

Classification Number 2 - RECONSTRUCTION, WIDENING & DUALIZATION - English

Township	Hopewell/Lawrence	Section/Contract #	2007BPP643C Bike Ped T.O. #11 (118183)
PM	Del Vecchio	UPC No.	Pennington Signed Bicycle Route

EARTHWORK (must be calculated)

	Unit	Quantity	x Unit Price	Amount
Stripping (4 - 6" Depth)	Acre	0	4,050	0
Roadway Exc. Unclassified, See (J)	C.Y.	2247	25	56175
Removal of Conc. Base & Conc. Surface Courses	S.Y.	0	15	0
Channel Excavation	C.Y.	0	12.25	0
Ditch Excavation	C.Y.	0	10	0
Borrow Excavation Zone 3, See (J)	C.Y.	0	20	0
		0		0
EARTHWORK TOTAL	=			56175

Suggested procedure for calculating earthwork:

- A) Determine Typical section (number of lanes, median widths, side slopes, etc.).
- B) Get latest topography map available.
- C) Plot proposed alignment on topo map.
- D) Develop profile using topo controls such as existing roads, streams, rivers and design manual.
- E) Calculate Areas for the typical section in 1 foot increments of cut or fill.
- F) At 10 to 60 foot intervals (depending on frequency of X-section changes) calculate the earthwork.
- G) Calculate any other significant earthwork (ramps, cross-roads, etc.).
- H) Make appropriate earthwork corrections for the pavement box and striping. Use 21 inch depth for rigid pavement, 26 inch depth for all flexible pavement and 4 inch depth for stripping.
- I) Deduct any roadway excavation from borrow required to calculate Borrow Excavation Zone 3.
- J) See Construction Cost Estimate Work Sheet (Section 3.1). This worksheet must be utilized for the most recent price information.

PAVEMENT

12 FOOT WIDE LANE (from subgrade up)

Pav't. Type	Description of Pavement	Cost/Linear Foot
A	10 inch R.C. Pavement	156
B	2 inch HMA Surf. Crs. & 8 inch HMA	61
C	3 inch HMA Surf. Crs. & 4 inch HMA	46
D	2 inch HMA Surf. Crs. & 2 inch HMA	22
E	Bridge Approach & Transition Slabs	156
	(Resurfacing Portion only F & G)	
F	2 inch HMA Surface Course	8.25
G	3 inch HMA Surface Course	12
H	Milling 2 inch	3

Computation Table for Pavement. Cost

Type	Cost from table above	x Length	x Pavement *W.F.	= Amount
B	96	3500	0.6667	224011.2
				0
				0
				0
				0
				0
				0
				0
PAVEMENT TOTAL				224011.2

*Width Factors = Ratio of 12 foot wide lane to actual pavement width.

Example = actual pavement width = 25 foot = 25/12 = 2.08 W.F.

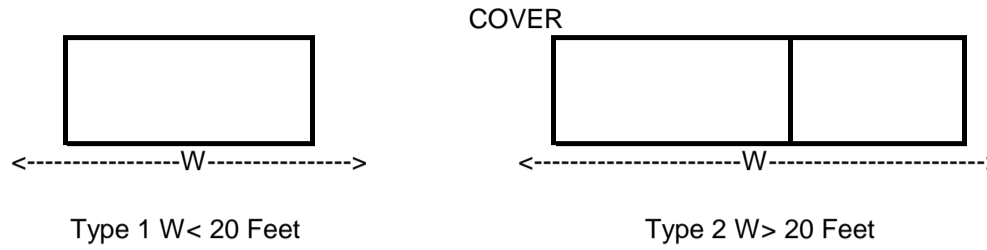
CONTEXT SENSITIVE DESIGN

Attach additional sheet detailing items and costs of context sensitive design work =

CULVERTS

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Class 2 - Reconstruction, Widening Dualization



Type		Layout (3)	Skew (1)	Cover (2)	Cost Per Sq. Foot
Type 1	Area w x L exceeds 1000 Sq. Feet	Short Culverts Difficult	0-60 degrees	0 to 10'	114.75
				10' to 20'	147.25
	Conditions under 1000 Square Feet		degrees	0 to 10'	203.50
				10' to 20'	235.00
Type 2	Area w x L exceeds 1000 Sq. Feet	Short Culverts Difficult	0-60 degrees	0 to 10'	121.75
				10' to 20'	152.50
	Conditions under 1000 Square Feet		degrees	0 to 10'	203.50
				10' to 20'	235.00

For skews over 60 degrees it will be necessary to make a special analysis and establish a square meter price comparable to above.

