

CEF Fact Sheet

St. Joseph's College - Bridge Replacement

Date of Estimate:	October 1, 1998
FEMA Region:	Ill
Preparer(s):	Tom Rathburn (FEMA) and Beth Ingalls (State)
Applicant Name:	St. Joseph's College
Project Title:	Bridge Replacement
Damaged Facility:	Simmond's Arch Bridge
Declaration Number:	FEMA-1234-DR-MD
Project Number:	5678
PA ID No.:	955-91000
Date of Inspection:	September 29, 1998
Event Date(s)	September 15, 1998
Work Category:	C
Type of Work: <i>(Enter New, Repair, etc.)</i>	New
Scope:	Floodwaters washed out 26 ft wide x 24 ft long bridge, including: 24 ft long concrete arch culvert (cross section: 5 ft high at center; 3 ft high on ends; 24 ft wide; 9 in thick), 2 - 3 ft wide, 24 ft long concrete footings; overlying earth fill; 2 - 26 ft wide, 1 ft thick concrete headwalls; 4 - 12 ft long, 1 ft thick wingwalls (ends 9 ft and 6 ft high) with 3 ft x 2 ft concrete footings; 26 ft x 16 ft wide asphalt road (4 in thick with 6 in base course) on bridge; 26 ft x 6 ft wide grass pathway on bridge; 2 galvanized steel guardrails (75 LF each); 37 LF handrail along pathway; and approx 10 CY of riprap. Scour removed 25 LF of 16 ft wide asphalt road and fill on each approach. Remove approx 62 CY of concrete from stream and dispose. Replace all elements using same quantities. Total fill volume = approx 275 CY. Use Class A concrete for footings and headwalls. Add topsoil and seed for pathway.

CEF Notes

St. Joseph's College - Bridge Replacement

Damaged Facility:	Simmond's Arch Bridge
Applicant Name:	St. Joseph's College
Project Number:	5678
Date of Estimate:	October 1, 1998
Preparer(s):	Tom Rathburn (FEMA) and Beth Ingalls (State)
Part A Notes:	<p>A.1 - Concrete removal and disposal was completed by a contractor before the project formulation team met with the applicant. Actual costs have been used for this work. For uncompleted work, construction costs are based on 1998 R.S. Means unit costs with appropriate city index for each CSI division of work.</p> <p>A.2 - Construction costs are based on 1998 R.S. Means unit costs with appropriate city index for each CSI division of work.</p>
Part B Notes:	<p>B.1 - General Requirements include Quality Control testing of concrete at 1% and Submittals at 1%</p> <p>B.2 - Standard CEF factor used for General Conditions</p>
Part C Notes:	<p>C.1 - Scope of new construction is well defined, 2% used for design scope contingency.</p> <p>C.2 - Constructibility costs for dewatering during installation of headwall and wingwalls, 2% contingency factor used to account for cost not included in Part A.</p> <p>C.3 - Access at site is limited, used 2%. No Storage or Staging costs applicable to scope of work included in Part A.</p> <p>C.4 - Project is too small for economies of scale factor.</p>
Part D Notes:	<p>D.1 - Standard CEF factor used for GC's Home Office Overhead</p> <p>D.2 - Standard CEF factor used for GC's Insurance, Payment & Performance Bond</p> <p>D.3 - Standard CEF factor used for GC's Profit</p>
Part E Notes:	<p>E.1 - (Design = 1 month, Bid & Award = 1 month) Uncompleted Construction is: 6 months/2 (midpoint of uncompleted construction) = 3 months</p>
Part F Notes:	<p>F.1 - Plan review costs are based on Montgomery County, MD requirements</p> <p>F.2 - Permit costs are based on Montgomery County, MD requirements</p>
Part G Notes:	<p>G.1 - Standard CEF factor used for Change Orders</p>
Part H Notes:	<p>H.1 - Standard CEF factor used for Project Management - Design Phase</p> <p>H.2 - Standard CEF factor used for A/E Design Contract Costs</p> <p>H.3 - Standard CEF factor used for Project Management - Construction Phase</p>
Miscellaneous Notes & Comments:	
	<p><i>Use mouse to Activate Cursor:</i></p>

