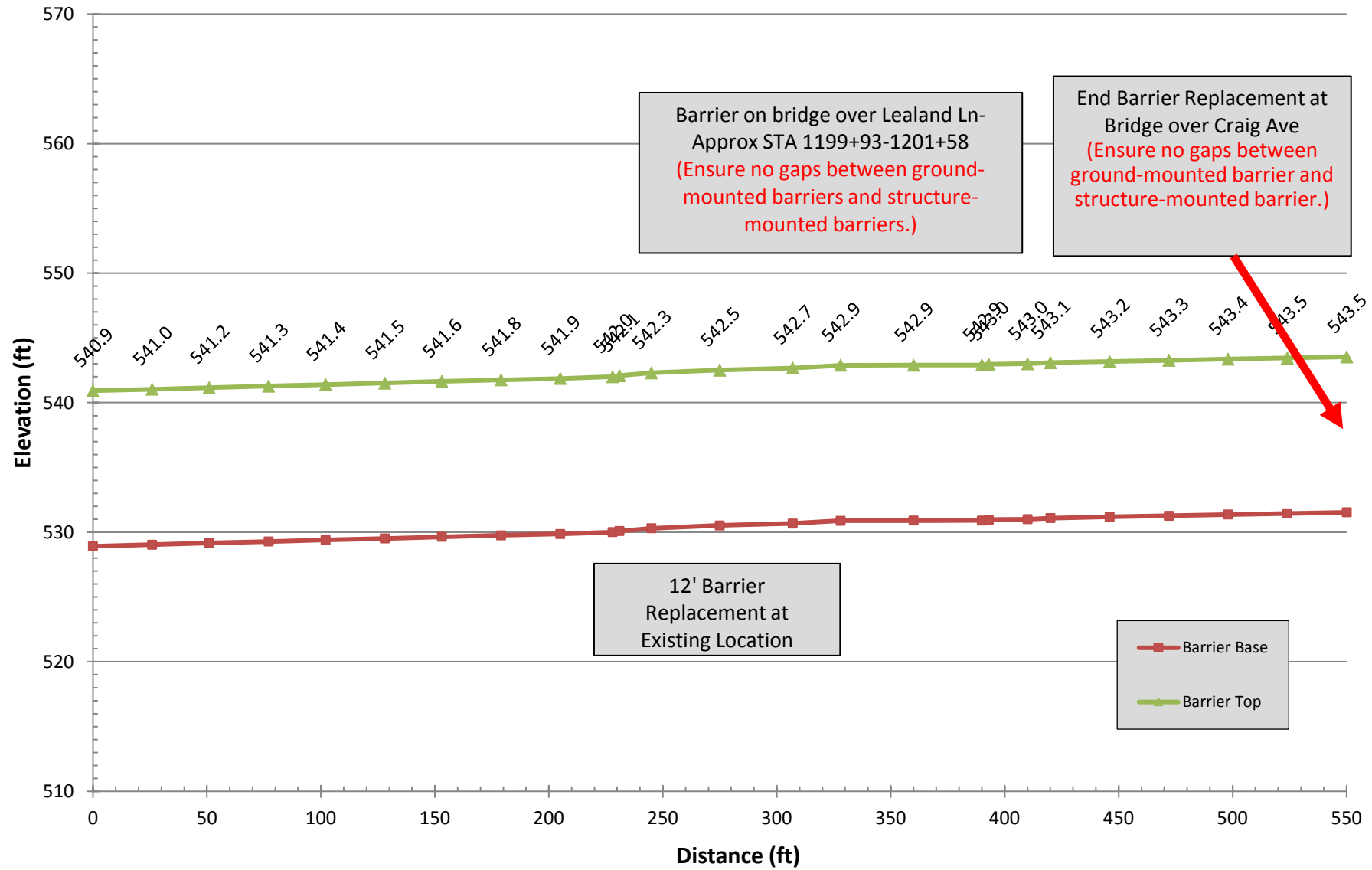
From	To	Approximate Segment Length (ft.)	Wall Type <sup>(1)(2)</sup>	Approximate Barrier Base Elevation (ft) <sup>(2)</sup>	Barrier Top Elevation (ft) <sup>(2)</sup>	Barrier Height (ft) <sup>(2)</sup>	Approximate Barrier Area (sq ft)
1197+65	1197+91	26	F (Existing Location)	528.9	12.0	540.9	312
1197+91	1198+16	25	F (Existing Location)	529.0	12.0	541.0	300
1198+16	1198+42	26	F (Existing Location)	529.2	12.0	541.2	312
1198+42	1198+67	25	F (Existing Location)	529.3	12.0	541.3	300
1198+67	1198+93	26	F (Existing Location)	529.4	12.0	541.4	312
1198+93	1199+18	25	F (Existing Location)	529.5	12.0	541.5	300
1199+18	1199+44	26	F (Existing Location)	529.6	12.0	541.6	312
1199+44	1199+70	26	F (Existing Location)	529.8	12.0	541.8	312
1199+70	1199+93	23	F (Existing Location)	529.9	12.0	541.9	276
1199+93	1199+96	3	S (Existing Location)	530.0	12.0	542.0	36
1199+96	1200+10	14	S (Existing Location)	530.1	12.0	542.1	168
1200+10	1200+40	30	S (Existing Location)	530.3	12.0	542.3	360
1200+40	1200+72	32	S (Existing Location)	530.5	12.0	542.5	384
