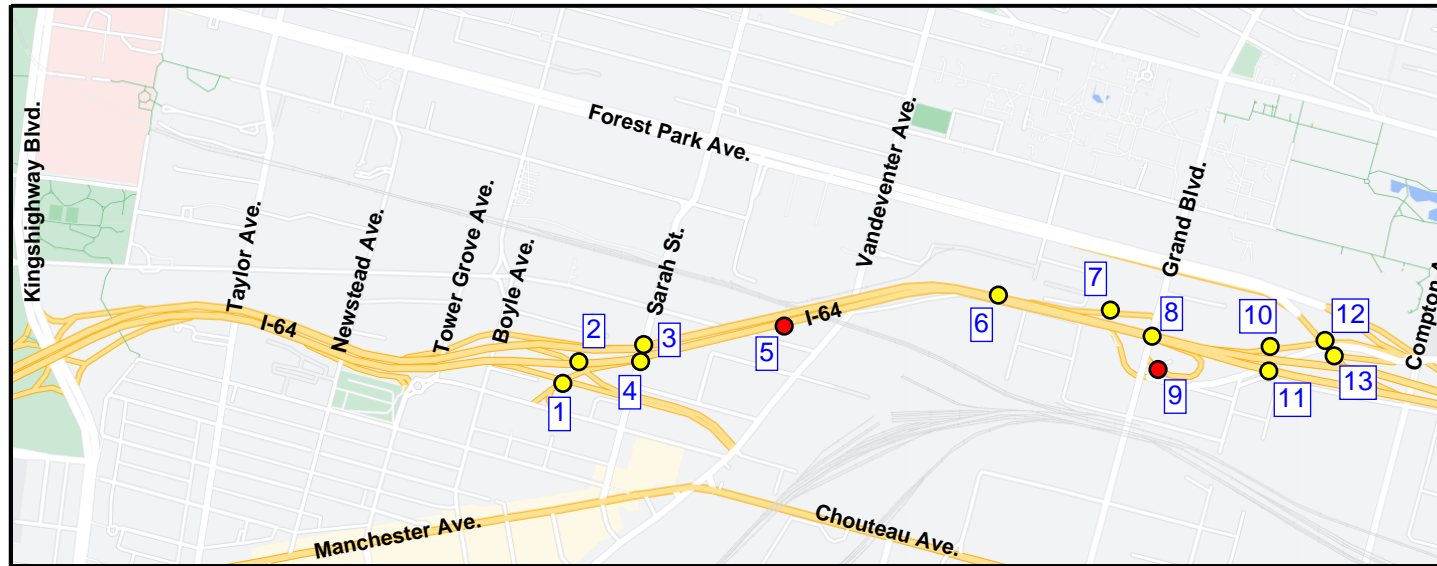


Date: 11/08/2022

J6I3585 - I-64 PEL Study

Bridge Rehabilitation/Replacement Summary



Overall NBI Rating

- 7 - 9 - Good
- 5 - 6 - Fair
- 0 - 4 - Poor

Note: Estimated rehabilitation and replacement construction cost based on 2022 pricing, accounting for current market conditions. Estimated replacement cost includes removal of existing bridges.

#	Bridge No.	Route & Feature Crossed	Built	Structure Type	Bridge Length	Bridge Width	General Scope & Recommendation	10 Yr Rehab	25 Yr Rehab	50 Yr Rehab	Replacement
1	A3735	EB I-64 On-Ramp from Papin over EB I-64 Ramp to Vandeventer Ave.	1977	Continuous Composite Curved WF Beam Spans	261'-0"	28'-2"	(50 Yr) - Deck Replacement & Full Repaint			\$1,503,560	
2	L0669	EB I-64 over Vandeventer WB I-64 On-Ramp	1956	Simple WF Beam Spans	79'-0"	54'-10"	(10 Yr) - Crack Filler & Misc. Repairs (25 Yr) - Replace Concrete Overlay & Repaint	\$213,787	\$918,327		
3	A3651	WB I-64 over Sarah	1981	Continuous P/S Concrete I-Girders	157'-0"	54'-10"	(25 Yr) - Hydro/Latex		\$743,998		
4	A3893	EB I-64 over Sarah	1982	P/S Concrete I-Girders	150'-0"	62'-2"	(25 Yr) - Hydro/Latex		\$471,620		
5	L0667	EB I-64	1956	Continuous Steel Plate Girder Spans	1391'-0"	63'-0"	(50 Yr) - Superstructure Replacement & Substructure Repair Replacement			\$21,965,448	\$43,984,446
6	A3594	WB I-64	1982	Continuous Steel Plate Girder Spans	5403'-0"	54'-10"	(25 Yr) - Hydro-Latex, Full Repaint, Expansion Joint Replacement, Rehab (50 Yr) - Deck Replacement & Full Repaint		\$44,344,750	\$59,985,726	
7	A3740	WB I-64 On-Ramp from Grand over Fill	1981	Continuous P/S Concrete I-Girders	305'-0"	28'-2"	(10 Yr) - Expansion Joint Replacement & Epoxy Overlay (25 Yr) - Expansion Joint Replacement & Hydro/Latex	\$180,928	\$322,977		
8	L0638	Grand over I-64	1954	Concrete Box Girder Span	88'-0"	80'-0"	(25 Yr) - Hydro/Latex, Deck repair, Substructure Repair & Overhang replacement Replacement		\$2,179,533		\$6,335,299
9	A0549	EB I-64 Off-Loop Ramp to Grand	1960	Continuous Concrete Solid Slab Spans	71'-0"	32'-8"	Replacement				\$675,769
10	A3741	WB I-64 On-Ramp from Market over Fill	1981	Continuous Concrete Solid Slab Spans	91'-0"	28'-2"	(25 Yr) - Hydro-Latex, Deck repair, Expansion Joint Replacement		\$201,842		\$808,741
11	A0832	EB I-64 over Market	1963	Continuous Concrete Box Girder Spans	211'-0"	56'-0"	(25 Yr) - Remove & Replace Exist. Concrete Overlay w/ New Hydro/Latex & Eliminate Longitudinal Joint Replacement		\$896,643		\$5,174,156
12	A3636	WB I-64 On-Ramp from Market over Forest Park Pkwy	1981	Continuous P/S Concrete I-Girders	156'-0"	28'-2"	(25 Yr) - Hydro/Latex		\$386,205		
13	A0835	EB I-64 Off-Ramp to Market over Forest Park Pkwy	1963	Continuous Concrete Box Girder Spans	203'-0"	32'-8"	Replacement				\$2,508,051



J6I3585 - I-64 PEL Study

Bridge #1 - A3735 (50 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

BRIDGE NO. 1 - A3735

Bridge Name: EB I-64 On-Ramp from Papin over EB I-64 Ramp to Vandeventer Ave.
Bridge No. A3735
Rehab/Replace Alternative: 50 Yr Fix
10/25/50 Yr Remark (original): (50 Yr) - Deck Replacement & Full Repaint

Scope/Recommendation:

Replace deck (barrier, expansion joints, and conduit replaced)
Replace approach slabs & add vertical drain at end bents
Substructure Repair (formed/unformed)
Concrete Protective Coating (Epoxy)
Full repaint of girders
Clean, coat, and reset rocker bearings
--

Assume full closure of A3735 but limited access to bridge (over I-64 ramp).

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	65	\$58.50	\$3,802.50
2162500	Removal of Existing Bridge Deck	Sq. Ft.	7364	\$11.05	\$81,368.63
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	1339	\$123.50	\$165,366.50
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	818	\$130.00	\$106,364.22
7034212	Slab on Steel	Sq. Yd.	818	\$487.50	\$398,865.82
7034219A	Type D Barrier	Lin. Ft.	550	\$149.50	\$82,202.58
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	241	\$169.00	\$40,799.58
7071000	Conduit System on Structure	Lump Sum	1	\$12,220.00	\$12,220.00
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$19,487.00	\$19,487.00
7123100	Cleaning and Coating Existing Bearings	Each	8	\$650.00	\$5,200.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	9300	\$26.00	\$241,800.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	9300	\$3.25	\$30,225.00
7125365A	Intermediate Field Coat (System G)	Sq. Ft.	9300	\$2.60	\$24,180.00
7125370A	Finish Field Coat (System G)	Sq. Ft.	9300	\$2.60	\$24,180.00
7129902	Reset Rocker Bearing	Each	8	\$650.00	\$5,200.00
7151001	Vertical Drain at End Bents	Lin. Ft.	110	\$58.50	\$6,444.17
7172001	Strip Seal Expansion Joint System	Lin. Ft.	62	\$585.00	\$36,270.00
	TOTAL BASE COST =				\$1,280,173.5

Misc. Construction Costs (10%): \$128,017.35

Sub-total: \$1,408,190.84

Mobilization (6%): \$84,491.45

*Surveying (1%): \$10,878.06

Total Rehab Cost (2022): \$1,503,560.35

*1% for surveying cost does not include base superstructure paint cost.

Cost/SF of Bridge: \$204.19

J6I3585 - I-64 PEL Study Bridge #2 - L0669 (10 Yr Rehab)

MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Bridge Name:	EB I-64 over Vandeventer WB I-64 On-Ramp
Bridge No.	L0669
Rehab/Replace Alternative:	10 Yr Fix
10/25/50 Yr Remark (original):	(10 Yr) - Crack Filler

Scope:

- Substructure repair & epoxy crack filler
- Seal deck with silane
- Apply concrete protective coating (epoxy) at abutments
- Expansion jt. seal replacement

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2165000	Removal of Existing Expansion Joint Sealant	Lin. Ft.	193	\$71.50	\$13,799.50
7033013	Penetrating Concrete Sealer	Sq. Yd.	441	\$26.00	\$11,466.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	234	\$169.00	\$39,490.12
7040104	Half-Sole Repair	Sq. Ft.	250	\$104.00	\$26,000.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	196	\$117.00	\$22,960.67
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$55,835.00	\$55,835.00
7172054	Open Cell Foam Joint Seal (no armor)	Lin. Ft.	193	\$71.50	\$13,799.50
	TOTAL BASE COST =				\$183,350.78

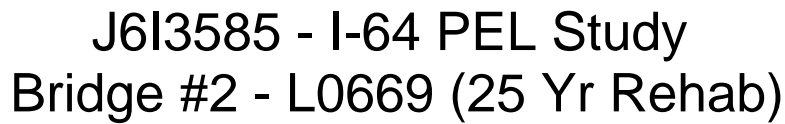
Misc. Construction Costs (10%): \$18,335.08

Sub-total:	\$201,685.86
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Mobilization (6%): \$12,101.15

Total Rehab Cost (2022):	\$213,787.01
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Cost/SF of Bridge: \$49.70

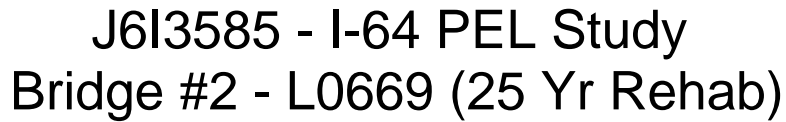


10/25/50 Yr Remark (original): (25 Yr) - Replace Concrete Overlay & Repaint

(25 Yr) - Replace Concrete Overlay & Repaint

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

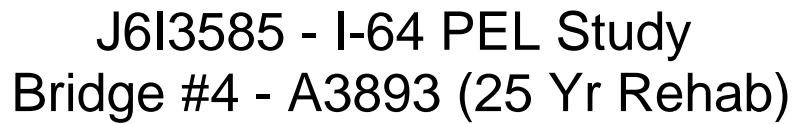
Cost/SF of Bridge: \$213.47



Bridge No. 3 - A3651

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

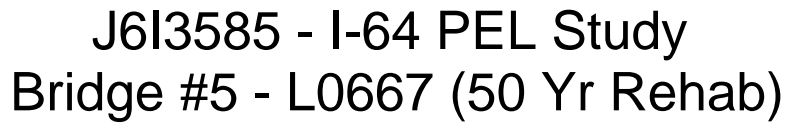
Cost/SF of Bridge: \$86.68



Bridge No. 4 - A3893

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

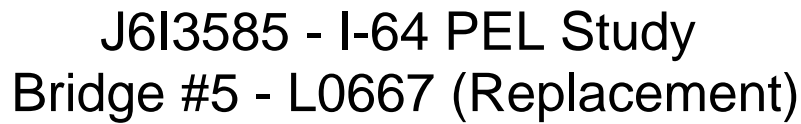
Cost/SF of Bridge: \$50.18



Bridge No. 5 - L0667

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Cost/SF of Bridge: \$266.14



Bridge No. 5 - L0667

Replace with 14-Span Continuous Composite Steel Plate Girder Bridge

Staged Construction (10%)
Seismic Performance Category B (10%)
Tight Site/Limited Access (3%)
Over railroad and multiple roads
Interstate bridge

Increase bridge cost by 15% for misc. construction cost.

Misc. Bridge Costs (15%):	\$4,908,650.18
**Misc. Roadway Costs (1%):	\$358,399.09

Mobilization (6%):	\$2,466,417.51
Surveying (1%):	\$411,069.59

Cost/SF of Bridge: \$532.93

**Additional percentage of base cost included to cover misc. roadway costs such as concrete approach pavement, striping and guardrail.



J6I3585 - I-64 PEL Study

Bridge #6 - A3594 (25 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 6 - A3594

Bridge Name: WB I-64
Bridge No. A3594
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro-latex, full repaint, expansion joint replacement, rehab, etc.

Scope:

Total hydro demolition
Remove and replace existing half-sole repairs
Latex modified concrete overlay
Remove and replace expansion joints
Substructure repairs (formed/unformed) and epoxy crack filler
Protective coating on concrete bents (epoxy)
Full repaint
--

Assume staging of rehabilitation work required.

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161001	Total Surface Hydro Demolition	Sq. Yd.	33238	\$52.00	\$1,728,376.00
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	299142	\$2.80	\$836,101.89
2161503	Removal of Existing Deck Repair	Sq. Ft.	25	\$52.00	\$1,300.00
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	909.0	\$455.00	\$413,595.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	84	\$910.00	\$76,440.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	33238	\$130.00	\$4,320,940.00
7034214	Class B-2 Concrete	Cu. Yd.	151.5	\$2,860.00	\$433,290.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	825	\$169.00	\$139,425.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	367	\$117.00	\$42,939.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	40910	\$2.86	\$117,002.60
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$86,749.00	\$86,749.00
7120900	Expansion Device (Finger Plate)	Lin. Ft.	466	\$2,600.00	\$1,211,600.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	653100	\$32.50	\$21,225,750.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	653100	\$3.25	\$2,122,575.00
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7125370A	Finish Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7171001	Preformed Compression Seal Expansion Joint System	Lin. Ft.	110	\$409.50	\$45,045.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	331	\$546.00	\$180,724.91
	TOTAL BASE COST =				\$36,377,973.40

Misc. Construction Costs (15%): \$5,456,696.0

Sub-total: \$41,834,669.41

Mobilization (6%): \$2,510,080.2

Total Rehab Cost (2022): \$44,344,749.57

Cost/SF of Bridge: \$140.27



J6I3585 - I-64 PEL Study

Bridge #6 - A3594 (50 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 6 - A3594

Bridge Name: WB I-64
Bridge No. A3594
Rehab/Replace Alternative: 50 Yr Fix
10/25/50 Yr Remark (original): (50 Yr) - Deck Replacement & Full Repaint

Scope:

Deck replacement (barriers, expansion joints, drains)
Replace drainage system on structure
Remove and replace approach slab and add vertical drains at end bents
Substructure repairs (formed/unformed) and epoxy crack filler
Protective coating on concrete bents (epoxy)
Full repaint

--

Assume staging of rehabilitation work required and increase cost for seismic retrofit.

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	95	\$58.50	\$5,557.50
2162500	Removal of Existing Bridge Deck	Sq. Ft.	316135	\$11.05	\$3,493,291.75
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	2057	\$123.50	\$253,998.35
7034212	Slab on Steel	Sq. Yd.	34279	\$377.00	\$12,923,294.70
7034219A	Type D Barrier	Lin. Ft.	11432	\$110.50	\$1,263,236.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	825	\$169.00	\$139,425.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	367	\$117.00	\$42,939.00
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$86,749.00	\$86,749.00
7120900	Expansion Device (Finger Plate)	Lin. Ft.	466	\$2,600.00	\$1,211,600.00
7123611	Slab Drain with Grate	Each	84	\$5,460.00	\$458,640.00
7123620	Drainage System (On Structure)	Lump Sum	1	\$2,107,170.00	\$2,107,170.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	653100	\$32.50	\$21,225,750.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	653100	\$3.25	\$2,122,575.00
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7125370A	Finish Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7151001	Vertical Drain at End Bents	Lin. Ft.	176	\$58.50	\$10,296.00
7171001	Preformed Compression Seal Expansion Joint System	Lin. Ft.	110	\$409.50	\$45,045.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	331	\$546.00	\$180,724.91
	TOTAL BASE COST =				\$48,966,412.21

Misc. Construction Costs (15%): \$7,344,961.8

Sub-total: \$56,311,374.04

Mobilization (6%): \$3,378,682.4

*Surveying (1%): \$295,669.3

Total Rehab Cost (2022): \$59,985,725.78

Cost/SF of Bridge: \$189.75

*1% for surveying cost does not include base superstructure paint cost.



J6I3585 - I-64 PEL Study

Bridge #7 - A3740 (10 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 7 - A3740

Bridge Name: WB I-64 On-Ramp from Grand over Fill
Bridge No. A3740
Rehab/Replace Alternative: 10 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Expansion joint replacement & EP Overlay, etc.

Scope:

Scarification of bridge deck
Epoxy polymer overlay
Substructure repairs (formed/unformed) and misc. crack repair
Protective coating concrete (epoxy) at Bent 1
Superstructure repair (unformed) & slab edge repair
Expansion joint replacement

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	892	\$15.60	\$13,922.97
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00	\$13,195.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00	\$10,920.00
6233000	Epoxy Polymer Wearing Surface	Sq. Yd.	892	\$52.00	\$46,409.90
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00	\$20,163.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	15	\$201.50	\$3,022.50
7040103	Superstructure Repair (Unformed)	Sq. Ft.	86	\$169.00	\$14,534.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	15	\$260.00	\$3,900.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00	\$11,700.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77	\$4,784.13
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$3,042.00	\$3,042.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00	\$16,965.00
	TOTAL BASE COST =				\$162,558.50

Misc. Construction Costs (5%): \$8,127.92

Sub-total: \$170,686.42

Mobilization (6%): \$10,241.19

Total Rehab Cost (2022): \$180,927.61

Cost/SF of Bridge: \$21.03



J6I3585 - I-64 PEL Study

Bridge #7 - A3740 (25 Yr Rehab)

MoDOT Job Number J6I3585

St. Louis County

8/1/2022

Bridge Name:

WB I-64 On-Ramp from Grand over Fill

Bridge No.

A3740

Rehab/Replace Alternative:

25 Yr Fix

10/25/50 Yr Remark (original): (25 Yr) - Expansion joint replacement & Hydro/Latex, etc.

Bridge No. 7 - A3740

Scope:

Total hydro demolition & scarification of bridge deck

Latex modified concrete overlay

Substructure repairs (formed/unformed) and misc. crack repair

Protective coating concrete (epoxy) at Bent 1

Superstructure repair (unformed) & slab edge repair

Expansion joint replacement

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	892	\$15.60	\$13,922.97
2161001	Total Surface Hydro Demolition	Sq. Yd.	892	\$65.00	\$58,012.37
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00	\$13,195.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00	\$10,920.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	892	\$130.00	\$116,024.74
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00	\$20,163.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	15	\$201.50	\$3,022.50
7040103	Superstructure Repair (Unformed)	Sq. Ft.	86	\$169.00	\$14,534.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	15	\$260.00	\$3,900.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00	\$11,700.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77	\$4,784.13
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$3,042.00	\$3,042.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00	\$16,965.00
	TOTAL BASE COST =				\$290,185.71

Misc. Construction Costs (5%): \$14,509.29

Sub-total: \$304,695.00

Mobilization (6%): \$18,281.70

Total Rehab Cost (2022): \$322,976.70

Cost/SF of Bridge: \$37.54



J6I3585 - I-64 PEL Study

Bridge #8 - L0638 (25 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 8 - L0638

Bridge Name: Grand over I-64
Bridge No. L0638
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex & Substructure Repair, etc.

Scope:

Total hydro demolition
Remove and replace existing half-sole repairs
Latex modified concrete overlay
Remove and replace overhang
Substructure repairs (formed/unformed)
Crack filler on substructure
Superstructure repair (unformed)
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Total Surface Hydro Demolition	Sq. Yd.	748	\$65.00	\$48,620.00
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	6732	\$3.25	\$21,879.00
2161503	Removal of Existing Deck Repair	Sq. Ft.	6600	\$52.00	\$343,200.00
2169901	Remove and Replace Existing Overhang*	Lump Sum	1	\$785,960.00	\$785,960.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	748	\$130.00	\$97,240.00
7034219A	Type D Barrier	Lin. Ft.	200	\$149.50	\$29,850.07
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	198	\$169.00	\$33,462.00
7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00	\$20,111.00
7040104	Half-Sole Repair	Sq. Ft.	8200	\$58.50	\$479,700.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	40	\$117.00	\$4,680.00
7071000	Conduit System on Structure	Lump Sum	1	\$4,537.00	\$4,537.00
	TOTAL BASE COST =				\$1,869,239.07

Misc. Construction Costs (10%): \$186,923.91

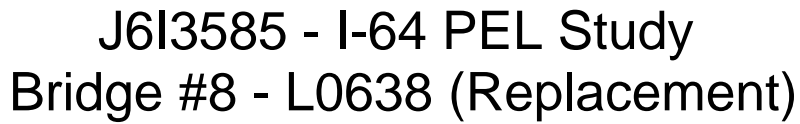
*Lump Sum cost for Remove and Replace Existing Overhang shall include partial removal of existing bridge deck, Class B-2 Concrete, Reinforcing Steel (Epoxy Coated), Resin Anchor system and any ancillary materials or labor required to replace the existing overhangs.

Sub-total: \$2,056,162.97

Mobilization (6%): \$123,369.78

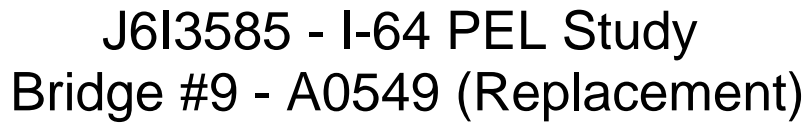
Total Rehab Cost (2022): \$2,179,532.75

Cost/SF: \$267.10



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***To meet vertical clearance standard of 16'-6" over I-64, a proposed grade raise of 18" was assumed for roadway costs (assuming similar structure depth). Lump sum cost for road work is based off of recent projects and estimated for approximate area of impact based on the proposed grade raise.



Bridge No. 9 - A0549

Scope:
Replace with 3-span 16" concrete slab bridge with 2 column bents and similar span arrangement

Increase bridge cost by 15% for misc. construction cost.

Cost/SF of Bridge: \$309.99

**Additional percentage of base cost included to cover misc. roadway costs such as concrete approach pavement, striping and guardrail.



J6I3585 - I-64 PEL Study

Bridge #10 - A3741 (25 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Bridge Name: WB I-64 On-Ramp from Market over Fill
Bridge No. A3741
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro-latex, expansion jt replacement, rehab, etc.

Scope:

Total hydro demolition & scarification of bridge deck
Latex modified concrete overlay
Superstructure repair (unformed) & slab edge repair
Misc. half-sole and full depth repairs
Expansion joint replacement

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	311	\$15.60	\$4,844.59
2161001	Total Surface Hydro Demolition	Sq. Yd.	311	\$65.00	\$20,185.78
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00	\$13,195.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00	\$10,920.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	311	\$130.00	\$40,371.56
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00	\$20,163.00
7040103	Superstructure Repair (Unformed)	Sq. Ft.	130	\$169.00	\$21,970.00
7040104	Half-Sole Repair	Sq. Ft.	150	\$104.00	\$15,600.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	20	\$260.00	\$5,200.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77	\$4,784.13
7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00	\$16,965.00
	TOTAL BASE COST =				\$181,349.06

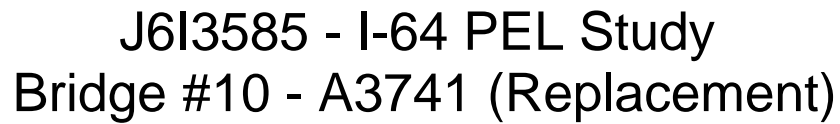
Misc. Construction Costs (5%): \$9,067.45

Sub-total: \$190,416.51

Mobilization (6%): \$11,424.99

Total Rehab Cost (2022): \$201,841.50

Cost/SF of Bridge: \$77.43



Bridge No. 10 - A3741

St. Louis County

8/1/2022

Bridge Name: WB I-64 On-Ramp from Market

Bridge No. A3741

Rehab/Replace Alternative: Replacement

10/25/50 Yr Remark (original): -

Scope:

Replace with 2-Span 17" Concrete Slab Bridge

Other Considerations (recommended individual % increase per EPG):

Seismic Performance Category B (10%)

Tight Site/Limited Access (3%)

Interstate ramp

Increase bridge cost by 10% for misc. construction cost.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
-	Remove Bridge	Sq. Ft.	2650	\$18.20	\$48,230.00
-	2-Span Concrete Slab Bridge	Sq. Ft.	2650	\$221.00	\$585,650.00
	TOTAL BASE COST =				\$633,880.00

Misc. Bridge Costs (10%):	\$58,565.00
Misc. Roadway Costs (10%):	\$63,388.00

Sub-total:	\$755,833.00
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Mobilization (6%):	\$45,349.98
Surveying (1%):	\$7,558.33

Total Cost of Removal and Replacement (2022):	\$808,741.31
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Cost/SF of Bridge: \$305.19

**Additional percentage of base cost included to cover misc. roadway costs such as concrete approach pavement, striping and guardrail.



J6I3585 - I-64 PEL Study

Bridge #11 - A0832 (25 Yr Rehab)

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Bridge Name: EB I-64 over Market
Bridge No. A0832
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Remove & Replace Ex Concrete overlay w/ new hydro/latex & eliminate L-joint, etc.