CEF Part A Estimate

St. Joseph's College - Bridge Replacement

Item No.	Item Description Title / Component Description	Div. # or Cost Code	Qty	Units	Unit Price	City Adj Factor	Total Cost
Completed							
Permanent							
1	Concrete and masonry removal	Actual cost	62.00	CY	\$ 110.00	1.00	\$ 6,820.00
2	Concrete disposal, including loading and 5 mile haul	Actual cost	93.00	CY	\$ 10.00	1.00	\$ 930.00
3	Dump charges for building construction materials	Actual cost	7.75	TON	\$ 50.00	1.00	\$ 387.50
					\$ -		\$ -
					\$ -		\$ -
Completed - Permanent Total							\$ 8,137.50
Non-Permanent							
					\$ -		\$ -
					\$ -		\$ -
					\$ -		\$ -
					\$ -		\$ -
Completed - Non-Permanent Total							\$ -
Uncompleted							
Permanent							
	Bridge Replacement				\$ -		\$ -
4	Concrete Arch Culvert	Contractor Quote	35.00	CY	\$ 930.00	1.00	\$ 32,550.00
5	Concrete Wing Walls (4 ea)	025-508-1100	12.22	CY	\$ 315.00	0.86	\$ 3,310.40
6	Concrete Head Walls (2 ea)	025-508-1100	6.10	CY	\$ 315.00	0.86	\$ 1,652.49
7	Concrete, class "A" for footings (4 ea) 2'x3'x14'	025-508-1000	12.50	CY	\$ 220.00	0.86	\$ 2,365.00
8	Backfill, granular (including approaches)	022-308-1511	275.00	CY	\$ 22.79	0.86	\$ 5,389.84
9	Backfill, granular, add for small areas	022-308-8900	275.00	CY	\$ 1.80	0.86	\$ 425.70
	Pavement Replacement (Incl Approaches)				\$ -		\$ -
10	Aggregate base course 6" thick, 16' wide	022-308-1511	25.00	CY	\$ 21.00	0.86	\$ 451.50
11	Aggregate base course 6" thick, 16' wide, add for small areas	022-308-8900	25.00	CY	\$ 1.80	0.86	\$ 38.70
12	Bituminous base course, 4" thick	022-308-2005	31.00	TON	\$ 25.50	0.86	\$ 679.83
13	Bituminous base course, 4" thick, add for small areas	022-308-8900	31.00	TON	\$ 2.13	0.86	\$ 56.79
	Pathway and Railings				\$ -		\$ -
14	Top Soil	029-204-3800	25.00	SY	\$ 5.80	0.86	\$ 124.70
15	Seeding	029-308-4400	25.00	SY	\$ 0.05	0.86	\$ 1.08
16	Bridge railing, painted steel pipe	Contractor Quote	37.00	LF	\$ 42.00	1.00	\$ 1,554.00
17	Guardrail, galvanized steel beam plate	028-404-0900	150.00	LF	\$ 31.00	0.86	\$ 3,999.00
18	Guardrail, galvanized steel wrap around ends	028-404-0300	4.00	EA	\$ 99.50	0.86	\$ 342.28
	Scour Protection				\$ -		\$ -
19	Riprap, dumped	022-712-0100	10.00	CY	\$ 36.00	0.86	\$ 309.60
					\$ -		\$ -
Uncompleted - Permanent Total							\$ 53,250.89
Non-Permanent							
20	Dewatering	021-404-0600	40.00	day	\$ 128.00	0.86	\$ 4,403.20
21	Sediment erosion control, silt fencing	022-704-1100	60.00	LF	\$ 0.82	0.86	\$ 42.31
					\$ -		\$ -
					\$ -		\$ -
					\$ -		\$ -
					\$ -		\$ -
					\$ -		\$ -
Uncompleted - Non-Permanent Total							\$ 4,445.51
TOTAL PART A BASE CONSTRUCTION COST							\$ 65,833.91

