



Cathedral of St. George
Greek Orthodox Church
Phase 1A & 1B Investigation
Philadelphia, PA

May 27, 2021

Design Development Estimate



Architect:

Historic Building Architects, LLC
312 West State Street
Trenton, NJ 08618
(609) 393 3999

Cost Consultant:

CHA Consulting, Inc.
1 Faneuil Hall Marketplace
South Market Bldg, Suite 4195
Boston, MA 02109
(617) 451 2717

Project Description:

This project consists of two phases of restoration of Cathedral of St. George in Philadelphia, PA:

Phase 1A - roof repairs at the eaves, and cornice

Phase 1B - Portico structural repairs, column repairs, stair restoration and interior finishes

Project Particulars:

Design Development Documents received from Historic Building Architects, LLC.

Revised Book B: Contract Drawings dated April 16, 2021, received May 10, 2021

Book A: Project Manual dated April 16, 2021

Book B: Contract Drawings dated April 16, 2021

Scope of Services dated January 8, 2021

Detailed quantity takeoff from these documents where possible

CHA Consulting, Inc. experience with similar projects of this nature

Discussion and review with Historic Building Architects, LLC. and their Consultant Design Team



MAIN SUMMARY

ELEMENT	PHASE 1A	PHASE 1B
Alternates		
Alternate #1: Fabricate FRP Cornice at North & South Eaves	\$28,900	
Alternate #2: Paint Exterior Woodwork with Regular Paint ILO Sanded Finish	(\$2,700)	(\$52,400)
Alternate #3A: Reconstruct/Repair Stem and Knee Wall between Columns 4 & 5		\$42,100
Alternate #3B: Reconstruct/Repair Stem and Knee Wall between Columns 5 & 6		\$30,400
Alternate #4: Cast Iron Railing and Fence Repair/Replacement		\$53,600
Alternate #5: Restoration of Religious Murals		\$220,200
Alternate #6: Non Phased Construction Cost	\$1,819,100	

Project Assumptions:

The project will be privately bid. Our costs assume that there will be at least three subcontractors submitting unrestricted bids in each sub-trade. Contractors will bid based on union labor rates.

Our estimate assumes it will be bid among at least four selected pre-qualified general contractors.

The Total Construction Cost reflects the fair construction value of this project and should not be construed as the prediction of the lowest bid.

Unit rates are based on current dollars. An escalation allowance to mid-point of construction has been included in the unit rates.

Temporary electrical and water site utility connections will be available. General Conditions value includes utility connections and consumption costs

Building will be occupied during construction including adjacent to renovation zones

Noise and vibration disturbances are anticipated and will be minimized or avoided during normal business hours

Operation during normal business hours

Construction will be phased:

Phase 1A - starts September 2021 with a duration of 6 months

Phase 1B - starts March 2022 with a duration of 8 months

Subcontractor's markups have been included in each unit rate. Markups cover the cost of field overhead, home office overhead and subcontractor's profit.

General Conditions covers supervision and general facilities to support Project that are not attributable to the direct trade costs

Project Requirements value covers scaffolding, staging and access, temporary protection, cleaning, Subcontractor's General Conditions

Overhead and profit markup is calculated on a percentage basis of direct construction costs. The value covers Contractor's bond, insurance and profit

Construction Cost Estimate Exclusions:

Grant applications and administration

Archeology assessment and fees

Site or existing condition surveys and investigations

Owner's administration; legal fees, interest expense, advertising, permitting, Owner's insurance, administration

Owner's site representation and project administration

Architectural/Engineering; Designer and other Professional fees, testing, printing, surveying

Unforeseen Conditions Contingency

Project costs; utility company back charges prior to construction, construction of swing space and temporary program facilities, program related phasing, relocation

