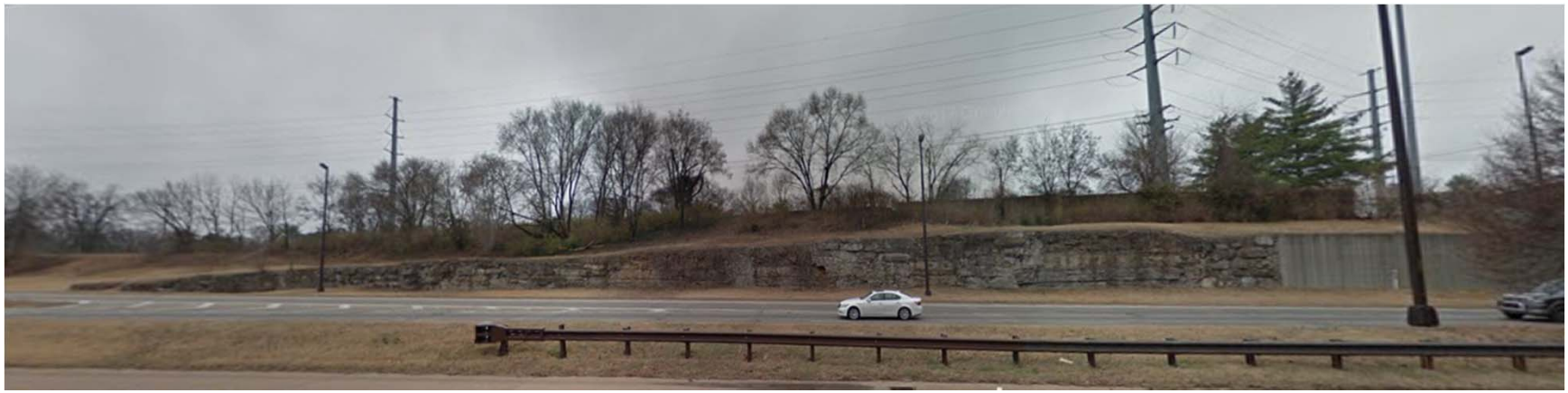
Rock Removal Estimate

I-440 From I-40 to I-24; Evaluation of several potential rockfall mitigation sites.

EAST BOUND LOCATIONS

Locations in order from I-40 to I-24

MM1, Exit 1 to 1A – Stone Masonry Wall



Total Length = 388 feet; 312 feet of exposed masonry wall.
Height= 212 @ 9 feet; 100 @ 15 feet
SQ FT = (212x9 + 100x15)= 3,408 ft^2

MM 3.2, Between Brightwood Ave and Belmont Blvd

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Total Length=744 feet; 394 rock face needs scaling, 350 is wall that does not require scaling.

Heights From 10-18 ft.

Some overhang removal is required near Belmont Blvd.

SQ FT Estimate= (145x 14)+(130x10)+(93x10)+(16*18)= 4,548 FT^2

SQ FT of Overhang = (17 x 5)+(10 X 2)= 105 FT ^2

MM 3.6 to 3.8 (Granny White Pike)

Overhang Trim Blasting

Estimated SQ FT = (27+48+31)*6 ft (Thickness of Overhang)= 636 ft^2

Total Height of Cuts = 14-15 ft

West Bound

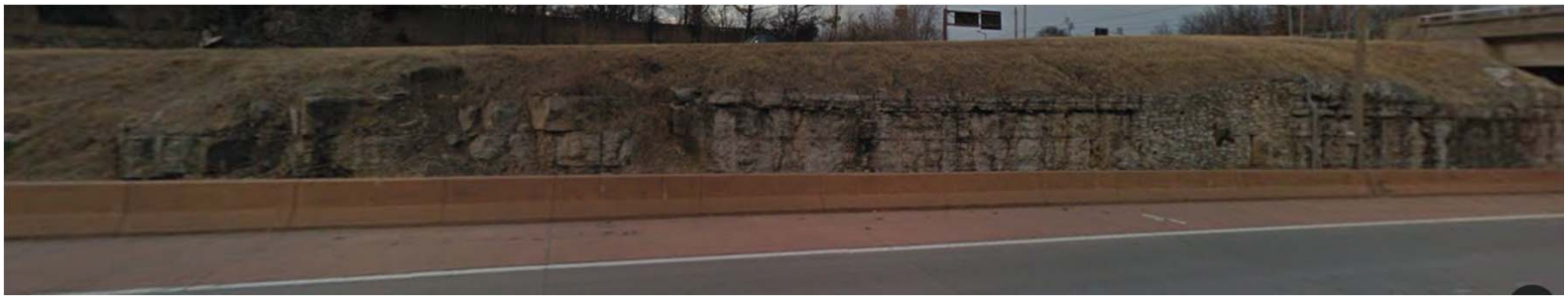
In order from I-24 to I-40

MM 6.8 to MM 6.6

Total Length = 906 feet
Height = 3-10 feet (includes the 3 foot barrier)
SQ FT = (322X 7)+(206 X 10)+(378x9)= 7,716 ft^2