St. Joseph's College - Bridge Replacement

				New	\$ -	\$ -	\$ -	\$ -	\$ -	Total
PART A "Base Costs" for Construction Work-In Trades										
A.1	Permanent Work (From Part A Estimate)			\$ 8,138						\$ 8,138
A.2	Non-Permanent Job Specific Work (From Part A Estimate)									\$ -
Part A Total				\$ 8,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,138
PART B General Requirements and General Conditions										
B.1	General Requirements	Range Low to High		Enter % in Appropriate Column						
	Safety & Security - Airports, Ports & Govt. Owned Marinas	4.0%	6.0%							
	Temporary Services & Utilities	0.0%	1.0%							
	Quality Control	0.0%	1.0%							
	Submittals	0.0%	5.0%							
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
B.2	General Conditions (4.25%)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Part B Total				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PART A through B SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,138
PART C Construction Cost Contingencies										
C.1	Design-Phase Scope Contingencies	Range Low to High		Enter % in Appropriate Column						
	Preliminary Engineering Analysis	15.0%	20.0%							
	Working Drawings	2.0%	10.0%							
					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
C.2	Facility or Project Constructability			Enter % in Appropriate Column						
	Facility or Project Type and Complexity	(See IG for Values)								
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
C.3	Access, Storage & Staging Contingencies	Range Low to High		Enter % in Appropriate Column						
	Access Contingencies	1.0%	4.0%							
	Storage Contingencies	1.0%	4.0%							
	Staging Contingencies	1.0%	4.0%							
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
C.4	Economies of Scale		0.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					0%	0%	0%	0%	0%	\$ -
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Part C Total				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PART A through C SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,138
PART D General Contractor's Overhead and Profit										
D.1	GC's Home Office Overhead		7.7%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
D.2	GC's Insurance, Payment & Performance Bonds		3.3%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
D.3	General Contractor's Profit			Select a top box for the type of project, and applicable bottom boxes to apply the factor.						
		New Construction	10.0%	<input type="checkbox"/>	Repair/Retrofit					
		Repair/Retrofit	10.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Part D Total				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
PART A through D SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,138

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		New	\$ -	\$ -	\$ -	\$ -	Total
PART E Cost Escalation Factors							
E	Cost Escalation Factor	Months	Monthly Factor				
				\$ -	\$ -	\$ -	\$ -
PART A through E SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -
PART F Plan Review and Construction Permit Cost							
F.1	Plan Review Fees						
	(List Individual Requirements Separately)						
				\$ -	\$ -	\$ -	\$ -
F.2	Construction Permit Fees						
	(List Individual Requirements Separately)						
				\$ -	\$ -	\$ -	\$ -
Part F Total				\$ -	\$ -	\$ -	\$ -
PART A through F SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -
PART G Applicant's Reserve for Change Orders							
G	Applicant's Reserve for Change Orders	7.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				\$ -	\$ -	\$ -	\$ -
PART A through G SUBTOTAL				\$ 8,138	\$ -	\$ -	\$ -
PART H Applicant's Project Management and Design Costs							
H.1	Applicant's Project Management - Design Phase	1.0%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				\$ -	\$ -	\$ -	\$ -
H.2	A/E Design Contract Cost						
	Above Average Complexity (Curve A)	<input type="checkbox"/>	0.0%	\$ -	\$ -	\$ -	\$ -
	Average Complexity (Curve B)	<input type="checkbox"/>	0.0%	\$ -	\$ -	\$ -	\$ -
	Basic Construction Inspection Services	<input type="checkbox"/>	3.0%	\$ -	\$ -	\$ -	\$ -
				\$ -	\$ -	\$ -	\$ -
H.3	Project Management - Construction Phase	6.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				\$ 488	\$ -	\$ -	\$ -
Part H Total				\$ 488	\$ -	\$ -	\$ -
PART A through H SUBTOTAL				\$ 8,626	\$ -	\$ -	\$ -
TOTAL OF COMPLETED WORK							\$8,626