Police details and street/sidewalk permits

Testing and commissioning

Work beyond the boundary of the Project



DIRECT TRADE COST DETAILS

	ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
				QUANTITY	COST	QUANTITY	COST
9	01-GENERAL REQUIREMENTS						
10							
11	Site set up, project supervision, office management, temp protection	MTH	\$10,000.00	6	\$60,000	8	\$80,000
12	Site Preparation						
13	6" metal chain link fence	LF	\$17.00	350	\$5,950	350	\$5,950
14	pair of locked gates	PRS	\$1,250.00	2	\$2,500	2	\$2,500
15	Dust control prior to demo & removal work	LS	\$2,500.00	1	\$2,500	1	\$2,500
16	Temporary signage	EA	\$225.00	4	\$900	4	\$900
17	Project construction sign	EA	\$750.00	1	\$750	1	\$750
18	Scaffolding, staging and access, lifts, screening, mesh at north and south elevations to access cornice, east elevation to access portico and columns	SF	\$5.00	9,240	\$46,200	11,160	\$55,800
19	Temporary protection of roofs being repaired	LS	\$1,500.00	1	\$1,500		
20	Protect all windows at north and south elevation	OPEN	\$500.00	20	\$10,000		
21	Protection of historic significant fabric, restoration, stained glass	LS	\$10,000.00	1	\$10,000	1	\$10,000
22	<i>Allowances</i>						
23	Photographic documentation	LS	\$1,000.00	1	\$1,000	1	\$1,000
24	Construction permits	AL	\$10,000.00	1	\$10,000	1	\$20,000
25	Allowance for testing	AL	\$5,000.00	1	\$5,000	1	\$5,000
26	Contractor's structural engineering services for shoring and bracing	LS	\$15,000.00			1	\$15,000
27	Mockups	LS	\$4,000.00	1	\$2,000	1	\$2,000
28	Overheads associated with all trades				\$47,000		\$106,000
29	Profit on all General Requirements	10.0%			\$18,730		\$26,440
30	01-General Requirements Total				\$224,030		\$333,840
31							
32							
33	02-SITE CONSTRUCTION & SCAFFOLDING						
34							
35	02 41 19 Selective Demolition						
36	02 04 00 Shoring and Bracing						
37	<i>Phase 1A</i>						
38	Carefull unfold double lock flashing and remove roof build up (incl's 3 layers of cedar shingles, plywood), and associated flashing at North and South eaves for installing new gutters, approx.2'-6" wide	SF	\$10.00	630	\$6,300		
39	remove outriggers assumed 16" oc	LOC	\$125.00	134	\$16,750		
40	Remove existing gutters and all associated attachments and flashing	LF	\$20.00	176	\$3,520		
41	downspouts	EA	\$500.00	6	\$3,000		
42	Remove damaged portions of ogee stucco cornice; assumed 30% of cornice	LF	\$70.00	50	\$3,500		
43	Remove paint down to original stucco at cornice, det. 3/A301	LF	\$25.00	176	\$4,400		
44	Remove box portion of cornice including lath and wood blocking, full run at north and south elevation	LF	\$75.00	176	\$13,200		
45	<i>Phase 1B</i>						
46	Remove and reinstall stone steps at the south side of the stairs						
47	Remove brick stem walls (per structural drawings)	LOC				3	Div 04
48	Remove damaged and deteriorated wood at portico	LOC					Div 06
49	Remove existing lintel and brick and mortar at basement (per structural drawings)	LOC					Div 04
50	Remove and reinstall cast iron railings	LF					Div 05
51	Remove and reinstall cast iron fence	LF					Div 05
52	Remove damaged plaster	SF	\$15.00			800	\$12,000
53	Remove and reinstall murals	EA					Div 12
54	Cutting and patching	LS	\$2,500.00	1	\$2,500	1	\$2,500
55	Shoring and bracing, miscellaneous	AL	\$7,500.00			1	\$7,500

