



Estimated by Brandon
Designed by Bridging the Gap Engineering
Prepared by Brandon Adams

Preparation Date 2/25/2019
Effective Date of Pricing 2/25/2019
Estimated Construction Time 28 Days

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Currency in US dollars

Designed by
Bridging the Gap Engineering
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Design Document
Document Date 2/25/2019
District Huntington District
Contact Brandon Adams
Budget Year 2019
UOM System Original

Direct Costs

LaborCost
EQCost
MatlCost
SubBidCost

Timeline/Currency

Preparation Date 2/25/2019
Escalation Date 2/25/2019
Eff. Pricing Date 2/25/2019
Estimated Duration 28 Day(s)

Currency US dollars
Exchange Rate 1.000000

Costbook CB16EN: 2016 MII English Cost Book

Labor NLS: National Labor Library

vdol.gov is the website for current Davis Bacon & Service Labor Rates. Fringes paid to the laborers are taxable. In a non-union job the whole fringes are taxable. In a union job, the vacation pay fringes are taxable.

Labor Rates

LaborCost1
LaborCost2
LaborCost3
LaborCost4

Equipment EP16R02: MII Equipment

02 MIDEAST

Sales Tax	6.00
Working Hours per Year	1,450
Labor Adjustment Factor	1.02
Cost of Money	3.68
Cost of Money Discount	25.00
Tire Recap Cost Factor	1.50
Tire Recap Wear Factor	1.80
Tire Repair Factor	0.15
Equipment Cost Factor	1.00
Standby Depreciation Factor	0.50

Fuel

Electricity	0.098
Gas	2.380
Diesel Off-Road	2.210
Diesel On-Road	2.740

Shipping Rates

Over 0 CWT	10.27
Over 240 CWT	7.45
Over 300 CWT	6.16
Over 400 CWT	5.35
Over 500 CWT	5.43
Over 700 CWT	5.43
Over 800 CWT	7.99

<u>Date</u>	<u>Author</u>	<u>Note</u>
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Direct Cost Markups

		Category		Method	
Productivity		Productivity		Productivity	
Overtime		Overtime		Overtime	
		Days/Week	Hours/Shift	Shifts/Day	1st Shift
Standard		5.00	8.00	1.00	8.00
Actual		5.00	8.00	1.00	8.00
					2nd Shift
					0.00
					0.00
					3rd Shift
					0.00
					0.00
		OT Factor	Working	OT Percent	FCCM Percent
Day		1.50	Yes	0.00	0.00
Monday		1.50	Yes		
Tuesday		1.50	Yes		
Wednesday		1.50	Yes		
Thursday		1.50	Yes		
Friday		1.50	Yes		
Saturday		1.50	No		
Sunday		2.00	No		

Sales Tax

Matl/Cost

TaxAdj

Running % on Selected Costs

Contractor Markups

		Category		Method	
Sub OH+Profit		Allowance		Running %	
JOOH		JOOH		Running %	
HOOH		HOOH		Running %	
Profit		Profit		Running %	
Bond		Bond		Running %	
Excise Tax		Excise		Running %	

Owner Markups

Escalation		Category		Method	
		Escalation		Escalation	
		StartDate	EndDate	EndIndex	Escalation
		2/23/2016	2/23/2016	0.00	0.00
		StartIndex			
		0.00			
Contingency		Contingency		Running %	
SIOH		SIOH		Running %	