MM 6.2 to 6.3

- Could not locate due to traffic and time constraints. (10x175 + 7x100 =2,450 ft^2)



MM 4 to Belmont Blvd

MM 4 to Belmont Blvd

MM 4 to Belmont Blvd

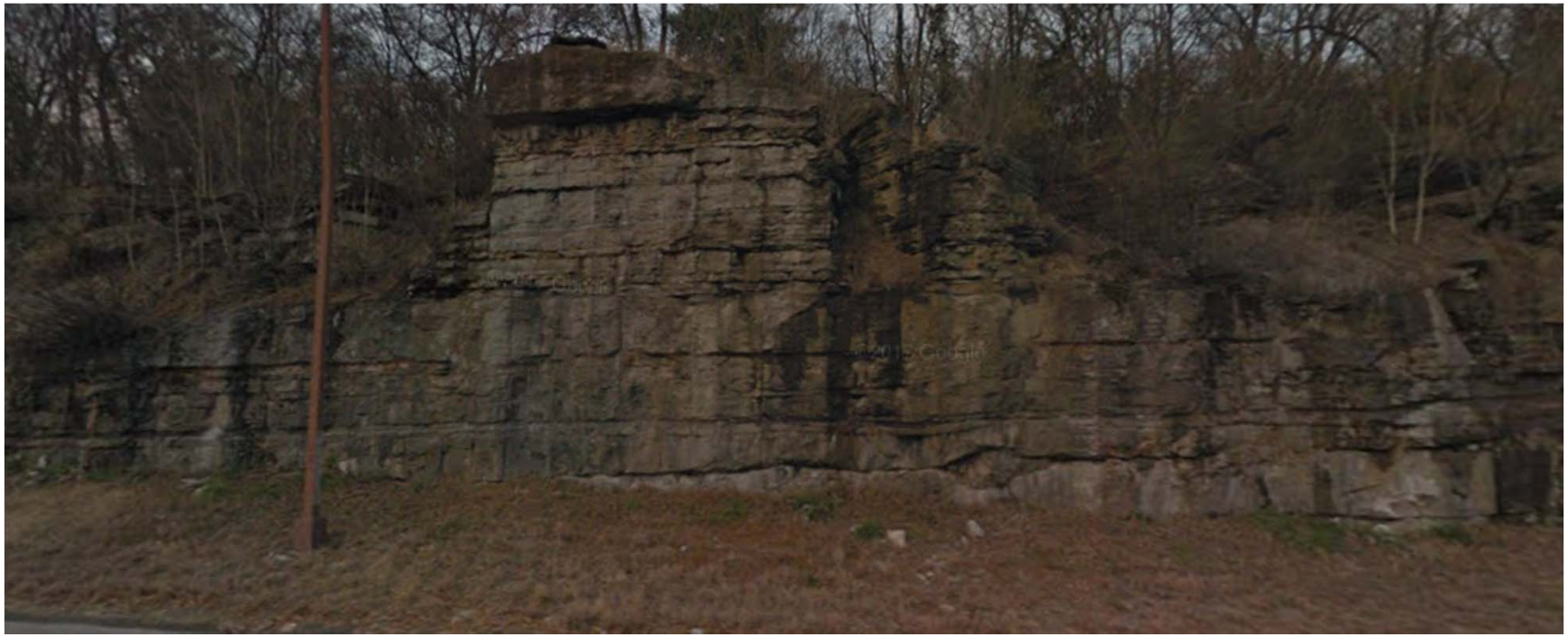
Total Length= 562
Height= 9-20 ft
SQ Ft =(86x9)+(86x11)+(24x10)+(58x14.5)+(70x17)+(130X20)+(108x22) = 8,967 ft^2

MM 3.8

Overhang Removal

Length= 24 ft
Height= 3 ft
SQ Ft of Overhang = (24x3)= 72 ft^2

MM 3.8 to MM 3.6



Just looked at this one particular location, more extensive investigation may be required.

