

# MEMORANDUM

**TO:** Cranberry Township

**FROM:** Darren S. Myer, HRG

**DATE:** February 15, 2017

**RE:** Freedom Road Widening Project

As a response to Duane's comments, we have modified the Typical Section of Freedom Road from the County line to Powell Road to include two 11' lanes, two 5' bike lanes and a sidewalk on the southern side. This will remove all earthwork conflicts with the surrounding properties in the project area. The sidewalk is not meeting the 5'-10' buffer requirement below, however it is protected by barrier curb which has been approved by PennDOT in the past. Below is the applicable design criteria for Freedom Road, which is classified as a Community Arterial – Suburban Corridor.

		Criteria	Reference
Roadway	Classification	Community Arterial	ITMS
		Suburban Corridor	
	Lane Width	11' to 12'	DM-2, Table 1.4
	Shoulder Width	8' to 10'	DM-2, Table 1.4
	Parking Lane	N/A	DM-2, Table 1.4
	Bike Lane	5' to 6' (if no shoulder)	DM-2, Table 1.4
	Median (if needed)	16' to 18' for Left Turn	DM-2, Table 1.4
		12' to 18' for Left Turn; 6' to 8' for Peds	
	Curb Return	25' to 50'	DM-2, Table 1.4
	Travel Lanes	2 to 4	DM-2, Table 1.4
	Cross Slopes (min)	2.0%	DM-2, Table 1.4
	Cross Slopes (max)	6.0%	DM-2, Table 1.4
	Vertical Grades (min)	0.5%	DM-2, Table 1.4
	Vertical Clearance (min)	16'-6"	DM-2, Table 1.4
Roadside	Clear Sidewalk Width	5' to 6'	DM-2, Table 1.4
	Buffer	5' to 10'	DM-2, Table 1.4
	Shy Distance	N/A	DM-2, Table 1.4
	Total Sidewalk Width	5' to 6'	DM-2, Table 1.4
	Clear Zone Widths	14'	DM-2, Table 12.1
Speed	Design Speed	35-50 mph	DM-2, Table 1.4

If you have any questions, please do not hesitate to call me at (724) 779-4777 to discuss in more detail.

**FREEDOM ROAD CORRIDOR  
HAINE SCHOOL TO COMMONWEALTH  
PROBABLE COST ESTIMATE WORKSHEET  
02/14/2017**

Description	Cost	Unit	Quantity	Total
<b>Construction Items</b>				
<b>Pavement</b>				
1.5" Superpave Wearing Course, SRL-E	\$12.00	Square Yard	36,190	\$434,280.00
2.5" Superpave Binder Course	\$14.00	Square Yard	19,330	\$270,620.00
7" Superpave Base Course	\$23.00	Square Yard	19,330	\$444,590.00
Subbase 6" Depth (No. 2A)	\$15.00	Square Yard	19,330	\$289,950.00
Bituminous Tack Coat	\$0.15	Square Yard	72,380	\$10,857.00
Mill Existing Pavement	\$5.00	Square Yard	16,880	\$84,400.00
Superpave Wearing Course, SRL-E Leveling	\$9.00	Square Yard	16,880	\$151,920.00

<b>Excavation</b>				
Excavation	\$25.00	Cubic Yard	15,220	\$380,500.00
Foreign Borrow Excavation	\$10.00	Cubic Yard	20,434	\$204,340.00

<b>Drainage</b>				
18" HDPE	\$70.00	Linear Feet	2,700	\$189,000.00
24" HDPE	\$75.00	Linear Feet	4,380	\$328,500.00
Standard Inlet Box	\$2,500.00	Each	21	\$52,500.00
Type 4 Inlet Box	\$5,000.00	Each	21	\$105,000.00
Concrete Box Culvert Extension	\$2,800.00	Linear Feet	80	\$224,000.00

