



# Appendix F Construction Cost Estimates

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DEWBERRY-GOODKIND, INC

PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR REDSTONE EXTENSION

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	1,000	\$35.00	\$35,000
ROCK EXCAVATION	CY	100	\$80.00	\$8,000
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	50	\$40.00	\$2,000
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	11	\$80.00	\$880
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	11	\$520.00	\$5,720
BORROW	CY	150,276	\$30.00	\$4,508,289
NEW DRAINAGE SYSTEM	SF	338,482	\$3.00	\$1,015,446
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	3,385	\$1.00	\$3,385
SUPERPAVE	TON	19,787	\$100.00	\$1,978,709
CONCRETE BASE COURSE WIDENING	CY	10,447	\$300.00	\$3,134,093
MILLING OF BITUMINOUS CONCRETE (3 in)	SF	45,800	\$0.50	\$22,900
SUBBASE	CY	10,447	\$21.00	\$219,386
FORMATION OF SUBGRADE	SF	338,482	\$0.25	\$84,621
MAJOR PIPE CULVERTS	FT	500	\$600	\$300,000
CONCRETE BOX CULVERTS	FT	250	\$975	\$243,750
NEW BRIDGE	SF	153,748	\$375	\$57,655,659
RETAINING WALLS	SF	15,624	\$65	\$1,015,560
CONCRETE MEDIAN BARRIER	FT	0	\$80.00	\$0
TRAFFIC SIGNAL MODIFICATIONS	EA	2	\$50,000	\$100,000
NEW TRAFFIC SIGNALS	EA	3	\$100,000	\$300,000
ROADWAY LIGHTING (RAMPS)	FT	9,467	\$40.00	\$378,680
BCLC	FT	17,041	\$10.00	\$170,406
CONCRETE CURBING	FT	1,893	\$40.00	\$75,736
GUIDERAIL	FT	10,224	\$28.00	\$286,282
SIGNING & STRIPING (ESTIMATED)	LS	1	\$435,000	\$435,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$2,000,000	\$2,000,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$720,000	\$720,000
MITIGATION (ESTIMATED)	LS	1	\$900,000	\$900,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$820,400	\$820,400
			<b>SUBTOTAL A</b>	<b>\$76,419,901</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$1,528,398
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$2,292,597
MOBILIZATION (7.5% OF SUBTOTAL A)				\$5,731,493
MINOR ITEMS (20% OF SUBTOTAL A)				\$15,283,980
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$1,528,398
			<b>SUBTOTAL B</b>	<b>\$102,784,767</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (12% OF SUBTOTAL B)				\$12,334,172
CONTINGENCIES (7% OF SUBTOTAL B)				\$7,194,934
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$8,222,781
UTILITY COST (2% OF SUBTOTAL B)				\$2,055,695
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$1,000,000	\$1,000,000
			<b>TOTAL</b>	<b>\$133,592,350</b>
			<b>ROUNDED TOTAL</b>	<b>\$133,600,000</b>

DEWBERRY-GOODKIND, INC

PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR RAMP TO NORTHBOUND I-291

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	250	\$35.00	\$8,750
ROCK EXCAVATION	CY	25	\$80.00	\$2,000
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	13	\$40.00	\$500
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	3	\$80.00	\$220
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	3	\$520.00	\$1,430
BORROW	CY	2,755	\$30.00	\$82,658
NEW DRAINAGE SYSTEM	SF	21,840	\$3.00	\$65,520
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	218	\$1.00	\$218
SUPERPAVE	TON	1,277	\$100.00	\$127,673
CONCRETE BASE COURSE WIDENING	CY	674	\$300.00	\$202,222
SUBBASE	CY	674	\$21.00	\$14,156
FORMATION OF SUBGRADE	SF	21,840	\$0.25	\$5,460
RETAINING WALL	SF	4,560	\$65.00	\$296,400
CONCRETE MEDIAN BARRIER	FT	1,310	\$65.00	\$85,150
ROADWAY LIGHTING (EXPRESSWAY)	FT	0	\$55.00	\$0
ROADWAY LIGHTING (RAMPS)	FT	840	\$40.00	\$33,600
GUIDERAIL	FT	504	\$28.00	\$14,112
SIGNING & STRIPING (ESTIMATED)	LS	1	\$500,000	\$500,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	U	1	\$500,000	\$500,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$50,000	\$50,000
MITIGATION (ESTIMATED)	U	1	\$50,000	\$50,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$100,000	\$100,000
			<b>SUBTOTAL A</b>	<b>\$2,140,070</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$42,801
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$64,202
MOBILIZATION (7.5% OF SUBTOTAL A)				\$160,505
MINOR ITEMS (15% OF SUBTOTAL A)				\$321,010
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$42,801
			<b>SUBTOTAL B</b>	<b>\$2,771,390</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (7% OF SUBTOTAL B)				\$193,997
CONTINGENCIES (5% OF SUBTOTAL B)				\$138,570
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$221,711
UTILITY COST (2% OF SUBTOTAL B)				\$55,428
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$0	\$0
			<b>TOTAL</b>	<b>\$3,381,096</b>
			<b>ROUNDED TOTAL</b>	<b>\$3,400,000</b>