Scope:

Total hydro demolition & scarification of bridge deck
Remove existing wearing surface (original deck)
Remove and replace existing deck repair where needed (beneath wearing surface)
Latex modified concrete overlay
Remove L-joint between bridges and at approach slabs
Repair barrier
Repair approach slab
Misc. half-sole and full depth repairs
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	559	\$15.60	\$8,717.35
2161000	Total Surface Hydro Demolition	Sq. Yd.	1744	\$52.00	\$90,672.69
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	5908	\$3.25	\$19,201.00
2161503	Removal of Existing Deck Repair	Sq. Ft.	85	\$52.00	\$4,425.20
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	252	\$650.00	\$163,800.00
2169904	Partial Removal and Replacement of Approach Slab	Sq. Ft.	159	\$104.00	\$16,536.00
5050004	Supplementary Wearing Surface Material	Cu. Yd.	5	\$910.00	\$4,550.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	1744	\$130.00	\$226,681.72
7034214	Class B-2 Concrete	Cu. Yd.	26.2	\$4,290.00	\$112,373.37
7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00	\$20,111.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	20	\$260.00	\$5,200.00
7049903	Parapet Repair (Formed)	Lin. Ft.	20	\$195.00	\$3,900.00
7040104	Half-Sole Repair	Sq. Ft.	700	\$104.00	\$72,800.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7101000	Reinforcing Steel (Bridges)	Lb.	7072	\$1.82	\$12,871.86
	TOTAL BASE COST =				\$768,990.19

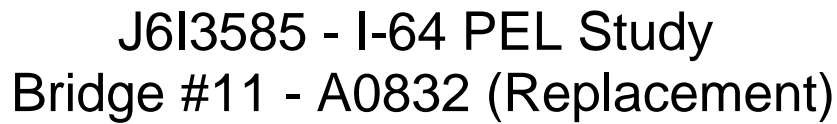
Misc. Construction Costs (10%): \$76,899.02

Sub-total: \$845,889.21

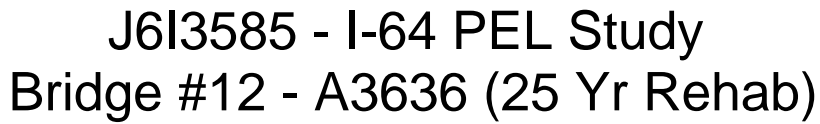
Mobilization (6%): \$50,753.35

Total Rehab Cost (2022): \$896,642.56

Cost/SF of Bridge: \$75.60

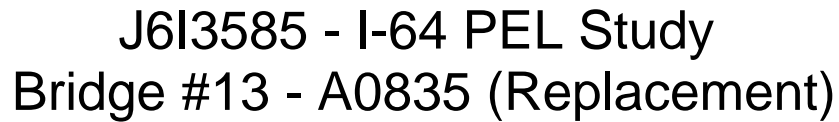


**To meet vertical clearance standard of 16'-6" over Market St., a proposed grade raise of 24" was assumed for roadway costs (assuming similar structure depth). Lump sum cost for road work is based off of recent projects and estimated for approximate area of impact based on the proposed grade raise.



Bridge No. 12 - A3636

Cost/SF of Bridge: \$87.88



Bridge No. 13 - A0835

Scope:
Replace with 3-Span Prestressed Concrete NU-Girder Bridge

Increase by bridge cost by 10% for misc. construction cost.

Cost/SF of Bridge: \$401.29

***To meet vertical clearance standard of 16'-6" over Forest Park Parkway, a proposed grade raise of 18" was assumed for roadway costs (assuming similar structure depth). Lump sum cost for road work is based off of recent projects and estimated for approximate area of impact based on the proposed grade raise.

Appendix A: Quantity Calculations



Project: I-64 PEL Study
Subject: No-Build Option (A3735)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 7/13/22
Checked by: MTW Date: 07/21/22

MoDOT Job Number J6I3585
St. Louis County
7/13/2022

BRIDGE NO. 1 - A3735

Bridge Name:	EB I-64 On-Ramp from Papin over EB I-64 Ramp to Vandeventer Ave.
Bridge No.	A3735
Rehab/Replace Alternatives:	50 Yr Fix
10/25/50 Yr Remark (original):	(50 Yr) - Deck Replacement & Full Repaint

Bridge Description

Original Construction:	1977
Superstructure Type:	Continuous Composite Curved W-Beam
Span Arrangement:	42'-58'-57'-55'-43'
Roadway Width:	24'-10"
Out-to-Out Width:	28'-2"
AADT:	2,371 (2020); 2,964 (2040)

Condition

Deck:	5
Superstructure:	7
Substructure:	6
Sufficiency rating:	94.1%
Vertical Clearance:	Posted at 15'-3"; Actual: 16'-5" (I-64 to Vandeventer), 23'-4" (Vandeventer to I-64)

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Minor issues only. Does not meet current standards for bridge rail.
Approach pavement	Spalls (large) & wear (medium) on west approach

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing surface	Minor issues only. OK (1.75" latex modified 2009)
Expansion device	Strip Seal at both abutments (2009 rehab)
Slope protection	Minor eroding and settlement.

Deck Components

Deck	Moderate to Large deficiencies throughout
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Superstructure Components:

Girders	Paint peeling/rusting throughout
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Project: I-64 PEL Study
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BRIDGE NO. 1 - A3735

Substructure Components:

Abut 1

Beam cap: Crack/Delam @ Bay 3 (few) Epoxy seal peeling at top ends of beam cap

Bent 2

Bearings: Brgs 3&4 rusting (light), Brgs 1-3 tipped (Medium)

Bent 3

HL cracking (few) at top Col 2

Bent 4

Minor issues only. OK.

Bent 5

Minor issues only. OK.

Column 1: Spalls @ bottom (small) and vertical cracks (minor)

Backwall: Delam and cracking throughout (moderate)

Abut 6

Stem: Delam at random (Large), rust stains throughout (moderate), spalls at front face (large) w/ efflorescence (light) & vertical cracks (minor)

Bearings: Tipped throughout (excessive)

Clearance Information:

See above

Structure Paint Information:

Poor. 74 tons of steel. Original System B Basic Lead Chromium (1979), Repaint Experimental Coatings(1999)

Requested Items:

Flush debris from Exp. Jts.

10SF of patching w/asphalt on east App. Slab

Repair guardrail

Repair both abut cap/stem delaminations

Repair west app

Repair overhead hazard from deck

Cleanup west abutment slope

Roadway surface resealed

Future Redeck & paint

Utility attachments:

Conduit in right barrier

Additional Recommendations

Replace approach slabs & add vertical drain at end bents

Substructure repair (assume 15% of substructure front face)

Apply Concrete Protective Coating (Epoxy) @ abutments & columns near roadways (10' above ground)

Abutment bearing rehabilitation

Other Recommendations to Consider

Vertical Clearance (15'-3" posted); new bridge would require 16'-6"



Project: I-64 PEL Study
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BRIDGE NO. 1 - A3735

Substructure Repair (Google Earth)(cont.)

Abut 6, Assume 15% of face requires repair. (assume this covers top of cap repair needed)





Project: I-64 PEL Study
Subject: No-Build Option (A3735)
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MoDOT Job Number J6I3585
St. Louis County
7/13/2022

BRIDGE NO. 1 - A3735

Bridge Name: EB I-64 On-Ramp from Papin over EB I-64 Ramp to Vandeventer Ave.
Bridge No. A3735
Rehab/Replace Alternative: 50 Yr Fix
10/25/50 Yr Remark (original) (50 Yr) - Deck Replacement & Full Repaint

Scope/Recommendation:

Replace deck (barrier, expansion joints, and conduit replaced)
Replace approach slabs & add vertical drain at end bents
Substructure Repair (formed/unformed)
Concrete Protective Coating (Epoxy)
Full repaint of girders
Clean, coat, and reset rocker bearings

Existing properties/dimensions

Skew:
Deck width: 28.1667 ft
Deck length: 261.432 ft (along BL)
Left Barrier length: 281.22 ft
Right Barrier length: 268.63 ft
Steel Weight: 74 tons

Quantities

Class 1 Excavation Accuracy 5 Cu. Yd.
Assume 3' width excavated to bottom of diaphragm

	Height (ft)	Length (ft) (abut & wings)	Volume (yd ³)	
Abut 1	4.083	53.200	24.1	
Abut 6	6.20	57.0	39.3	
Total			65.0	Cu. Yd.

Removal of Existing Bridge Deck Accuracy 1 Sq. Ft.

	Width (ft)	Length (ft)	Area (ft ²)	
	28.1667	261.432	7364	
Total			7364	Sq. Ft.

Removal and Replacement of Approach Slab Accuracy 1 Sq. Ft.

App. Slab	Area (ft ²)	
1	747	(from Google Earth)
4	592	(from Google Earth)
Total	1339	Sq. Ft.

Latex Modified Concrete Wearing Surface Accuracy 1 Sq. Yd.

Total	818	Sq. Yd.
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Slab on Steel Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	28.1667	261.432	818	
Total			818	Sq. Yd.



Project: I-64 PEL Study
Subject: No-Build Option (A3735)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 7/13/22
Checked by: MTW Date: 07/21/22

MoDOT Job Number J6I3585
St. Louis County
7/13/2022
Type D Barrier

BRIDGE NO. 1 - A3735

		Accuracy 1 Lin. Ft.
	Length (ft)	
Left Barrier	281.2	
Right Barrier	268.6	
Total	550	Lin. Ft.

Substructure Repair (Formed) Accuracy 1 Sq. Ft.

Abut 1

Beam cap - Cracks/delam at Bay 3 (take 5% area of bay 3)

	Width (ft)	Length (ft)	15% Area (ft ²)
Bay 3	2	9.333	9

Bent 5

Column 1 spalls (Assume 5' above ground needs substructure formed)

	Height (ft)	Diameter (ft)	Area (ft ²)
Column 1	5	2.5	39

Abut 6

Backwall - Moderate delam at random (assume 10% of face area)

Stem - Large delam and large spalls on front face (assume 15% of front face)

	Height (ft)	Length (ft)	x% Area (ft ²)	
Backwall	6.20	49.96	31	(Height varies, approx ave)
Stem	21.67	49.96	162	

Total Substructure Repair (Formed) **241** **Sq. Ft.**

Conduit System on Structure (up to 2.5" diam.) Accuracy Lump Sum (LF for cost)

Total (right barrier length) **269** **Lin. Ft.**

Protective Coating - Concrete Bents and Piers (Epoxy) Accuracy Lump Sum (SF for cost)

	Width / Height (ft)	Length / Diameter (ft)	Area (ft ²)	
<u>Abut 1</u>				
Backwall (front face)	4.083	31.2	127.4	
Top of Cap	2	33.3	66.6	
Cap (front face)	3	33.3	99.9	
<u>Abut 6</u>				
Backwall (front face)	6.20	49.96	309.9	(Height varies, approx ave)
Top of Cap	3.33	49.96	166.4	
Cap (front face)	3.5	49.96	174.8	
Stem (front face)	21.667	49.96	1082.4	
<u>Bent 2 (Apply to columns coating 10' above ground)</u>				
Two Columns	10	2.5	157.1	
<u>Bent 3 (Apply to columns coating 10' above ground)</u>				
Two Columns	10	2.5	157.1	
<u>Bent 5 (Apply to columns coating 10' above ground)</u>				
Two Columns	10	2.5	157.1	
Total			2499	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3735)
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Job #: 10333314

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MoDOT Job Number J6I3585
St. Louis County
7/13/2022

BRIDGE NO. 1 - A3735

Cleaning, Lubricating and Coating Existing Bearing Accuracy Each

Abut 1	4	
Abut 6	4	
Total	8	Each

Surface Preparation for Recoating Structural Steel Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for WF beams, estimate 125 sq. ft. per ton.		
Total	9300	Sq. Ft.

Field Application of Inorganic Zinc Primer Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for WF beams, estimate 125 sq. ft. per ton.		
Total	9300	Sq. Ft.

Intermediate Field Coat (System G) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for WF beams, estimate 125 sq. ft. per ton.		
Total	9300	Sq. Ft.

Finish Field Coat (System G) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for WF beams, estimate 125 sq. ft. per ton.		
Total	9300	Sq. Ft.

Reset Rocker Bearing Accuracy Each

Abut 1	4	
Abut 6	4	
Total	8	Each

Vertical Drain at End Bents Accuracy 1 Lin. Ft.

	Bent length (ft)	Wing lengths (both) (ft)	Total Length (ft)	
Abut 1	31.200	22	53.2	
Abut 6	49.96	7	56.96	
			110	Lin. Ft.

Strip Seal Expansion Joint System Accuracy 1 Lin. Ft.

Total (from 2009 Rehab)	62	Sq. Ft.
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Project: I-64 PEL Study
Subject: No-Build Option (A3735)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 7/13/22
Checked by: MTW Date: 07/21/22

MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 1 - A3735

Bridge Name: EB I-64 On-Ramp from Papin over EB I-64 Ramp to Vandeventer Ave.
Bridge No. A3735
Rehab/Replace Alternative: 50 Yr Fix
10/25/50 Yr Remark (original): (50 Yr) - Deck Replacement & Full Repaint

Scope/Recommendation:

Replace deck (barrier, expansion joints, and conduit replaced)
Replace approach slabs & add vertical drain at end bents
Substructure Repair (formed/unformed)
Concrete Protective Coating (Epoxy)
Full repaint of girders
Clean, coat, and reset rocker bearings
--

Assume full closure of A3735 but limited access to bridge (over I-64 ramp).

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	65	\$58.50	\$3,802.50
2162500	Removal of Existing Bridge Deck	Sq. Ft.	7364	\$11.05	\$81,368.63
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	1339	\$123.50	\$165,366.50
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	818	\$130.00	\$106,364.22
7034212	Slab on Steel	Sq. Yd.	818	\$487.50	\$398,865.82
7034219A	Type D Barrier	Lin. Ft.	550	\$149.50	\$82,202.58
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	241	\$169.00	\$40,799.58
7071000	Conduit System on Structure	Lump Sum	1	\$12,220.00	\$12,220.00
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$19,487.00	\$19,487.00
7123100	Cleaning and Coating Existing Bearings	Each	8	\$650.00	\$5,200.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	9300	\$26.00	\$241,800.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	9300	\$3.25	\$30,225.00
7125365A	Intermediate Field Coat (System G)	Sq. Ft.	9300	\$2.60	\$24,180.00
7125370A	Finish Field Coat (System G)	Sq. Ft.	9300	\$2.60	\$24,180.00
7129902	Reset Rocker Bearing	Each	8	\$650.00	\$5,200.00
7151001	Vertical Drain at End Bents	Lin. Ft.	110	\$58.50	\$6,444.17
7172001	Strip Seal Expansion Joint System	Lin. Ft.	62	\$585.00	\$36,270.00
	TOTAL BASE COST =				\$1,280,173.5

Misc. Construction Costs (10%): \$128,017.35

Sub-total: \$1,408,190.84

Mobilization (6%): \$84,491.45

*Surveying (1%): \$10,878.06

Total Rehab Cost (2022): \$1,503,560.35

*1% for surveying cost does not include base superstructure paint cost.

Cost/SF of Bridge: \$204.19



Project: I-64 PEL Study
Subject: No-Build Option (A3735)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 7/13/22
Checked by: MTW Date: 07/21/22

MoDOT Job Number J613585
St. Louis County
7/13/2022

BRIDGE NO. 1 - A3735

Unit Costs:

Add 30% to account for 2022 price increases

2169901	Class 1 Excavation	Cu. Yd.	65	\$58.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$45.00	
		Other	-	
		<u>Use:</u>	\$58.50	
2162500	Removal of Existing Bridge Deck	Sq. Ft.	7364	\$11.05
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$8.50	(composite)
		Other	-	
		<u>Use:</u>	\$11.05	
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	1339	\$123.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$95.00	(from partial removal/replace)
		Other	-	
		<u>Use:</u>	\$123.50	
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	818	\$130.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$100.00	
		Other	-	
		<u>Use:</u>	\$130.00	
7034212	Slab on Steel	Sq. Yd.	818	\$487.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$375.00	(< 1000 Sq. Yd.)
		Other	-	
		<u>Use:</u>	\$487.50	
7034219A	Type D Barrier	Lin. Ft.	550	\$149.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$115.00	(< 600 LF)
		Other	-	
		<u>Use:</u>	\$149.50	
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	241	\$169.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$130.00	(>100 Sq. Ft.)
		Other	-	
		<u>Use:</u>	\$169.00	
7071000	Conduit System on Structure	Lump Sum	1	\$12,220.00
		<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>
		Pay Items 2021	\$35.00	269 LF
		Other	-	
		<u>Use:</u>	\$12,220.00	



Project: I-64 PEL Study
Subject: No-Build Option (A3735)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 7/13/22
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MoDOT Job Number J6I3585
St. Louis County
7/13/2022

BRIDGE NO. 1 - A3735

7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$19,487.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td><u>Quantity</u></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$6.00</td><td>2499</td><td>SF</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$19,487.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>			Pay Items 2021	\$6.00	2499	SF		Other	-				Use:	\$19,487.00			
<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>																						
Pay Items 2021	\$6.00	2499	SF																					
Other	-																							
Use:	\$19,487.00																							
7123100	Cleaning and Coating Existing Bearings	Each	8	\$650.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$500.00</td><td></td><td>(with paint in job)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$650.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$500.00		(with paint in job)		Other	-				Use:	\$650.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$500.00		(with paint in job)																					
Other	-																							
Use:	\$650.00																							
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	9300	\$26.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$20.00</td><td></td><td>(paint in larger contract >6000SF)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$26.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$20.00		(paint in larger contract >6000SF)		Other	-				Use:	\$26.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$20.00		(paint in larger contract >6000SF)																					
Other	-																							
Use:	\$26.00																							
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	9300	\$3.25																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$2.50</td><td></td><td>(paint in larger contract >6000SF)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$3.25</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2.50		(paint in larger contract >6000SF)		Other	-				Use:	\$3.25			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2.50		(paint in larger contract >6000SF)																					
Other	-																							
Use:	\$3.25																							
7125315A	Intermediate Field Coat (System G)	Sq. Ft.	9300	\$2.60																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$2.00</td><td></td><td>(paint in larger contract >6000SF)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$2.60</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2.00		(paint in larger contract >6000SF)		Other	-				Use:	\$2.60			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2.00		(paint in larger contract >6000SF)																					
Other	-																							
Use:	\$2.60																							
7125320A	Finish Field Coat (System G)	Sq. Ft.	9300	\$2.60																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$2.00</td><td></td><td>(paint in larger contract >6000SF)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$2.60</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2.00		(paint in larger contract >6000SF)		Other	-				Use:	\$2.60			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2.00		(paint in larger contract >6000SF)																					
Other	-																							
Use:	\$2.60																							
7129902	Reset Rocker Bearing	Each	8	\$650.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Other</td><td>\$500.00</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$650.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	-				Other	\$500.00				Use:	\$650.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	-																							
Other	\$500.00																							
Use:	\$650.00																							
7151001	Vertical Drain at End Bents	Lin. Ft.	110	\$58.50																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$45.00</td><td></td><td></td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$58.50</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$45.00				Other	-				Use:	\$58.50			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$45.00																							
Other	-																							
Use:	\$58.50																							
7172001	Strip Seal Expansion Joint System	Lin. Ft.	62	\$585.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$450.00</td><td></td><td>(<100 ft)</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$585.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$450.00		(<100 ft)		Other	-				Use:	\$585.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$450.00		(<100 ft)																					
Other	-																							
Use:	\$585.00																							



Project: I-64 PEL Study
Subject: No-Build Option (L0669)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/29/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Bridge Name:	EB I-64 over Vandeventer WB I-64 On-Ramp
Bridge No.	L0669
Rehab/Replace Alternative:	10 Yr Fix OR 25 Yr Fix
10/25/50 Yr Remark (original):	(10 Yr) - Crack Filler (25 Yr) - Replace Concrete Overlay & Repaint

Bridge Description

Original Construction:	1956
Superstructure Type:	Simple Span Composite WF Beam
Span Arrangement:	68'
Roadway Width:	48'-0"
Out-to-Out Width:	54'-10" (inspection report)
AADT:	48,870 (2020); 61,088 (2040)

Condition

Deck:	7
Superstructure:	7
Substructure:	6
Sufficiency rating:	81.0%
Vertical Clearance:	15'-5" (SIA), min. posting is 15'-0" @ bridge A6881 to the east

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Light severity only. Does not meet current standard for bridge rail.
Approach pavement	Cracks and patches throughout. Moderate spalling on lanes 2/3 (under overlay).

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing surface	Good (1.75" latex modified). Light severity only.
-----------------	---

Deck Components

Deck	1% delam on bottom. 2% saturation at bottom. Few cracks and light efflorescence at overhang
------	---

Superstructure Components:

Girders	Minor pitting/rusting in bottom flange (painted over previously). Minor rusting on diaphragms.
---------	--



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BRIDGE NO. 2 - L0669

Substructure Components:

Abut 1

Beam cap - Large delam throughout, large horizontal cracks on top. Water leaking and pooling on top surface. Sealed

Bearing - minor rusting throughout and packrust at bottom of G1& G2. Sealed

Backwall - moderate leaching throughout, spalls on top, many vertical cracks. Sealed

Beam cap - Medium delam throughout with many horizontal cracks. Moderate leaching throughout. Sealed

Stem - Moderate delam random, moderate efflorescence throughout, few cracks throughout.

Abut 2

Expansion bearing - minor rusting throughout

Backwall - moderate efflorescence leaching, and vertical cracks throughout. Sealed

Clearance Information:

Min vert. clearance measured: 15'-4"

Structure Paint Information:

Good. 26 tons of steel. 0.1% of surface rusted

Requested Items:

Stencil bridge number

Seal joints (hot pour) - approach slab/deck

Epoxy inject cracks at abutments

Repair guard rail

Future substructure repair (2020)

Future Seal deck with Silane (2024)

Utility attachments:

2" conduit in both rails

Additional Recommendations

Substructure repair (10 & 25 yr) (see below for assumptions)

Seal deck with Silane (10 yr only)

Apply Concrete Protective Coating (Epoxy) @ abutments (10 & 25 yr)

Abutment bearing rehabilitation (25 yr)

Expansion jt seal replacement (10 & 25 yr)

Include approach slab in overlay (25 yr), include 5% half sole repair on approach slabs required

Other Recommendations to Consider

Vertical Clearance (15'-0" posted); new bridge would require 16'-6"; other bridge controlling clearance 70+ years old. May consider replacement, but superstructure still in good condition



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St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Substructure Repair and Crack Filler Quantity (Google Earth)

Abut 1

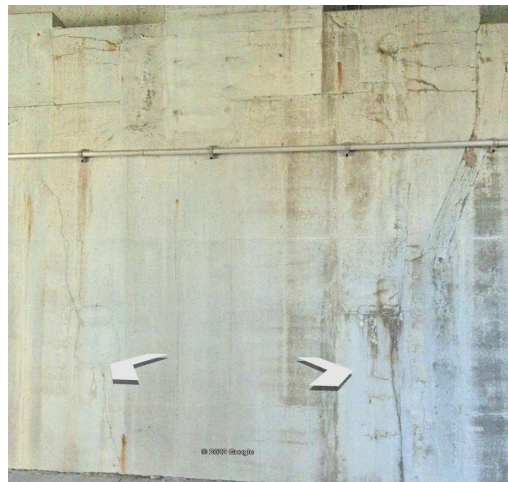
Beam Cap

Say 25% of cap face beneath girders need substructure repair (formed/unformed). (assume this covers repair needed)



Stem

Say 75% of stem height for crack lengths under every bay for epoxy injection. (assume backwall will be accounted for with this quantity)





Project: I-64 PEL Study
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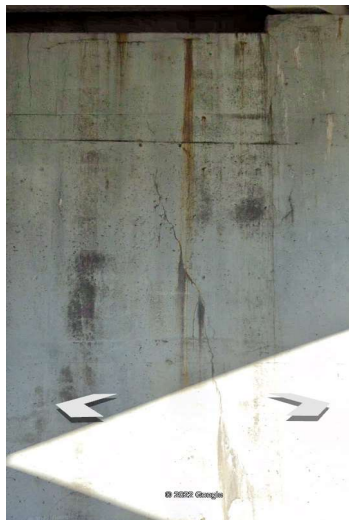
Computed by: SFP Date:07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Substructure Repair and Crack Filler Quantity (Google Earth)(cont.)
Abut 2

Similar





Project: I-64 PEL Study
Subject: No-Build Option (L0669)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/29/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Bridge Name: EB I-64 On-Ramp from Papin
Bridge No. A3735
Rehab/Replace Alternative: 10 Yr Fix OR 25 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Crack Filler
(25 Yr) - Replace Concrete Overlay & Repaint

Scope/Recommendation:

Crack filler (10 yr only)
Seal deck with Silane (10 yr only)
Remove and replace concrete overlay w/ approach slab included (25 yr only)
Repaint girders (25 yr only)
Abutment bearing rehab (25 yr only)
Apply concrete protective coating (epoxy) at abutments (10 & 25 yr)
Substructure repair (10 & 25 yr)
Expansion jt. seal replacement (10 & 25 yr)

Existing properties/dimensions

Skew:
Roadway width: 48 ft
Deck Width: 54.5833 (Max, Varies)
Deck length: 78.8125 ft (Ave, Varies)
Left Barrier length: 85.646 ft
Right Barrier length: 69.74 ft
Steel Weight: 26 tons

Quantities

Removal of Concrete Wearing Surface (25 yr) Accuracy 1 Sq. Ft.
(inspection notes indicated overlay on approach slab)

	Area (ft ²)	
App Slab 1	2214	
Deck	3967	(from 2009 rehab)
App Slab 2	2124	
Total (from 2009 Rehab)	3967	Sq. Ft.

Removal of Existing Deck Repair (25 yr) Accuracy 1 Sq. Ft.

Total (2008 rehab)	1460	Sq. Ft.
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Removal of Existing Expansion Joint Sealant (10/25 yr) Accuracy 1 Lin. Ft.

Total (from 2009 Rehab)	193	Lin. Ft.
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Latex Modified Concrete Wearing Surface (25 yr) Accuracy 1 Sq. Yd.

	Area (yd ²)	
App Slab 1	246	
Deck	441	(2009 rehab)
App Slab 2	236	
Total (from 2009 Rehab)	923	Sq. Yd.

Penetrating Concrete Sealer (10 yr) Accuracy 1 Sq. Yd.

Total (from 2009 Rehab)	441	Sq. Yd.
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Project: I-64 PEL Study
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MoDOT Job Number J613585

St. Louis County

8/1/2022

BRIDGE NO. 2 - L0669

Substructure Repair (Formed/Unformed)

(10/25 yr) Accuracy 1 Sq. Ft.

	Cap Front Face height (ft)	Cap Front Face Length (ft)	25% of Area (ft ²)	
Abut 1	4.7	117.61	137.2	
Abut 2	3.8	100.65	96.4	
Total			234	Sq. Ft.