1200+72	1200+93	21	S (Existing Location)	530.7	12.0	542.7	252
1200+93	1201+25	32	S (Existing Location)	530.9	12.0	542.9	384
1201+25	1201+55	30	S (Existing Location)	530.9	12.0	542.9	360
1201+55	1201+58	3	S (Existing Location)	530.9	12.0	542.9	36
1201+58	1201+75	17	F (Existing Location)	531.0	12.0	543.0	204
1201+75	1201+85	10	F (Existing Location)	531.0	12.0	543.0	120
1201+85	1202+11	26	F (Existing Location)	531.1	12.0	543.1	312
1202+11	1202+37	26	F (Existing Location)	531.2	12.0	543.2	312
1202+37	1202+63	26	F (Existing Location)	531.3	12.0	543.3	312
1202+63	1202+89	26	F (Existing Location)	531.4	12.0	543.4	312
1202+89	1203+15	26	F (Existing Location)	531.5	12.0	543.5	312
1203+15	1203+41	26	F (Existing Location)	531.5	12.0	543.5	312
1203+41	1203+67	26	F (Existing Location)	531.6	12.0	543.6	312
1203+67	1203+93	26	F (Existing Location)	531.7	12.0	543.7	312
1203+93	1204+19	26	F (Existing Location)	531.8	12.0	543.8	312
1204+19	1204+40	21	F (Existing Location)	531.7	12.0	543.7	252
1204+40	1204+65	25	F (Existing Location)	531.6	12.0	543.6	300
1204+65	1204+91	26	F (Existing Location)	531.5	12.0	543.5	312