DEWBERRY-GOODKIND, INC

PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
EXIT 63 IMPROVEMENTS

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	750	\$35.00	\$26,250
ROCK EXCAVATION	CY	75	\$80.00	\$6,000
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	38	\$40.00	\$1,500
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	8	\$80.00	\$660
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	8	\$520.00	\$4,290
BORROW	CY	64,022	\$30.00	\$1,920,665
NEW DRAINAGE SYSTEM	SF	515,022	\$3.00	\$1,545,066
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	5,150	\$1.00	\$5,150
SUPERPAVE	TON	30,107	\$100.00	\$3,010,733
CONCRETE BASE COURSE WIDENING	CY	15,896	\$300.00	\$4,768,722
SUBBASE	CY	15,896	\$21.00	\$333,811
FORMATION OF SUBGRADE	SF	515,022	\$0.25	\$128,756
BRIDGE	SF	10,000	\$375.00	\$3,750,000
RETAINING WALL	SF	5,000	\$65.00	\$325,000
CONCRETE MEDIAN BARRIER	FT	0	\$80.00	\$0
ROADWAY LIGHTING (EXPRESSWAY)	FT	18,930	\$55.00	\$1,041,150
ROADWAY LIGHTING (RAMPS)	FT	5,247	\$40.00	\$209,880
GUIDERAIL	FT	1,704	\$28.00	\$47,712
SIGNING & STRIPING (ESTIMATED)	LS	1	\$500,000	\$500,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$500,000	\$500,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$50,000	\$50,000
MITIGATION (ESTIMATED)	LS	1	\$50,000	\$50,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$100,000	\$100,000
			<b>SUBTOTAL A</b>	<b>\$18,325,344</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$366,507
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$549,760
MOBILIZATION (7.5% OF SUBTOTAL A)				\$1,374,401
MINOR ITEMS (15% OF SUBTOTAL A)				\$2,748,802
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$366,507
			<b>SUBTOTAL B</b>	<b>\$23,731,321</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (7% OF SUBTOTAL B)				\$1,661,192
CONTINGENCIES (5% OF SUBTOTAL B)				\$1,186,566
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$1,898,506
UTILITY COST (2% OF SUBTOTAL B)				\$474,626
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$500,000	\$500,000
			<b>TOTAL</b>	<b>\$29,452,211</b>
			<b>ROUNDED TOTAL</b>	<b>\$29,500,000</b>

## PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR HOV RAMP

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

## SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	1,000	\$35.00	\$35,000
ROCK EXCAVATION	CY	100	\$80.00	\$8,000
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	50	\$40.00	\$2,000
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	11	\$80.00	\$880
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	11	\$520.00	\$5,720
BORROW	CY	146,835	\$30.00	\$4,405,060
NEW DRAINAGE SYSTEM	SF	332,004	\$3.00	\$996,012
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	3,320	\$1.00	\$3,320
SUPERPAVE	TON	19,408	\$100.00	\$1,940,840
CONCRETE BASE COURSE WIDENING	CY	10,247	\$300.00	\$3,074,111
SUBBASE	CY	10,247	\$21.00	\$215,188
FORMATION OF SUBGRADE	SF	332,004	\$0.25	\$83,001
MAJOR PIPE CULVERTS	FT	300	\$600	\$180,000
CONCRETE BOX CULVERTS	FT	100	\$975	\$97,500
NEW BRIDGE	SF	32,341	\$375	\$12,128,042
RETAINING WALLS	SF	9,500	\$65	\$617,500
STANDPIPES (ESTIMATED)	EA	0	\$14,000	\$0
CONCRETE MEDIAN BARRIER	FT	1,000	\$65.00	\$65,000
TRAFFIC SIGNAL MODIFICATIONS	EA	0	\$50,000	\$0
NEW TRAFFIC SIGNAL	EA	0	\$100,000	\$0
ROADWAY LIGHTING (EXPRESSWAY)	FT	0	\$175.00	\$0
ROADWAY LIGHTING (RAMPS)	FT	6,291	\$40.00	\$251,640
BCLC	FT	2,516	\$10.00	\$25,164
CONCRETE CURBING	FT	629	\$40.00	\$25,164
GUIDERAIL	FT	1,887	\$28.00	\$52,844
SIGNING & STRIPING (ESTIMATED)	LS	1	\$435,000	\$435,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$2,000,000	\$2,000,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$720,000	\$720,000
MITIGATION (ESTIMATED)	LS	1	\$900,000	\$900,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$820,400	\$820,400
			<b>SUBTOTAL A</b>	<b>\$29,087,387</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$581,748
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$872,622
MOBILIZATION (7.5% OF SUBTOTAL A)				\$2,181,554
MINOR ITEMS (20% OF SUBTOTAL A)				\$5,817,477
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$581,748
			<b>SUBTOTAL B</b>	<b>\$39,122,535</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (12% OF SUBTOTAL B)				\$4,694,704
CONTINGENCIES (5% OF SUBTOTAL B)				\$1,956,127
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$3,129,803
UTILITY COST (2% OF SUBTOTAL B)				\$782,451
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$100,000	\$100,000
			<b>TOTAL</b>	<b>\$49,785,620</b>
			<b>ROUNDED TOTAL</b>	<b>\$49,800,000</b>

DEWBERRY-GOODKIND, INC

PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR REALIGNMENT OF PLEASANT VALLEY ROAD

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	1,779	\$35.00	\$62,282
ROCK EXCAVATION	CY	178	\$80.00	\$14,236
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	89	\$40.00	\$3,559
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	20	\$80.00	\$1,566
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	20	\$520.00	\$10,179
BORROW	CY	37,280	\$30.00	\$1,118,404
NEW DRAINAGE SYSTEM	SF	96,092	\$3.00	\$288,276
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	961	\$1.00	\$961
SUPERPAVE	TON	5,617	\$100.00	\$561,738
CONCRETE BASE COURSE WIDENING	CY	2,966	\$300.00	\$889,741
MILLING OF BITUMINOUS CONCRETE (3 in)	SF	156,600	\$0.50	\$78,300
SUBBASE	CY	2,966	\$21.00	\$62,282
FORMATION OF SUBGRADE	SF	96,092	\$0.25	\$24,023
MAJOR PIPE CULVERTS	FT	300	\$600	\$180,000
CONCRETE BOX CULVERTS	FT	75	\$975	\$73,125
NEW BRIDGE	SF	0	\$375	\$0
RETAINING WALLS	SF	0	\$65	\$0
CONCRETE MEDIAN BARRIER	FT	0	\$80.00	\$0
TRAFFIC SIGNAL MODIFICATIONS	EA	0	\$50,000	\$0
NEW TRAFFIC SIGNAL	EA	1	\$100,000	\$100,000
ROADWAY LIGHTING (RAMPS)	FT	1,532	\$40.00	\$61,280
BCLC	FT	1,226	\$10.00	\$12,256
CONCRETE CURBING	FT	306	\$40.00	\$12,256
GUIDERAIL	FT	919	\$28.00	\$25,738
SIGNING & STRIPING (ESTIMATED)	LS	1	\$10,000	\$10,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$50,000	\$50,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$0	\$0
MITIGATION (ESTIMATED)	LS	1	\$100,000	\$100,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$75,000	\$75,000
			<b>SUBTOTAL A</b>	<b>\$3,815,200</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$76,304
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$114,456
MOBILIZATION (7.5% OF SUBTOTAL A)				\$286,140
MINOR ITEMS (15% OF SUBTOTAL A)				\$572,280
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$76,304
			<b>SUBTOTAL B</b>	<b>\$4,940,684</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (7% OF SUBTOTAL B)				\$345,848
CONTINGENCIES (5% OF SUBTOTAL B)				\$247,034
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$395,255
UTILITY COST (2% OF SUBTOTAL B)				\$98,814
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$1,000,000	\$1,000,000
			<b>TOTAL</b>	<b>\$7,027,635</b>
			<b>ROUNDED TOTAL</b>	<b>\$7,000,000</b>