Half-Sole Repair

(10/25 yr) Accuracy 50 Sq. Ft.

Replace removed existing repairs (25 yr only)	1460	
10% from approach slab	217	
Total (10 yr)	250	Sq. Ft.
Total (25 yr)	1700	Sq. Ft.

Epoxy Pressure Injecting

(10/25 yr) Accuracy 1 Lin. Ft.

	75% Height of Wall	# of Bays	Length (ft)	
Abut 1	17.0	6	102.2	
Abut 2	15.7	6	94.0	
Total			196	Lin. Ft.

Protective Coating - Concrete Bents and Piers (Epoxy)

(10/25 yr) Accuracy Lump Sum (SF for cost)

	Width / Height (ft)	Length(ft)	Area (ft ²)	
<u>Abut 1 (width/height from original plans as "average", length from 1977)</u>				
Backwall (front face)	3.917	117.61	460.6	
Top of Cap (original)	2.91667	117.61	343.0	
Cap (front face)	4.667	117.61	548.9	
Stem (front face)	22.72	117.61	2672.1	
<u>Abut 2 (width/height from original plans as "average", length from 1977)</u>				
Backwall (front face)	3.917	100.65	394.2	
Top of Cap	2.5	100.65	251.6	
Cap (front face)	3.833	100.65	385.8	
Stem (front face)	20.89	100.65	2102.6	
Total			7159	Sq. Ft.

Surface Preparation for Recoating Structural Steel

(25 yr) Accuracy 100 Sq. ft.

Per previous rehab (2008)		
Total	4400	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (L0669)
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Job #: 10333314

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MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Field Application of Inorganic Zinc Primer

(25 yr) Accuracy 100 Sq. ft.

Total	4400	Sq. Ft.
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Intermediate Field Coat (System G)

(25 yr) Accuracy 0.1 ton

Total	4400	Sq. Ft.
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Finish Field Coat (System G)

(25 yr) Accuracy 0.1 ton

Total	4400	Sq. Ft.
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Open Cell Foam Joint Seal (no armor)

(10/25 yr) Accuracy 1 Lin. Ft.

Total (from 2009 Rehab)	193	Lin. Ft.
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Project: I-64 PEL Study
Subject: No-Build Option (L0669)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Bridge Name: EB I-64 over Vandeventer WB I-64 On-Ramp
Bridge No. L0669
Rehab/Replace Alternative: 10 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Crack Filler

Scope:

Substructure repair & epoxy crack filler
Seal deck with silane
Apply concrete protective coating (epoxy) at abutments
Expansion jt. seal replacement
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2165000	Removal of Existing Expansion Joint Sealant	Lin. Ft.	193	\$71.50	\$13,799.50
7033013	Penetrating Concrete Sealer	Sq. Yd.	441	\$26.00	\$11,466.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	234	\$169.00	\$39,490.12
7040104	Half-Sole Repair	Sq. Ft.	250	\$104.00	\$26,000.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	196	\$117.00	\$22,960.67
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$55,835.00	\$55,835.00
7172054	Open Cell Foam Joint Seal (no armor)	Lin. Ft.	193	\$71.50	\$13,799.50
	TOTAL BASE COST =				\$183,350.78

Misc. Construction Costs (10%): \$18,335.08

Sub-total: \$201,685.86

Mobilization (6%): \$12,101.15

Total Rehab Cost (2022): \$213,787.01

Cost/SF of Bridge: \$49.70



Project: I-64 PEL Study
Subject: No-Build Option (L0669)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J613585
St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

Bridge Name: EB I-64 over Vandeventer WB I-64 On-Ramp
Bridge No. L0669
Rehab/Replace Alternative: 10 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Crack Filler

Unit Costs:

Add 30% to account for 2022 price increases

2165000	Removal of Existing Expansion Joint Sealant	Lin. Ft.	193	\$71.50
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$55.00</div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$71.50</div></div></div>				
7033013	Penetrating Concrete Sealer	Sq. Yd.	441	\$26.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$20.00</div><div>(<1000 Sq. Yd.)</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$26.00</div></div></div>				
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	234	\$169.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$130.00</div><div>(>100 Sq. Ft.)</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$169.00</div></div></div>				
7040104	Half-Sole Repair	Sq. Ft.	250	\$104.00
				\$78.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$80.00</div><div>(<1000 Sq. Ft.; 10 yr)</div></div><div><div>Pay Items 2021</div><div>\$60.00</div><div>(>1000 Sq. Ft.; 25 yr)</div></div></div>				
7040110	Epoxy Pressure Injecting	Lin. Ft.	196	\$117.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$90.00</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$117.00</div></div></div>				
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$55,835.00
<div><div><div>Reference</div><div>Unit Cost</div><div>Quantity</div></div><div><div>Pay Items 2021</div><div>\$6.00</div><div>7159</div><div>SF</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$55,835.00</div></div></div>				
7172054	Open Cell Foam Joint Seal (no armor)	Lin. Ft.	193	\$71.50
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$55.00</div><div>(>100 ft)</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$71.50</div></div></div>				
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	3967	\$3.25
<div><div><div>Reference</div><div>Unit Cost</div></div><div><div>Pay Items 2021</div><div>\$2.50</div><div>(<10000 SF)</div></div><div><div>Other</div><div>-</div></div><div><div>Use:</div><div>\$3.25</div></div></div>				



Project: I-64 PEL Study
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St. Louis County
8/1/2022

BRIDGE NO. 2 - L0669

2161503	Removal of Existing Deck Repair	Sq. Ft.	1460	\$52.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$40.00
Other	-
Use:	\$52.00

5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	923	\$130.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$100.00
Other	-
Use:	\$130.00

7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	4400	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$45.00 (paint in larger contract <6000SF)
Other	-
Use:	\$58.50

7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	4400	\$3.90
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$3.00 (paint in larger contract <6000SF)
Other	-
Use:	\$3.90

7125315A	Intermediate Field Coat (System G)	Sq. Ft.	4400	\$2.93
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$2.25 (paint in larger contract <6000SF)
Other	-
Use:	\$2.93

7125320A	Finish Field Coat (System G)	Sq. Ft.	4400	\$2.93
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$2.25 (paint in larger contract <6000SF)
Other	-
Use:	\$2.93



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Bridge Name:	WB I-64 over Sarah
Bridge No.	A3651
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro/Latex, etc.

Bridge Description

Original Construction:	1981
Superstructure Type:	P/S I-Girder
Span Arrangement:	46'-60'-48'
Roadway Width:	51'-5"
Out-to-Out Width:	54'-10"
AADT:	50,026 (2020); 62,533 (2040)

Condition

Deck:	6
Superstructure:	6
Substructure:	7
Sufficiency rating:	89.3%
Vertical Clearance:	

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Low severity issues. Does not meet current bridge rail standards.
Approach pavement	Poor Condition - urethane lifted both approaches Large longitudinal cracks and patches throughout. 6SF repaired in right lane previously. Settlement throughout Light wear on driving surface

Drainage, Expansion devices, Bank/slope & Deck protective components

Bank/Slope	Moderate undermining (large void on left side east end wing apron)
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Deck Components

Span 1	Driving surface: 10SF repaired previously. Heavy wheel lines. Moderate pitting. Moderate diagonal cracks at ends. Many transverse cracks, minor scaling, throughout. Bottom: Minor effl. At bottom/overhangs. Many transverse cracks on overhangs. 2% saturation on bottom. Minor spalls in bay 4 at construction joint.
Span 2	Driving surface: Moderate pitting. Heavy wheel lines. Minor scaling and many transverse cracks throughout. Bottom: Moderate effl. Throughout bottom and minor on overhangs. Medium transverse cracks on bottom and at overhang.
Span 3	Driving surface: Moderate pitting. Heavy wheel lines. Minor scaling and many transverse cracks throughout. Bottom: Minor effl on bottom and overhang. Few diagonal cracks. Rebar exposed and large spalls in bay 1 near abutment with transverse cracks. 1% saturation.



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Superstructure Components:

Span 1	Minor severity only
Span 2	Minor severity only
Span 3	Moderate saturation on girder casing (G1, G2 & G4)

Substructure Components:

Substructure components	only minor damage throughout. OK
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Clearance Information:

	15'-9"
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Structure Paint Information:

	-
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Requested Items:

Stencil bridge number
Seal joints (hot pour) - approach slab/deck; remove silicone and use preformed jt.
Span 3 Bay 1 bottom deck repair (spall)
Repair fence at north sides.
Replace approach slabs and fix broken curb at SW quadrant (2025)
Seal deck with in deck (2026)

Utility attachments:

	1" lighting conduit at bent 2
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Additional Recommendations

Provide open cell foam jt seal between abutment and slab
Replace approach slabs & add vertical drain at end bents
Assume 50 Sq. Ft. of half sole repair
Full depth repair on deck (assume 50 SF)
Superstructure repair (unformed) (assume 75SF)

Other Recommendations to Consider



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Bridge Name: WB I-64 over Sarah
Bridge No. A3651
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Scope/Recommendation:

Scarification & hydro demolition of deck
Replace approach slabs & add vertical drains at end bent
Latex modified concrete wearing surface
Superstructure repair (unformed)
Misc. half-sole and full depth repair on deck
Provide open cell foam jt. seal between abutment and slab

Existing properties/dimensions

Roadway Width	51.42 ft	
Deck width:	54.75 ft	Total deck area:
Deck length:	156.77 ft	8583.2 (ft ²)
Left Barrier length:	169.02 ft	
Right Barrier length:	176.02 ft	

Quantities

Class 1 Excavation Accuracy 5 Cu. Yd.
Assume 3' width excavated to bottom of diaphragm

	Height (ft)	Length (ft) (abut & wings)	Volume (yd ³)	
Abut 1	4.25	77.073	36.4	
Abut 4	4.25	68.5	32.3	
Total			70.0	Cu. Yd.

Scarification of Bridge Deck Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
Deck	51.42	156.77	895.6	
Total			896	Sq. Yd.

Total Surface Hydro Demolition Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
Deck	51.42	156.77	895.6	
Total			896	Sq. Yd.

Removal of Existing Deck Repair Accuracy 1 Sq. Ft.

Total	10	Sq. Ft.
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Removal and Replacement of Approach Slab Accuracy 1 Sq. Ft.

	Area (ft ²)	
App 1	1760.0	(Google Earth)
App 2	1500.0	(Google Earth)
Total	3260	Sq. Ft.

Latex Modified Concrete Wearing Surface Accuracy 1 Sq. Yd.

Total	896	Sq. Yd.
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Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Superstructure Repair (Unformed) Accuracy 1 Sq. Ft.

	75.0	
Total	75	Sq. Ft.

Half-Sole Repair Accuracy 50 Sq. Ft.

Total	50	Sq. Ft.
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Full Depth Repair Accuracy 50 Sq. Ft.

Total	50	Sq. Ft.
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Vertical Drain at End Bents Accuracy 1 Lin. Ft.

	Bent length (ft)	Wing lengths (both) (ft)	Total Length (ft)	
Abut 1	62.073	15	77.07	
Abut 4	59.54	8.92	68.46	
			146	Lin. Ft.

Open Cell Foam Joint System (no armor) Accuracy 1 Lin. Ft.

	Length(ft)	
Abut 1	62.1	
Abut 4	59.5	
Total	122	Lin. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Bridge Name: WB I-64 over Sarah
Bridge No. A3651
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Scope:

Scarification & hydro demolition of deck
Replace approach slabs & add vertical drains at end bent
Latex modified concrete wearing surface
Superstructure repair (unformed)
Misc. half-sole and full depth repair on deck
Provide open cell foam jt. seal between abutment and slab
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	70	\$58.50	\$4,095.00
2161000	Scarification of Bridge Deck	Sq. Yd.	896	\$15.60	\$13,971.70
2161001	Total Surface Hydro Demolition	Sq. Yd.	896	\$65.00	\$58,215.42
2161503	Removal of Existing Deck Repair	Sq. Ft.	10	\$52.00	\$520.00
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	3260	\$123.50	\$402,610.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	896	\$130.00	\$116,430.83
7040103	Superstructure Repair (Unformed)	Sq. Ft.	75	\$169.00	\$12,675.00
7040104	Half-Sole Repair	Sq. Ft.	50	\$104.00	\$5,200.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7151001	Vertical Drain at End Bents	Lin. Ft.	146	\$58.50	\$8,513.58
7172053	Open Cell Foam Joint System (no armor)	Lin. Ft.	122	\$71.50	\$8,695.44
	TOTAL BASE COST =				\$638,076.97

Misc. Construction Costs (10%): \$63,807.70

Sub-total: \$701,884.67

Mobilization (6%): \$42,113.08

Total Rehab Cost (2022): \$743,997.75

Cost/SF of Bridge: \$86.68



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

Bridge Name: WB I-64 over Sarah
Bridge No. A3651
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Unit Costs:

Add 30% to account for 2022 price increases

2169901	Class 1 Excavation	Cu. Yd.	70	\$58.50								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$45.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$58.50</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$45.00	Other	-	Use:	\$58.50
Reference	Unit Cost											
Pay Items 2021	\$45.00											
Other	-											
Use:	\$58.50											
2161000	Scarification of Bridge Deck	Sq. Yd.	896	\$15.60								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$12.00 (<2000 SY)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$15.60</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$12.00 (<2000 SY)	Other	-	Use:	\$15.60
Reference	Unit Cost											
Pay Items 2021	\$12.00 (<2000 SY)											
Other	-											
Use:	\$15.60											
2161001	Total Surface Hydro Demolition	Sq. Yd.	896	\$65.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$50.00 (<1000 SY)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$65.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$50.00 (<1000 SY)	Other	-	Use:	\$65.00
Reference	Unit Cost											
Pay Items 2021	\$50.00 (<1000 SY)											
Other	-											
Use:	\$65.00											
2161503	Removal of Existing Deck Repair	Sq. Ft.	10	\$52.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$40.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$52.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$40.00	Other	-	Use:	\$52.00
Reference	Unit Cost											
Pay Items 2021	\$40.00											
Other	-											
Use:	\$52.00											
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	3260	\$123.50								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$95.00 (used partial removal/replace price)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$123.50</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$95.00 (used partial removal/replace price)	Other	-	Use:	\$123.50
Reference	Unit Cost											
Pay Items 2021	\$95.00 (used partial removal/replace price)											
Other	-											
Use:	\$123.50											
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	896	\$130.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$100.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$130.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$100.00	Other	-	Use:	\$130.00
Reference	Unit Cost											
Pay Items 2021	\$100.00											
Other	-											
Use:	\$130.00											
7040103	Superstructure Repair (Unformed)	Sq. Ft.	75	\$169.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$130.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$169.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$130.00	Other	-	Use:	\$169.00
Reference	Unit Cost											
Pay Items 2021	\$130.00											
Other	-											
Use:	\$169.00											



Project: I-64 PEL Study
Subject: No-Build Option (A3651)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/21/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 3 - A3651

7040104	Half-Sole Repair	Sq. Ft.	50	\$104.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$80.00	(<1000 SF)
Other	-	
Use:	\$104.00	

7040106	Full Depth Repair	Sq. Ft.	50	\$143.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$110.00	(<100 SF)
Other	-	
Use:	\$143.00	

7151001	Vertical Drain at End Bents	Lin. Ft.	146	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$45.00	
Other	-	
Use:	\$58.50	

7172053	Open Cell Foam Joint System (no armor)	Lin. Ft.	122	\$71.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$55.00	(> 100 ft)
Other	-	
Use:	\$71.50	



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/28/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Bridge Name:	EB I-64 over Sarah
Bridge No.	A3893
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro/Latex, etc.

Bridge Description

Original Construction:	1982
Superstructure Type:	P/S I-Girder
Span Arrangement:	44'-61'-42'
Roadway Width:	59'-5"
Out-to-Out Width:	62'-9"
AADT:	48,870 (2020); 61,088 (2040)

Condition

Deck:	6
Superstructure:	7
Substructure:	7
Sufficiency rating:	91.6%
Vertical Clearance:	

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Minor severity issues with many vertical cracks throughout. Does not meet current standard for bridge rail.
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Approach pavement	Fair condition. (75 SF Repaired by MoDOT in 2018) Med. Delam at west end abutment & Mod. at NE edge Mod. spalls at south shoulder and longitudinal jt
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Drainage, Expansion devices, Bank/slope & Deck protective components

Bank/Slope	Moderate undermining (large void on left side east end wing apron)
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Deck Components

Span 1	Driving surface: Large diagonal cracks at ends. Minor pitting on driving surface. Longitudinal cracks at joints. Transverse cracks, medium wear, moderate efflorescence (& at const. jt), and many transverse cracks throughout Bottom: Large delam at bay 5& 6 near abut & bay 4 and 5. 2% saturation. Moderate spalls at bay 5 near abut and bay 4 at const. joint. Moderate rebar exposed. Transverse cracks, medium wear, moderate effl. (& at const. jt), and many transverse cracks throughout
Span 2	Driving surface: Medium wear and transverse cracks throughout. Longitudinal cracks at joints. Bottom: Diagonal cracks at bent 2 bay 4,5,&6 w/efflorescence. Moderate effl. on south side at bent 2. Light Effl. And transv. cracks at overhangs
Span 3	Driving surface: Medium wear and transverse cracks throughout. Longitudinal cracks at joints. Bottom: Moderate effl. throughout. Transverse cracks at overhangs and throughout.



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/28/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Superstructure Components:

Span 1

Span 2

Span 3

Moderate vertical cracks in diaphragms with efflorescence and leaching (minor)
small spall on G1 & G2 from collision. Delamination on girder encasement (bay 2, G2). Leaching at bottom of bay
4 const. jt. Transverse cracks in bott flange G3 near bent 3
Moderate vertical cracks in diaphragms with minor delam.

spall in G3



collision damage in G1



Substructure Components:

Substructure components

Minor issues only. OK

Clearance Information:

Min vert. clearance measured: 15'-5"

Structure Paint Information:

-

Requested Items:

Stencil bridge number
Seal joints (hot pour) - approach slab/deck; remove silicone and use preformed jt.
Repair conduit at column 1 bent 2 (see below)
Chip delams and seal @ span 1 bottom of deck
Repair erosion in slope protection.
Hydro demolition (include approach slabs)
Seal deck with in deck (2026)

Utility attachments:

1" Conduit at Bent 2

Additional Recommendations

Expansion jt seal
Half sole repair on approach slab (say 400 SF)
Full depth repair on deck (say 50 SF)
Replace conduit on Col 1 (assume 2")
Superstructure repair (unformed) (assume 2% deck & 10 ft of slab edge repair)
Substructure repair (formed/unformed) (assume 30 SF)
Crack filler (assume 50 LF)
Clean and epoxy coat girders with collision damage (assume 50SF)

Other Recommendations to Consider



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

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Checked by: MTW Date:07/28/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Conduit at Bent 2 Column 1



Approach Slabs





Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Bridge Name: EB I-64 over Sarah
Bridge No. A3893
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Scope/Recommendation:

Total hydro demolition and scarification of bridge deck
Remove and replace existing deck repair as needed
Latex modified concrete wearing surface
Superstructure repair (unformed) and slab edge repair for overhangs
Misc. half-sole and full depth repairs on deck and approach slab
Clean and epoxy coat girders with collision damage
Replace conduit on Column 1
Provide expansion joint seal at deck/approach slabs

Existing properties/dimensions

Roadway Width	59.42 ft	
Deck width:	62.75 ft	Total deck area:
Deck length:	149.79 ft	9399.3 (ft ²)
Left Barrier length:	166.93 ft	
Right Barrier length:	176.07 ft	

Quantities

Scarification of Bridge Deck

Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
App Slab 1			254	(Google earth)
Deck	59.42	149.79	988.9	
App Slab 2			220	(Google earth)
Total			1463	Sq. Yd.

Total Surface Hydro Demolition

Accuracy 1 Sq. Yd.

	Width (ft)	Length(ft)	Area (yd ²)	
App Slab 1			254	(Google earth)
Deck	59.42	149.79	988.9	
App Slab 2			220	(Google earth)
Total			1463	Sq. Yd.

Removal of Existing Deck Repair

Accuracy 1 Sq. Ft.

Total	250	Sq. Ft.
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Latex Modified Concrete Wearing Surface

Accuracy 1 Sq. Yd.

Total	1463	Sq. Yd.
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Substructure Repair (Formed/Unformed)

Accuracy 1 Sq. Ft.

Total	30	Sq. Ft.
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Superstructure Repair (Unformed)

Accuracy 1 Sq. Ft.

2% from deck area	188.0	
Total	188	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J613585
St. Louis County
8/1/2022
Half-Sole Repair

Bridge No. 4 - A3893

	Accuracy	50 Sq. Ft.
Total	400	Sq. Ft.

Full Depth Repair	Accuracy	50 Sq. Ft.
Total	50	Sq. Ft.

Slab Edge Repair (Bridges)	Accuracy	1 Lin. Ft.
Assume 10'		
Total	10	Lin. Ft.

Epoxy Pressure Injecting	Accuracy	1 Lin. Ft.
Total	50	Lin. Ft.

Cleaning and Epoxy Coating	Accuracy	1 Sq. Ft.
Total	20	Sq. Ft.

Conduit System on Structure	Accuracy	Lump Sum (LF for cost)
	Length(ft)	
Along column 1	13.667	
Along cap	17	
Total	31	Lin. Ft.

Preformed Silicone Expansion Joint Seal (no armor)	Accuracy	1 Lin. Ft.
	Length(ft)	
Abut 1	68.3	
Abut 4	65.8	
Total	135	Lin. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/28/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Bridge Name: EB I-64 over Sarah
Bridge No. A3893
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Scope:

Total hydro demolition and scarification of bridge deck
Remove and replace existing deck repair as needed
Latex modified concrete wearing surface
Superstructure repair (unformed) and slab edge repair for overhangs
Misc. half-sole and full depth repairs on deck and approach slab
Clean and epoxy coat girders with collision damage
Replace conduit on Column 1
Provide expansion joint seal at deck/approach slabs
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	1463	\$15.60	\$22,822.80
2161001	Total Surface Hydro Demolition	Sq. Yd.	1463	\$52.00	\$76,076.00
2161503	Removal of Existing Deck Repair	Sq. Ft.	250	\$52.00	\$13,000.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	1463	\$130.00	\$190,190.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	30	\$201.50	\$6,045.00
7040103	Superstructure Repair (Unformed)	Sq. Ft.	188	\$169.00	\$31,772.00
7040104	Half-Sole Repair	Sq. Ft.	400	\$78.00	\$31,200.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	10	\$260.00	\$2,600.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	50	\$117.00	\$5,850.00
7040113	Cleaning and Epoxy Coating	Sq. Ft.	20	\$117.00	\$2,340.00
7071000	Conduit System on Structure	Lump Sum	1	\$1,391.00	\$1,391.00
7174001	Preformed Silicone Expansion Joint Seal (no armor)	Lin. Ft.	135	\$104.00	\$14,040.00
	TOTAL BASE COST =				\$404,476.80

Misc. Construction Costs (10%): \$40,447.68

Sub-total: \$444,924.48

Mobilization (6%): \$26,695.47

Total Rehab Cost (2022): \$471,619.95

Cost/SF of Bridge: \$50.18



Project: I-64 PEL Study
Subject: No-Build Option (A3893)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date:07/28/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 4 - A3893

Bridge Name: EB I-64 over Sarah
Bridge No. A3893
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex, etc.

Unit Costs:

Add 30% to account for 2022 price increases

2161000	Scarification of Bridge Deck	Sq. Yd.	1463	\$15.60
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Reference	Unit Cost
Pay Items 2021	\$12.00 (<2000 SY)
Other	-
Use:	\$15.60

2161001	Total Surface Hydro Demolition	Sq. Yd.	1463	\$52.00
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Reference	Unit Cost
Pay Items 2021	\$40.00 (>1000 SY)
Other	-
Use:	\$52.00

2161503	Removal of Existing Deck Repair	Sq. Ft.	250	\$52.00
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Reference	Unit Cost
Pay Items 2021	\$40.00
Other	-
Use:	\$52.00

5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	1463	\$130.00
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Reference	Unit Cost
Pay Items 2021	\$100.00
Other	-
Use:	\$130.00

7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	30	\$201.50
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Reference	Unit Cost
Pay Items 2021	\$155.00 (<100 SF)
Other	-
Use:	\$201.50

7040103	Superstructure Repair (Unformed)	Sq. Ft.	188	\$169.00
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Reference	Unit Cost
Pay Items 2021	\$130.00
Other	-
Use:	\$169.00

7040104	Half-Sole Repair	Sq. Ft.	400	\$78.00
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Reference	Unit Cost
Pay Items 2021	\$60.00 (<5000 SF)
Other	-
Use:	\$78.00

7040106	Full Depth Repair	Sq. Ft.	50	\$143.00
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Reference	Unit Cost
Pay Items 2021	\$110.00 (<100 SF)
Other	-
Use:	\$143.00



Project: I-64 PEL Study
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St. Louis County
8/1/2022

Bridge No. 4 - A3893

7040107	Slab Edge Repair (Bridges)	Lin. Ft.	10	\$260.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$200.00
Other	-
Use:	\$260.00

7040110	Epoxy Pressure Injecting	Lin. Ft.	50	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$90.00
Other	-
Use:	\$117.00

7040113	Cleaning and Epoxy Coating	Sq. Ft.	20	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$90.00	(<100 SF)
Other	-	
Use:	\$117.00	

7071000	Conduit System on Structure	Lump Sum	1	\$1,391.00
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<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>
Pay Items 2021	\$35.00	31 LF
Other	-	
Use:	\$1,391.00	

7174002	Preformed Silicone Expansion Joint Seal (no armor)	Lin. Ft.	135	\$104.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$80.00
Other	-
Use:	\$104.00



Project: I-64 PEL Study
Subject: No-Build Option (L0667)
Task: Cost Estimates
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 5 - L0667

Bridge Name:	EB I-64
Bridge No.	L0667
Rehab/Replace Alternative:	50 Yr Fix or Replacement
10/25/50 Yr Remark (original):	(50 Yr) - Superstructure Replacement and Substructure Repair, etc.

