

Bridge Estimate

Lebanon / Hartford - Contract 16148

Bridge No's. 044/103 & 044/104

Interstate 89 N.B. & S.B. over the Connecticut River

CONSTRUCTION COST ESTIMATE

OCTOBER 2017

ITEM NO.	ITEM DESCRIPTION	UNIT	TYPE	TOTAL QUANTITY	UNIT PRICE	TOTAL COST
203.1	COMMON EXCAVATION	CY	S	135	\$15.00	\$2,025.00
207.3	UNCLASSIFIED CHANNEL EXCAVATION	CY	S	14,800	\$25.00	\$370,000.00
209.201	GRANULAR BACKFILL (BRIDGE) (F)	CY	S	1,100	\$40.00	\$44,000.00
209.4	GRANULAR BACKFILL (GRAV)	CY	S	2,020	\$35.00	\$70,700.00
403.911	HOT BITUMINOUS BRIDGE PAVEMENT, 1" BASE COURSE	TON	S	560	\$190.00	\$106,400.00
500.02	ACCESS FOR BRIDGE CONSTRUCTION	U	SP	1	\$1,850,000.00	\$1,850,000.00
502	REMOVAL OF EXISTING BRIDGE STRUCTURE	U	S	1	\$1,870,000.00	\$1,870,000.00
503.201	COFFERDAMS	U	S	1	\$130,000.00	\$130,000.00
503.202	COFFERDAMS	U	S	1	\$80,000.00	\$80,000.00
503.203	COFFERDAMS	U	S	1	\$155,000.00	\$155,000.00
503.301	COFFERDAMS WITH SHEETING LEFT-IN-PLACE	U	S	1	\$235,000.00	\$235,000.00
503.302	COFFERDAMS WITH SHEETING LEFT-IN-PLACE	U	S	1	\$240,000.00	\$240,000.00
503.303	COFFERDAMS WITH SHEETING LEFT-IN-PLACE	U	S	1	\$285,000.00	\$285,000.00
503.304	COFFERDAMS WITH SHEETING LEFT-IN-PLACE	U	S	1	\$360,000.00	\$360,000.00
504.1	COMMON BRIDGE EXCAVATION (F)	CY	S	1,200	\$21.00	\$25,200.00
504.25	ROCK BRIDGE EXCAVATION MECHANICAL METHODS	CY	SP	50	\$150.00	\$7,500.00
508	STRUCTURAL FILL	CY	S	80	\$60.00	\$4,800.00
510.1	PILE DRIVING EQUIPMENT	U	S	1	\$240,000.00	\$240,000.00
510.61	FURNISHING & DRIVING STEEL BEARING PILES	LB	S	892,000	\$0.90	\$802,800.00
510.65	DRIVING-POINTS FOR STEEL BEARING PILES	EA	S	140	\$225.00	\$31,500.00
510.9	PILE SPLICES	EA	S	159	\$200.00	\$31,800.00
511.00	CONCRETE BRIDGE DECK PAVEMENT REMOVAL (F)	SY	S	2,630	\$17.00	\$44,710.00
512.02	PREPARATION FOR CONCRETE REPAIRS, CLASS II	SY	S	320	\$650.00	\$208,000.00
520.02	CONCRETE CLASS AA, ABOVE FOOTINGS (F)	CY	S	1,720	\$1,200.00	\$2,064,000.00
520.0201	CONCRETE CLASS AA, ABOVE FOOTINGS	CY	SP	8	\$1,300.00	\$10,400.00
520.0302	CONCRETE CLASS AA APPROACH SLABS (QC/QA) (F)	CY	S	200	\$400.00	\$80,000.00
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	CY	S	260	\$675.00	\$175,500.00
520.21	CONCRETE CLASS B, FOOTINGS (F)	CY	S	900	\$360.00	\$324,000.00
520.6	CONCRETE CLASS T, FOUNDATION SEAL	CY	S	1,050	\$250.00	\$262,500.00
520.7002	CONCRETE BRIDGE DECK (QC/QA) (F)	CY	S	2,100	\$950.00	\$1,995,000.00