DIRECT TRADE COST DETAILS

	ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
				QUANTITY	COST	QUANTITY	COST
56	Dispose of demolished items and materials	LS	\$4,600.00	1	\$3,600	1	\$1,000
57	Subtotal				\$56,770		\$23,000
58	Design and Pricing Contingency		7.5%		\$4,258		\$1,725
59	Profit		10.0%		\$6,103		\$2,473
60	Escalation from now to start of construction						
61	Phase 1A		1.7%		\$1,140		
62	Phase 1B		4.2%				\$1,136
63	02 41 19 Selective Demolition Total				\$68,271		\$28,334
64							
65	33 30 00 Storm Drainage						
66	Cut out existing concrete to install new hidden trench, new 80 black PVC drain pipe at south elevation	LF	\$125.00	27	\$3,375		
67	New concrete trench drain under sidewalk, slope away from foundation, det 7/ A300a	LF	\$150.00	12	\$1,800		
68	Connect to existing cast iron	LS	\$2,500.00	1	\$2,500		
69	Subtotal				\$7,675		
70	Burdens and Markups						
71	Phase 1A		19.2%		\$1,473		
72	Phase 1B		21.7%				
73	33 30 00 Storm Drainage Total				\$9,148		
74							
75							
76	04-MASONRY						
77							
78	04 01 40.91 Historic Masonry Restoration						
79	<i>Phase 1A</i>						
80	Rake and repoint unstable brick joints at eaves with lime putty mortar; 25% of exposed brick	SF	\$35.00	500	\$17,500		
81	Bore new hole through masonry to relocate downspout	EA	\$1,500.00	4	\$6,000		
82	<i>Phase 1B</i>						
83	<i>Repairs to brick stem and knee walls</i>						
84	Temporary remove stone treads and first landing stone between columns 1, 2, 3 to allow access to brick stem and knee walls, store and protect	BAY	\$1,700.00			3	\$5,100
85	Knee wall; rake out and repoint bottom 18" of wall, remove brick and rebuilt top 18" of wall - 8' long	LOC	\$6,120.00			3	\$18,360
86	Rebuild stem walls below exterior stairs, carefully remove top 18" of masonry along stem wall and replace w/SW tooth new brick, re-install stone treads; det 3/S-400	LOC	\$7,500.00			5	\$37,500
87	Repoint brick pier face below column	LOC	\$2,100.00			3	\$6,300
88	<i>Portico landing and steps details; dwg A400</i>						
89	Rebuild Southern half of marble and bluestone steps; assumed 50%	LFR	\$95.00			203	\$19,285
90	Repair stone steps; dutchman repair	LOC	\$375.00			1	\$375
91	Marble dutchman repair	LOC	\$450.00			1	\$450
92	Replace marble paver	EA	\$2,500.00			1	\$2,500
93	Pin crack in tread, infill new joint w/fine lime putty	LOC	\$500.00			1	\$500
94	Pin cracked bluestone	LOC	\$500.00			1	\$500
95	Replace cementitious patch with lime putty patch	LOC	\$1,000.00			2	\$2,000
96	Rake and repoint stones at landing 100%	SF	\$50.00			545	\$27,250
97	Rake and repoint brick basement piers, four sides with a type N mortar. Poulitice bottom 4 courses of piers	EA	\$2,000.00			20	\$40,000
98	Remove sloping stone, brick and mortar below stone to install new lintel at tunnel; det 2&3/S601	LOC	\$1,750.00			1	\$1,750