Bridge Description

Original Construction:	1956
Superstructure Type:	Continuous Steel Plate Girder
Span Arrangement:	87'-67"-128'-67"-113'-113'-68'-114'-114'-65'-111'-123'-123.5'-101'

Roadway Width:	56'-0"
Out-to-Out Width:	63'-0"
AADT:	48,870 (2020); 61,088 (2040)

Condition

Deck:	4
Superstructure:	6
Substructure:	6
Sufficiency rating:	75.9%
Vertical Clearance:	Varies

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Superstructure replacement. Does not meet current standard for bridge rail.
Approach pavement	"Fair": Large delam on driving surface w/moderate rebar exposed, spalls, and long. cracks

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing surface	Superstructure replacement; "poor"
Expansion Devices	Strip seal (abut 1) Finger plates (bent 5,7,11) Strip Seal (abut 15)

Deck Components

All spans	Superstructure replacement; Heavy rusting/deterioration throughout.
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Project: I-64 PEL Study
Subject: No-Build Option (L0667)
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St. Louis County

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Superstructure Components:

All spans

Bridge No. 5 - L0667

Superstructure replacement; deterioration throughout.
Cracking at connection plates replaced previously

Substructure Components:

Abut 1

Backwall: Few diagonal cracks
Beam Cap: Few horizontal cracks; sealed
Rocker expansion bearings: light rusting throughout

Bent 2

Beam cap: sealed.

Column: Few patches throughout

Fixed Pedestal (rotating) bearings: -

Bent 3

Beam cap: Few horizontal cracks and patches throughout; sealed.

Column: Few patches throughout (col 2,3,4)

Rocker expansion bearings: -

Bent 4

Beam cap: seal peeling

Column: seal near bent cap peeling. Few patches throughout

Rocker expansion bearings: -

Bent 5

Beam cap: few horiz. cracks on cap face and few patches throughout. Sealed.

Column: -

Rocker expansion bearings: -

Hanger pins/strap: light rusting throughout

Bent 6

Beam cap: Many patches throughout. sealed.

Column: Few patches throughout

Fixed Pedestal (rotating) bearings: -

Bent 7

Beam cap: few patches throughout. Sealed.

Column: few patches throughout

Rocker expansion bearings: -

Hanger pins/strap: minor section loss at top and bottom of strap.

(G3, 4th diap. e/o bent 6, north side of span 6.

Bent 8

Beam cap: few patches throughout. seal peeling

Column: few patches throughout

Rocker expansion bearings: -

Bent 9

Beam cap: few patches throughout. seal peeling

Column: few patches throughout

Rocker expansion bearings: -

Bent 10

Beam cap: small delam on south end. sealed

Column: few horizontal cracks, vertical cracks, and patches throughout.

Rocker expansion bearings: -

Bent 11

Beam cap: few horiz. cracks and patches throughout. Sealed.

Column: -

Fixed Pedestal (rotating) bearings: -

Hanger pins/strap: light rusting throughout. Moderate section loss behind hanger plate @ G1

Bent 12

Beam cap: few horiz. cracks, vertical cracks and patches throughout. Sealed.

Column: few spalls and vertical cracks throughout.

Rocker expansion bearings: -

Bent 13

Beam cap: many patches throughout. sealed

Column: few patches throughout

Rocker expansion bearings: -

Bent 14

Beam cap: few patches throughout. sealed.

Column: -

Fixed Pedestal (rotating) bearings: -

Abut 15

Backwall: med. delam. throughout. Mod. vert. cracks throughout. Sealed.

Beam Cap: Med. delam, mod. effl., mod. spalls, and many vertical/horizontal cracks throughout. Moderate spalls at G8 bearing seat. Sealed.

Rocker expansion bearings: moderate tipping throughout.



Project: I-64 PEL Study
Subject: No-Build Option (L0667)
Task: Cost Estimates
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 5 - L0667

Clearance Information:

Varies

Structure Paint Information:

B System Basic Lead Chromium Green (1983); S System Cal
Sulph/Lead Paint (2006)

Requested Items:

Stencil Bent #s west to east
Seal asphalt wearing surface joint seam
Seal joints with hot pour
Clean/flush drains
Flush strip seals
Redeck/replace superstructure (2027)

Utility attachments:

2" conduit (broken at Abut 1&15, G8)

Additional Recommendations

Crack filler at each bent (Assume 10' per bent/abut)
Substructure repair (formed/unformed) (assume 1% of each bent
face, except abut 15; assume 3%.)
Substructure protective coating at all bents
Replace Approach Slabs

Other Recommendations to Consider



Project: I-64 PEL Study
Subject: No-Build Option (L0667)
Task: Cost Estimates
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St. Louis County
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Bridge No. 5 - L0667

Bridge Name: EB I-64
Bridge No. L0667
Rehab/Replace Alternative: 50 Yr Fix or Replacement
10/25/50 Yr Remark (original): (50 Yr) - Superstructure Replacement and Substructure Repair, etc.

Scope/Recommendation:
Superstructure replacement (assume pedestals required for new bearings)
Approach Slab replacement
Crack filler and substructure repair throughout
Substructure protective coating

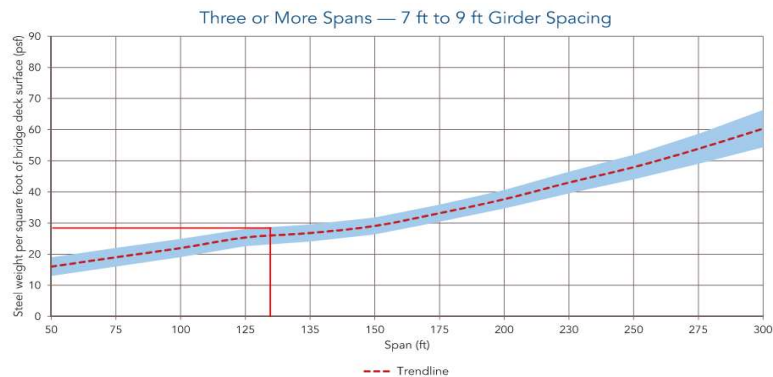
Existing properties/dimensions

Roadway Width	56.00 ft	
Deck width:	59.3333 ft	Total deck area:
Deck length:	1391.00 ft	82532.6 (ft ²)
App Slab 1 Length	20.00 ft	(est. from google earth)
App Slab 2 Length	20.00 ft	(est. from google earth)
Left Barrier length:	1416.00 ft	
Right Barrier length:	1404.00 ft	
Steel Weight	1983 tons	(Existing; inspection report)

From NSBA Charts
3+ Spans with 8'-6" spacing 25 lb/ft² (max span 128')

Estimated weight	2,063,316 lb
+15% for misc. steel	309,497 lb

Total weight for replacement
superstructure 2,372,813 lb



(NSBA Steel Span Weight Curves 2019)



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Bridge No. 5 - L0667

Quantities

Class 1 Excavation

Accuracy 5 Cu. Yd.

Assume 3' width excavated to bottom of diaphragm

	Height (ft)	Length (ft)	Volume (yd ³)	
Abut 1	6.125	87.75	59.7	
Abut 15	5.91	63.3	41.5	
Total			100.0	Cu. Yd.

Removal of Existing Superstructure (steel superstructure)

Accuracy Lump Sum (SF for cost)

Quantity for unit cost

	Area (ft ²)	
Deck	82532.6	
Total	82533	Sq. Ft.

Removal and Replacement of Approach Slab

Accuracy 1 Sq. Ft.

	Area (ft ²)	
App Slab 1	1186.7	
App Slab 2	1186.7	
Total	2373	Sq. Ft.

Class B-1 Concrete (Substructure)

Accuracy 0.1 Cu. Yd.

Assume 2'-0"x2'-0"x1'-0" pedestal at end bents (8 @ 2 bents)

Assume 3'-3"x3'-3"x1'-0" pedestal at intermediate bents (8 @ 13 bents)

	Area (ft ²)	Height (ft)	Volume (yd ³)	
Abut Pedestal (x16)	4	1	1.2	
Int. Bent Pedestal (x104)	10.6	1	40.7	
Total			50.0	Cu. Yd.

Slab on Steel

Accuracy 1 Sq. Yd.

	Area (yd ²)	
Deck	9170.3	
Total	9170	Sq. Yd.

Type D Barrier

Accuracy 1 Lin. Ft.

	Length (ft)	
Left	1416.0	
Right	1404.0	
Total	2820	Sq. Ft.



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Bridge No. 5 - L0667

Substructure Repair (Formed/Unformed)

Accuracy 1 Sq. Ft.

See Protective Coating Quantities for Bent Face Areas used

	Cap/Col. Face		Repair Area (ft ²)	
	Area (ft ²)	% Repair		
Abut 1	893	1%	8.9	
Bent 2, 6, 11, 14	7285	1%	72.9	
Bent 3	4534	1%	45.3	
Bent 4	4004	1%	40.0	
Bent 5, 7, 12, 13	6966	1%	69.7	
Bent 8	3962	1%	39.6	
Bent 9	3713	1%	37.1	
Bent 10	3828	1%	38.3	
Abut 15	1197	3%	35.9	
Total			388	Sq. Ft.

Epoxy Pressure Injecting

Accuracy 1 Lin. Ft.

	Length (ft)	Bents	Total Length (ft)	
10' Per Bent	10	15	150	
Total			150	Lin. Ft.

Reinforcing Steel (Epoxy)

Accuracy 10 Lb.

	Density (lb/CY)	Concrete Vol. (CY)	Weight (lb)	
	120	50.0	6000.0	
Total			6000	Lb.

Conduit System on Structure

Accuracy Lump Sum (LF for cost)

	Length(ft)	
Along right side of bridge (replace existing, assume 2 conduits)	2921.10	(add 5% to length of bridge for misc. lengths)
Total	2921	Lin. Ft.



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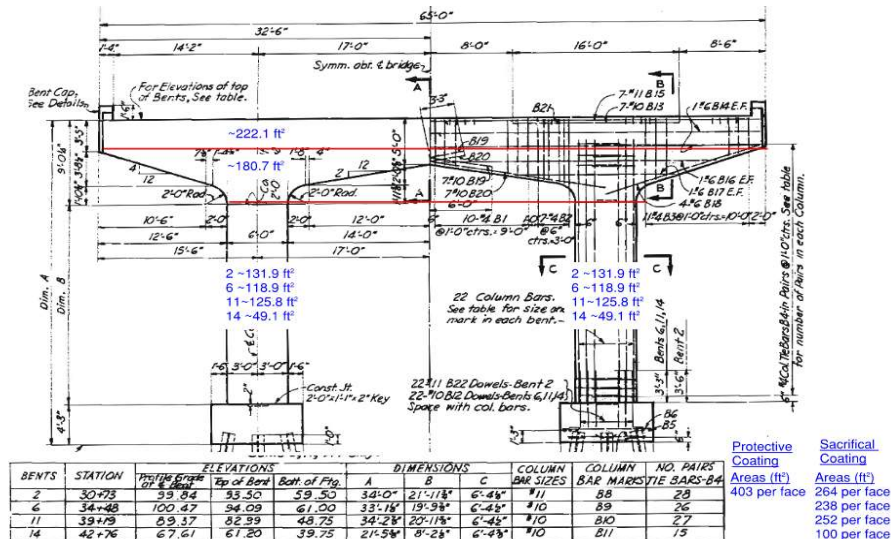
Bridge No. 5 - L0667

Protective Coating - Concrete Bents and Piers (Epoxy)

Accuracy Lump Sum (SF for cost)

Abut 1	Height/Width (ft)	Length (ft)	Area (ft ²)
Backwall Front Face	6.125	63.25	387.4
Top of Cap	2	63.25	126.5
Cap Front Face	6	63.25	379.5
Total Area		893	Sq. Ft.

Bent 2, 6, 11, 14	Height/Width (ft)	Length/Height (ft)	Area (ft ²)
Top of Cap (x 4)	3.25	65	845.0
Side Face (x 16)	3.25	9.0	468.0
Bent Face (x 8)	-	-	3224.0
Col. Side Face (x 16)	3.25	20.0	1040.0
Bent 2 Col. face (x 2)	-	-	528.0
Bent 6 Col. face (x 2)	-	-	476.0
Bent 11 Col. face (x 2)	-	-	504.0
Bent 14 Col. face (x 2)	-	-	200.0
Total Area for Protective Coating		4537	Sq. Ft.
Total Area for Sacrificial Graffiti Protection		2748	Sq. Ft.



Protective Coating Areas (ft²)
403 per face

Sacrificial Coating Areas (ft²)
264 per face
238 per face
252 per face
100 per face



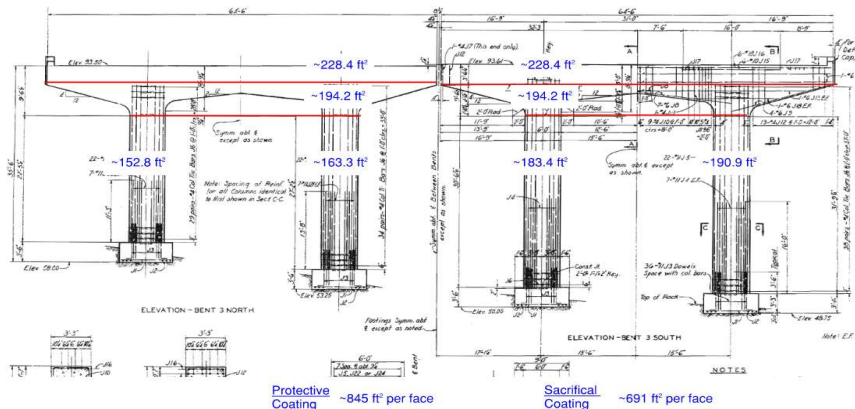
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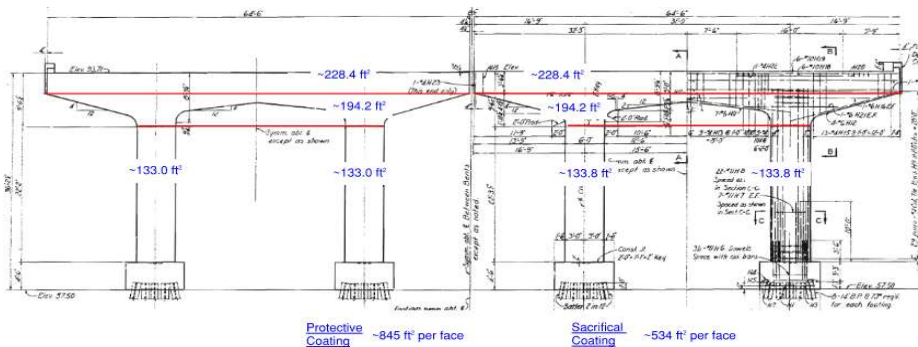
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Bridge No. 5 - L0667

Bent 3	Height/Width (ft)	Length (ft)	Area (ft ²)
Top of Cap	3.25	129	419.3
Side Face (x 8)	3.25	9.5	247.0
Bent Face (see below * 2)	-	-	1690.0
Col. Side Face (x 8)	3.25	30.6	795.6
Col. face (x 2)	-	-	1382.0
Total Area for Protective Coating			2356
Total Area for Sacrificial Graffiti Protection			2178



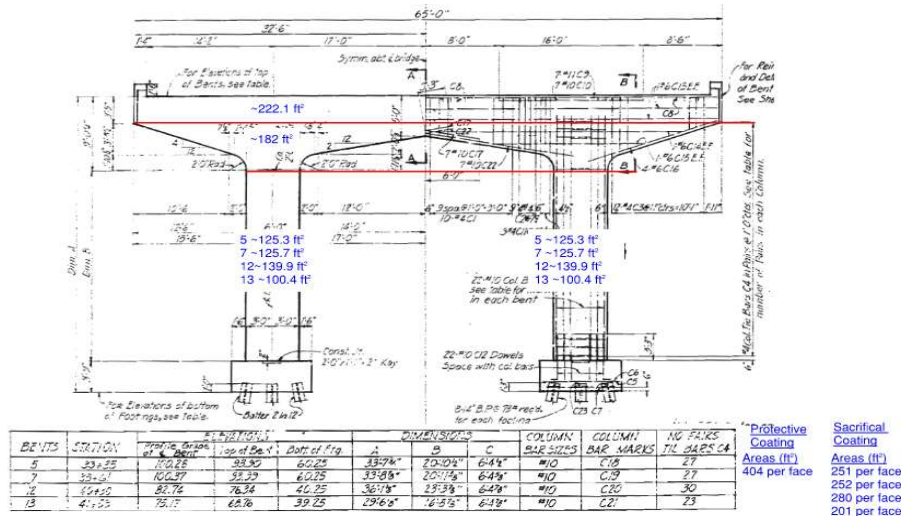
Bent 4	Height/Width (ft)	Length (ft)	Area (ft ²)
Top of Cap	3.25	129	419.3
Side Face (x 8)	3.25	9.5	247.0
Bent Face (see below * 2)	-	-	1690.0
Col. Side Face (x 8)	3.25	22.3	579.8
Col. face (x 2)	-	-	1068.0
Total Area for Protective Coating			2356
Total Area for Sacrificial Graffiti Protection			1648



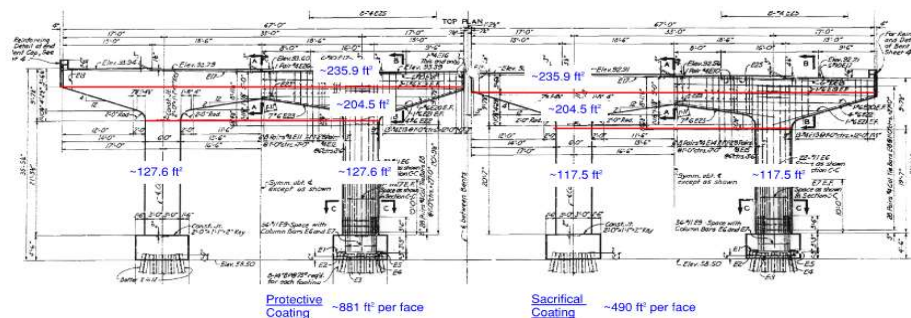
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Bridge No. 5 - L0667

Bent 5, 7, 12, 13	Height/Width (ft)	Length (ft)	Area (ft ²)	
Top of Cap (x 4)	3.25	65	211.3	
Side Face (x 16)	3.25	9.0	468.0	(used middle height)
Bent Face (x 8)	-	-	3232.0	
Col. Side Face (x 16)	3.25	20.9	1086.8	
Bent 5 face (x 2)	-	-	502.0	
Bent 7 face (x 2)	-	-	504.0	
Bent 12 face (x 2)	-	-	560.0	
Bent 13 face (x 2)	-	-	402.0	
Total Area for Protective Coating			3911	Sq. Ft.
Total Area for Sacrificial Grafititi Protection			3055	Sq. Ft.



Bent 8	Height/Width (ft)	Length (ft)	Area (ft ²)	
Top of Cap	3.25	134	435.5	
Side Face (x 8)	3.25	9.6	249.2	
Bent Face (see below * 2)	-	-	1762.0	
Col. Side Face (x 8)	3.25	20.6	535.6	
Col. face (x 2)	-	-	980.0	
Total Area for Protective Coating			2447	Sq. Ft.
Total Area for Sacrificial Grafitti Protection			1516	Sq. Ft.



Bent 9	Height/Width (ft)	Length (ft)	Area (ft ²)	
Top of Cap	3.25	134	435.5	
Side Face (x 8)	3.25	9.6	249.6	(used middle height)
Bent Face (see below * 2)	-	-	1762.0	
Col. Side Face (x 8)	3.25	17.9	465.4	
Col. face (x 2)	-	-	800.0	
Total Area for Protective Coating			2447	Sq. Ft.
Total Area for Sacrificial Graffiti Protection			1265	Sq. Ft.

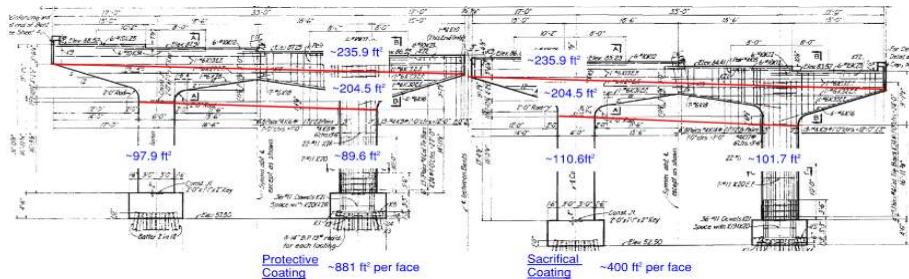


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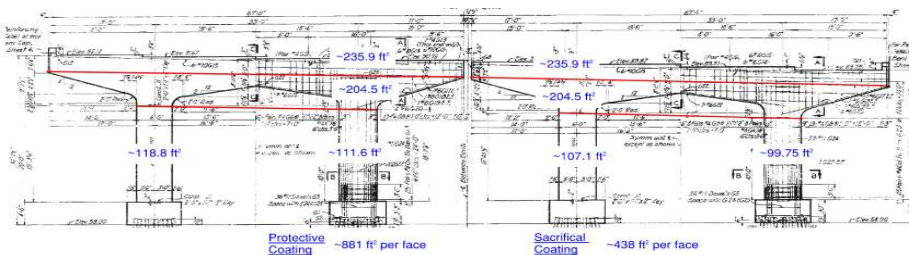
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Bridge No. 5 - L0667



Bent 10	Height/Width (ft)	Length (ft)	Area (ft ²)
Top of Cap	3.25	134	435.5
Side Face (x 8)	3.25	9.6	249.6
Bent Face (see below * 2)	-	-	1762.0
Col. Side Face (x 8)	3.25	19.4	504.4
Col. face (x 2)	-	-	876.0
Total Area for Protective Coating			2447
Total Area for Sacrificial Graffiti Protection			1380



Abut 15	Height/Width (ft)	Length (ft)	Area (ft ²)
Backwall Front Face	5.91	61	360.5
Top of Cap	2	61	122.0
Ca/Stem Front Face	11.3333	63	714.0
Total Area			1197
Total Estimated Area of Protective Coating			22592
Say			23000
Total Estimated Area of Sacrificial Graffiti Protection Sys.			13790
Say			14000



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Bridge No. 5 - L0667

Expansion Device (Finger Plate)

Accuracy 1 Lin. Ft.

	Length (ft)	
Bent 5	59.333	
Bent 7	59.333	
Bent 11	59.333	
Total	178	Lin. Ft.

Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W

Accuracy 10 Lb.

	Weight (lb)	
Assume steel weight replaced as-is	2,372,813	
Total	2372813	Lb.

Slab Drain with Grate

Accuracy Each

	Each	
42 existing	42	
Additional 4	4	
Total	46	Each

Drainage System on Structure

Lump Sum (Lin. Ft. for estimate)

	Bridge Length	
Total	1391.0	Lin. Ft.

Intermediate Field Coat System (System G)

Accuracy 100 Sq. Ft.

Per MoDOT Pay item spreadsheet for plate girders, estimate 135 sq. ft. per ton.

	Bridge Length (ft)	Weight (tons) -> SF	
	1391.00	160200	
Total		160200	Sq. Ft.

Finish Field Coat System (System G)

Accuracy 100 Sq. Ft.

Assume 10' from each joint in both directions (bents 1, 5, 7, 11, 15; 8 total lengths of 10)

	Bridge Length (ft)	Weight (tons) -> SF	Equivalent Sq. Ft. for 10' of length	
10' at joints (8 girders)	1391.00	160165	1151.4	(use all 8 to be conservative)
fascia girder (~1 girder+5%)		20021	21022	
Total (x 8)		22200	Sq. Ft.	

Vertical Drain at End Bents

(50 yr)

Accuracy 1 Lin. Ft.

	Bent length (ft)	Wing lengths (both) (ft)	Total Length (ft)	
Abut 1	63.25	24.5	87.75	
Abut 15	63.25	-	63.25	
			151	Lin. Ft.

Laminated Neoprene Bearing Pad Assembly

Accuracy Each

	# of Bearings	
3 pin/hanger spans * 8 girders	24	
8 per bent; 15 bents	120	
Total	144	Each

Strip Seal Expansion Joint System

Accuracy 1 Lin. Ft.

	Length (ft)	
Abut 1	59.3333	
Abut 15	59.3333	
Total	119	Lin. Ft.



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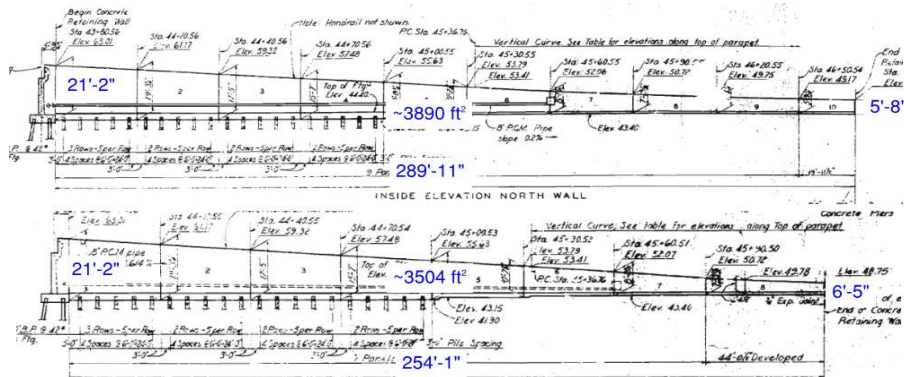
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Bridge Replacement

Bridge No. 5 - L0667

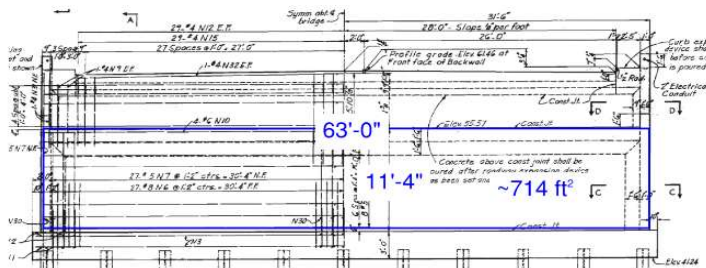
Total Bridge area removed and replaced:	Area (ft ²) 82532.6	
	82533	Sq. Ft.

MSE Wall at Abut 15 (see below)	Area (ft ²) 8108.0	
	8108	Sq. Ft.

Side Walls



Front Face



MoDOT Job Number J613585
St. Louis County
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Bridge No. 5 - L0667

Bridge Name:	EB I-64
Bridge No.	L0667
Rehab/Replace Alternative:	50 Yr Fix
10/25/50 Yr Remark (original):	(50 Yr) - Superstructure Replacement and Substructure Repair, etc.

Scope:

Superstructure replacement (girders, bearings, drains, barriers, expansion joints) (assume pedestals required for new bearings)
 Approach slab replacement and vertical drains at end bents added
 Crack filler and substructure repair throughout
 Substructure protective coating
 Drainage system on structure replaced
 Protective coating on bent caps and sacrificial graffiti protection on columns

Assume staging of rehabilitation work required and increase cost for seismic retrofit.