DEWBERRY-GOODKIND, INC

PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 2/13/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR SPUI

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	1,481	\$35.00	\$51,819
ROCK EXCAVATION	CY	148	\$80.00	\$11,844
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	74	\$40.00	\$2,961
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	16	\$80.00	\$1,303
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	16	\$520.00	\$8,469
BORROW	CY	31,017	\$30.00	\$930,515
NEW DRAINAGE SYSTEM	SF	388,096	\$3.00	\$1,164,288
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	3,881	\$1.00	\$3,881
SUPERPAVE	TON	22,687	\$100.00	\$2,268,745
CONCRETE BASE COURSE WIDENING	CY	11,978	\$300.00	\$3,593,481
MILLING OF BITUMINOUS CONCRETE (3 in)	SF	552,100	\$0.50	\$276,050
SUBBASE	CY	11,978	\$21.00	\$251,544
FORMATION OF SUBGRADE	SF	388,096	\$0.25	\$97,024
MAJOR PIPE CULVERTS	FT	300	\$600	\$180,000
CONCRETE BOX CULVERTS	FT	75	\$975	\$73,125
NEW BRIDGE	SF	16,023	\$375	\$6,008,677
RETAINING WALLS	SF	25,500	\$65	\$1,657,500
CONCRETE MEDIAN BARRIER	FT	3,315	\$80.00	\$265,200
TRAFFIC SIGNAL MODIFICATIONS	EA	2	\$50,000	\$100,000
NEW TRAFFIC SIGNAL	EA	2	\$100,000	\$200,000
ROADWAY LIGHTING (RAMPS)	FT	3,379	\$40.00	\$135,160
BCLC	FT	2,703	\$10.00	\$27,032
CONCRETE CURBING	FT	676	\$40.00	\$27,032
GUIDERAIL	FT	2,027	\$28.00	\$56,767
SIGNING & STRIPING (ESTIMATED)	LS	1	\$435,000	\$435,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$2,000,000	\$2,000,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$720,000	\$720,000
MITIGATION (ESTIMATED)	LS	1	\$900,000	\$900,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$820,400	\$820,400
			<b>SUBTOTAL A</b>	<b>\$22,267,817</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$445,356
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$668,035
MOBILIZATION (7.5% OF SUBTOTAL A)				\$1,670,086
MINOR ITEMS (15% OF SUBTOTAL A)				\$3,340,173
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$445,356
			<b>SUBTOTAL B</b>	<b>\$28,836,823</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (7% OF SUBTOTAL B)				\$2,018,578
CONTINGENCIES (5% OF SUBTOTAL B)				\$1,441,841
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$2,306,946
UTILITY COST (2% OF SUBTOTAL B)				\$576,736
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$1,000,000	\$1,000,000
			<b>TOTAL</b>	<b>\$36,180,924</b>
			<b>ROUNDED TOTAL</b>	<b>\$36,200,000</b>

## PRELIMINARY ENGINEERING COST ESTIMATE

PROJECT NO. 4393

DATE: 4/2/2009

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
COST ESTIMATE FOR HALF AUXILIARY LANES

MADE BY: Ranjit Bhave  
CHKD BY: George Jacobs

## SUMMARY

(2008 UNIT PRICES)