Description	Area Computation	x Cost per Sq. Foot	= Amount
			0
			0
			0
			0
		Culvert Total =	0

BRIDGES

For the Bridge Sketch see the Construction Cost Estimation Preparation Manual

1 to 3 spans and 2 side spans (Max. Span 100 feet)

H = Clear Height 14 To 23 feet (4)

L = 100 to 400 feet & all viaducts over 400 feet (5)

Class	Layout	Skew (1)	Foundation (2)	Cost per Sq. Foot
I	Width at Least 45 feet	0 to 40 Degrees	No Piles	134.75
			Piles at Stub Abut.	159.75
			Piles at Piers & Stu	174.75
		40 to 60 Degrees	No Piles	145
			Piles at Stub Abut.	168.25
			Piles at Piers & Stu	181.25

For the Bridge Sketch see the Construction Cost Estimation Preparation Manual

1 to 3 spans and 2 side spans (Max. Span 100 feet) (3)

H = Clear Height 14 feet (4)

L = under 400 feet

Class	Layout	Skew (1)	Foundation (2)	Cost per Sq. Foot
II	L exceeds W Area L x W exceeds 4500 Sq. Feet	0 to 40 Degrees	No Piles	176.5
			On Piles	187.25
		40 to 60 Degrees	No Piles	219.75
			On Piles	273.25
III	W exceeds L Area L x W exceeds 4500 Sq. Feet	0 to 40 Degrees	No Piles	226.75
			On Piles	299.25
		40 to 60 Degrees	No Piles	241.5
			On Piles	310
IV	Width 30 - 45 feet Area W x L under 4500 Sq. Foot	0 to 40 Degrees	No Piles	295.5
			On Piles	396.75
		40 to 60 Degrees	No Piles	318.25
			On Piles	416.25

DRAINAGE TOTAL = 359224.8

INCIDENTAL ITEMS

Item	Pay Item	Cost	x Quantity	= Amount
D11-1 (Bike Route Sign) - 12	SF		35 24.00	840
M4-14 (Begin Aux. Sign) - 2	SF		35 1.00	35
M4-6 (End Aux. Sign) - 2	SF		35 1.00	35
M5-1 (Left Turn Arrow Sign) - 2	SF		35 1.50	53
M6-1 (Turn Arrow Sign) - 3	SF		35 2.25	79
M6-3 (Straight Arrow Sign) - 2	SF		35 1.50	53
M5-2 (Bear Left Arrow Sign) - 1	SF		35 0.75	26
W11-1 (Bicycle Warning Sign) - 6	SQFT		35 24	840
Traffic Stripes, Long Life Epoxy	LF		4 7000	28000
INCIDENTAL ITEMS TOTAL		=		29960.00

LANDSCAPE

	Quantity	x Unit Prices	= Amount
Topsoil and Seeding (Mainline) Length of Project in miles	0.66	112,815	74457.9
Planting (Mainline) Length of Project in miles	0	64,500	0
Topsoil, Seeding, Planting (Finger Ramp) Number of Finger Ramps	0	12,500	0
Topsoil, Seeding, Planting (Loop Ramp) Number of Loop Ramps	0	20,000	0
Topsoil, Seeding (Access Road) Length of Access Road in Feet	0	7.9	0
LANDSCAPE TOTAL	=		74457.9

NOISE ABATEMENT

	Unit	Quantity	x Cost	= Amount
			305	0
				0
				0
				0
NOISE ABATEMENT TOTAL	=			0