<b>Project:</b>	Interstate 440 from I-40 to I-24
<b>County:</b>	Davidson
<b>PIN:</b>	125325.00
<b>Noise Analysis Area:</b>	23A (Battlefield)
<b>Design Year:</b>	2040
<b>Barrier Type:</b>	Ground-Mounted and Structure-Mounted Replacement Barriers
<b>Barrier Location:</b>	Shoulder and Lealand Bridge
<b>Date:</b>	12/22/2017

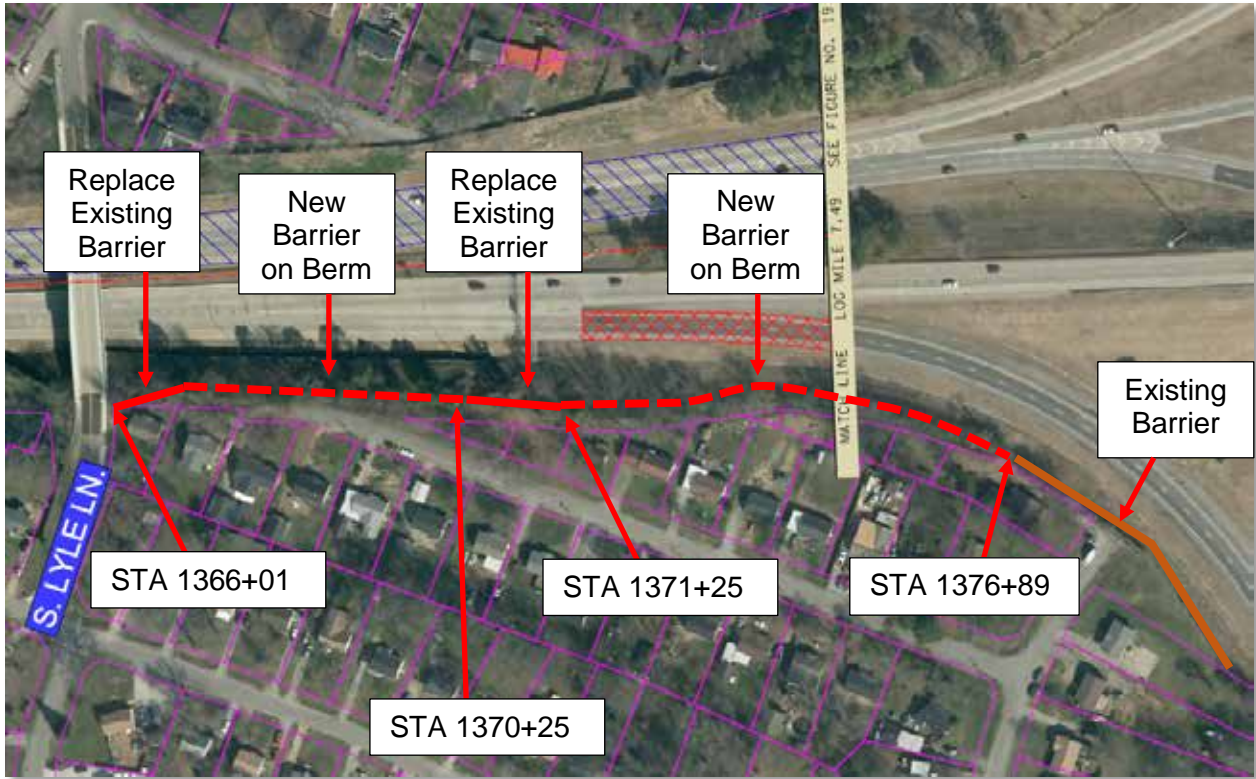
From	To	Approximate Segment Length (ft.)	Wall Type <sup>(1)(2)</sup>	Approximate Barrier Base Elevation (ft) <sup>(2)</sup>	Barrier Top Elevation (ft) <sup>(2)</sup>	Barrier Height (ft) <sup>(2)</sup>	Approximate Barrier Area (sq ft)	
1204+91	1205+17	26	F (Existing Location)	531.3	12.0	543.3	312	
1205+17	1205+42	25	F (Existing Location)	531.2	12.0	543.2	300	
1205+42	1205+68	26	F (Existing Location)	531.1	12.0	543.1	312	
1205+68	1205+94	26	F (Existing Location)	531.0	12.0	543.0	312	
1205+94	1206+19	25	F (Existing Location)	530.9	12.0	542.9	300	
1206+19	1206+20	1	F (Existing Location)	530.9	12.0	542.9	12	
1206+20	1206+45	25	F (Existing Location)	530.8	12.0	542.8	300	
1206+45	1206+71	26	F (Existing Location)	530.6	12.0	542.6	312	
1206+71	1206+96	25	F (Existing Location)	530.5	12.0	542.5	300	
1206+96	1207+22	26	F (Existing Location)	530.4	12.0	542.4	312	
1207+22	1207+23	1	F (Existing Location)	530.4	12.0	542.4	12	
1207+23	1207+52	29	F (Existing Location)	530.0	12.0	542.0	348	
1207+52	1207+78	26	F (Existing Location)	529.6	12.0	541.6	312	
1207+78	1208+03	25	F (Existing Location)	529.2	12.0	541.2	300	
1208+03	1208+24	21	F (Existing Location)	529.0	12.0	541.0	252	
1208+24	1208+25	1	F (Existing Location)	528.9	12.0	540.9	12	
1208+25	1208+5	25	F (Existing Location)	528.6	12.0	540.6	300	
1208+5	1208+76	26	F (Existing Location)	528.2	12.0	540.2	312	
1208+76	1209+02	26	F (Existing Location)	527.9	12.0	539.9	312	
1209+02	1209+27	25	F (Existing Location)	527.5	12.0	539.5	300	
1209+27	1209+28	1	F (Existing Location)	527.5	12.0	539.5	12	
1209+28	1209+53	25	F (Existing Location)	527.1	12.0	539.1	300	
1209+53	1209+78	25	F (Existing Location)	526.8	12.0	538.8	300	
1209+78	1209+79	1	F (Existing Location)	526.8	12.0	538.8	12	
1209+79	1210+02	23	F (Existing Location)	526.4	12.0	538.4	276	
1210+02	1210+04	2	F (Existing Location)	526.4	12.0	538.4	24	
1210+04	---	---	F (Existing Location)	526.4	12.0	538.4	---	
<b>Length (ft.):</b>		<b>1,239</b>					<b>Barrier Area (sq. ft.):</b>	<b>14,868</b>
							<b>Barrier Area on Structure (sq. ft.):</b>	<b>1,944</b>
							<b>Ground-Mounted Barrier Area (sq. ft.):</b>	<b>12,924</b>
							<b>Average Height:</b>	<b>12.0</b>

