

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	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
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	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
HAINESCHOOL TO COMMONWEALTH
PROBABLE COST ESTIMATE WORKSHEET
02/14/2017**

Description	Cost	Unit	Quantity	Total
Construction Items				
Pavement				
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
Excavation				
Excavation	\$25.00	Cubic Yard	15,220	\$380,500.00
Foreign Borrow Excavation	\$10.00	Cubic Yard	20,434	\$204,340.00
Drainage				
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
Traffic Signal				
	\$300,000.00	Lump Sum	3	\$900,000.00
Miscellaneous				
Plain Cement Concrete Curb	\$25.00	Linear Feet	8,260	\$206,500.00
Concrete Sidewalk	\$55.00	Square 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
				\$234,694.35
				\$93,877.74
				\$187,755.48
				\$704,083.05
				Total Construction: \$5,914,297.62
Utility Relocation				
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
Contingency				
	20.0%	Of Totals		\$1,568,509.77
				Total Project Cost: \$9,411,059.00

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

Description	Cost	Unit	Quantity	Total
Construction Items				
Pavement				
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
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
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				
Landscaping Costs	5.0%	Of Construction Subtotal		\$206,340.08
Misc. E&S Controls	2.0%	Of Construction Subtotal		\$82,536.03
Maintenance and Protection of Traffic	4.0%	Of Construction Subtotal		\$165,072.06
	15.0%	Of Construction Subtotal		\$619,020.23
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
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		
Construction Items						
Pavement						
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		
Excavation						
Excavation	\$25.00	Cubic Yard	14,460	\$361,500.00		
Drainage						
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		
Miscellaneous						
Plain Cement Concrete Curb	\$25.00	Linear Feet	4,600	\$115,000.00		
Concrete Sidewalk	\$55.00	Square 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		
Construction Subtotal:				\$1,499,271.00		
Pavement Marking/Signing						
Landscaping Costs						
Misc. E&S Controls						
Maintenance and Protection of Traffic						
5.0%	Of Construction Subtotal		\$74,963.55			
2.0%	Of Construction Subtotal		\$29,985.42			
4.0%	Of Construction Subtotal		\$59,970.84			
15.0%	Of Construction Subtotal		\$224,890.65			
Total Construction:				\$1,889,081.46		
Utility Relocation						
Utility Pole Relocation	\$35,000.00	Each	6	\$210,000.00		
Total Utility Relocation:				\$210,000.00		
RIGHT OF WAY ACQUISITION						
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		
Total Right of Way:				\$247,202.25		
Contingency						
20.0%	Of Construction Total		\$469,256.74			
Total Project Cost:				\$2,815,541.00		