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	100	\$58.50	\$5,850.00
2169901	Removal of Existing Superstructure (steel superstructure)	Lump Sum	1	\$1,072,929.00	\$1,072,929.00
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	2373	\$123.50	\$293,106.50
7034001	Class B-1 Concrete (Substructure)	Cu. Yd.	50.0	\$2,730.00	\$136,500.00
7034212	Slab on Steel	Sq. Yd.	9170	\$377.00	\$3,457,199.76
7034219A	Type D Barrier	Lin. Ft.	2820	\$110.50	\$311,610.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	388	\$169.00	\$65,528.29
7040110	Epoxy Pressure Injecting	Lin. Ft.	150	\$117.00	\$17,550.00
7071000	Conduit System on Structure	Lump Sum	1	\$132,912.00	\$132,912.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	6000	\$3.77	\$22,620.00
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$179,400.00	\$179,400.00
7110400	Sacrificial Graffiti Protection System	Lump Sum	1	\$18,200.00	\$18,200.00
7120900	Expansion Device (Finger Plate)	Lin. Ft.	178	\$2,600.00	\$462,799.74
7121122	Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W	Lb.	2372813	\$4.23	\$10,025,134.93
7123611	Slab Drain with Grate	Each	46	\$5,460.00	\$251,160.00
7123620	Drainage System (On Structure)	Lump Sum	1	\$542,490.00	\$542,490.00
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	160200	\$2.60	\$416,520.00
7125370A	Finish Field Coat System (System G)	Sq. Ft.	22200	\$2.60	\$57,720.00
7151001	Vertical Drain at End Bents	Lin. Ft.	151	\$58.50	\$8,833.50
7162000	Laminated Neoprene Bearing Pad Assembly	Each	144	\$2,730.00	\$393,120.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	119	\$546.00	\$64,974.00
	TOTAL BASE COST =				\$17,936,157.72

Misc. Construction Costs (15%):	\$2,690,423.66
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Sub-total:	\$20,626,581.38
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Mobilization (6%): \$1,237,594.88

*Surveying (1%): \$101,272.06

Total Rehab Cost (2022): \$21,965,448.33

*1% for surveying cost does not include base fabricated structural steel or superstructure paint cost.

Cost/SF of Bridge: \$266.14



Project: I-64 PEL Study
Subject: No-Build Option (L0667)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/28/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 5 - L0667

Unit Costs:

Add 30% to account for 2022 price increases

2169901	Class 1 Excavation	Cu. Yd.	100	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$45.00
Other	-
Use:	\$58.50

2169901	Removal of Existing Superstructure (steel superstructure)	Lump Sum	1	\$1,072,929.00
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<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>
Pay Items 2021	\$10.00	82533 Sq. Ft.
Other	-	
Use:	\$1,072,929.00	

2169904	Removal and Replacement of Approach Slab	Sq. Ft.	2373	\$123.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$95.00	(use partial remove/
Other	-	replace cost)
Use:	\$123.50	

7034001	Class B-1 Concrete (Substructure)	Cu. Yd.	50.0	\$2,730.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$2,100.00	(<100 Cu. Yd.)
Other	-	
Use:	\$2,730.00	

7034212	Slab on Steel	Sq. Yd.	9170	\$377.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$290.00	(>1000 Sq. Yd.)
Other	-	
Use:	\$377.00	

7034219A	Type D Barrier	Lin. Ft.	2820	\$110.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$85.00	(>600 ft.)
Other	-	
Use:	\$110.50	

7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	388	\$169.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$130.00	(>100 Sq. Ft.)
Other	-	
Use:	\$169.00	

7040110	Epoxy Pressure Injecting	Lin. Ft.	150	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$90.00
Other	-
Use:	\$117.00



Project: I-64 PEL Study
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St. Louis County
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Bridge No. 5 - L0667

7071000	Conduit System on Structure	Lump Sum	1	\$132,912																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td><u>Quantity</u></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$35.00</td><td>2921</td><td>Lin. Ft.</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$132,912.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>			Pay Items 2021	\$35.00	2921	Lin. Ft.		Other	-				Use:	\$132,912.00			
<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>																						
Pay Items 2021	\$35.00	2921	Lin. Ft.																					
Other	-																							
Use:	\$132,912.00																							
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	6000	\$3.77																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$2.90</td><td>(<10000 lb)</td><td></td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$3.77</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2.90	(<10000 lb)			Other	-				Use:	\$3.77			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2.90	(<10000 lb)																						
Other	-																							
Use:	\$3.77																							
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$179,400																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td><u>Quantity</u></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$6.00</td><td>23000</td><td>Sq. Ft.</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$179,400.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>			Pay Items 2021	\$6.00	23000	Sq. Ft.		Other	-				Use:	\$179,400.00			
<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>																						
Pay Items 2021	\$6.00	23000	Sq. Ft.																					
Other	-																							
Use:	\$179,400.00																							
7110400	Sacrificial Graffiti Protection System	Lump Sum	1	\$18,200																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td><u>Quantity</u></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>\$1.00</td><td>14000</td><td>Sq. Ft.</td><td></td></tr><tr><td>Other</td><td>-</td><td></td><td></td><td></td></tr><tr><td>Use:</td><td>\$18,200.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>			Pay Items 2021	\$1.00	14000	Sq. Ft.		Other	-				Use:	\$18,200.00			
<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>																						
Pay Items 2021	\$1.00	14000	Sq. Ft.																					
Other	-																							
Use:	\$18,200.00																							
7120900	Expansion Device (Finger Plate)	Lin. Ft.	178	\$2,600.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td colspan="3"></td></tr><tr><td>Pay Items 2021</td><td>\$2,000.00</td><td colspan="3"></td></tr><tr><td>Other</td><td>-</td><td colspan="3"></td></tr><tr><td>Use:</td><td>\$2,600.00</td><td colspan="3"></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2,000.00				Other	-				Use:	\$2,600.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2,000.00																							
Other	-																							
Use:	\$2,600.00																							
7121122	Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50W	Lb.	2372813	\$4.23																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td colspan="3"></td></tr><tr><td>Pay Items 2021</td><td>\$3.25</td><td colspan="3"></td></tr><tr><td>Other</td><td>-</td><td colspan="3"></td></tr><tr><td>Use:</td><td>\$4.23</td><td colspan="3"></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$3.25				Other	-				Use:	\$4.23			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$3.25																							
Other	-																							
Use:	\$4.23																							
7123611	Slab Drain with Grate	Each	46	\$5,460.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td colspan="3"></td></tr><tr><td>Pay Items 2021</td><td>-</td><td colspan="3"></td></tr><tr><td>I-435 MO River Bridge Bidtabs (2021 cost)</td><td>4200.0</td><td colspan="3"></td></tr><tr><td>Use:</td><td>\$5,460.00</td><td colspan="3"></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	-				I-435 MO River Bridge Bidtabs (2021 cost)	4200.0				Use:	\$5,460.00			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	-																							
I-435 MO River Bridge Bidtabs (2021 cost)	4200.0																							
Use:	\$5,460.00																							
7123620	Drainage System (On Structure)	Lump Sum	1	\$542,490.00																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td><u>Quantity</u></td><td colspan="2"></td></tr><tr><td>Pay Items 2021</td><td>-</td><td></td><td></td><td></td></tr><tr><td>I-435 MO River Bridge Bidtabs (2021 cost)</td><td>\$300.00</td><td>1391</td><td>Lin. Ft.</td><td></td></tr><tr><td>Use:</td><td>\$542,490.00</td><td></td><td></td><td></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>			Pay Items 2021	-				I-435 MO River Bridge Bidtabs (2021 cost)	\$300.00	1391	Lin. Ft.		Use:	\$542,490.00			
<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>																						
Pay Items 2021	-																							
I-435 MO River Bridge Bidtabs (2021 cost)	\$300.00	1391	Lin. Ft.																					
Use:	\$542,490.00																							
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	160200	\$2.60																				
<table><tr><td><u>Reference</u></td><td><u>Unit Cost</u></td><td colspan="3"></td></tr><tr><td>Pay Items 2021</td><td>\$2.00</td><td>(>6000 SF)</td><td colspan="2" rowspan="3"></td></tr><tr><td>Other</td><td>-</td><td colspan="3"></td></tr><tr><td>Use:</td><td>\$2.60</td><td colspan="3"></td></tr></table>					<u>Reference</u>	<u>Unit Cost</u>				Pay Items 2021	\$2.00	(>6000 SF)			Other	-				Use:	\$2.60			
<u>Reference</u>	<u>Unit Cost</u>																							
Pay Items 2021	\$2.00	(>6000 SF)																						
Other	-																							
Use:	\$2.60																							



Project: I-64 PEL Study
Subject: No-Build Option (L0667)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 5 - L0667

7125370A	Finish Field Coat System (System G)	Sq. Ft.	22200	\$2.60
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$2.00	(>6000 SF)
Other	-	
Use:	\$2.60	

7151001	Vertical Drain at End Bents	Lin. Ft.	151	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$45.00	
Other	-	
Use:	\$58.50	

7162000	Laminated Neoprene Bearing Pad Assembly	Each	144	\$2,730.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$2,100.00	
Other	-	
Use:	\$2,730.00	

7172001	Strip Seal Expansion Joint System	Lin. Ft.	119	\$546.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$420.00	(>100 ft)
Other	-	
Use:	\$546.00	

Replacement Costs:

-	Remove Bridge	Sq. Ft.	82533	\$26.00
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<u>Reference</u>		
I-29 Viaduct (steel bridge staged over RR and streets) :	\$20.00 /SF	(HDR Est. 2021)
Conway (void slab on interstate):	\$20.00 /SF	(HDR Est 2021)
Say:	\$26.00 /SF	

-	14-Span Continuous Composite Steel Plate Girder Bridge	Sq. Ft.	82533	\$396.50
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<u>Reference</u>		
I-29 Viaduct (steel bridge staged over RR and streets) :	\$305.00 /SF	(HDR Est. 2021)
Say:	\$396.50 /SF	

-	MSE Walls	Sq. Ft.	8108	\$119.60
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<u>Reference</u>		
Conway Wall+stain	\$92.00 /SF	
Assume any temp walls added into cost/sf, Say:	\$119.60 /SF	



Project: I-64 PEL Study
Subject: No-Build Option (A3594)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 08/01/22

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 6 - A3594

Bridge Name:	WB I-64
Bridge No.	A3594
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro-latex, full repaint, expansion joint replacement, rehab, (50 Yr) - Deck Replacement & Full Repaint

Bridge Description

Original Construction:	1982
Superstructure Type:	Continuous Steel Plate Girder
Span Arrangement:	56 Span Bridge
Roadway Width:	51'-5"
Out-to-Out Width:	54'-10"
AADT:	38,765 (2020); 48,456 (2040)

Condition

Deck:	7
Superstructure:	7
Substructure:	6
Sufficiency rating:	91.1%
Vertical Clearance:	-

Inspection Notes (NOTE: Many individual comments in insp. report are over 10 years old)

Railing and App Pavement Components and Ratings

Barrier	Light effl. and many vertical cracks throughout. Does not meet current standards for bridge rail.
Approach pavement	Large long. cracks on west end. Small patches at east end lane 3 and 25SF of patches on west approach. Small fracture at approach joint on west end lane 3.

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing surface	2in low slump concrete throughout (1982) - Good condition
Expansion Devices	Abut 1- Elastomeric Comp. Seal Bent 4-Elastomeric Strip Seal Bent 8-Elastomeric Strip Seal Bent 12-Finger Plate Bent 16-Finger Plate Bent 20-Finger Plate Bent 24-Finger Plate Bent 28-Finger Plate Bent 31-Finger Plate Bent 36-Finger Plate Bent 38-Elastomeric Strip Seal Bent 42-Finger Plate Bent 46-Elastomeric Strip Seal Bent 50-Elastomeric Strip Seal Bent 53-Elastomeric Strip Seal Abut 57-Elastomeric Comp. Seal

Deck Components

All spans	All overhangs: light effl. and few transv. Cracks
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Project: I-64 PEL Study
Subject: No-Build Option (A3594)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 08/01/22

MoDOT Job Number J613585

St. Louis County

8/1/2022

Superstructure Components:

All spans

Light to medium rusting at many locations

Bridge No. 6 - A3594

Substructure Components:

All Bents

Light rusting at several bearings throughout bridge

Bent 2

Open horizontal cracks on SW corner

Bent 14

Light vertical and horizontal cracks at random and on columns

Bent 20

Slender right column

Bent 24

Large delam at right column groundline

Bent 25

Large spalls at groundline (cannot see in google earth)

Bent 28

Minor scrapes from collision on right column

Missing keeper at G5 bearing

Bent 29

Large spalls at groundline (cannot see in google earth)

Bent 30

Mod. Vertical cracks throughout column

Bent 31

Few delam at groundline

Bent 34

Few delam at groundline

Bent 35

Few vertical cracks on top of right column

Bent 38

Minor spalls throughout column

Bent 40

Few horizontal and vertical cracks throughout column

Bent 44

Few vertical cracks throughout column

Bent 45

Minor vertical cracks at top of column

Bent 46

Moderate vertical cracks at north end of beam cap, moderate vertical cracks on exterior column

Bent 50

Minor delam at groundline of column 2

Bent 51

Minor vertical cracks at beam cap exterior column

Bent 52

Few horizontal and vertical cracks throughout beam cap

Bent 53

Few spalls throughout bottom of beam cap

Bent 54

Map cracked throughout bottom of column (patches), minor vertical cracks on beam cap at exterior column

Bent 56

Minor vertical cracks on beam cap at exterior column

Abut 57

Few spalls and large vertical cracks throughout backwall



Project: I-64 PEL Study
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 6 - A3594

Clearance Information:

Varies

Structure Paint Information:

C System Inorganic Zinc/Vinyl Green (original 1983); 1 System Cal-Alum Sulph/Sys C Gray (2006)

Requested Items:

Seal Joints
Flush deck and finger joints of debris
Fill spalls at joint areas with asphalt throughout bridge
Many columns throughout bridge with large spalls, rebar exposed, and delam.
Expansion device replacements, hydro/latex, full repaint (2025)

Utility attachments:

-

Additional Recommendations

Crack filler (Assume 10' per for 1/3 of the columns)
Substructure repair (formed/unformed) (Assume 30 Sq Ft for 1/4 of the columns)
Protective coating on concrete caps beneath expansion joints and 10' of column for bents 20-41 (alongside EB I-64)

Other

Examples of deterioration at columns:

Bent 24 (~ 4'x7')





Project: I-64 PEL Study
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Bent 34 (~2'x4')

Bridge No. 6 - A3594





Project: I-64 PEL Study
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MoDOT Job Number J613585
 St. Louis County
 8/1/2022

Bridge No. 6 - A3594

Bridge Name:	WB I-64
Bridge No.	A3594
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro-latex, full repaint, expansion joint replacement, rehab, etc. (50 Yr) - Deck Replacement & Full Repaint

Scope/Recommendation:

Total hydro demolition (25 Yr)
 Remove and replace existing half-sole repairs (25 Yr)
 Latex modified concrete overlay (25 Yr)
 Remove and replace expansion joints (25 Yr)
 Substructure repairs (formed/unformed) and epoxy crack filler (25/50 Yr)
 Protective coating on concrete bents (epoxy) (25/50 Yr)
 Full repaint (25/50 Yr)
 Deck replacement (barriers, expansion joints, drains) (50 Yr)
 Replace drainage system on structure (50 Yr)
 Remove and replace approach slab and add vertical drains at end bents (50 Yr)

Existing properties/dimensions

Roadway Width	51.42 ft (insp. rpt)			
Main Deck width:	54.833 ft (insp. rpt)	Main deck area:		
Main Deck length:	5403.00 ft (insp. rpt)	296262.7 (ft ²)		Total
A3740 Extension Roadway Width	24.83 ft			316134.7 (ft²)
A3740 Extension Width	28.17 ft	Approximate 3740 Extension Area:		
A3740 Extension Length	214.00 ft	12404.0 (ft ²)	(est. from google earth)	
A3741 Extension Roadway Width	24.83 ft	Approximate 3741 Extension Area:		
A3741 Extension Width	28.17 ft	7468.0 (ft ²)	(est. from google earth)	
A3741 Extension Length	198.00 ft			
App Slab 1 Length	20.00 ft	(est. from google earth)		
App Slab 2 Length	20.00 ft	(est. from google earth)		
Left Barrier length:	5815.00 ft (say main bridge+both 3740 and 3741)			
Right Barrier length:	5617.00 ft (say main bridge+3740)			
Steel Weight	4838 tons	(Existing)		

Total Surface Hydro Demolition (25 yr) Accuracy 1 Sq. Yd.

	Total Deck area w/App Slabs (ft ²)	Approx. deck area under barrier (ft ²)	Area (yd ²)	
	318191.37	19053.3	33238	
Total			33238	Sq. Yd.

Removal of Concrete Wearing Surface (25 yr) Accuracy 1 Sq. Ft.

Total	299142	Sq. Ft.
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Removal of Existing Deck Repair Accuracy 1 Sq. Ft.

Total (inspection report)	25	Sq. Ft.
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Project: I-64 PEL Study
Subject: No-Build Option (A3594)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 6 - A3594

Removal of Existing Expansion Joint & Adjacent Concrete (25 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
Abut 1 Comp Seal System	54.8	
Abut 57 Comp Seal System	54.8	
6 Strip Seals	329.00	
8 Finger Plates	438.66	
Additional Finger Plate length at Bent 31 (A3740 extension)	27.00	
Additional Taper length at Bent 38	2.00	
Additional Taper length at Bent 42	2.00	
Total	909.00	Lin. Ft.

Remove and Replace Barrier Curb (25 yr) Accuracy 1 Lin. Ft.
Assume 3' for each barrier (left and right) removed and replaced

	Length (ft)	
14 expansions joints replaced	84.0	
Total	84	Lin. Ft.

Latex Modified Concrete Wearing Surface (25 yr) Accuracy 1 Sq. Yd.
Total **33238** **Sq. Yd.**

Class B-2 Concrete Length (ft) Accuracy 0.1 Cu. Yard
Assume 18"x18" removed and replace on each side of expansion joint

	Length (ft)	Area (ft ²)	Volume (yd ³)	
	909.00	5	151.5	
Total			151.5	Cu. Yd.

Superstructure Repair (Unformed) (25/50 yr) Accuracy 1 Sq. Ft.

	Area (ft ²)	Total # of columns	Total Area (ft ²)	
30 Sq Ft for 1/4 of all columns	30	110	825	
Total			825	Sq. Ft.

Epoxy Pressure Injecting Accuracy 1 Lin. Ft.

	Length (ft)	Total # of columns	Total Length (ft)	
10' for 1/3 of all columns	10	110	366.67	
Total			367.0	Lin. Ft.

Reinforcing Steel (Epoxy Coated) (25 yr) Accuracy 10 Lb.
Reinforcing for deck at expansion joint replacement

	Concrete volume (CY)	Weight (lb)	
Assume 270 lb/CY	151.5	40905	
Total		40910	Lb.



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Bridge No. 6 - A3594

Protective Coating - Concrete Bents and Piers (Epoxy)

Accuracy Lump Sum (SF for cost)

Coat 10' of columns at bents 20-41 (columns along I-64 EB); use 5'-6" as diameter (see pg 185 for ref, Dia A)

	Diameter (ft)	Area per column (ft ²)	Total Area (ft ²)
42 columns	5.5	172.8	7257.1
			7257 Sq. Ft.

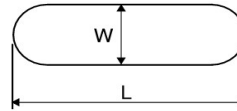
Bents beneath expansion joints with concrete caps (1,4,8,12,46,50,53,57). Pg numbers for PDF of plans noted for reference.

Abut 1 (pg 151)

Cap/Backwall Length	54.5	ft
Cap Width	2.625	ft
Backwall Height	4.9167	ft
Cap Height	5.000	ft
Cap Face Area:	683.52	ft ²

Bent 4 (pg 155)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	4.250	ft
Cap Face Area:	457.36	ft ²

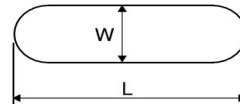


Bent 8 (pg 157)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	3.750	ft
Cap Face Area:	403.56	ft ²

Bent 12 (pg 158)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	3.750	ft
Cap Face Area:	403.56	ft ²

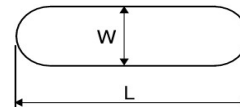


Bent 46 (pg 220)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	3.750	ft
Cap Face Area:	403.56	ft ²

Bent 50 (pg 223)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	3.583	ft
Cap Face Area:	385.62	ft ²



Bent 53 (pg 226)

Cap Length	52	ft
Cap Width	3.1667	ft
Cap Height	3.833	ft
Cap Face Area:	412.52	ft ²



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Bridge No. 6 - A3594

Abut 57 (pg 229)		
Cap/Backwall Length	54.5	ft
Cap Width	3.21	ft
Backwall Height	4.9167	ft
Cap Height	5.000	ft
Cap Face Area:	715.41	ft ²

Total Area of Protective Coating **11122** **Sq. Ft.**

Expansion Device (Finger Plate) (25/50 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
8 Finger Plates	438.664	
Additional Finger Plate length at Bent 31 (A3740 extension)	27.000	
Additional Taper length at Bent 42	2.000	
Total	466	Lin. Ft.

Surface Preparation for Recoating Structural Steel (25/50 yr) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for plate girders, estimate 135 sq. ft. per ton.		
Total	653100	Sq. Ft.

Field Application of Inorganic Zinc Primer (25/50 yr) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for plate girders, estimate 135 sq. ft. per ton.		
Total	653100	Sq. Ft.

Intermediate Field Coat (System G) (25/50 yr) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for plate girders, estimate 135 sq. ft. per ton.		
Total	653100	Sq. Ft.

Finish Field Coat (System G) (25/50 yr) Accuracy 100 Sq. ft.

Per MoDOT Pay item spreadsheet for plate girders, estimate 135 sq. ft. per ton.		
Total	653100	Sq. Ft.

Preformed Compression Seal Expansion Joint System (25/50 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
Abut 1	54.83	
Abut 57	54.83	
Total	110	Sq. Ft.

Strip Seal Expansion Joint System (25/50 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
6 Strip Seals	329.00	
Additional Taper length at Bent 38	2.00	
Total	331	Sq. Ft.



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Class 1 Excavation

Assume 3' width excavated to bottom of diaphragm

Bridge No. 6 - A3594

(50 yr) Accuracy 5 Cu. Yd.

	Height (ft)	Length (ft)	Volume (yd ³)	
Abut 1	4.9167	89.5	48.9	
Abut 15	4.9167	86.5	47.3	
Total			95.0	Cu. Yd.

Removal of Existing Bridge Deck

(50 yr) Accuracy 1 Sq. Ft.

	Area (ft ²)	
	316135	
Total	316135	Sq. Ft.

Removal and Replacement of Approach Slab

(50 yr) Accuracy 1 Sq. Ft.

	Area (ft ²)	
App Slab 1	1028.3	
App Slab 2	1028.3	
Total	2057	Sq. Ft.

Slab on Steel

(50 yr) Accuracy 1 Sq. Yd.

(Assume 4" taken in on each side for Type D barrier)

	Total Removed Area (ft ²)	8" Barrier Area (ft ²)	Area (yd ²)	
	316135	7621.3	34279	
Total			34279	Sq. Yd.

Type D Barrier

(50 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
Left Barrier	5815.0	
Right Barrier	5617.0	
Total	11432	Lin. Ft.

Slab Drain with Grate

(50 yr) Accuracy Each

45 drains between bents 1 and 42. Assume 1.5 drains per span

	# of spans	# of drains	
	56	84	
		84	Each

Drainage System (On Structure)

(50 yr) Accuracy Lump Sum (use lin. ft. to est.)

Assume a cost per Lin. Ft. of bridge length

	Length (ft)	
	5403.00	
	5403	Lin. Ft.

Vertical Drain at End Bents

(50 yr) Accuracy 1 Lin. Ft.

	Bent length (ft)	Wing lengths (both) (ft)	Total Length (ft)	
Abut 1 (pg 151)	54.5	35	89.5	
Abut 57 (pg 229)	54.5	32	86.50	
			176	Lin. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3594)
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Bridge No. 6 - A3594

Bridge Name: WB I-64
Bridge No. A3594
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro-latex, full repaint, expansion joint replacement, rehab, etc.

Scope:

Total hydro demolition
Remove and replace existing half-sole repairs
Latex modified concrete overlay
Remove and replace expansion joints
Substructure repairs (formed/unformed) and epoxy crack filler
Protective coating on concrete bents (epoxy)
Full repaint
--

Assume staging of rehabilitation work required.

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161001	Total Surface Hydro Demolition	Sq. Yd.	33238	\$52.00	\$1,728,376.00
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	299142	\$2.80	\$836,101.89
2161503	Removal of Existing Deck Repair	Sq. Ft.	25	\$52.00	\$1,300.00
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	909.0	\$455.00	\$413,595.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	84	\$910.00	\$76,440.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	33238	\$130.00	\$4,320,940.00
7034214	Class B-2 Concrete	Cu. Yd.	151.5	\$2,860.00	\$433,290.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	825	\$169.00	\$139,425.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	367	\$117.00	\$42,939.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	40910	\$2.86	\$117,002.60
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$86,749.00	\$86,749.00
7120900	Expansion Device (Finger Plate)	Lin. Ft.	466	\$2,600.00	\$1,211,600.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	653100	\$32.50	\$21,225,750.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	653100	\$3.25	\$2,122,575.00
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7125370A	Finish Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7171001	Preformed Compression Seal Expansion Joint System	Lin. Ft.	110	\$409.50	\$45,045.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	331	\$546.00	\$180,724.91
	TOTAL BASE COST =				\$36,377,973.40

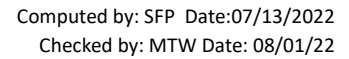
Misc. Construction Costs (15%): \$5,456,696.0

Sub-total: \$41,834,669.41

Mobilization (6%): \$2,510,080.2

Total Rehab Cost (2022): \$44,344,749.57

Cost/SF of Bridge: \$140.27



Bridge No. 6 - A3594

Bridge Name:	WB I-64
Bridge No.	A3594
Rehab/Replace Alternative:	50 Yr Fix
10/25/50 Yr Remark (original):	(50 Yr) - Deck Replacement & Full Repaint

Scope:

- Deck replacement (barriers, expansion joints, drains)
- Replace drainage system on structure
- Remove and replace approach slab and add vertical drains at end bents
- Substructure repairs (formed/unformed) and epoxy crack filler
- Protective coating on concrete bents (epoxy)
- Full repaint

Assume staging of rehabilitation work required and increase cost for seismic retrofit.