<b>Traffic Signal</b>				
	\$300,000.00	Lump Sum	3	\$900,000.00

<b>Miscellaneous</b>				
Plain Cement Concrete Curb	\$25.00	Linear Feet	8,260	\$206,500.00
Concrete Sidewalk	\$55.00	Sqare Yard	5,510	\$303,050.00
6" Pavement Base Drain	\$13.00	Linear Feet	8,760	\$113,880.00

**Construction Subtotal:** \$4,693,887.00

Pavement Marking/Signing	5.0%	Of Construction Subtotal	\$234,694.35
Landscaping Costs	2.0%	Of Construction Subtotal	\$93,877.74
Misc. E&S Controls	4.0%	Of Construction Subtotal	\$187,755.48
Maintenance and Protection of Traffic	15.0%	Of Construction Subtotal	\$704,083.05

**Total Construction:** \$5,914,297.62

<b>Utility Relocation</b>				
Utility Pole Relocation	\$35,000.00	Each	22	\$770,000.00
Waterline Relocation	\$85.00	LF	1,450	\$123,250.00
Gasline Relocation	\$100.00	LF	3,050	\$305,000.00
Sanitary Manhole Adjustment	\$3,500.00	Each	17	\$59,500.00

**Total Utility Relocation:** \$1,257,750.00

**RIGHT OF WAY ACQUISITION**

Right of Way (Commercial)	\$185,130.00	Acres	3.62	\$670,501.25
Right of Way (Residential)	\$130,680.00	Acres	0.00	\$0.00

**Total Right of Way:** \$670,501.25

<b>Contingency</b>			
20.0%	Of Totals	\$1,568,509.77	
<b>Total Project Cost:</b>			<b>\$9,411,059.00</b>

**FREEDOM ROAD CORRIDOR  
POWELL TO HAINE SCHOOL  
PROBABLE COST ESTIMATE WORKSHEET  
02/14/2017**

Description	Cost	Unit	Quantity	Total
<b>Construction Items</b>				
<b>Pavement</b>				
1.5" Superpave Wearing Course, SRL-E	\$12.00	Square Yard	28,870	\$346,440.00
2.5" Superpave Binder Course	\$14.00	Square Yard	21,356	\$298,984.00
7" Superpave Base Course	\$23.00	Square Yard	21,356	\$491,188.00
Subbase 6" Depth (No. 2A)	\$15.00	Square Yard	21,356	\$320,340.00
Bituminous Tack Coat	\$0.15	Square Yard	57,730	\$8,659.50
Mill Existing Pavement	\$5.00	Square Yard	7,510	\$37,550.00
Superpave Wearing Course, SRL-E Leveling	\$9.00	Square Yard	7,510	\$67,590.00

**Excavation**

Excavation	\$25.00	Cubic Yard	28,240	\$706,000.00
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**Drainage**

18" HDPE	\$70.00	Linear Feet	2,370	\$165,900.00
24" HDPE	\$75.00	Linear Feet	3,900	\$292,500.00
Standard Inlet Box	\$2,500.00	Each	17	\$42,500.00
Type 4 Inlet Box	\$5,000.00	Each	17	\$85,000.00
48" HDPE Replacement	\$600.00	Linear Feet	160	\$96,000.00

**Traffic Signal**

	\$300,000.00	Lump Sum	2	\$600,000.00
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**Miscellaneous**

Plain Cement Concrete Curb	\$25.00	Linear Feet	7,560	\$189,000.00
Concrete Sidewalk	\$55.00	Square Yard	5,050	\$277,750.00
6" Pavement Base Drain	\$13.00	Linear Feet	7,800	\$101,400.00

**Construction Subtotal:** \$4,126,801.50

**Pavement Marking/Signing**

5.0%	Of Construction Subtotal	\$206,340.08
2.0%	Of Construction Subtotal	\$82,536.03
4.0%	Of Construction Subtotal	\$165,072.06
15.0%	Of Construction Subtotal	\$619,020.23