Description	Quantity	UOM	Contractor	ContractMarkup	ManHours	EQHours	DirectMatl	ProjectCost	DirectCost
Project Costs				313,186	2,172.97	326.37	488,883	981,289	656,532
1 Superstructure	1.00	EA	1 Prime Contractor	168,211	928.47	265.00	276,090.27	536,680.36	356,899.67
1.1 Steel Plate Girder, Material Grade 50, Finish no paint or galvanizing, work per design dwg. by others, girders are 125'-0 long welded (Note: Quote from West Virginia Steel Cooperation on 2/28/2019)	1.00	EA	1 Prime Contractor	48.38 112,062	0.00 0.00	0.00 0.00	231,606.82 231,607	343,668.62 343,669	231,606.82 231,607
1.2 Steel Plate Girder Installation (Note: Crane sized based off of https://nckynningsrud.com/en/cranecalculator/ A radius required was estimated to be 50 ft with the crane sitting on a platform at Elev. 579.29 and 10 ft away from riverbank. Crane size is minimum of 100 TON)	80.00	HR	1 Prime Contractor	48.38 33,526	10.00 800.00	3.00 240.00	0.00 0	1,285.21 102,817	866.14 69,291
1.3 Shipping for Steel Plate Girder (Note: Assumed shipping cost is 10% of cost of girders)	1.00	LS	1.1 Sub Contractor	4,783	1.00	1.00	18,876	35,483	19,130
1.4 Steel Plate Girder Misc. (Bolts, Sheer Studs, etc.) (Note: Assumed to be 5% of girder cost)	1.00	EA	1 Prime Contractor	48.38 4,616	0.00 0.00	0.00 0.00	9,540.00 9,540	14,155.88 14,156	9,540.00 9,540
1.5 Elastometric Bearing Pad, 5/8" T layers w/ 5.875" T total	2,880.00	SI	1 Prime Contractor	48.38 4,124	0.01 16.00	0.00 0.00	2.52 7,272	4.39 12,648	2.96 8,524
1.1 Splice Connections	1.00	EA	1 Prime Contractor	8,910	111.47	24.00	8,401.84	27,324.37	18,414.57
1.1.1 M 164 Type 3 Bolts, 7/8" dia, incl nut & washer. (Note: 328 Bolts per connection)	1,312.00	EA	1 Prime Contractor	48.38 3,964	0.07 87.47	0.00 0.00	1.03 1,349	9.27 12,158	6.25 8,193
1.1.2 Splice Connection Installation, Crane- 40 Ton (Note: Based off the splic being at 100 ft and 25 ft mark with the additional 40 ton crane rated to lift the 25 ft segment. Crane calculation based off of https://nckynningsrud.com/en/cranecalculator/)	4.00	EA	1 Prime Contractor	48.38 1,533	6.00 24.00	6.00 24.00	0.00 0	1,175.31 4,701	792.07 3,168
1.1.1 Top Flange	1.00	EA	1 Prime Contractor	471	0.00	0.00	973.48	1,444.49	973.48
1.1.1.1 Steel plate, structural, for connections & stiffeners, 1/2" T, shop fabricated, incl shop primer (Note: Top Plate: 16"x39.5" Area per connection: 632 sq. in Total: 2528 sq in)	2,528.00	SI	1 Prime Contractor	48.38 243	0.00 0.00	0.00 0.00	0.20 502	0.29 746	0.20 502
1.1.1.2 Steel plate, structural, for connections & stiffeners, 1/2" T, shop fabricated, incl shop primer (Note: Bottom Plates (2): 7.5"x39.5" Area per Plate: 296.25 sq mi, Total Area per connection: 592.5 sq in. Total: 2370 sq in)	2,370.00	SI	1 Prime Contractor	48.38 228	0.00 0.00	0.00 0.00	0.20 471	0.29 699	0.20 471
1.1.2 Bottom Flange	1.00	EA	1 Prime Contractor	1,764	0.00	0.00	3,646.67	5,411.09	3,646.67
1.1.2.1 Steel plate, structural, for connections & stiffeners, 1" T, shop fabricated, incl shop primer (Note: Top Plates (2): 69.5"x8.5", Area per Plate: 590.75 sq in, Total Area per connection: 1181.5 sq in. Total: 4726 sq in)	4,726.00	SI	1 Prime Contractor	48.38 909	0.00 0.00	0.00 0.00	0.40 1,879	0.59 2,788	0.40 1,879
1.1.2.2 Steel plate, structural, for connections & stiffeners, 1" T, shop fabricated, incl shop primer (Note: Bottom Plate: 69.5"x16", Area per connection: 1112 sq in. Total: 4448 sq in)	4,448.00	SI	1 Prime Contractor	48.38 855	0.00 0.00	0.00 0.00	0.40 1,768	0.59 2,624	0.40 1,768
1.1.3 Web	1.00	EA	1 Prime Contractor	1,177	0.00	0.00	2,432.70	3,609.75	2,432.70
1.1.3.1 Steel plate, structural, for connections & stiffeners, 1/2" T, shop fabricated, incl shop primer (Note: Bottom Plates (2): 45"x34" Area per Plate: 1530 sq mi, Total Area per connection: 3060 sq in. Total: 12,240 sq in)	12,240.00	SI	1 Prime Contractor	48.38 1,177	0.00 0.00	0.00 0.00	0.20 2,433	0.29 3,610	0.20 2,433