Say 15% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	95	\$58.50	\$5,557.50
2162500	Removal of Existing Bridge Deck	Sq. Ft.	316135	\$11.05	\$3,493,291.75
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	2057	\$123.50	\$253,998.35
7034212	Slab on Steel	Sq. Yd.	34279	\$377.00	\$12,923,294.70
7034219A	Type D Barrier	Lin. Ft.	11432	\$110.50	\$1,263,236.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	825	\$169.00	\$139,425.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	367	\$117.00	\$42,939.00
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$86,749.00	\$86,749.00
7120900	Expansion Device (Finger Plate)	Lin. Ft.	466	\$2,600.00	\$1,211,600.00
7123611	Slab Drain with Grate	Each	84	\$5,460.00	\$458,640.00
7123620	Drainage System (On Structure)	Lump Sum	1	\$2,107,170.00	\$2,107,170.00
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	653100	\$32.50	\$21,225,750.00
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	653100	\$3.25	\$2,122,575.00
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7125370A	Finish Field Coat System (System G)	Sq. Ft.	653100	\$2.60	\$1,698,060.00
7151001	Vertical Drain at End Bents	Lin. Ft.	176	\$58.50	\$10,296.00
7171001	Preformed Compression Seal Expansion Joint System	Lin. Ft.	110	\$409.50	\$45,045.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	331	\$546.00	\$180,724.91
	TOTAL BASE COST =				\$48,966,412.21

Misc. Construction Costs (15%):	\$7,344,961.8
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Sub-total:	\$56,311,374.04
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Mobilization (6%): \$3,378,682.4

*Surveying (1%):	\$295,669.3
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Total Rehab Cost (2022):	\$59,985,725.78
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Cost/SF of Bridge: \$189.75

*1% for surveying cost does not include base superstructure paint cost.



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St. Louis County
11/8/2022

Bridge No. 6 - A3594

Unit Costs:

Add 30% to account for 2022 price increases

2169901	Class 1 Excavation	Cu. Yd.	95	\$58.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$45.00	
		Other	-	
		<u>Use:</u>	\$58.50	
2161001	Total Surface Hydro Demolition	Sq. Yd.	33238	\$52.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$40.00	(>1000 SY)
		Other	-	
		<u>Use:</u>	\$52.00	
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	299142	\$2.80
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2.15	(>10000 SF)
		Other	-	
		<u>Use:</u>	\$2.80	
2161503	Removal of Existing Deck Repair	Sq. Ft.	25	\$52.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$40.00	
		Other	-	
		<u>Use:</u>	\$52.00	
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	909.0	\$455.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$350.00	
		Other	-	
		<u>Use:</u>	\$455.00	
2169903	Remove and Replace Barrier Curb	Lin. Ft.	84	\$910.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$700.00	
		Other	-	
		<u>Use:</u>	\$910.00	
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	33238	\$130.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$100.00	
		Other	-	
		<u>Use:</u>	\$130.00	
7034214	Class B-2 Concrete	Cu. Yd.	151.5	\$2,860.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2,200.00	(>100 CY but exp jt only. Use mid-range)
		Other	-	
		<u>Use:</u>	\$2,860.00	
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	825	\$169.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$130.00	(>100 SF)
		Other	-	
		<u>Use:</u>	\$169.00	
7040110	Epoxy Pressure Injecting	Lin. Ft.	367	\$117.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$90.00	
		Other	-	
		<u>Use:</u>	\$117.00	



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7101000	Reinforcing Steel (Epoxy Coated)	Lb.	40910	\$2.86
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2.20	(>10000 lb. say OK for exp jt only)
		Other	-	
		Use:	\$2.86	
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$86,749.00
		<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>
		Pay Items 2021	\$6.00	11122 Sq. Ft.
		Other	-	
		Use:	\$86,749.00	
7120900	Expansion Device (Finger Plate)	Lin. Ft.	466	\$2,600.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2,000.00	
		Other	-	
		Use:	\$2,600.00	
7125200	Surface Preparation for Recoating Structural Steel	Sq. Ft.	653100	\$32.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$20.00	(>6000 sf and larger contract)
		Other	-	
		Use:	\$32.50	
7125210	Field Application of Inorganic Zinc Primer	Sq. Ft.	653100	\$3.25
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2.50	(>6000 sf and larger contract)
		Other	-	
		Use:	\$3.25	
7125365A	Intermediate Field Coat System (System G)	Sq. Ft.	653100	\$2.60
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2.00	(>6000 sf and larger contract)
		Other	-	
		Use:	\$2.60	
7125370A	Finish Field Coat System (System G)	Sq. Ft.	653100	\$2.60
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$2.00	(>6000 sf and larger contract)
		Other	-	
		Use:	\$2.60	
7171001	Preformed Compression Seal Expansion Joint System	Lin. Ft.	110	\$409.50
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$315.00	
		Other	-	
		Use:	\$409.50	
7172001	Strip Seal Expansion Joint System	Lin. Ft.	331	\$546.00
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$420.00	(>100 ft)
		Other	-	
		Use:	\$546.00	
2162500	Removal of Existing Bridge Deck	Sq. Ft.	316135	\$11.05
		<u>Reference</u>	<u>Unit Cost</u>	
		Pay Items 2021	\$8.50	(>100 ft)
		Other	-	
		Use:	\$11.05	



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11/8/2022

Bridge No. 6 - A3594

2169904	Removal and Replacement of Approach Slab	Sq. Ft.	2057	\$123.50
		Reference	Unit Cost	
		Pay Items 2021	\$95.00	(use partial remove/ replace cost)
		Other	-	
		Use:	\$123.50	
7034212	Slab on Steel	Sq. Yd.	34279	\$377.00
		Reference	Unit Cost	
		Pay Items 2021	\$290.00	(>1000 SY)
		Other	-	
		Use:	\$377.00	
7034219A	Type D Barrier	Lin. Ft.	11432	\$110.50
		Reference	Unit Cost	
		Pay Items 2021	\$85.00	(>600 LF)
		Other	-	
		Use:	\$110.50	
7123611	Slab Drain with Grate	Each	84	\$5,460.00
		Reference	Unit Cost	
		Pay Items 2021	-	
		I-435 River Bridge Bidtabs (2021 cost)	\$4,200.00	
		Use:	\$5,460.00	
7123620	Drainage System (On Structure)	Lump Sum	1	\$2,107,170.00
		Estimate cost per foot of bridge for replacement of drainage structures		
		Reference	Unit Cost	Quantity
		Pay Items 2021	-	
		I-435 River Bridge Rehab Bidtabs	\$300.00	5403 ft
		Use:	\$2,107,170.00	
7151001	Vertical Drain at End Bents	Lin. Ft.	176	\$58.50
		Reference	Unit Cost	
		Pay Items 2021	\$45.00	
		Other	-	
		Use:	\$58.50	



Project: I-64 PEL Study
Subject: No-Build Option (A3740)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
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8/1/2022

Bridge No. 7 - A3740

Bridge Name:	WB I-64 On-Ramp from Grand over Fill
Bridge No.	A3740
Rehab/Replace Alternative:	10/25 Yr Fix
10/25/50 Yr Remark (original):	(10 Yr) - Expansion joint replacement & EP Overlay, etc. (25 Yr) - Expansion joint replacement & Hydro/Latex, etc.

Bridge Description

Original Construction:	1981
Superstructure Type:	P/S I-Girder
Span Arrangement:	61'-61'-61'-61'-60'
Roadway Width:	24'-10"
Out-to-Out Width:	28'-2"
AADT:	5,946 (2020); 7,433 (2040)

Condition

Deck:	7
Superstructure:	7
Substructure:	6
Sufficiency rating:	97.8%
Vertical Clearance:	-

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Minor severity only. Does not meet current standard for bridge rail.
Approach pavement	Minor severity only. OK

Drainage, Expansion devices, Bank/slope & Deck protective components

Drainage	Drain at Bent 3, attached to Col 1
Expansion Jt.	Moderate deterioration with debonding throughout, missing 5.5'

Deck Components

All spans	Moderate delamination/pitting/cracks/scaling throughout. Ligh wear on driving surface. Cracks on overhangs: Span 2 south side (few), Span 3 north and south side (minor), Span 4 south side (few)
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Project: I-64 PEL Study
Subject: No-Build Option (A3740)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 7 - A3740

Superstructure Components:

All spans

Minor issues only. OK

Substructure Components:

Bent 1

Medium horizontal cracks on bearing seat.
Few horizontal and vertical cracks and small spalls on cap face
Small delam on top of cap on north end

Bent 2

Small delam @ top of column 1
Rust stains and scrapes on Col 1
Scaling throughout

Bent 3

Minor issues only

Bent 4

Minor issues only

Bent 5

epoxy seal throughout (graffiti guard)

Abut 6

Minor issues only

Clearance Information:

-

Structure Paint Information:

-

Requested Items:

Stencil bridge number
Clean and Seal Bent 1 cap under joint
Clean out debris at east abutment
Cut and brush trees on slope
Repair guardrail SE quadrant
Clean Drain @ bent 3 on left side
Seal deck with Silane (2024)
EPO Deck and app slab; replace expansion joint at bent 1 (2025)

Utility attachments:

-

Additional Recommendations

Substructure repairs (say 5% formed/unformed of bent 1 cap face and 100 ft of epoxy injection to cover all minor issues throughout bent) (10/25 yr)
Protective coating at bent 1 (10/25 yr)
Superstructure repair on overhang (assume 1% of deck area and 15' of slab edge repair from damage noted at multiple spans) (10/25 yr)

Other Recommendations to Consider



Project: I-64 PEL Study
 Subject: No-Build Option (A3740)
 Task: Cost Estimates
 Job #: 10333314

Computed by: SFP Date: 07/13/2022
 Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
 St. Louis County
 8/1/2022

Bridge No. 7 - A3740

Bridge Name: WB I-64 On-Ramp from Grand over Fill
Bridge No. A3740
Rehab/Replace Alternative: 10/25 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Expansion joint replacement & EP Overlay, etc.
 (25 Yr) - Expansion joint replacement & Hydro/Latex, etc.

Scope/Recommendation:

Epoxy Polymer Overlay (10 yr)
 Scarification of Bridge Deck (10/25 yr)
 Total Hydro Demolition (25 yr)
 Latex Modified Concrete overlay (25 yr)
 Expansion Joint replacement (10/25 yr)
 Epoxy Pressure Injecting/Substructure repairs (formed/unformed) (10/25 yr)
 Protective Coating Concrete (Epoxy) at Bent 1 (10/25 yr)
 Superstructure repair (unformed) & slab edge repair (10/25 yr)

Existing properties/dimensions

Roadway Width	24.83 ft	
Deck width:	28.167 ft	Total deck area:
Deck length:	305.46 ft	8603.9 (ft ²)
Left Barrier length:	313.46 ft	
Right Barrier length:	313.46 ft	
Approach Length:	18.00 ft (insp. report)	

Expansion Joint Replacement:
 Expansion length from 3740 305.46 ft (concrete)
 Expansion length from 3594 101.46 ft (steel) (1/2 length from Slab plan, pg 358 of As-built plans)
 Total Expansion from temp: 3.826 in

Use Strip Seal to replace existing expansion joint

Quantities

Scarification of Bridge Deck (10/25 yr) Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)
Bridge + Approach Slab	24.83	323.46	892
Total			892 Sq. Yd.

Total Surface Hydro Demolition (25 yr) Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)
	24.83	323.46	892
Total			892 Sq. Yd.

Removal of Existing Expansion Joint & Adjacent Concrete (10/25 yr) Accuracy 1 Lin. Ft.

	Length (ft)
Total	29 Lin. Ft.

Remove and Replace Barrier Curb (10/25 yr) Accuracy 1 Lin. Ft.

Assume 3' for each barrier (left and right) removed and replaced

	Length (ft)
	12.0
Total	12 Lin. Ft.

Latex Modified Concrete Wearing Surface (25 yr) Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)
Bridge + Approach Slab	24.83	323.46	892
Total			892 Sq. Yd.



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Subject: No-Build Option (A3740)
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Epoxy Polymer Wearing Surface

Bridge No. 7 - A3740

(10 yr) Accuracy 1 Sq. Yd.

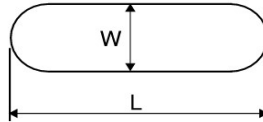
	Width (ft)	Length (ft)	Area (yd ²)	
Bridge + Approach Slab	24.83	323.46	892	
Total			892	Sq. Yd.

Class B-2 Concrete (10/25 yr) Accuracy 0.1 Cu. Yard
Assume 18"x18" removed and replace on each side of expansion joint

	Length (ft)	Area (ft ²)	Volume (yd ³)	
	28.167	5	4.7	
Total			4.7	Cu. Yd.

Substructure Repair (Formed/Unformed) (10/25 yr) Accuracy 1 Sq. Ft.

Bent 1
Cap Length 26.75 ft
Cap Width 3.667 ft
Cap Height 5.115 ft
Cap Face Area: 295.04 ft²



	Area (ft ²)	
5% from face of cap	14.8	
Total	15	Sq. Ft.

Superstructure Repair (Unformed) (10/25 yr) Accuracy 1 Sq. Ft.

	Area (ft ²)	
1% from deck area	86.0	
Total	86	Sq. Ft.

Slab Edge Repair (Bridges) (10/25 yr) Accuracy 1 Lin. Ft.

Assume 15'	15.0	
Total	15	Lin. Ft.

Epoxy Pressure Injecting (10/25 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
Total	100	Lin. Ft.

Reinforcing Steel (Epoxy Coated) (10/25 yr) Accuracy 10 Lb.
Reinforcing for deck at expansion joint replacement

	Concrete volume (CY)	Weight (lb)	
Assume 270 lb/CY	4.7	1269	
Total		1269	Lb.



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Bridge No. 7 - A3740

Protective Coating - Concrete Bents and Piers (Epoxy) (10/25 yr) Accuracy Lump Sum (SF for cost)

See Bent 1 dimensions above

	Area (ft ²)	
Top of cap	95.21	
Cap faces	295.04	
Total	390	Sq. Ft.

Strip Seal Expansion Joint System (10/25 yr) Accuracy 1 Lin. Ft.

	Length (ft)	
Total	29	Lin. Ft.



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Bridge No. 7 - A3740

Bridge Name: WB I-64 On-Ramp from Grand over Fill
Bridge No. A3740
Rehab/Replace Alternative: 10 Yr Fix
10/25/50 Yr Remark (original): (10 Yr) - Expansion joint replacement & EP Overlay, etc.

Scope:

Scarification of bridge deck
Epoxy polymer overlay
Substructure repairs (formed/unformed) and misc. crack repair
Protective coating concrete (epoxy) at Bent 1
Superstructure repair (unformed) & slab edge repair
Expansion joint replacement

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	892	\$15.60	\$13,922.97
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00	\$13,195.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00	\$10,920.00
6233000	Epoxy Polymer Wearing Surface	Sq. Yd.	892	\$52.00	\$46,409.90
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00	\$20,163.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	15	\$201.50	\$3,022.50
7040103	Superstructure Repair (Unformed)	Sq. Ft.	86	\$169.00	\$14,534.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	15	\$260.00	\$3,900.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00	\$11,700.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77	\$4,784.13
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$3,042.00	\$3,042.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00	\$16,965.00
	TOTAL BASE COST =				\$162,558.50

Misc. Construction Costs (5%): \$8,127.92

Sub-total: \$170,686.42

Mobilization (6%): \$10,241.19

Total Rehab Cost (2022): \$180,927.61

Cost/SF of Bridge: \$21.03



Project: I-64 PEL Study
Subject: No-Build Option (A3740)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J6I3585
St. Louis County
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Bridge No. 7 - A3740

Bridge Name: WB I-64 On-Ramp from Grand over Fill
Bridge No. A3740
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Expansion joint replacement & Hydro/Latex, etc.

Scope:

Total hydro demolition & scarification of bridge deck
Latex modified concrete overlay
Substructure repairs (formed/unformed) and misc. crack repair
Protective coating concrete (epoxy) at Bent 1
Superstructure repair (unformed) & slab edge repair
Expansion joint replacement

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	892	\$15.60	\$13,922.97
2161001	Total Surface Hydro Demolition	Sq. Yd.	892	\$65.00	\$58,012.37
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00	\$13,195.00
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00	\$10,920.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	892	\$130.00	\$116,024.74
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00	\$20,163.00
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	15	\$201.50	\$3,022.50
7040103	Superstructure Repair (Unformed)	Sq. Ft.	86	\$169.00	\$14,534.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	15	\$260.00	\$3,900.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00	\$11,700.00
7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77	\$4,784.13
7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	1	\$3,042.00	\$3,042.00
7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00	\$16,965.00
	TOTAL BASE COST =				\$290,185.71

Misc. Construction Costs (5%): \$14,509.29

Sub-total:	\$304,695.00
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Mobilization (6%): \$18,281.70

Total Rehab Cost (2022):	\$322,976.70
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Cost/SF of Bridge: \$37.54



Project: I-64 PEL Study
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MoDOT Job Number J613585
St. Louis County
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Bridge No. 7 - A3740

Unit Costs:

Add 30% to account for 2022 price increases

2161000	Scarification of Bridge Deck	Sq. Yd.	892	\$15.60
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Reference	Unit Cost
Pay Items 2021	\$12.00 (<2000 SY)
Other	-
Use:	\$15.60

2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00
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Reference	Unit Cost
Pay Items 2021	\$350.00
Other	-
Use:	\$455.00

2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00
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Reference	Unit Cost
Pay Items 2021	\$700.00
Other	-
Use:	\$910.00

6233000	Epoxy Polymer Wearing Surface	Sq. Yd.	892	\$52.00
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Reference	Unit Cost
Pay Items 2021	\$40.00 (<1000 SY)
Other	-
Use:	\$52.00

7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00
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Reference	Unit Cost
Pay Items 2021	\$3,300.00 (< 25CY for exp. jt.)
Other	-
Use:	\$4,290.00

7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	15	\$201.50
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Reference	Unit Cost
Pay Items 2021	\$155.00 (<100 SF)
Other	-
Use:	\$201.50

7040103	Superstructure Repair (Unformed)	Sq. Ft.	86	\$169.00
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Reference	Unit Cost
Pay Items 2021	\$130.00
Other	-
Use:	\$169.00

7040107	Slab Edge Repair (Bridges)	Lin. Ft.	15	\$260.00
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Reference	Unit Cost
Pay Items 2021	\$200.00
Other	-
Use:	\$260.00



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Bridge No. 7 - A3740

7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$90.00
Other	-
Use:	\$117.00

7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$2.90	(exp. jt.)
Other	-	
Use:	\$3.77	

7110200	Protective Coating - Concrete Bents and Piers (Epoxy)	Lump Sum	390	\$3,042.00
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<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>
Pay Items 2021	\$6.00	390 SF
Other	-	
Use:	\$3,042.00	

7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$450.00	(<100 LF)
Other	-	
Use:	\$585.00	

2161001	Total Surface Hydro Demolition	Sq. Yd.	892	\$65.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$50.00	(< 1000 SY)
Other	-	
Use:	\$65.00	

5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	892	\$130.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$100.00
Other	-
Use:	\$130.00



Project: I-64 PEL Study
Subject: No-Build Option (L0638)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J613585
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Bridge No. 8 - L0638

Bridge Name:	Grand over I-64
Bridge No.	L0638
Rehab/Replace Alternative:	25 Yr Fix or Replacement
10/25/50 Yr Remark (original):	(25 Yr) - Hydro/Latex & Substructure Repair, etc.

Bridge Description

Original Construction:	1954
Superstructure Type:	Haunched 8-Cell Box Girder
Span Arrangement:	88'
Roadway Width:	66'-0" with 5'-10" sidewalks on each side
Out-to-Out Width:	80'-0"
AADT:	20,597 (2020); 28,836 (2040)

Condition

Deck:	6
Superstructure:	6
Substructure:	6
Sufficiency rating:	91.0%
Vertical Clearance:	-

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Heavy delam on backside/top @ right Rebar exposed throughout (heavy @ right side) Moderate scaling throughout Many spalls throughout Broken bracket for railing on north left side and at south end right side Does not meet current standard for bridge rail.
Sidewalks	Moderate delam, long. cracks, satur. and scaling throughout. Few rebar exposed and many spalls throughout.
Approach pavement	Poor condition: Patches and many spalls on both ends with heavy rutting on north end

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing Surface	2" concrete WS (fair): Med long. cracks, transv. cracks, and wear throughout. Map cracks at south end, and minor pitting throughout
Drainage	
Expansion Jt.	

Deck Components

Deck	Med. wear on driving surface Overhangs: Mod. delam, effl., rust stains and saturation (7% of deck area). Minor rebar exposed and light cracks at random. Heavy scaling on north side and moderate scaling on west overhang.
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Project: I-64 PEL Study
Subject: No-Build Option (L0638)
Task: Cost Estimates
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Bridge No. 8 - L0638

Superstructure Components: Deck girder

Many small delams with minor efflr. On bottom. 8% (large) patches of shotcrete repair. Moderate saturation on edge. All 4 corners have 10' longitudinal cracks at superstructure/sidewalk seam
Moderate saturation on sides of boxes near abut.

Substructure Components: Abut 1

Beam Cap: Minor diagonal and vert. cracks
Stem: few patches
Turned back wings: Few diagonal cracks, moderate honey combs, rebar exposed, and spalls
Abut 2
Beam Cap: moderate delam, with minor cracks, and medium spalling on front face
Stem: large delam at bottom, moderate patches with minor rebar exposed and cracks throughout
Turned back wings: large delam throughout, moderate rebar exposed (NE corner), and large spalls at random

Clearance Information:

15'-2" per SIA; 16'-7" per Insp. Report (below bridge)

Structure Paint Information:

-

Requested Items:

Repair abutment stem/backwall (north)
Repair approach roadway. Fill bridge/approach joint spalls w/asphalt
Repair overhead hazard on back of east barrier and bottom of overhang
Repair sidewalk surface and parapets
Seal cracks in roadway surface with pavon
Repair handrail (east)
Replacement (2026)

Utility attachments:

-

Additional Recommendations

Superstructure repair (unformed) on deck girder (assume 2% of underside area).
Substructure repair (formed/unformed)(7% of front face beam cap and stem/wings at each abut)
Assume 20' of crack filler at each bent
Recommend replacing overhang and barrier
Assume entire deck repaired with existing repairs removed (half-sole)
Replace conduit on barrier in kind

Other:

Stem deterioration (google earth)
Abut 2 front face





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Bridge No. 8 - L0638

Abut 1 NE wall



Abut 2 SE wall





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Bridge No. 8 - L0638

Bridge Name: Grand over I-64
Bridge No. L0638
Rehab/Replace Alternative: 25 Yr Fix or Replacement
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex & Substructure Repair, etc.

Scope/Recommendation:

Total Hydro Demolition
Remove and replace existing half-sole repairs
Latex Modified Concrete overlay
Remove and replace overhang
Substructure repairs (formed/unformed)
Crack filler on substructure
Superstructure repair (unformed)

Existing properties/dimensions

Roadway Width	66.00 ft		
Deck width:	80 ft	Total deck area:	
Deck length:	102 ft	8160.0	(ft ²)
Left Barrier length:	99.83 ft		
Right Barrier length:	99.83 ft		

Quantities

Total Surface Hydro Demolition Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	66.00	102	748	
Total			748	Sq. Yd.

Removal of Concrete Wearing Surface Accuracy 1 Sq. Ft.

Total	6732	Sq. Ft.
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Removal of Existing Deck Repair Accuracy 1 Sq. Ft.

Total (1977 rehab)	6600	Sq. Ft.
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Remove and Replace Existing Overhang Accuracy Lump Sum

Misc Quantities to price removal and replacement of overhang:

Partial removal of existing bridge deck (SF)

	Width (ft)	Length (ft)	Area (ft ²)	
Left	7	99.83	699	
Right	7.00	99.83	699	
Total			1398	Sq. Ft.

Assume 7"x10"x99'-10" for each overhang with Type D Barriers along.

	Area (ft ²)	Length (ft)	Volume (yd ³)
Class B-2 Concrete (CY)	5.83	199.67	43
		lb/CY	Weight (lb)
Reinforcing Steel (Epoxy Coated)(lb)		270	11647



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Bridge No. 8 - L0638

Latex Modified Concrete Wearing Surface

Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	66.00	102	748	
Total			748	Sq. Ft.

Type D Barrier

Accuracy 1 Lin. Ft.

	Length (ft)	
Left Barrier	99.8	
Right Barrier	99.8	
Total	200	Lin. Ft.

Substructure Repair (Unformed)

Accuracy 1 Sq. Ft.

Abut 1			
Front face			
Front face Length	70	ft	
Cap + Stem Height	16.229	ft	
Cap + Stem Front Face Area:	1136.04	ft ²	
Side face			
Side face width	7.00	ft	
Cap+Stem height	23.15	ft	(front face height + 6'-11")
Cap + Stem Side Face Area:	162.02	ft ²	
Wall under overhang (parallel to I-64)			
Width	5.00	ft	
Cap+Stem height	23.15	ft	
	115.73	ft ²	

Assume Abut 2 similar area and MSE area covers any repairs needed on parallel walls.

Total area (total Abut 1 * 2) 2827.58 ft²

5% of area at both abutments	197.9	
Total	198	Sq. Ft.

Superstructure Repair (Formed/Unformed)

Accuracy 1 Sq. Ft.

	Width (ft)	Length (ft)	Area (ft ²)	
2% of underside of deck girders	70	85.333	119.5	
Total			119	Sq. Ft.

Half-Sole Repair

Accuracy 50 Sq. Ft.

Total	8200	Sq. Ft.
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Epoxy Pressure Injecting

Accuracy 1 Lin. Ft.

	Length (ft)	
Abut 1	20.0	
Abut 2	20.0	
Total	40	Lin. Ft.



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Conduit System on Structure

Bridge No. 8 - L0638

Accuracy Lump Sum (LF for cost)

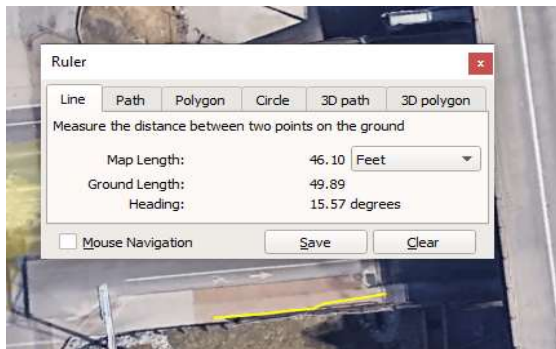
	Length(ft)	
Right barrier	99.83	
Total	100	Lin. Ft.