526.3	HIGH MOLECULAR WEIGHT METHACRYLATE CRACK SEAL FOR CONCRETE BRIDGE DECKS	GAL	SP	140	\$450.00	\$63,000.00
528.51	PRESTRESSED CONCRETE DECK PANELS (F)	SF	S	68,100	\$19.00	\$1,293,900.00
534.3	WATER REPELLENT (SILANE/SILOXANE)	GAL	S	170	\$75.00	\$12,750.00
538.2	BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES (F)	SY	S	140	\$45.00	\$6,300.00
538.6	BARRIER MEMBRANE, HEAT WELDED - MACHINE METHOD (F)	SY	S	12,350	\$21.00	\$259,350.00
540.31	CONCRETE ARMOR MATRIX COMPONENT	EA	SP	16,500	\$55.00	\$907,500.00
541.1	PVC WATERSTOPS, NH TYPE 1 (F)	LF	S	220	\$10.00	\$2,200.00
541.2	PVC WATERSTOPS, NH TYPE 2 (F)	LF	S	90	\$10.00	\$900.00
544	REINFORCING STEEL (F)	LB	S	263,000	\$1.10	\$289,300.00
544.01	REINFORCING STEEL	LB	SP	800	\$1.25	\$1,000.00
544.11	REINFORCING STEEL- MECHANICAL CONNECTORS (F)	LB	S	20,300	\$6.00	\$121,800.00
544.2	REINFORCING STEEL, EPOXY COATED (F)	LB	S	570,000	\$1.30	\$741,000.00
544.7	SYNTHETIC FIBER REINFORCEMENT (F)	LB	S	1,400	\$8.00	\$11,200.00
547	SHEAR CONNECTORS (F)	EA	S	35,500	\$5.00	\$177,500.00
550.1	STRUCTURAL STEEL (F)	LB	S	3,308,000	\$1.65	\$5,458,200.00
550.210	BRIDGE SHOES - DISC (F)	EA	SP	84	\$5,000.00	\$420,000.00
561.3001	PREFABRICATED FINGER EXPANSION JOINT (F)	LF	S	224	\$1,400.00	\$313,600.00
562.1	SILICONE JOINT SEALANT (F)	LF	S	180	\$15.00	\$2,700.00
563.23	BRIDGE RAIL T3	LF	S	1,770	\$165.00	\$292,050.00
563.921	PROTECTIVE SCREENING FOR OVERPASS STRUCTURES T2 OR T4 RAIL	LF	SP	205	\$40.00	\$8,200.00
565.232	BRIDGE APPROACH RAIL T3 (STEEL POSTS)	U	S	4	\$4,750.00	\$19,000.00
585.21	STONE FILL, CLASS B (BRIDGE)	CY	S	7,000	\$37.50	\$262,500.00
585.3	STONE FILL, CLASS C	CY	S	150	\$50.00	\$7,500.00
593.411	GEOTEXTILE; PERM CONTROL CL.1, NON-WOVEN	SY	S	3,230	\$3.00	\$9,690.00
606.413	SINGLE SLOPE CONCRETE MEDIAN BARRIER, PRECAST	LF	SP	840	\$125.00	\$105,000.00
606.4174	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL - BRACED	LF	SP	1,690	\$100.00	\$169,000.00
692	MOBILIZATION	U	S	0.80	\$2,352,500.00	\$1,882,000.00
1002.1	REPAIRS OR REPLACEMENTS AS NEEDED - BRIDGE STRUCTURES	\$	SP	1	\$100,000.00	\$100,000.00
1010.15	FUEL ADJUSTMENT	\$	SP	0.80	\$250,000.00	\$200,000.00
1010.2	ASPHALT CEMENT ADJUSTMENT	\$	SP	0.80	\$50,000.00	\$40,000.00
1010.41	QUALITY CONTROL QUALITY ASSURANCE (QC/QA) FOR CONCRETE	\$	SP	1	\$103,800.00	\$103,800.00