**Landscaping Costs**

**Misc. E&S Controls**

**Maintenance and Protection of Traffic**

**Total Construction:** \$5,199,769.89

**Utility Relocation**

Utility Pole Relocation	\$35,000.00	Each	23	\$805,000.00
Waterline Relocation	\$85.00	Linear Feet	1,890	\$160,650.00
Gasline Relocation	\$100.00	Linear Feet	3,030	\$303,000.00
Sanitary Manhole Adjustment	\$3,500.00	Each	5	\$17,500.00

**Total Utility Relocation:** \$1,286,150.00

**RIGHT OF WAY ACQUISITION**

Right of Way (Commercial)	\$185,130.00	Acres	5.58	\$1,033,081.50
Right of Way (Residential)	\$130,680.00	Acres	0.00	\$0.00

**Total Right of Way:** \$1,033,081.50

**Contingency**

20.0%	Of Totals	\$1,503,800.28
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**Total Project Cost:** \$9,022,802.00

**FREEDOM ROAD CORRIDOR  
COUNTY LINE TO POWELL  
PROBABLE COST ESTIMATE WORKSHEET  
02/14/2017**

Description	Cost	Unit	Quantity	Total
<b>Construction Items</b>				
<b>Pavement</b>				
1.5" Superpave Wearing Course, SRL-E	\$12.00	Square Yard	8,370	\$100,440.00
2.5" Superpave Binder Course	\$14.00	Square Yard	7,450	\$104,300.00
7" Superpave Base Course	\$23.00	Square Yard	7,450	\$171,350.00
Subbase 6" Depth (No. 2A)	\$15.00	Square Yard	7,450	\$111,750.00
Bituminous Tack Coat	\$0.15	Square Yard	16,740	\$2,511.00
Mill Existing Pavement	\$5.00	Square Yard	930	\$4,650.00
Superpave Wearing Course, SRL-E Leveling	\$9.00	Square Yard	930	\$8,370.00
<b>Excavation</b>				
Excavation	\$25.00	Cubic Yard	14,460	\$361,500.00
<b>Drainage</b>				
18" HDPE	\$70.00	Linear Feet	1,320	\$92,400.00
24" HDPE	\$75.00	Linear Feet	2,300	\$172,500.00
Standard Inlet Box	\$2,500.00	Each	10	\$25,000.00
Type 4 Inlet Box	\$5,000.00	Each	10	\$50,000.00
<b>Miscellaneous</b>				
Plain Cement Concrete Curb	\$25.00	Linear Feet	4,600	\$115,000.00
Concrete Sidewalk	\$55.00	Sqare Yard	1,540	\$84,700.00
6" Pavement Base Drain	\$13.00	Linear Feet	4,600	\$59,800.00
Retaining Wall	\$35,000.00	Lump Sum	1	\$35,000.00
<b>Construction Subtotal:</b>				<b>\$1,499,271.00</b>
Pavement Marking/Signing	5.0%	Of Construction Subtotal		\$74,963.55
Landscaping Costs	2.0%	Of Construction Subtotal		\$29,985.42
Misc. E&S Controls	4.0%	Of Construction Subtotal		\$59,970.84
Maintenance and Protection of Traffic	15.0%	Of Construction Subtotal		\$224,890.65
<b>Total Construction:</b>				<b>\$1,889,081.46</b>
<b>Utility Relocation</b>				
Utility Pole Relocation	\$35,000.00	Each	6	\$210,000.00
<b>Total Utility Relocation:</b>				<b>\$210,000.00</b>
<b>RIGHT OF WAY ACQUISITION</b>				
Right of Way (Commercial)	\$185,130.00	Acres	1.06	\$197,000.25
Right of Way (Residential)	\$130,680.00	Acres	0.38	\$50,202.00
<b>Total Right of Way:</b>				<b>\$247,202.25</b>
<b>Contingency</b>				
	20.0%	Of Construction Total		\$469,256.74
<b>Total Project Cost:</b>				<b>\$2,815,541.00</b>