Bridge Replacement

	Area (ft ²)	
Total Bridge area removed and replaced:	8160.0	
	8200	Sq. Ft.

MSE Wall Area required

Assume similar at each abut:
Front Face (see below)
Side Walls (see below)





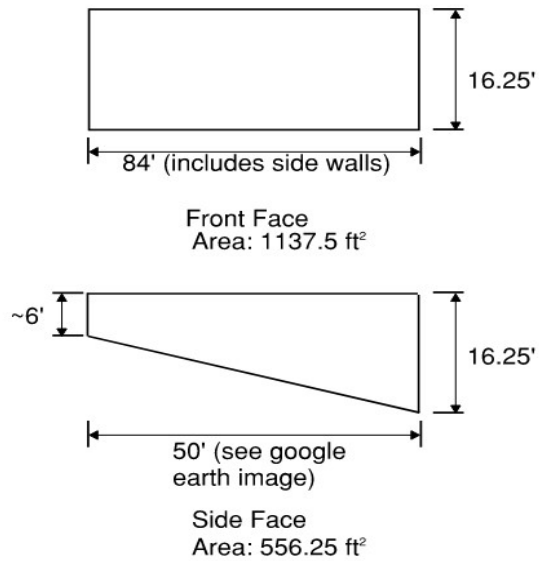
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Bridge No. 8 - L0638

Estimated replacement walls



Total (2 front face, 4 side face) = 4500 SF



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Subject: No-Build Option (L0638)
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Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/28/22

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 8 - L0638

Bridge Name: Grand over I-64
Bridge No. L0638
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/Latex & Substructure Repair, etc.

Scope:

Total hydro demolition
Remove and replace existing half-sole repairs
Latex modified concrete overlay
Remove and replace overhang
Substructure repairs (formed/unformed)
Crack filler on substructure
Superstructure repair (unformed)
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Total Surface Hydro Demolition	Sq. Yd.	748	\$65.00	\$48,620.00
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	6732	\$3.25	\$21,879.00
2161503	Removal of Existing Deck Repair	Sq. Ft.	6600	\$52.00	\$343,200.00
2169901	Remove and Replace Existing Overhang*	Lump Sum	1	\$785,960.00	\$785,960.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	748	\$130.00	\$97,240.00
7034219A	Type D Barrier	Lin. Ft.	200	\$149.50	\$29,850.07
7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	198	\$169.00	\$33,462.00
7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00	\$20,111.00
7040104	Half-Sole Repair	Sq. Ft.	8200	\$58.50	\$479,700.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	40	\$117.00	\$4,680.00
7071000	Conduit System on Structure	Lump Sum	1	\$4,537.00	\$4,537.00
	TOTAL BASE COST =				\$1,869,239.07

Misc. Construction Costs (10%): \$186,923.91

*Lump Sum cost for Remove and Replace Existing Overhang shall include partial removal of existing bridge deck, Class B-2 Concrete, Reinforcing Steel (Epoxy Coated), Resin Anchor system and any ancillary materials or labor required to replace the existing overhangs.

Sub-total: \$2,056,162.97

Mobilization (6%): \$123,369.78

Total Rehab Cost (2022): \$2,179,532.75

Cost/SF: \$267.10



Project: I-64 PEL Study
Subject: No-Build Option (L0638)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/28/22

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 8 - L0638

Unit Costs:

Add 30% to account for 2022 price increases

2161000	Total Surface Hydro Demolition	Sq. Yd.	748	\$65.00																
<table><tr><th>Reference</th><th>Unit Cost</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$50.00</td><td>(<1000 SY)</td></tr><tr><td>Other</td><td>-</td><td></td></tr><tr><td>Use:</td><td>\$65.00</td><td></td></tr></table>					Reference	Unit Cost		Pay Items 2021	\$50.00	(<1000 SY)	Other	-		Use:	\$65.00					
Reference	Unit Cost																			
Pay Items 2021	\$50.00	(<1000 SY)																		
Other	-																			
Use:	\$65.00																			
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	6732	\$3.25																
<table><tr><th>Reference</th><th>Unit Cost</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$2.50</td><td>(<10000 SF)</td></tr><tr><td>Other</td><td>-</td><td></td></tr><tr><td>Use:</td><td>\$3.25</td><td></td></tr></table>					Reference	Unit Cost		Pay Items 2021	\$2.50	(<10000 SF)	Other	-		Use:	\$3.25					
Reference	Unit Cost																			
Pay Items 2021	\$2.50	(<10000 SF)																		
Other	-																			
Use:	\$3.25																			
2161503	Removal of Existing Deck Repair	Sq. Ft.	6600	\$52.00																
<table><tr><th>Reference</th><th>Unit Cost</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$40.00</td><td></td></tr><tr><td>Other</td><td>-</td><td></td></tr><tr><td>Use:</td><td>\$52.00</td><td></td></tr></table>					Reference	Unit Cost		Pay Items 2021	\$40.00		Other	-		Use:	\$52.00					
Reference	Unit Cost																			
Pay Items 2021	\$40.00																			
Other	-																			
Use:	\$52.00																			
2169901	Remove and Replace Existing Overhang Partial Removal of Existing Bridge Deck	Lump Sum	1	\$785,960.00																
<table><tr><th>Reference</th><th>Unit Cost</th><th>Quantity</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$40.00</td><td>1398</td><td>SF</td></tr><tr><td>Other</td><td>-</td><td></td><td></td></tr><tr><td>Use:</td><td>\$72,678.42</td><td></td><td></td></tr></table>					Reference	Unit Cost	Quantity		Pay Items 2021	\$40.00	1398	SF	Other	-			Use:	\$72,678.42		
Reference	Unit Cost	Quantity																		
Pay Items 2021	\$40.00	1398	SF																	
Other	-																			
Use:	\$72,678.42																			
<u>Class B-2 Concrete</u>																				
<table><tr><th>Reference</th><th>Unit Cost</th><th>Quantity</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$2,200.00</td><td>43</td><td>CY</td></tr><tr><td>Other</td><td>-</td><td></td><td></td></tr><tr><td>Use:</td><td>\$123,373.87</td><td></td><td></td></tr></table>					Reference	Unit Cost	Quantity		Pay Items 2021	\$2,200.00	43	CY	Other	-			Use:	\$123,373.87		
Reference	Unit Cost	Quantity																		
Pay Items 2021	\$2,200.00	43	CY																	
Other	-																			
Use:	\$123,373.87																			
<u>Reinforcing Steel (Epoxy Coated)</u>																				
<table><tr><th>Reference</th><th>Unit Cost</th><th>Quantity</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$2.90</td><td>11647</td><td>lb</td></tr><tr><td>Other</td><td>-</td><td></td><td></td></tr><tr><td>Use:</td><td>\$43,909.88</td><td></td><td></td></tr></table>					Reference	Unit Cost	Quantity		Pay Items 2021	\$2.90	11647	lb	Other	-			Use:	\$43,909.88		
Reference	Unit Cost	Quantity																		
Pay Items 2021	\$2.90	11647	lb																	
Other	-																			
Use:	\$43,909.88																			
<u>Misc Resin Anchor System</u>																				
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>-</td></tr><tr><td>2007 rehab cost escalated for 2021:</td><td>\$420,000.00</td></tr><tr><td>Use:</td><td>\$546,000.00</td></tr><tr><td>Total:</td><td>\$785,960.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	-	2007 rehab cost escalated for 2021:	\$420,000.00	Use:	\$546,000.00	Total:	\$785,960.00						
Reference	Unit Cost																			
Pay Items 2021	-																			
2007 rehab cost escalated for 2021:	\$420,000.00																			
Use:	\$546,000.00																			
Total:	\$785,960.00																			
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	748	\$130.00																
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$100.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$130.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$100.00	Other	-	Use:	\$130.00								
Reference	Unit Cost																			
Pay Items 2021	\$100.00																			
Other	-																			
Use:	\$130.00																			
7034219A	Type D Barrier	Lin. Ft.	200	\$149.50																
<table><tr><th>Reference</th><th>Unit Cost</th><th></th></tr><tr><td>Pay Items 2021</td><td>\$115.00</td><td>(< 600 LF)</td></tr><tr><td>Other</td><td>-</td><td></td></tr><tr><td>Use:</td><td>\$149.50</td><td></td></tr></table>					Reference	Unit Cost		Pay Items 2021	\$115.00	(< 600 LF)	Other	-		Use:	\$149.50					
Reference	Unit Cost																			
Pay Items 2021	\$115.00	(< 600 LF)																		
Other	-																			
Use:	\$149.50																			



Project: I-64 PEL Study
Subject: No-Build Option (L0638)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/28/22

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 8 - L0638

7040101/02	Substructure Repair (Formed/Unformed)	Sq. Ft.	198	\$169.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$130.00	(>100 SF)
Other	-	
Use:	\$169.00	

7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$130.00	
Other	-	
Use:	\$169.00	

7040104	Half-Sole Repair	Sq. Ft.	8200	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$45.00	(>5000SF)
Other	-	
Use:	\$58.50	

7040110	Epoxy Pressure Injecting	Lin. Ft.	40	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$90.00	
Other	-	
Use:	\$117.00	

7071000	Conduit System on Structure	Lump Sum	1	\$4,537.00
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<u>Reference</u>	<u>Unit Cost</u>	<u>Quantity</u>	
Pay Items 2021	\$35.00	100	LF
Other	-		
Use:	\$4,537.00		

Replacement Costs:

-	Remove Bridge	Sq. Ft.	8200	\$52.00
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<u>Reference</u>		
NW Bundle Slab Bridge (steel superstructure over creek) :	\$16.80 /SF	(HDR est. 2022)
Central District Bundle (concrete tee beam over creek):	\$12.60 /SF	(BidTabs 2021)
Conway (void slab on interstate):	\$20.00 /SF	(HDR Est 2021)
Route 100 (arched bridge over creek):	\$17.00 /SF	(BidTabs 2021)
Say:	\$52.00 /SF	

-	Simple Span NU-Girder Bridge	Sq. Ft.	8200	\$169.00
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<u>Reference</u>		
Route 100 (simple span NU43 over creek, part of larger project):	\$109.36 /SF	(BidTabs 2021)
Conway A9009 (simple span NU35 over roadway):	\$167.58 /SF	(HDR Est 2022)
Estimate for NU43 over interstate, Say:	\$169.00 /SF	

-	MSE Walls	Sq. Ft.	4500	\$119.60
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<u>Reference</u>		
Wall+stain	\$92.00 /SF	
Temporary wall	\$25.00 /SF	
Assume any temp walls added into cost/sf, Say:	\$119.60 /SF	



Project: I-64 PEL Study
Subject: No-Build Option (A0549)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 9 - A0549

Bridge Name:	EB I-64 Off-Loop Ramp to Grand over Federal Sign Company Entrance
Bridge No.	A0549
Rehab/Replace Alternative:	Replacement
10/25/50 Yr Remark (original):	-

Bridge Description

Original Construction:	1960
Superstructure Type:	Continuous Slab (void & solid)
Span Arrangement:	17'-28'-17' (along baseline)
Roadway Width:	28'-0"
Out-to-Out Width:	32'-9"
AADT:	4,935 (2020); 6,169 (2040)

Condition

Deck:	4
Superstructure:	4
Substructure:	5
Sufficiency rating:	32.3%
Vertical Clearance:	Posted at 14'-9"

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Doesn't meet current standard for bridge rail
Sidewalks	-
Approach pavement	New asphalt overlay and approach roadway (2018)

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing Surface	3/4" Type C UBAWS overlay (2018)
Banks/Slope	Moderate eroding at both ends with breaking up and heaving at east end

Deck Components

Deck	Up to 60% patched in each span
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Project: I-64 PEL Study
Subject: No-Build Option (A0549)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 9 - A0549

Superstructure Components:
Slab

Moderate to heavy saturation (33%) and cracks

Substructure Components:
Abut 1

2' of undermining in NE quadrant

Abut 2

3'x5' void in NW quadrant

Clearance Information:

Posted at 14'-9"

Structure Paint Information:

-

Requested Items:

Repair slope protection
Fill voids underneath substructure
Replacement (2026)

Utility attachments:

2" dia. lighting conduit on south parapet

Additional Recommendations

Other:



Project: I-64 PEL Study
Subject: No-Build Option (A0549)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 9 - A0549

Bridge Name: EB I-64 Off-Loop Ramp to Grand over Federal Sign Company Entrance
Bridge No. A0549
Rehab/Replace Alternative: Replacement
10/25/50 Yr Remark (original): -

Scope/Recommendation:
Replace with 3-span 16" concrete slab bridge with 2 column bents and similar span arrangement

Existing properties/dimensions

Roadway Width	28.00 ft	
Deck width:	32.75 ft	Total deck area:
Deck length (fill face to fill face):	71 ft	2325.3 (ft ²)
Left Barrier length:	78.92 ft	
Right Barrier length:	62.50 ft	

Bridge Replacement

Total Bridge area removed:	Area (ft ²) 2325.3	
	2350	Sq. Ft.

Total New Bridge Area:	Area (ft ²) 2177.3	
	2180	Sq. Ft.

Other Considerations:
Horizontally Curved
Seismic Performance Category B
Tight Site/Limited Access
Nearby retaining walls (for off ramp and adjacent existing bridge)

Aerial View of Existing Bridge:





Project: I-64 PEL Study
Subject: No-Build Option (A0549)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022
Looking NW

Bridge No. 9 - A0549



Looking NE





Project: I-64 PEL Study
Subject: No-Build Option (A0549)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date:07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 9 - A0549

Replacement Costs:

Add 30% to account for 2022 price increases

-	Remove Bridge	Sq. Ft.	2350	\$18.20
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Reference

NW Bundle Slab Bridge (steel superstructure over creek) :	\$10.14 /SF	(HDR est. 2022)
Central District Bundle (concrete tee beam over creek):	\$12.60 /SF	(BidTabs 2021)
Conway (void slab on interstate):	\$20.00 /SF	(HDR Est 2021)
Say:	\$18.20 /SF	

-	Concrete Slab Bridge (Assume 16" replaced in kind)	Sq. Ft.	2180	\$214.50
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Reference

NWB Slab Bridge (22" Slab w/pile bents over creek):	<u>\$209.00</u> /SF	(HDR est. 2022)
CDBB Slab Bridge (21" slab w/DS over creek):	\$194.00 /SF	(BidTabs 2021)

Equivalent 16" Slab Cost for NWB Bridge, Say: \$214.50 (80% of NWB Slab, due to DS+30%)



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Bridge Name:	WB I-64 On-Ramp from Market over Fill
Bridge No.	A3741
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro-latex, expansion jt replacement, rehab, etc.

Bridge Description

Original Construction:	1981
Superstructure Type:	Continuous Solid Slab
Span Arrangement:	45'-45'
Roadway Width:	24'-10"
Out-to-Out Width:	28'-2"
AADT:	3,923 (2020); 4,915 (2040)

Condition

Deck:	5
Superstructure:	5
Substructure:	7
Sufficiency rating:	86.3%
Vertical Clearance:	-

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Moderate effl. At random, minor scaling and few cracks throughout. Does not meet current standard for bridge rail.
Approach pavement	"Fair": Medium map cracks at random, minor rutting in driving surface, moderate scaling throughout (east end)

Drainage, Expansion devices, Bank/slope & Deck protective components

Expansion Jt.	"Poor": Elastomeric strip seal (leaking)
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Deck Components

Span 1	Driving surface: Moderate delam at joint and transverse cracks Throughout/at random: medium map cracks, moderate saturation, spalls, and wear (at patches)
Span 2	Driving surface: minor map cracks in gutter area, moderate transverse cracks Throughout/at random: Moderate saturation, minor scaling and wear



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Superstructure Components:

Span 1

Bottom: Moderate delam, leaching, spalls. Minor rebar exposed at edge and many transverse cracks. Many long. cracks at drop panel. 15% of span has saturation
Other: Many vert. cracks at edge and map cracks throughout

Span 2

Bottom: Minor leaching. 7% of span has saturation
Other: Moderate efflr. and few delam. at edge with map cracks throughout

Substructure Components:

All bents

Minor issues only. OK

Clearance Information:

-

Structure Paint Information:

-

Requested Items:

Stencil bridge number
Repair expansion device
Repair spall on bottom of slab (NW quad)
Cut tree in NE quad
Place chevron sticker at crashworthy end
Hydro demo and replace expansion device (2021)
Seal deck with silane (2024)

Utility attachments:

-

Additional Recommendations

Slab edge repair (assume 10' each side)
Superstructure repair (unformed), assume 5% of deck
Half Sole Repair (150 SF)
Full Depth Repair (50 SF)

Other Recommendations to Consider

-



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Bridge Name: WB I-64 On-Ramp from Market over Fill
Bridge No. A3741
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro-latex, expansion jt replacement, rehab, etc.

Scope/Recommendation:
Expansion Joint replacement
Total Hydro Demolition
Latex Modified Concrete overlay
Superstructure repair (unformed) & slab edge repair

Existing properties/dimensions

Roadway Width	24.83 ft		
Deck width:	28.167 ft	Total deck area:	
Deck length:	92.55 ft	2606.9	(ft ²)
Left Barrier length:	97.00 ft		
Right Barrier length:	99.09 ft		
Approach Slab length:	20 ft (insp. report)		

Quantities

Scarification of Bridge Deck Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
Bridge and Approach Slab	24.83	112.55	310.6	
Total			311	Sq. Yd.

Total Surface Hydro Demolition Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
Bridge and Approach Slab	24.83	112.55	311	
Total			311	Sq. Yd.

Removal of Existing Expansion Joint & Adjacent Concrete Accuracy 1 Lin. Ft.

	Length (ft)	
Total	29	Lin. Ft.

Remove and Replace Barrier Curb Accuracy 1 Lin. Ft.

Assume 3' for each barrier (left and right) removed and replaced

	Length (ft)	
	12.0	
Total	12	Lin. Ft.

Latex Modified Concrete Wearing Surface Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	24.83	112.55	311	
Total			311	Sq. Yd.



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Class B-2 Concrete Accuracy 0.1 Cu. Yard
Assume 18"x18" removed and replace on each side of expansion joint

	Length (ft)	Area (ft ²)	Volume (yd ³)	
	28.167	5	4.7	
Total			4.7	Cu. Yd.

Superstructure Repair (Unformed) Accuracy 1 Sq. Ft.

	Area (ft ²)	
5% from deck area	130.3	
Total	130	Sq. Ft.

Half-Sole Repair Accuracy 50 Sq. Ft.

Total	150	Sq. Ft.
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Full Depth Repair Accuracy 50 Sq. Ft.

Total	50	Sq. Ft.
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Slab Edge Repair (Bridges) Accuracy 1 Lin. Ft.

Assume 20'	20.0	
Total	20	Lin. Ft.

Reinforcing Steel (Epoxy Coated) Accuracy 10 Lb.
Reinforcing for deck at expansion joint replacement

	Concrete volume (CY)	Weight (lb)	
Assume 270 lb/CY	4.7	1269	
Total		1269	Lb.

Strip Seal Expansion Joint System Accuracy 1 Lin. Ft.

	Length (ft)	
Total	29	Lin. Ft.

Bridge Replacement

	Area (ft ²)	
Total Bridge area removed and replaced:	2606.9	
	2650	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

Unit Costs:

Add 30% to account for 2022 price increases

2161000	Scarification of Bridge Deck	Sq. Yd.	311	\$15.60
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$12.00 (<2000 SY)</div><div>Other-</div><div>Use:\$15.60</div></div>				
2161001	Total Surface Hydro Demolition	Sq. Yd.	311	\$65.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$50.00 (<1000 SY)</div><div>Other-</div><div>Use:\$65.00</div></div>				
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	29	\$455.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$350.00</div><div>Other-</div><div>Use:\$455.00</div></div>				
2169903	Remove and Replace Barrier Curb	Lin. Ft.	12	\$910.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$700.00</div><div>Other-</div><div>Use:\$910.00</div></div>				
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	311	\$130.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$100.00</div><div>Other-</div><div>Use:\$130.00</div></div>				
7034214	Class B-2 Concrete	Cu. Yd.	4.7	\$4,290.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$3,300.00 (exp. jt.)</div><div>Other-</div><div>Use:\$4,290.00</div></div>				
7040103	Superstructure Repair (Unformed)	Sq. Ft.	130	\$169.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$130.00</div><div>Other-</div><div>Use:\$169.00</div></div>				
7040104	Half-Sole Repair	Sq. Ft.	150	\$104.00
<div><div><div>Reference</div><div>Unit Cost</div></div><div>Pay Items 2021\$80.00 (<1000 SF)</div><div>Other-</div><div>Use:\$104.00</div></div>				



Project: I-64 PEL Study
Subject: No-Build Option (A3741)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 10 - A3741

7040106	Full Depth Repair	Sq. Ft.	50	\$143.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$110.00	(<100 SF)
Other	-	
Use:	\$143.00	

7040107	Slab Edge Repair (Bridges)	Lin. Ft.	20	\$260.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$200.00	
Other	-	
Use:	\$260.00	

7101000	Reinforcing Steel (Epoxy Coated)	Lb.	1269	\$3.77
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$2.90	(exp. jt.)
Other	-	
Use:	\$3.77	

7172001	Strip Seal Expansion Joint System	Lin. Ft.	29	\$585.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$450.00	(<100 LF)
Other	-	
Use:	\$585.00	

Replacement Costs:

-	Remove Bridge	Sq. Ft.	2650	\$18.20
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<u>Reference</u>		
NW Bundle Slab Bridge (steel superstructure over creek) :	\$16.80 /SF	(HDR est. 2022)
Central District Bundle (concrete tee beam over creek):	\$12.60 /SF	(BidTabs 2021)
Conway (void slab on interstate):	\$20.00 /SF	(HDR Est 2021)
No major roadway beneath, staging accounted for separately. Say:	\$18.20 /SF	

-	Concrete Slab Bridge (Assume 17" replaced in kind)	Sq. Ft.	2650	\$221.00
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<u>Reference</u>		
NWB Slab Bridge (22" Slab w/pile bents over creek):	\$209.00 /SF	(HDR est. 2022)
CDBB Slab Bridge (21" slab w/DS over creek):	\$194.00 /SF	(BidTabs 2021)

Equivalent 16" Slab Cost for NWB Bridge, Say: \$221.00 (82% of NWB Slab, due to DS+30%)



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Bridge Name:	EB I-64 over Market
Bridge No.	A0832
Rehab/Replace Alternative:	25 Yr Fix or Replacement
10/25/50 Yr Remark (original):	(25 Yr) - Remove & Replace Ex Concrete overlay w/ new hydro/latex & eliminate L-joint, etc.

Bridge Description

Original Construction:	1963
Superstructure Type:	4-Cell Box Girder (3 Cells added in 1982 widening)
Span Arrangement:	64'-80'-64'
Roadway Width:	30' (original), 52' (after widening 22')
Out-to-Out Width:	34'-9" (original), 58'-5" (after widening 23'-8")
AADT:	45,667 (2020); 57,084 (2040)

Condition

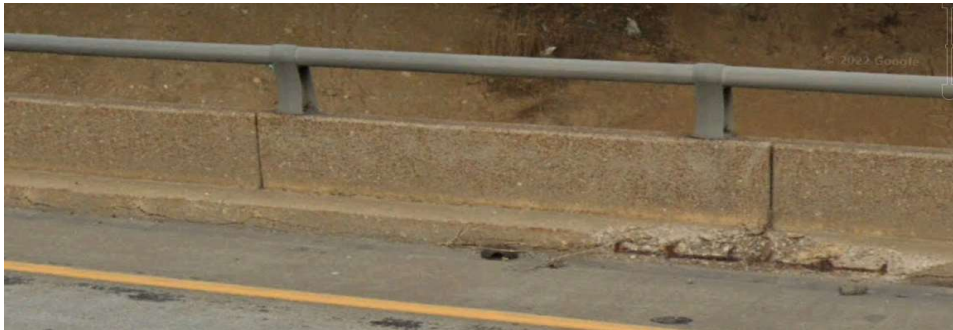
Deck:	6
Superstructure:	6
Substructure:	7
Sufficiency rating:	90.7%
Vertical Clearance:	14'-11" actual

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Left: Light effl. throughout, moderate honeycombs on roadway face, rebar exposed at curb, moderate scaling throughout and large spalls at bent 3 curb. Right: light effl. and few vert. cracks throughout.
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Left barrier:



Approach pavement

"Poor" condition; approaches lifted in 2020
Mod. longitudinal cracks at ends. Large patches throughout (174SF east, 13 SF west; 2013 repair).
From google earth: deterioration and missing pavement at joints



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing Surface "Poor"; 2.25" concrete ws (applied in 1982)
large patches, minor scaling, and many transverse cracks
throughout. Medium wear throughout

Expansion Jt. Strip seal "very poor". 252' longitudinal joint
Longitudinal joint patched every year.

Long. joint: Moderate anchorage spalls throughout. Deterioration
throughout. Many areas of missing seal and poor bond, heavy
leaking throughout.

Deck Components

Span 1 Overhangs: Mod. Efflr and rust stains, fine map cracks,
transverse cracks.
Other: Mod. longitudinal cracks throughout, many patches
throughout (many at long. joint)

Span 2 Overhangs: Mod. effl., many transverse cracks
Other: many long. Cracks throughout, few patches at joints (at
long. jt), 1% saturation at overhangs, few spalls at joints

Span 3 Overhangs: Mod. effl., mod. saturation, few transverse cracks
Other: Mod. long. cracks throughout, few patches and spalls at
joints (long. jt.).

Superstructure Components:

Span 1 - CIP Multi-Cell Box Girder Bottom: Minor delam at edges
Other: Mod. diagonal cracks at abut added section. Minor
saturation at edge

Span 2 - CIP Multi-Cell Box Girder Bottom: Mod. Effl. , many patches at random, minor collision
damage and leaching, minor saturation (4%), and few
transverse cracks
Other: medium shear cracks near abut, heavy efflr. At edge.

Span 3 - CIP Multi-Cell Box Girder Bottom: Mod. efflr. and leaching. Many patches, and few rust
and fire stains.
Other: heavy efflr.

Substructure Components:

All bents little to no issues throughout. OK.