SUBTOTAL = \$25,386,775

Contingency (5%) = \$1,269,339

BRIDGE TOTAL = \$26,656,114

SAY = \$ 26,700,000

Note: 1) Superstructure Item Payment Breakdown is 76% NHDOT, 24% Vtrans
 2) Substructure Item Payment Breakdown is per Substructure Unit. Abut A, Piers 1, 2, 3, 4 are Owned by NHDOT. Pier 5 & Abut. B Owned by Vtrans
 3) Project Wide Item Payment Breakdown is 76% NHDOT, 24% Vtrans
 4) Unit Costs Based on Year 2016 Costs

Highway Estimate

Lebanon / Hartford - Contract 16148

Bridge No's: 044/103 & 044/104

Interstate 89 N.B. & S.B. over the Connecticut River

CONSTRUCTION COST ESTIMATE

OCTOBER 2017

ITEM NO.	DESCRIPTION	UNIT	UNIT PRICE	TOTAL QUANTITY	TOTAL COST
201.1	CLEARING AND GRUBBING (F)	A	\$6,000	1	\$3,000
202.31	FILL ABANDONED PIPE	CY	\$200	48	\$9,600
202.41	REMOVAL OF EXISTING PIPE 0-24" DIAMETER	LF	\$15	1,500	\$22,500
202.5	REMOVAL OF CATCH BASINS, DROP INLETS, AND MANHOLES	EA	\$300	24	\$7,200
202.7	REMOVAL OF GUARDRAIL	LF	\$2	8,400	\$16,800
203.1	COMMON EXCAVATION	CY	\$10	13,100	\$131,000
203.2	ROCK EXCAVATION	CY	\$50	105	\$5,250
203.55543	GUARDRAIL EAGRT OFFSET PLATFORM, TL 3	U	\$7,000	4	\$28,000
203.6	EMBANKMENT IN PLACE (F)	CY	\$10	7,400	\$74,000
214.	FINE GRADING	U	\$100,000	1	\$100,000
304.1	SAND (F)	CY	\$20	3,500	\$70,000
304.4	CRUSHED STONE (FINE GRADATION)(F)	CY	\$25	4,700	\$117,500
304.5	CRUSHED STONE (COARSE GRADATION)(F)	CY	\$25	2,900	\$72,500
403.X	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	T	\$75	19,300	\$1,447,500
403.99	TEMPORARY BITUMINOUS PAVEMENT	T	\$80	2,860	\$228,800
417	COLD PLANING BITUMINOUS SURFACES	SY	\$4	15,200	\$60,800
603.00212	12" R.C. PIPE, 2000D	LF	\$60	54	\$3,240
603.00215	15" R.C. PIPE, 2000D	LF	\$65	4,700	\$305,500
603.00218	18" R.C. PIPE, 2000D	LF	\$70	960	\$67,200
603.00224	24" R.C. PIPE, 2000D	LF	\$95	1,700	\$161,500
603.30115	15" R.C. END SECTIONS	EA	\$700	4	\$2,800
603.30118	18" R.C. END SECTIONS	EA	\$800	3	\$2,400
603.30124	24" R.C. END SECTIONS	EA	\$1,000	4	\$4,000
603.80215	15" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$45	30	\$1,350
603.80218	18" PLASTIC PIPE (SMOOTH INTERIOR)	LF	\$50	70	\$3,500
604.0007	POLYETHYLENE LINER	EA	\$200	52	\$10,400
604.12	CATCH BASINS, TYPE B	U	\$3,000	40	\$120,000
604.125	CATCH BASINS, TYPE B 5 FT DIAMETER	U	\$3,250	1	\$3,250
604.15	CATCH BASINS, TYPE E	U	\$3,000	35	\$105,000
604.155	CATCH BASINS, TYPE E 5 FT DIAMETER	U	\$3,250	1	\$3,250
604.324	DRAINAGE MANHOLE, 4 FT DIAMETER	U	\$2,500	10	\$25,000
604.4	RECONSTRUCTING / ADJUSTING CATCH BASIN	LF	\$450	7	\$3,150
604.9101	OUTLET CONTROL STRUCTURE	U	\$4,000	2	\$8,000
606.1254	BEAM GUARDRAIL (TERMINAL UNIT TYPE EAGRT, TL 3) STEEL	U	\$2,000	4	\$8,000
606.127	BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) STEEL	LF	\$600	5	\$3,000
606.18001	*31" W-BEAM GUARDRAIL WITH 8" OFFSET BLOCKS (STEEL POST)	LF	\$16	6,300	\$100,800
606.28001	*31" DOUBLE FACED W-BEAM GUARDRAIL WITH 8" OFFSET BLOCKS	LF	\$22	1,200	\$26,400
606.413	SINGLE SLOPE CONCRETE MEDIAN BARRIER, PRECAST	LF	\$80	2,400	\$192,000
606.417	PORTABLE CONCRETE BARRIER FOR TRAFFIC CONTROL	LF	\$25	7,200	\$180,000
609.01	STRAIGHT GRANITE CURB	LF	\$35	415	\$14,525
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	\$20	2,500	\$50,000
609.811	BITUMINOUS CURB, TYPE B (4" REVEAL)	LF	\$8	5,000	\$40,000
615.10001	FULL TRAFFIC SIGN STRUCTURE	U	\$100,000	2	\$200,000
615.20001	CANTILEVER TRAFFIC SIGN STRUCTURE	U	\$70,000	1	\$70,000
MAJOR HIGHWAY ITEM SUB-TOTAL COST					\$4,108,715
Costs Estimated by Percentages of Major Highway Items**:			Contract %	Estimate	
TRAFFIC ITEMS (PAVEMENT MARKINGS & SIGNS)			5.00%	\$205,436	
OTHER ITEMS AND CONTINGENCIES			20.00%	\$821,743	
ROADWAY ITEMS SUB-TOTAL COST					\$5,135,894