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		New	\$ -	\$ -	\$ -	\$ -	Total
PART A		"Base Costs" for Construction Work-In Trades					
A.1	Permanent Work (From Part A Estimate)	\$ 53,251					\$ 53,251
A.2	Non-Permanent Job Specific Work (From Part A Estimate)	\$ 4,446					\$ 4,446
Part A Total		\$ 57,697	\$ -	\$ -	\$ -	\$ -	\$ 57,697
PART B		General Requirements and General Conditions					
B.1	General Requirements	Range Low to High		Enter % in Appropriate Column			
	Safety & Security - Airports, Ports & Govt. Owned Marinas	4.0%	6.0%				
	Temporary Services & Utilities	0.0%	1.0%				
	Quality Control	0.0%	1.0%	1.00%			
	Submittals	0.0%	5.0%	1.00%			
		\$ 1,154	\$ -	\$ -	\$ -	\$ -	\$ 1,154
B.2	General Conditions (4.25%)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
		\$ 2,452	\$ -	\$ -	\$ -	\$ -	\$ 2,452
Part B Total		\$ 3,606	\$ -	\$ -	\$ -	\$ -	\$ 3,606
PART A through B SUBTOTAL		\$ 61,303	\$ -	\$ -	\$ -	\$ -	\$ 61,303
PART C		Construction Cost Contingencies					
C.1	Design-Phase Scope Contingencies	Range Low to High		Enter % in Appropriate Column			
	Preliminary Engineering Analysis	15.0%	20.0%				
	Working Drawings	2.0%	10.0%	2.00%			
		\$ 1,226	\$ -	\$ -	\$ -	\$ -	\$ 1,226
C.2	Facility or Project Constructability			Enter % in Appropriate Column			
	Facility or Project Type and Complexity	(See IG for Values)		2.00%			
		\$ 1,226	\$ -	\$ -	\$ -	\$ -	\$ 1,226
C.3	Access, Storage & Staging Contingencies	Range Low to High		Enter % in Appropriate Column			
	Access Contingencies	1.0%	4.0%	2.00%			
	Storage Contingencies	1.0%	4.0%	0.00%			
	Staging Contingencies	1.0%	4.0%	0.00%			
		\$ 1,226	\$ -	\$ -	\$ -	\$ -	\$ 1,226
C.4	Economies of Scale	0.0%		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Part C Total		\$ 3,678	\$ -	\$ -	\$ -	\$ -	\$ 3,678
PART A through C SUBTOTAL		\$ 64,981	\$ -	\$ -	\$ -	\$ -	\$ 64,981
PART D		General Contractor's Overhead and Profit					
D.1	GC's Home Office Overhead	7.7%		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		\$ 5,004	\$ -	\$ -	\$ -	\$ -	\$ 5,004
D.2	GC's Insurance, Payment & Performance Bonds	3.3%		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		\$ 2,144	\$ -	\$ -	\$ -	\$ -	\$ 2,144
D.3	General Contractor's Profit			Select a top box for the type of project, and applicable bottom boxes to apply the factor.			
	New Construction	10.0%		<input checked="" type="checkbox"/>			
	Repair/Retrofit	10.0%			<input type="checkbox"/>		
		\$ 7,213	\$ -	\$ -	\$ -	\$ -	\$ 7,213
Part D Total		\$ 14,361	\$ -	\$ -	\$ -	\$ -	\$ 14,361
PART A through D SUBTOTAL		\$ 79,342	\$ -	\$ -	\$ -	\$ -	\$ 79,342