Clearance Information:

14'-11" measured at north edge

Structure Paint Information:



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Requested Items:

Repair gland (slicoflex (or emseal) at abutment expansion device. Span 3 patch as well.
Clean abut caps
Cut brush/trees on slope protection
Chip/patch delam on span 1 edge
Repair spall on left curb (see above)
Seal deck with silane (2024)
Remove/replace low slump ws and L-joint (2023) OR replace bridge in 2030

Utility attachments:

Sewer manhole near int. bent col. 3

Additional Recommendations

Repair barrier (20' of curb shown above)
Repair approach slab and include in hydro/latex (assume 10% of approach slab area for half-sole repair)
Repair slab edge (1% area +10' per side)
Full-depth repair (assume 50SF)
Replace existing deck repair beneath overlay where required (1982 plans show 851 SF of repair beneath, say 10% will need replacement)
Assume 5 CY of supplementary wearing surface required

Other:



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Bridge Name: EB I-64 over Market
Bridge No. A0832
Rehab/Replace Alternative: 25 Yr Fix or Replacement
(25 Yr) - Remove & Replace Ex Concrete overlay w/ new hydro/latex & eliminate L-joint, etc.
10/25/50 Yr Remark (original):

Scope/Recommendation:

Total Hydro Demolition (include approach slab)/Scarification on deck without wearing surface
Remove Existing Wearing Surface (original deck)
Remove and replace existing deck repair where needed (beneath wearing surface)
Latex Modified Concrete overlay (include approach slab)
Remove L-joint between bridges and at approach slabs
Repair barrier
Repair approach slab
Misc. Half-Sole and Full Depth Repairs

Existing properties/dimensions

Roadway Width (original):	30.00 ft	
Deck width (original):	32.375 ft	Total deck area:
Deck length (original) (fill face to fill face)::	211 ft	11860.4 (ft ²)
Roadway Width (widened portion):	22 ft	
Deck width (widened portion):	23.667 ft	
Deck length (widened portion) (fill face to fill face)::	212.5 ft	Total roadway area:
Length of L-joint (including app. slab):	251.5 ft	11005.0 (ft ²)
Left Barrier length:	240.17 ft	
Right Barrier length:	238.83 ft	

Quantities

Scarification of Bridge Deck

Accuracy 1 Sq. Yd.

	Width (ft)	Length(ft)	Area (yd ²)	
Deck	23.67	212.5	558.8	
Total			559	Sq. Yd.

Total Surface Hydro Demolition

Accuracy 1 Sq. Yd.

	Area (yd ²)	
Roadway Area	1223	
Approach Slabs	633	
Subtract out area of slab replaced around exp. jt.	(-) 112	(deck and app slab)
Total	1744	Sq. Yd.

Removal of Concrete Wearing Surface

Accuracy 1 Sq. Ft.

Only on original bridge	6330	
Subtract out area of slab replaced around exp. jt.	(-) 422	
Total	5908	Sq. Ft.

Removal of Existing Deck Repair

Accuracy 1 Sq. Ft.

Say 10% of 851 SF (assume the rest will be covered by L-Joint removal)	85.1	
Total	85	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Removal of Existing Expansion Joint & Adjacent Concrete

Accuracy 1 Lin. Ft.

	Length (ft)	
Total	252.0	Lin. Ft.

Partial Removal and Replacement of Approach Slab

Accuracy 1 Sq. Ft.

	Width (ft)	Length (ft)	Area (ft ²)	
Area along expansion joints	2	79.125	158.25	
Total			159.0	Sq. Ft.

Supplementary Wearing Surface Material

Accuracy 1 Cu. Yd.

	Volume (yd ³)	
See above	5	
Total	5	Cu. Yd.

Latex Modified Concrete Wearing Surface

Accuracy 1 Sq. Yd.

	Area (yd ²)	
See above	1744	
Total	1744	Sq. Yd.

Class B-2 Concrete

Accuracy 0.1 Cu. Yard

Assume 2'-0"x10" removed and replace on each side of expansion joint on bridge

	Length (ft)	Area (ft ²)	Volume (yd ³)	
Original Bridge	211	1.67	13.05	
Widened Portion	212.5	1.67	13.14	
Total			26.2	Cu. Yd.

Superstructure Repair (Unformed)

Accuracy 1 Sq. Ft.

	Area (ft ²)	
1% of deck area	118.6	
Total	119	Sq. Ft.

Slab Edge Repair (Bridges)

Accuracy 1 Lin. Ft.

Assume 20' (10' on each side)	20.0	
Total	20	Lin. Ft.

Parapet Repair (Formed)

Accuracy 1 Lin. Ft.

	20.0	
Total	20	Lin. Ft.



Project: I-64 PEL Study
 Subject: No-Build Option (A0832)
 Task: Cost Estimates
 Job #: 10333314

Computed by: SFP Date: 07/13/2022
 Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
 St. Louis County
 8/1/2022
 Half-Sole Repair

Bridge No. 11 - A0832

	Area (ft ²)	Accuracy 50 Sq. Ft.
10% of approach slab	569.3	
Replace 10% of existing repairs removed prior to new overlay	85.1	
Total	700	Sq. Ft.

Full Depth Repair	Area (ft ²)	Accuracy 50 Sq. Ft.
	50.0	
Total	50	Sq. Ft.

Reinforcing Steel (Bridges)			Accuracy 10 Lb.
Reinforcing for deck at expansion joint replacement			
	Concrete volume (CY)	Weight (lb)	
Assume 270 lb/CY	26.2	7072.45	
Total		7072	Lb.

Bridge Replacement

	Width (ft)	Length (ft)	Area (ft ²)	
Total Bridge area removed and replaced:	56.042	212.5	11908.9	
			11950	Sq. Ft.





Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Bridge Name: EB I-64 over Market
Bridge No. A0832
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Remove & Replace Ex Concrete overlay w/ new hydro/latex & eliminate L-joint, etc.

Scope:

Total hydro demolition & scarification of bridge deck
Remove existing wearing surface (original deck)
Remove and replace existing deck repair where needed (beneath wearing surface)
Latex modified concrete overlay
Remove L-joint between bridges and at approach slabs
Repair barrier
Repair approach slab
Misc. half-sole and full depth repairs
--

Assume staging of rehabilitation work required.

Say 10% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2161000	Scarification of Bridge Deck	Sq. Yd.	559	\$15.60	\$8,717.35
2161000	Total Surface Hydro Demolition	Sq. Yd.	1744	\$52.00	\$90,672.69
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	5908	\$3.25	\$19,201.00
2161503	Removal of Existing Deck Repair	Sq. Ft.	85	\$52.00	\$4,425.20
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	252	\$650.00	\$163,800.00
2169904	Partial Removal and Replacement of Approach Slab	Sq. Ft.	159	\$104.00	\$16,536.00
5050004	Supplementary Wearing Surface Material	Cu. Yd.	5	\$910.00	\$4,550.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	1744	\$130.00	\$226,681.72
7034214	Class B-2 Concrete	Cu. Yd.	26.2	\$4,290.00	\$112,373.37
7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00	\$20,111.00
7040107	Slab Edge Repair (Bridges)	Lin. Ft.	20	\$260.00	\$5,200.00
7049903	Parapet Repair (Formed)	Lin. Ft.	20	\$195.00	\$3,900.00
7040104	Half-Sole Repair	Sq. Ft.	700	\$104.00	\$72,800.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7101000	Reinforcing Steel (Bridges)	Lb.	7072	\$1.82	\$12,871.86
	TOTAL BASE COST =				\$768,990.19

Misc. Construction Costs (10%): \$76,899.02

Sub-total: \$845,889.21

Mobilization (6%): \$50,753.35

Total Rehab Cost (2022): \$896,642.56

Cost/SF of Bridge: \$75.60



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Bridge Name: EB I-64 over Market
Bridge No. A0832
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Remove & Replace Ex Concrete overlay w/ new hydro/latex & eliminate L-joint, etc.

Unit Costs:

Add 30% to account for 2022 price increases

2161000	Scarification of Bridge Deck	Sq. Yd.	559	\$15.60								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$12.00 (<2000 SY)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$15.60</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$12.00 (<2000 SY)	Other	-	Use:	\$15.60
Reference	Unit Cost											
Pay Items 2021	\$12.00 (<2000 SY)											
Other	-											
Use:	\$15.60											
2161000	Total Surface Hydro Demolition	Sq. Yd.	1744	\$52.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$40.00 (>1000 SY)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$52.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$40.00 (>1000 SY)	Other	-	Use:	\$52.00
Reference	Unit Cost											
Pay Items 2021	\$40.00 (>1000 SY)											
Other	-											
Use:	\$52.00											
2161502	Removal of Concrete Wearing Surface	Sq. Ft.	5908	\$3.25								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$2.50 (<10000 SY)</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$3.25</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$2.50 (<10000 SY)	Other	-	Use:	\$3.25
Reference	Unit Cost											
Pay Items 2021	\$2.50 (<10000 SY)											
Other	-											
Use:	\$3.25											
2161503	Removal of Existing Deck Repair	Sq. Ft.	85	\$52.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$40.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$52.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$40.00	Other	-	Use:	\$52.00
Reference	Unit Cost											
Pay Items 2021	\$40.00											
Other	-											
Use:	\$52.00											
2164500	Removal of Existing Expansion Joint & Adjacent Concrete	Lin. Ft.	252	\$650.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$350.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$650.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$350.00	Other	-	Use:	\$650.00
Reference	Unit Cost											
Pay Items 2021	\$350.00											
Other	-											
Use:	\$650.00											
2169904	Partial Removal and Replacement of Approach Slab	Sq. Ft.	159	\$104.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$80.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$104.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$80.00	Other	-	Use:	\$104.00
Reference	Unit Cost											
Pay Items 2021	\$80.00											
Other	-											
Use:	\$104.00											
5050004	Supplementary Wearing Surface Material	Cu. Yd.	5	\$910.00								
<table><tr><th>Reference</th><th>Unit Cost</th></tr><tr><td>Pay Items 2021</td><td>\$700.00</td></tr><tr><td>Other</td><td>-</td></tr><tr><td>Use:</td><td>\$910.00</td></tr></table>					Reference	Unit Cost	Pay Items 2021	\$700.00	Other	-	Use:	\$910.00
Reference	Unit Cost											
Pay Items 2021	\$700.00											
Other	-											
Use:	\$910.00											



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	1744	\$130.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$100.00
Other	-
Use:	\$130.00

7034214	Class B-2 Concrete	Cu. Yd.	26.2	\$4,290.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$3,300.00
Other	-
Use:	\$4,290.00

7040103	Superstructure Repair (Unformed)	Sq. Ft.	119	\$169.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$130.00
Other	-
Use:	\$169.00

7040107	Slab Edge Repair (Bridges)	Lin. Ft.	20	\$260.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$200.00
Other	-
Use:	\$260.00

7049903	Parapet Repair (Formed)	Lin. Ft.	20	\$195.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$150.00 (similar to slab edge repair)
Other	-
Use:	\$195.00

7040104	Half-Sole Repair	Sq. Ft.	700	\$104.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$80.00 (<1000SF)
Other	-
Use:	\$104.00

7040106	Full Depth Repair	Sq. Ft.	50	\$143.00
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$110.00 (<100SF)
Other	-
Use:	\$143.00

7101000	Reinforcing Steel (Bridges)	Lb.	7072	\$1.82
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<u>Reference</u>	<u>Unit Cost</u>
Pay Items 2021	\$1.40
Other	-
Use:	\$1.82



Project: I-64 PEL Study
Subject: No-Build Option (A0832)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 11 - A0832

Replacement Costs:

-	Remove Bridge	Sq. Ft.	11860	\$24.70
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Reference

NW Bundle Slab Bridge (steel superstructure over creek) :	\$16.80 /SF	(HDR est. 2022)
Central District Bundle (concrete tee beam over creek):	\$12.60 /SF	(BidTabs 2021)
Conway (void slab on interstate):	\$20.00 /SF	(HDR Est 2021)
Route 100 (arched bridge over creek):	\$17.00 /SF	(BidTabs 2021)

Say: \$24.70 /SF

-	3-Span NU-Girder Bridge	Sq. Ft.	11950	\$169.00
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Reference

Route 100 (simple span NU43 over creek, part of larger project):	\$109.36 /SF	(BidTabs 2021)
Conway A9009 (simple span NU35 over roadway):	\$167.58 /SF	(HDR Est 2022)

Estimate for NU35 over interstate, Say: \$169.00 /SF



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

Bridge Name:	WB I-64 On-Ramp from Market over Forest Park Ave
Bridge No.	A3636
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro/latex

Bridge Description

Original Construction:	1981
Superstructure Type:	P/S I-Girder
Span Arrangement:	51'-51'-51'
Roadway Width:	24'-10"
Out-to-Out Width:	28'-2"
AADT:	3,932 (2020); 4,915 (2040)

Condition

Deck:	6
Superstructure:	7
Substructure:	7
Sufficiency rating:	95.0%
Vertical Clearance:	18'-0" (actual)

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Moderate spalls on left left side at end with rebar exposed. Collision scraps at right roadway face. Light scaling and many vertical cracks throughout 25' of damaged rail on one side. Does not meet current standard for bridge rail.
Approach pavement	"Poor": Moderate long. Cracks, scaling, and spalls throughout. Minor settlement on west end (1/2")

Drainage, Expansion devices, Bank/slope & Deck protective components

Bank/Slope Protection	Moderate settlement at east end slope protection
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Deck Components

Span 1	Bottom: Moderate effl. , few rebar exposed, minor sat (5%) Other: Light pitting and scaling on driving surface, moderate spalls throughout bay 1, random transverse cracks throughout and at overhangs
Span 2	Light effl. And many transverse cracks on overhang. Mod. Effl, few long. Cracks, and minor sat. (7%) throughout. Mod. Pitting and light scaling on driving surface
Span 3	Bottom: Minor delam. and saturation (5%) Other: Mod. Effl. And few long. And many transv. Cracks throughout. Mod. Pitting and light scaling on driving surface. Light effl. And many few cracks on overhang.



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

Superstructure Components:
All spans

Minor issues only listed in inspection report
From google earth, seems like there could be a crack on the
northern exterior girder running along the bottom.



Substructure Components:
All bents

Minor issues only. OK.

Clearance Information:

Measured at 18'-0"

Structure Paint Information:

-

Requested Items:

Stencil Bridge number
Seal joints - Hot pour
Seal paved joints on slope
Repair approach roadway
Repair guardrail
Mudjack protection on slope
Seal deck with silane (2024)
Hydro demolition (2026)

Utility attachments:

-

Additional Recommendations

Replace approach slabs
Superstructure repair (unformed), assume 2% of deck for
overhang
Crack filler (assume 100' for girders and misc cracking
throughout bridge)
Full depth repair (50 SF)
Half-Sole repair (100 SF)
Preformed Silicone Seal
Assume 2 CY of supplementary wearing surface material

Other Recommendations to Consider



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/22/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

Bridge Name: WB I-64 On-Ramp from Market over Forest Park Ave
Bridge No. A3636
Rehab/Replace Alternative: 25 Yr Fix
10/25/50 Yr Remark (original): (25 Yr) - Hydro/latex

Scope/Recommendation:

Total hydro demolition and scarification of bridge deck
Latex modified concrete overlay
Superstructure repair (unformed) and crack filler
Replace approach slabs and add vertical drain at end bents
Provide joint seal at abutments/approach slab
Misc. full depth and half-sole deck repairs

Existing properties/dimensions

Roadway Width	24.83 ft	
Deck width:	28.167 ft	Total deck area:
Deck length (fill face to fill face):	156.02 ft	4394.6 (ft ²)
Left Barrier length:	174.10 ft	
Right Barrier length:	165.08 ft	

Quantities

Class 1 Excavation

Accuracy 5 Cu. Yd.

Assume 3' width excavated to bottom of diaphragm

	Height (ft)	Length (ft) (abut & wings)	Volume (yd ³)	
Abut 1	3.89	46.958	20.3	
Abut 4	3.89	37.8	16.3	
Total			35.0	Cu. Yd.

Scarification of Bridge Deck

Accuracy 1 Sq. Yd.

	Width (ft)	Length(ft)	Area (yd ²)	
Deck	24.83	156.02	430.5	
Total			430	Sq. Yd.

Total Surface Hydro Demolition

Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	24.83	156.02	430	
Total			430	Sq. Yd.



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

Removal and Replacement of Approach Slab

Accuracy 1 Sq. Ft.

	Area (ft ²)	
App 1	550.0	(Google Earth)
App 2	770.0	(Google Earth)
Total	1320	Sq. Ft.

Supplementary Wearing Surface Material

Accuracy 1 Cu. Yd.

	Volume (yd ³)	
	2	
Total	2	Cu. Yd.

Latex Modified Concrete Wearing Surface

Accuracy 1 Sq. Yd.

	Width (ft)	Length (ft)	Area (yd ²)	
	24.83	156.02	430	
Total			430	Sq. Yd.

Superstructure Repair (Unformed)

Accuracy 1 Sq. Ft.

	Area (ft ²)	
2% from deck area	87.9	
Total	88	Sq. Ft.

Half-Sole Repair

Accuracy 50 Sq. Ft.

Total	100	Sq. Ft.
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Full Depth Repair

Accuracy 50 Sq. Ft.

Total	50	Sq. Ft.
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Epoxy Pressure Injecting

Accuracy 1 Lin. Ft.

	Length (ft)	
Total	100	Lin. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022
Vertical Drain at End Bents

Bridge No. 12 - A3636

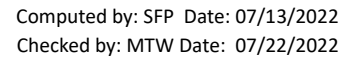
Accuracy 1 Lin. Ft.

	Bent length (ft)	Wing lengths (both) (ft)	Total Length (ft)	
Abut 1	29.958	17	46.96	
Abut 4	34.89	2.92	37.80	
			85	Lin. Ft.

Preformed Silicone Expansion Joint Seal (with armor)

Accuracy 1 Lin. Ft.

	Length(ft)	
Abut 1	33.0	
Abut 4	36.0	
Total	69	Lin. Ft.



Bridge No. 12 - A3636

Bridge Name:	WB I-64 On-Ramp from Market over Forest Park Ave
Bridge No.	A3636
Rehab/Replace Alternative:	25 Yr Fix
10/25/50 Yr Remark (original):	(25 Yr) - Hydro/latex

Scope:

Total hydro demolition and scarification of bridge deck
 Latex modified concrete overlay
 Superstructure repair (unformed) and crack filler
 Replace approach slabs and add vertical drain at end bents
 Provide joint seal at abutments/approach slab
 Misc. full depth and half-sole deck repairs

Say 5% increase in base cost for misc. construction and roadway costs associated with bridge rehabilitation.

Item Number	Item Description	Units	Quantity	Unit Cost	Estimated Cost
2061000	Class 1 Excavation	Cu. Yd.	35	\$58.50	\$2,047.50
2161000	Scarification of Bridge Deck	Sq. Yd.	430	\$15.60	\$6,715.70
2161001	Total Surface Hydro Demolition	Sq. Yd.	430	\$65.00	\$27,982.10
2169904	Removal and Replacement of Approach Slab	Sq. Ft.	1320	\$123.50	\$163,020.00
5050004	Supplementary Wearing Surface Material	Cu. Yd.	2	\$910.00	\$1,820.00
5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	430	\$130.00	\$55,964.20
7040103	Superstructure Repair (Unformed)	Sq. Ft.	88	\$169.00	\$14,872.00
7040104	Half-Sole Repair	Sq. Ft.	100	\$104.00	\$10,400.00
7040106	Full Depth Repair	Sq. Ft.	50	\$143.00	\$7,150.00
7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00	\$11,700.00
7151001	Vertical Drain at End Bents	Lin. Ft.	85	\$58.50	\$4,958.47
7174001	Preformed Silicone Expansion Joint Seal (with armor)	Lin. Ft.	69	\$585.00	\$40,365.00
	TOTAL BASE COST =				\$346,994.97

Misc. Construction Costs (5%):	\$17,349.75
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Sub-total:	\$364,344.72
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Mobilization (6%): \$21,860.68

Total Rehab Cost (2022):	\$386,205.40
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Cost/SF of Bridge: \$87.88



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

Unit Costs:

Add 30% to account for 2022 price increases

2169901	Class 1 Excavation	Cu. Yd.	35	\$58.50
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Reference	Unit Cost
Pay Items 2021	\$45.00
Other	-
Use:	\$58.50

2161000	Scarification of Bridge Deck	Sq. Yd.	430	\$15.60
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Reference	Unit Cost
Pay Items 2021	\$12.00 (<2000 SY)
Other	-
Use:	\$15.60

2161001	Total Surface Hydro Demolition	Sq. Yd.	430	\$65.00
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Reference	Unit Cost
Pay Items 2021	\$50.00 (< 1000SY)
Other	-
Use:	\$65.00

2169904	Removal and Replacement of Approach Slab	Sq. Ft.	1320	\$123.50
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Reference	Unit Cost
Pay Items 2021	\$95.00 (from partial removal/replace)
Other	-
Use:	\$123.50

5050004	Supplementary Wearing Surface Material	Cu. Yd.	2	\$910.00
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Reference	Unit Cost
Pay Items 2021	\$700.00
Other	-
Use:	\$910.00

5052000	Latex Modified Concrete Wearing Surface	Sq. Yd.	430	\$130.00
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Reference	Unit Cost
Pay Items 2021	\$100.00
Other	-
Use:	\$130.00

7040103	Superstructure Repair (Unformed)	Sq. Ft.	88	\$169.00
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Reference	Unit Cost
Pay Items 2021	\$130.00
Other	-
Use:	\$169.00



Project: I-64 PEL Study
Subject: No-Build Option (A3636)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 12 - A3636

7040104	Half-Sole Repair	Sq. Ft.	100	\$104.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$80.00	(<1000 SF)
Other	-	
Use:	\$104.00	

7040106	Full Depth Repair	Sq. Ft.	50	\$143.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$110.00	(<100 SF)
Other	-	
Use:	\$143.00	

7040110	Epoxy Pressure Injecting	Lin. Ft.	100	\$117.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$90.00	
Other	-	
Use:	\$117.00	

7151001	Vertical Drain at End Bents	Lin. Ft.	85	\$58.50
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$45.00	
Other	-	
Use:	\$58.50	

7174001	Preformed Silicone Expansion Joint Seal (with armor)	Lin. Ft.	69	\$585.00
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<u>Reference</u>	<u>Unit Cost</u>	
Pay Items 2021	\$300.00	
additional \$150/ft for any concrete removal/replace. required	\$150.00	
Use:	\$585.00	



Project: I-64 PEL Study
Subject: No-Build Option (A0835)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/20/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 13 - A0835

Bridge Name:	EB I-64 Off-Ramp to Market over Forest Park Ave
Bridge No.	A0835
Rehab/Replace Alternative:	Replacement
10/25/50 Yr Remark (original):	-

Bridge Description

Original Construction:	1963
Superstructure Type:	3-Cell Concrete Box Girder
Span Arrangement:	56'-80'-64'
Roadway Width:	28'-0"
Out-to-Out Width:	
AADT:	7,349 (2020); 11,024 (2040)

Condition

Deck:	5
Superstructure:	5
Substructure:	7
Sufficiency rating:	65.4%
Vertical Clearance:	15'-2" (actual)

Inspection Notes

Railing and App Pavement Components and Ratings

Barrier	Large and moderate delam, spalls, and scaling throughout both curbs. Does not meet current standard for bridge rail.
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Approach pavement	New asphalt overlay (2018)
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Drainage, Expansion devices, Bank/slope & Deck protective components

Wearing Surface	Existing asphalt milled off and new 2" asphalt applied (2018)
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Banks/Slope	Moderate eroding (east side collapsing)
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Deck Components

All spans	Moderate to heavy effl., saturation, and cracks throughout
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Project: I-64 PEL Study
Subject: No-Build Option (A0835)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/20/2022

MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 13 - A0835

Superstructure Components:
Box Girders

Moderate to heavy effl., saturation, cracks, and damage throughout.

Substructure Components:

Minor erosion in SE quadrant at abut 4 wings

Clearance Information:

Preceding bridge signed at 14'-5", 15'-2" actual per inspection report

Structure Paint Information:

-

Requested Items:

Repair 'A' curb
Place vertical clearance sign
Seal joints
Epoxy Coat quad box bottom at drain and abutment face
Patch curb spalls
Repair overhead hazard
Remove/replace wearing surface, hydro/latex OR replace bridge (2030) with A0832

Utility attachments:

1" steel conduit under span 2
Lights on bent 2 column

Additional Recommendations

Other:



Project: I-64 PEL Study
Subject: No-Build Option (A0835)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
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MoDOT Job Number J6I3585
St. Louis County
8/1/2022

Bridge No. 13 - A0835

Bridge Name:	EB I-64 Off-Ramp to Market over Forest Park Ave
Bridge No.	A0835
Rehab/Replace Alternative:	Replacement
10/25/50 Yr Remark (original):	-

Scope/Recommendation:
Replace with 3-Span Prestressed Concrete NU-Girder Bridge

Existing properties/dimensions

Roadway Width	28.00 ft	
Deck width:	32.75 ft	Total deck area:
Deck length:	203 ft	6648.3 (ft ²)
Left Barrier length:	211.54 ft	
Right Barrier length:	210.96 ft	

Bridge Replacement

	Area (ft ²)	
Total Bridge area removed:	6648.3	
	6650	Sq. Ft.
<hr/>		
	Area (ft ²)	
Total Bridge area replaced:	6225.4	
	6250	Sq. Ft.



Project: I-64 PEL Study
Subject: No-Build Option (A0835)
Task: Cost Estimates
Job #: 10333314

Computed by: SFP Date: 07/13/2022
Checked by: MTW Date: 07/20/2022

MoDOT Job Number J613585
St. Louis County
8/1/2022

Bridge No. 13 - A0835

Bridge Name: EB I-64 Off-Ramp to Market over Forest Park Ave
Bridge No. A0835
Rehab/Replace Alternative: Replacement
10/25/50 Yr Remark (original): -

Replacement Costs:

Add 30% to account for 2022 price increases

-	Remove Bridge	Sq. Ft.	6650	\$22.10
Reference				
	NW Bundle Slab Bridge (steel superstructure over creek) :	\$16.80 /SF		(HDR est. 2022)
	Central District Bundle (concrete tee beam over creek):	\$12.60 /SF		(BidTabs 2021)
	Conway (void slab on interstate):	\$20.00 /SF		(HDR Est 2021)
	Route 100 (arched bridge over creek):	\$17.00 /SF		(BidTabs 2021)
	3-cell box girder. Say:	\$22.10 /SF		
-	3-Span NU-Girder Bridge	Sq. Ft.	6250	\$162.50
Reference				
	Route 100 (simple span NU43 over creek, part of larger project):	\$109.36 /SF		(BidTabs 2021)
	Conway A9009 (simple span NU35 over roadway):	\$167.58 /SF		(HDR Est 2022)
	Estimate for NU35 over interstate, Say:	\$162.50 /SF		