Estimate Summary

Lebanon / Hartford - Contract 16148
 Bridge No's: 044/103 & 044/104
 Interstate 89 N.B. & S.B. over the Connecticut River

CONSTRUCTION COST ESTIMATE OCTOBER 2017

	ROADWAY ITEMS SUB-TOTAL COST	\$5,135,894
	TOTAL BRIDGE COST (INCLUDING MOBILIZATION)	\$26,700,000
	ROADWAY AND BRIDGE ITEMS SUB-TOTAL COST	\$31,835,894
Costs Estimated by Percentages of Highway and Bridge Items**:		
	Contract %	Estimate
TRAFFIC CONTROL & SMART WORK ZONE ITEMS	2.00%	\$636,718
EROSION CONTROL ITEMS	2.00%	\$636,718
<u>CONTRACT BID ITEMS</u>		
698.11 FIELD OFFICE TYPE A	MON \$2,500 48	\$120,000
698.2 PHYSICAL TESTING LABORATORY	MON \$900 36	\$32,400
1010.15 FUEL ADJUSTMENT	\$ \$250,000 1	\$250,000
1010.2 ASPHALT CEMENT ADJUSTMENT	\$ \$50,000 1	\$50,000
1010.3 QUALITY CONTROL QUALITY ASSURANCE (QC/QA) ASPHALT	\$ \$60,000 1	\$60,000
	CONSTRUCTION ITEMS SUB-TOTAL COST	\$33,621,730
CONSTRUCTION ENGINEERING		
** Percentages Estimated from other similar NHDOT projects		
ROADWAY CE (PERCENTAGE OF ROADWAY ITEMS SUB-TOTAL COST)	6.00%	\$308,154
BRIDGE CE (PERCENTAGE OF TOTAL BRIDGE COST)	6.00%	\$1,602,000
	OVERALL TOTAL PROJECT COST	\$35,531,883
	Use	\$35,600,000