# I-440 Reconstruction, PIN #125325.00

## Eastbound Barrier Replacement Approx. STA 1197+65 - 1210+04 (NAA 23A)



# NAA 37 (South Lyle Lane, DeSoto Drive, Dodge Drive) Barrier Replacement and New Barrier on Berm



<b>Project:</b>	Interstate 440 from I-40 to I-24
<b>County:</b>	Davidson
<b>PIN:</b>	125325.00
<b>Noise Analysis Area:</b>	37 (Single family residences on South Lyle Lane, DeSoto Drive, and Dodge Drive)
<b>Design Year:</b>	2040
<b>Barrier Type:</b>	Ground-Mounted New and Replacement Barrier
<b>Barrier Location:</b>	Replacement barriers at existing locations, new barriers on berm
<b>Date:</b>	12/22/2017

From	To	Approximate Segment Length (ft.)	Wall Type <sup>(1)(2)</sup>	Approximate Barrier Base Elevation (ft) <sup>(2)</sup>	Barrier Top Elevation (ft) <sup>(2)</sup>	Barrier Height (ft) <sup>(2)</sup>	Approximate Barrier Area (sq ft)
1366+01	1366+22	22	F (Existing Location)	554.9	559.5	4.6	102
1366+22	1366+44	22	F (Existing Location)	553.3	560.5	7.2	159
1366+44	1366+66	23	F (Existing Location)	554.5	561.5	7.0	161
1366+66	1366+84	19	F (Existing Location)	555.5	562.5	7.0	133
1366+84	1367+08	25	F (Berm)	556.4	563.5	7.1	178
1367+08	1367+32	25	F (Berm)	560.0	564.0	4.0	101
1367+32	1367+69	37	F (Berm)	563.5	563.5	0.0	No Barrier
1367+69	1368+06	37	F (Berm)	565.0	565.0	0.0	No Barrier
1368+06	1368+42	36	F (Berm)	566.5	566.5	0.0	No Barrier
1368+42	1368+78	36	F (Berm)	566.3	566.3	0.0	No Barrier
1368+78	1369+15	38	F (Berm)	566.0	566.0	0.0	No Barrier
1369+15	1369+52	38	F (Berm)	566.3	566.3	0.0	No Barrier
1369+52	1369+89	37	F (Berm)	566.6	569.0	2.4	89
1369+89	1370+25	37	F (Berm)	565.0	569.0	4.0	148
1370+25	1370+50	25	F (Existing Location)	563.4	569.0	5.6	140
1370+50	1371+00	51	F (Existing Location)	558.1	569.0	10.9	556
1371+00	1371+25	26	F (Existing Location)	557.9	569.0	11.1	289
1371+25	1371+50	25	F (Existing Location)	564.2	569.0	4.8	120
1371+50	1371+74	25	F (Berm)	564.8	569.0	4.2	105
1371+74	1371+99	25	F (Berm)	563.3	569.0	5.7	143
1371+99	1372+24	25	F (Berm)	565.1	569.0	3.9	98
1372+24	1372+89	65	F (Berm)	564.9	569.0	4.1	266
1372+89	1373+41	53	F (Berm)	563.3	569.0	5.7	304
1373+41	1373+92	51	F (Berm)	560.1	566.9	6.7	343
1373+92	1374+19	27	F (Berm)	557.9	564.8	6.9	186
1374+19	1375+13	95	F (Berm)	555.9	563.7	7.8	742
1375+13	1375+84	75	F (Berm)	552.7	559.8	7.1	535
1375+84	1376+49	69	F (Berm)	550.4	556.8	6.4	442
1376+49	1376+69	25	F (Berm)	548.3	554.0	5.7	144
1376+69	1376+89	25	F (Berm)	548.5	553.0	9.5	238
1376+89	---	---	F (Berm)	539.0	548.5	9.5	---
<b>Total Length (ft.):</b>		<b>1,119</b>			<b>Barrier Area (sq. ft.):</b>		<b>5,721</b>
<b>New Barrier (ft.):</b>		<b>897</b>			<b>Average Height:</b>		<b>6.4</b>

(1) F = free standing barrier; R = Retaining Wall; S = Structure; EOP = location at shoulder; ROW = located at/near right-of-way; Trans = located in transition between EOP and ROW.

(2) At beginning station.

**I-440 Improvements, PIN #125325.00**  
**New and Replacement Eastbound Barrier**  
**Approx. STA 1366+01 - 1376+89 (NAA 37)**