Description	Quantity	UOM	Contractor	ContractMarkup	ManHours	EQHours	DirectMatl	ProjectCost	DirectCost
1.2 Stiffeners	1.00	EA	1 Prime Contractor	190	0.00	0.00	393.53	583.93	393.53
1.2.1 Steel plate, structural, for connections & stiffeners, 1/2" T, shop fabricated, incl shop primer	13.75	SF	1 Prime Contractor	48.38 190	0.00 0.00	0.00 0.00	28.62 394	42.47 584	28.62 394
2 Bridge Deck & Parapet Wall	1.00	EA	1 Prime Contractor	144,976	1,244.50	61.37	212,792.88	444,608.28	299,632.56
2.1 Class H concrete Deck: Includes material, equipment, and labor (Note: Estimate from WV DOT based off Sandbar project using their average unit cost.)	108.20	CY	1 Prime Contractor	48.38 119,842	8.54 924.21	0.42 45.08	1,696.00 183,507	3,396.75 367,528	2,289.15 247,686
2.2 Deck: Rebar including material and labor (Note: Estimate from WV DOT based off Sandbar project using their average unit cost.)	5,708.56	LB	1 Prime Contractor	48.38 7,319	0.00 0.00	0.00 0.00	2.65 15,128	3.93 22,447	2.65 15,128
2.3 Standard Type V Barrier includes material, equipment, and labor	32.50	CY	1 Prime Contractor	48.38 12,546	6.83 222.08	0.33 10.83	323.30 10,507	1,183.84 38,475	797.82 25,929
2.4 Concrete Class H Haunches	6.82	CY	1 Prime Contractor	48.38 5,269	14.40 98.21	0.80 5.46	535.30 3,651	2,369.23 16,158	1,596.68 10,889