ITEM DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	EXTENSION
<b>ROADWAY ITEMS</b>				
EARTH EXCAVATION	CY	1,000	\$35.00	\$35,000
ROCK EXCAVATION	CY	100	\$80.00	\$8,000
UNSUITABLE MATERIAL EXCAVATION (MUCK) @50% OF ROCK EXCAVATION	CY	50	\$40.00	\$2,000
CONTAMINATED SOIL EXCAVATION (HYDROCARBONS) @ 1% TOTAL EXCAVATION	CY	11	\$80.00	\$880
HAZARDOUS WASTE EXCAVATION (PCB's) @ 1% TOTAL EXCAVATION	CY	11	\$520.00	\$5,720
BORROW	CY	57,846	\$30.00	\$1,735,389
NEW DRAINAGE SYSTEM	SF	286,700	\$3.00	\$860,100
EXISTING DRAINAGE UPGRADE @ 1% NEW DRAINAGE SYSTEM	SF	2,867	\$1.00	\$2,867
SUPERPAVE	TON	16,760	\$100.00	\$1,676,000
CONCRETE BASE COURSE WIDENING	CY	8,849	\$300.00	\$2,654,630
MILLING OF BITUMINOUS CONCRETE (3 in)	SF	0	\$0.50	\$0
SUBBASE	CY	8,849	\$21.00	\$185,824
FORMATION OF SUBGRADE	SF	286,700	\$0.25	\$71,675
MAJOR PIPE CULVERTS	FT	500	\$600	\$300,000
CONCRETE BOX CULVERTS	FT	250	\$975	\$243,750
NEW BRIDGE	SF	8,000	\$375	\$3,000,000
RETAINING WALLS	SF	0	\$65	\$0
CONCRETE MEDIAN BARRIER	FT	0	\$80.00	\$0
TRAFFIC SIGNAL MODIFICATIONS	EA	2	\$50,000	\$100,000
NEW TRAFFIC SIGNALS	EA	3	\$100,000	\$300,000
ROADWAY LIGHTING (FREEWAY)	FT	14,335	\$40.00	\$573,400
BCLC	FT	0	\$10.00	\$0
CONCRETE CURBING	FT	0	\$40.00	\$0
GUIDERAIL	FT	0	\$28.00	\$0
SIGNING & STRIPING (ESTIMATED)	LS	1	\$435,000	\$435,000
STAGE CONSTRUCTION ITEMS (ESTIMATED)	LS	1	\$2,000,000	\$2,000,000
NOISE BARRIERS (ESTIMATED)	LS	1	\$720,000	\$720,000
MITIGATION (ESTIMATED)	LS	1	\$900,000	\$900,000
INCIDENT MANAGEMENT SYSTEM (ESTIMATED)	LS	1	\$820,400	\$820,400
			<b>SUBTOTAL A</b>	<b>\$16,630,635</b>
<b>LUMP SUM ITEMS</b>				
CLEARING AND GRUBBING (2% OF SUBTOTAL A)				\$332,613
MAINTENANCE & PROTECTION OF TRAFFIC (3% OF SUBTOTAL A)				\$498,919
MOBILIZATION (7.5% OF SUBTOTAL A)				\$1,247,298
MINOR ITEMS (20% OF SUBTOTAL A)				\$3,326,127
HEALTH AND SAFETY SUPPORT COSTS (2% OF SUBTOTAL A)				\$332,613
			<b>SUBTOTAL B</b>	<b>\$22,368,204</b>
<b>ADDITIONAL ITEMS</b>				
INCIDENTALS (12% OF SUBTOTAL B)				\$2,684,184
CONTINGENCIES (7% OF SUBTOTAL B)				\$1,565,774
PRELIMINARY ENGINEERING (8% OF SUBTOTAL B)				\$1,789,456
UTILITY COST (2% OF SUBTOTAL B)				\$447,364
RIGHT-OF-WAY (ESTIMATED)	LS	1	\$100,000	\$100,000
			<b>TOTAL</b>	<b>\$28,954,983</b>
			<b>ROUNDED TOTAL</b>	<b>\$29,000,000</b>



**DEWBERRY-GOODKIND, INC**

PRELIMINARY ENGINEERING COST ESTIMATE

**PROJECT NO. 4393**

**DATE:** 10/21/2008

PROJECT:  
BUCKLAND AREA TRANSPORTATION STUDY  
Bike/Ped Imprpvements in Manchester