GENERAL ITEMS

Item	Project Length (mile)	x Cost/Mile	= Amount
Field Office	0	44,260	0
Materials Field Laboratory	0	28,970	0
Erosion Control during Construction	0.66	64,375	42487.5
GENERAL ITEMS TOTAL	=		42487.5

SUMMARY

Route	Hopewell/Lawrence	Section/Proj. Id. #	2007BPP643C Bike Ped T.O. #11 (118183)
PM	Del Vecchio	UPC No.	Pennington Signed Bicycle Route

Work Type	Totals from other pages
Earthwork	56175
Pavement	224011.2
Context Sensitive Design	0
Culverts	0
Bridges	0
Drainage	359224.8
Incidental Items	29960
Landscape	74457.9
Noise Abatement	0
General Items	42487.5

Class 2 - Reconstruction, Widening Dualization

PROJECT SUBTOTAL	786316.4
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Other Items	Proj. Subtotal Range	Choice	Amount
Lighting, Traffic Stripes, Signs and Delineators		0% of Proj. Subtotal	0
Maintenance of Traffic		10% of Proj. Subtotal	78632
Training		1% of Proj. Subtotal	7863.164
Mobilization			70768.476
	Project Cost < 5.0 (Mil.)	9% of Proj. Subtotal	70768
	Project Cost 5.0 & above	10% of Proj. Subtotal	0
Progress Schedule	Project Cost(Mil.)	\$	0
	Less than 2.0		0
	2.0 to 5.0		6,000
	5.0 to 10.0		8,000
	10.0 to 20.0		15,000
	20.0 to 30.0		30,000
	30.0 to 40.0		40,000
	40.0 & above		58,000
Clearing Site	Project Cost (Mil.)	\$	15000
	Less than 1.0		15,000
	1.0 to 2.0		30,000
	2.0 to 5.0		45,000
	5.0 to 10.0		115,000
	10.0 to 20.0		220,000
	20.0 to 30.0		240,000
	30.0 to 40.0		250,000
40.0 & above		490,000	
Construction Layout	Project Cost(Mil.)	\$	7000
	Less than 1.0		7,000
	1.0 to 2.0		20,000
	2.0 to 5.0		42,000
	5.0 to 10.0		87,000
	10.0 to 20.0		160,000
	20.0 to 30.0		220,000
	30.0 to 40.0		490,000
40.0 & above		890,000	
PROJECT TOTAL			965580

CONTINGENCIES & ESCALATION

Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%

Y

4.00

4.00

1.10

965579.68	1.030	1.10	1094002
Project Total	Contingencies (1+C)	1 + [0.01 (Y+1) (Y-2)]	Construction Estimate for PD

Project Cost(Mil.)	Contingencies (C) Percent	Average Construction Duration in Years
0-10	3%	1
10-20	2.50%	2
Over 20	2%	3

0.030
0.000
0.000

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	% of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%

0
222082.36
0.00
0

CONSTRUCTION ENGINEERING AMOUNT \$222,082.36

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$

Construction Change Order Contingency Amount

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\$0 to 0.1	\$6,000	0
0.1 to 0.5	25,000	0
0.5 to 5.0	25,000 + 4% of amount in excess of \$500,000	48800
5.0 to 10.0	205,000 + 3% of amount in excess of \$5,000,000	0
10.0 to 15.0	355,000 + 2% of amount in excess of \$10,000,000	0
15.0 and above	455,000 + 1.5% of amount in excess of \$15,000,000 - max \$	0
		0

For State Funded Projects, Contingencies for Change orders = 0
CHANGE ORDER CONTINGENCY AMOUNT = 48800

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

1094002	0.12	131280	CHECK
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for Urban use 0.12,
 Rural 0.055 or +
 Estimate =
 Utility Relocation
 Cost for Initial
 Estimate

Construction Cost for Initial Estimate

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST

NO ROW

If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Estimate for Initial	1094002
Construction Engineering (CE)	222082
Contingencies	48800
Utilities Relocations	131280
Total Construction Cost	1496164
Planning Contingencies (20%)	299233
Right of Way Cost	NO ROW
TOTAL COST	1795397