Description	ManHours	EQHours	CrewHours	CrewCost
Crew Summary	2,172.97	326.37	305.76	141,527
RSM C14 6 Carpenter + 2 Cement Finisher + 4 Laborer + 4 Rodmen + 1 Equip Oper Heavy + 1 crane, 80 ton	18.00	1.00		1,123.61
MIL B-LABORER Laborers, (Semi-Skilled)	98.21	5.46	5.46	6,130
MIL B-EQOPRCRN Equip. Operators, Heavy	4.00			
MIL B-CARPENTER Carpenters	1.00			
MIL B-RODMAN Rodmen, (Reinforcing)	5.00			
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker	4.00			
MIL B-CARPENTER Carpenters	1.00			
MIL B-CEMTFINR Cement Finishers	1.00			
GEN C80Z2190 CRANE, HYDRAULIC, TRUCK MOUNTED, 80 TON (72.6 MT), 128' (39 M) BOOM	2.00			
		1.00		
RSM C17B 10 Skilled Worker + .25 Equip Oper Heavy + .25 hyd crane, 80 ton + .25 concrete finisher, roto trowel, 46" dia	10.25	0.50		593.58
MIL B-SKILLWKR Skilled Workers	1,146.29	55.92	111.83	66,382
MIL B-EQOPRCRN Equip. Operators, Heavy	8.00			
MIL B-SKILLWKR Skilled Workers	0.25			
GEN C25Z1560 CONCRETE FINISHER, ROTO TROWEL, 46" (1,168 MM) DIA, 4 BLADE	2.00			
GEN C80Z2190 CRANE, HYDRAULIC, TRUCK MOUNTED, 80 TON (72.6 MT), 128' (39 M) BOOM		0.25		
		0.25		
RSM SSWK 1 Structural Steel Worker	1.00	0.00		65.23
MIL B-STRSTEEL Structural Steel Workers	16.00	0.00	16.00	1,044
	1.00			
USR B34J 1 Truck Driver Heavy + 1 truck, off-hwy, 100 ton	1.00	1.00		244.88
MIL B-TRKDVHRV Truck Drivers, Heavy	1.00	1.00	1.00	245
USR T55Z7800 TRUCK, OFF-HIGHWAY, RIGID FRAME, 100 TON (90.9 MT), 47-67 CY (35.9-51.2 M3), REAR DUMP		1.00		
USR S1 1 Equip Oper Heavy + 1 Equip Oper Light + 1 crane, hydraulic, self-propelled, rough terrain 40 TON (36 MT) 84'	6.00	6.00		725.65
MIL B-EQOPRLT Equip. Operators, Light	24.00	24.00	4.00	2,903
MIL B-EQOPRCRN Equip. Operators, Heavy	2.00			
GEN XMEZ9305 IMPACT WRENCH (AIR, 300- 1000 FT LBS.) 1" (25 MM) MAX BOLT (ADD AIR COMPRESSOR)	4.00			
GEN C75Z2200 CRANE, HYDRAULIC, SELF-PROPELLED, ROUGH TERRAIN, 40 TON (36 MT), 84' (25.6 M) BOOM, 4X4		2.00		
		4.00		
USR SSWK 1 Structural Steel Worker	1.00	0.00		65.23
MIL B-STRSTEEL Structural Steel Workers	87.47	0.00	87.47	5,705
	1.00			
USR UC1 6 Structural Steel Worker + 1 Equip Oper Heavy + 1 crane, lattice boom, 100 ton + welder, 300 amp	10.00	3.00		738.98
MIL B-WELDERS Welders, Structural Steel	800.00	240.00	80.00	59,118
MIL B-STRSTEEL Structural Steel Workers	1.00			
MIL B-STRSTEEL Structural Steel Workers	6.00			
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker	1.00			
MIL B-EQOPRCRN Equip. Operators, Heavy	1.00			
GEN C85Z2560 CRANE, MECHANICAL, LATTICE BOOM, CRAWLER, LIFTING, 100 TON (91 MT), 200' (61.0 M) BOOM	1.00			
GEN W35Z8640 WELDER, ENGINE DRIVEN, DIESEL, 300 AMP, TRAILER MOUNTED		1.00		
		2.00		

Description	LaborType	ManHours	BaseWage	TaxableFringe	Payroll	WCI	NonTaxFringe	Subsistence	Total
Labor Rates		2,173	87,384	38,762	17,017	9,105	0	0	152,269
MIL B-CARPENTER Carpenters	Journeyman	27	1,101	373	199	115	0	0	1,787
MIL B-CARPENTER Carpenters	Foreman	5	229	75	41	24	0	0	368
MIL B-CEMTFINR Cement Finishers	Journeyman	11	431	175	82	45	0	0	733
MIL B-EQOPRCRN Equip. Operators, Heavy	Journeyman	129	4,839	2,155	943	504	0	0	8,441
MIL B-EQOPRLT Equip. Operators, Light	Journeyman	8	287	133	57	30	0	0	507
MIL B-EQOPROIL Equip. Operators, Oilers / Grade Checker	Journeyman	85	3,070	1,423	606	320	0	0	5,419
MIL B-LABORER Laborers, (Semi-Skilled)	Journeyman	22	705	225	125	73	0	0	1,128
MIL B-RODMAN Rodmen, (Reinforcing)	Journeyman	22	884	539	192	92	0	0	1,708
MIL B-SKILLWKR Skilled Workers	Journeyman	895	36,109	12,221	6,520	3,763	0	0	58,612
MIL B-SKILLWKR Skilled Workers	Foreman	224	9,251	3,055	1,660	964	0	0	14,930
MIL B-STRSTEEL Structural Steel Workers	Journeyman	583	23,642	14,417	5,134	2,464	0	0	45,658
MIL B-STRSTEEL Structural Steel Workers	Foreman	80	3,402	1,977	726	354	0	0	6,458
MIL B-TRKDVRHV Truck Drivers, Heavy	Journeyman	1	33	18	7	2	0	0	59
MIL B-WELDERS Welders, Structural Steel	Foreman	80	3,402	1,977	726	354	0	0	6,458

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