St. Joseph's College - Bridge Replacement

		New	\$ -	\$ -	\$ -	\$ -	\$ -	Total	
PART E Cost Escalation Factors									
E	Cost Escalation Factor	Months	Monthly Factor						
		3	0.188%	\$ 447	\$ -	\$ -	\$ -	\$ -	\$ 447
PART A through E SUBTOTAL				\$ 79,790	\$ -	\$ -	\$ -	\$ -	\$ 79,790
PART F Plan Review and Construction Permit Cost									
F.1	Plan Review Fees								
	Montgomery County Department of Public Works			\$ 500					
				\$ 500	\$ -	\$ -	\$ -	\$ -	\$ 500
F.2	Construction Permit Fees								
	Montgomery County Construction Fee			\$ 1,500					
				\$ 1,500	\$ -	\$ -	\$ -	\$ -	\$ 1,500
Part F Total				\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000
PART A through F SUBTOTAL				\$ 81,790	\$ -	\$ -	\$ -	\$ -	\$ 81,790
PART G Applicant's Reserve for Change Orders									
G	Applicant's Reserve for Change Orders		7.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				\$ 5,725	\$ -	\$ -	\$ -	\$ -	\$ 5,725
PART A through G SUBTOTAL				\$ 87,515	\$ -	\$ -	\$ -	\$ -	\$ 87,515
PART H Applicant's Project Management and Design Costs									
H.1	Applicant's Project Management - Design Phase		1.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				\$ 875	\$ -	\$ -	\$ -	\$ -	\$ 875
H.2	A/E Design Contract Cost								
	Above Average Complexity (Curve A)		<input type="checkbox"/>	11.9%	\$ -	\$ -	\$ -	\$ -	\$ -
	Average Complexity (Curve B)		<input checked="" type="checkbox"/>	9.3%	\$ 8,161	\$ -	\$ -	\$ -	\$ -
	Basic Construction Inspection Services		<input type="checkbox"/>	3.0%	\$ -	\$ -	\$ -	\$ -	\$ -
				\$ 8,161	\$ -	\$ -	\$ -	\$ -	\$ 8,161
H.3	Project Management - Construction Phase		6.0%	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
				\$ 5,251	\$ -	\$ -	\$ -	\$ -	\$ 5,251
Part H Total				\$ 14,287	\$ -	\$ -	\$ -	\$ -	\$ 14,287
PART A through H SUBTOTAL				\$ 101,802	\$ -	\$ -	\$ -	\$ -	\$ 101,802
TOTAL OF UNCOMPLETED WORK								\$101,802	

Total Project Summary

St. Joseph's College - Bridge Replacement

		Completed	Uncompleted	Total
PART A	"Base Costs" for Construction Work In Trades	\$ 8,138	\$ 57,697	\$ 65,835
	A.1 Permanent Work	\$ 8,138	\$ 53,251	\$ 61,389
	A.2 Non-Permanent Job Specific Work (From Part A Estimate)	\$ -	\$ 4,446	\$ 4,446
PART B	General Requirements and General Conditions	\$ -	\$ 3,606	\$ 3,606
	B.1 General Requirements	\$ -	\$ 1,154	\$ 1,154
	B.2 General Conditions	\$ -	\$ 2,452	\$ 2,452
PART C	Construction Cost Contingencies (Design and Construction)	\$ -	\$ 3,678	\$ 3,678
	C.1 Standard Design-Phase Scope Contingencies	\$ -	\$ 1,226	\$ 1,226
	C.2 Facility or Project Constructability	\$ -	\$ 1,226	\$ 1,226
	C.3 Access, Storage, and Staging Contingencies	\$ -	\$ 1,226	\$ 1,226
	C.4 Economies of Scale in New Construction	\$ -	\$ -	\$ -
PART D	General Contractor's Overhead and Profit	\$ -	\$ 14,361	\$ 14,361
	D.1 General Contractor's Home Office Overhead Costs	\$ -	\$ 5,004	\$ 5,004
	D.2 General Contractor's Insurance, Payment, and Performance Bonds	\$ -	\$ 2,144	\$ 2,144
	D.3 Contractor's Profit	\$ -	\$ 7,213	\$ 7,213
PART E	Cost Escalation Allowance	\$ -	\$ 447	\$ 447
PART F	Plan Review and Construction Permit Costs	\$ -	\$ 2,000	\$ 2,000
	F.1 Plan Review Fees	\$ -	\$ 500	\$ 500
	F.2 Construction Permit Fees	\$ -	\$ 1,500	\$ 1,500
PART G	Applicant's Reserve for Construction	\$ -	\$ 5,725	\$ 5,725
PART H	Applicant's Project Management and Design Costs	\$ 488	\$ 14,287	\$ 14,775
	H.1 Applicant's Project Management - Design Phase	\$ -	\$ 875	\$ 875
	H.2 Architecture & Engineering Design Contract Costs	\$ -	\$ 8,161	\$ 8,161
	H.3 Project Management - Construction Phase	\$ 488	\$ 5,251	\$ 5,739
Complete Project Total for Completed and Uncompleted Work		\$ 8,626	\$ 101,802	\$ 110,428