**MADE BY:** Ranjit Bhave  
**CHKD BY:** Bill O'Keefe

MEASUREMENTS  
UNIT - AS NOTED

Name of Corridor	Type of Improvement								Total Cost	
	Bike Lane (FT)	Sidewalk (FT)	Crosswalk (EA)	Ped Signals (EA)	Mixed Use Trail (FT)	Road Widening				Shoulder Striping * (FT)
						Length (FT)	Width (FT)	Area (SQ FT)		
Adams Street/ Buckland Street/ Buckland Road	9382	0	14	0	0			0	0	16873
Chapel Road	0	0	5	0	0			0	0	1000
Clark Street	220							726		11220
Deming Street	0	477	2	0	0			0	7086	29139
Ellington Road/ Oakland Road										
Pavilions Drive	4558	0	3	0	0			0	0	7437
Pleasant Valley Road/ Buckland Hills Drive/ Hale Road	0	0	19	0	0			0	0	3800
Redstone Road	9556	0	4	0	0			0	0	15134
Slater Street	5654	0	2	0	0			9804	0	155941
Smith Street										
Tolland Turnpike wheeler Road	13368	7466	11	0	0			0	0	395552
<b>Total</b>	<b>42738</b>	<b>7943</b>	<b>60</b>	<b>0</b>	<b>0</b>			<b>10530</b>	<b>7086</b>	
Unit cost	\$2	\$50	\$200	\$10,500				\$15	\$1	
<b>Total cost</b>	<b>\$64,107</b>	<b>\$397,150</b>	<b>\$12,000</b>	<b>\$0</b>	<b>\$0</b>			<b>\$157,950</b>	<b>\$4,889</b>	<b>\$636,096</b>

\* Restriping to provide wide shoulders

**DEWBERRY-GOODKIND, INC**

PRELIMINARY ENGINEERING COST ESTIMATE

**PROJECT NO. 4393**

**DATE:** 10/21/2008

PROJECT:

BUCKLAND AREA TRANSPORTATION STUDY

Bike/Ped Improvements in South Windsor

**MADE BY:** Ranjit Bhawe

**CHKD BY:** Bill O'Keefe

MEASUREMENTS

UNIT - AS NOTED

Name of Corridor	Type of Improvement								Total Cost	
	Bike Lane (FT)	Sidewalk (FT)	Crosswalk (EA)	Ped Signals (EA)	Mixed Use Trail (FT)	Road Widening				Shoulder Striping * (FT)
						Length (FT)	Width (FT)	Area (SQ FT)		
Adams Street/ Buckland Street/ Buckland Road Chapel Road	13390	2975	16	4	320			0	0	\$214,355
Clark Street	21824	10866	16	0	0			61281	0	\$1,498,451
Deming Street	16818	6798	18	0	0			50640	1600	\$1,129,431
Ellington Road/ Oakland Road	0	7692	3	0	0			38922	19274	\$982,329
Pavilions Drive										
Pleasant Valley Road/ Buckland Hills Drive/ Hale Road Redstone Road	5908	3557	4	0	0			5741	0	\$273,627
Slater Street	2764	0	0	0	0			8412	0	\$130,326
Smith Street	9702	3475	4					19558		\$482,473
Tolland Turnpike										
Wheeler Road	0	0	0	0	0			5464	2728	\$83,842
Total	70406	35363	61	4	320			190018	23602	
Unit cost	\$2	\$50	\$200	\$10,500	\$1			\$15	\$1	
Total cost	\$105,609	\$1,768,150	\$12,200	\$42,000	\$320			\$2,850,270	\$16,285	\$4,794,834

\* Restriping to provide wide shoulders

## Multi-modal Transportation Center Facility and Cost Summary

Transportation Center Features	Cost Assumptions
	Construction
• Waiting Room	• Transportation Building
• Ticketing/ Fare Collection Area	2,000 SF @ \$150/SF = \$300,000
• 2 Offices	
• 2 Bathrooms	• Bus Area/Canopy
• Employee break room	6,500 SF @ \$150/SF = \$975,000
• 6 bus berths	
• Canopy	• Structured Parking @ \$15,000/Space = \$ 7,500,000
• Circulator/Shuttle Bus Service	
• Local Bus Service	Sub Total = \$8,775,000
• BRT Service	
• Taxi Stand	Design, Engineering, Construction Management (20%) = \$1,755,000
• Bicycle Rental Area	
• Pedestrian Access	Contingency (20%) = \$1,755,000
• 500 Structured Parking Spaces	
	<b>Total = \$12,285,000</b>