Length of this location = 50 ft, 12ft of overhang
Height = 24 ft, 4 ft high overhang

SQ FT of Overhang Removal = (12x 4)= 48 Sq ft
Additional block to the right might be beneficial for removal= (8x 10)= 80 Sq ft

Belmont Blvd. overpass

Total Height= Approximately 20 feet tall
Total Length= 90 feet to vertical joint near drainage at front of wall, total wall length is unknown.

Observations- At the corner, there is a vertical crack. Wall seems to be stable, but repair is indeed advisable.

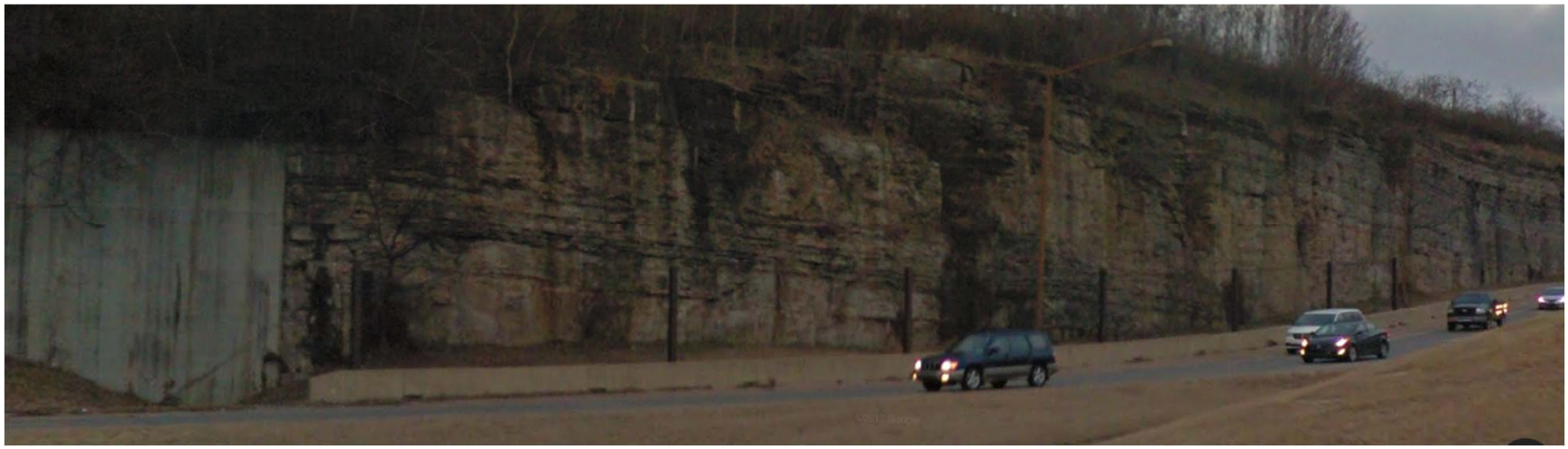
Ramp to Hillsboro Road

Overhang Requires Trim Blasting

Total Length= 33+34= 67 feet
Total Height = 3 feet

Sq Ft = (67x3)= 201 ft^2

On-ramp from Hillsboro Road to I-440



Minor Damage to Rock Fence Panels, Panels bulge inward and outward, Catchment Relatively clean.

Total Length of Rockfall Fence= 230 ft

No significant visible damage.

Hillsboro Rd to MM 2.4

- Did not evaluate this location.

- Google Maps Estimate of 680 feet long and 30 feet high (680 x 30) = 20,400 ft^2

MM2.1 to MM 2.0

MM2.1 to MM 2.0

MM2.1 to MM 2.0

Length= 474 ft
Height= 17-20 ft
Total Sq. Ft= 474 x 20 =9,480 x (50%) = 4,740 ft^2

Murphy Road On-ramp to I-440 WB

Total Length of Fence= 652 feet

Fence needs to be replaced, 3 gaps in the fence panels at different locations

Bowing of fence panels observed.

Rock Catchment needs to be cleaned out, lots of debris behind fence.

Rock Slope; Length – 652 ft , Height ~48 ft (SQ FT = 652x48 = 31, 296 ft^2)

Acklen Park Drive to Overpass MM0.8

Acklen Park Drive to Overpass MM0.8

Total Length= 240 +95 + 220 = 555 ft
Height = 8 – 20 ft

SQ Footage = (240x20 + 95x15+ 220x 8) = 7,985 ft^2

Masonry Wall Failure = 95 x 15 = 1,425 ft^2

MM 0.8

Trim Blasting?

Length= 200 ft
Height = 3 ft

Trim Blasting would be beneficial for the first 100 feet.
Sq Footage = 100 x 3 ft = 300 ft^2

If treatment of whole slope
Sq Footage= 200 x 3ft= 600 ft^2