DIRECT TRADE COST DETAILS

ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
			QUANTITY	COST	QUANTITY	COST
99 Metal railing footing repair, det 8/A500; remove, core, clean and reinstall post in grout, seal joint w/caulk <i>changed</i> to remove screws under the plate cover, and reinstall after railing repair at shop.	LOC	\$150.00			8	\$1,200
100 Metal fence repair, det 11/A501; remove rail settings, core, clean and reinstall them in grout	LOC	\$175.00			126	\$22,050
101 fence post	LOC	\$225.00			12	\$2,700
102 Clean stone surrounding metal railing post	LOC	\$250.00			8	\$2,000
103 Remove debris and clean concrete along metal fence	LF	\$50.00			120	\$6,000
104 Remove paint from stucco, north side of stairs	LOC	\$500.00			1	\$500
105 Clean brick from stains and free of efflorescence; allow	LS	\$1,500.00	1	\$1,500	1	\$1,500
106 <i>Interior</i>						
107 Rake and repaint brick after plaster removal behind mural	SF	\$50.00			243	\$12,150
108 Subtotal				\$25,000		\$209,970
109 Burdens and Markups						
110 Phase 1A	19.2%			\$4,800		
111 Phase 1B	21.7%					\$45,517
112 04 01 40.91 Historic Masonry Restoration Total				\$29,800		\$255,487
113						
114						
115 05-METALS						
116						
117 05 03 83 Historic Cast Iron Repair						
118 <i>Phase 1B</i>						
119 Remove cast iron railing, shop repair and replacement of components, reinstall after restoration and painting (in Div 09); stair rail and portico south and north elevation railing	LF	\$325.00			34	Alternate #4
120 Cast iron fence along building and parking space	LF	\$275.00			120	Alternate #4
121 Subtotal						
122 Burdens and Markups						
123 Phase 1A	19.2%					
124 Phase 1B	21.7%					
125 05 03 83 Historic Cast Iron Repair Total						
126						
127 05 50 00 Miscellaneous Metals						
128 <i>Existing tunnel</i>						
129 L6x6x3/8 lintel w/1" thick dry pack at edge of concrete slab	EA	\$1,750.00			2	\$3,500
130 (2)W6x15 lintel	EA	\$2,625.00			1	\$2,625
131 (5) 2"x7" shims/col for exterior column repair; det 2/S-401	EA	\$350.00			30	\$10,500
132 Replace rusted conduit attachments w/stainless steel; allow	LS	\$1,000.00			1	\$1,000
133 Miscellaneous steel framing	LS	\$5,000.00	1	\$5,000	1	\$5,000
134 Trench grate w/locking toggle, det 7/A300a (concrete portion in Div 02/Storm Drainage)	LF	\$75.00	39	\$2,925		
135 Subtotal				\$7,925		\$22,625
136 Burdens and Markups						
137 Phase 1A	19.2%			\$1,521		
138 Phase 1B	21.7%					\$4,905
139 05 50 00 Miscellaneous Metals Total				\$9,446		\$27,530
140						
141						
142						
143						
144						
145						
146						



DIRECT TRADE COST DETAILS

	ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
				QUANTITY	COST	QUANTITY	COST
147	06-WOOD, PLASTICS AND COMPOSITES						
148							
149	06 10 53 Rough Carpentry						
150	06 15 16 Wood Roof Decking						
151	Phase 1A						
	Structural framing for new built-in gutter and cornice; locally cut existing rafter interrupted by new gutter, add 1/4" thick cont. bent plate w/1/2"Ø hilti + 1/4" thick x 4" wide z-plate centered at each outrigger + cont. 1 1/2" thick board, det 1/S301	LF	\$275.00	176	\$48,400		
152							
153	Remove and replace wood blocking; new (7+1)-pcs	LF	\$100.00	176	\$17,600		
154	Wood blocking for new pole gutter	LF	\$25.00	45	\$1,125		
155	Replace solid sawn wood deck boards at eaves incl's framing support	LOC	\$750.00	2	\$1,500		
156	Phase 1B						
157	Repair portico attic pediment framing, incl's new shear plate at portico shear frame; det 1&2/S302	LF	\$412.50			70	\$28,875
158	Wood blocking, cants, and nailers	LF	\$100.00			160	\$16,000
159	Subtotal				\$68,625		\$44,875
160	Burdens and Markups						
161	Phase 1A		19.2%		\$13,175		
162	Phase 1B		21.7%				\$9,728
163	06 10 53 Rough Carpentry Total				\$81,800		\$54,603
164							
165	06 20 13 Exterior Finish Carpentry						
166	Phase 1B						
167	Restore exterior woodwork at portico entablature and pediment (careful remove paint (in Div 09) from wood elements 100%)	LF	\$750.00			247	\$185,250
	3D scan of decorative frieze at pediment for the purposes of documentation for historical record and creation of file to be used for CNC cutting of replacement pieces	LS	\$3,000.00			1	\$3,000
168							
169	Replace deteriorated & missing pieces in decorative frieze using CNC cut large size	EA	\$1,500.00			35	\$52,500
170		EA	\$2,500.00			6	\$15,000
171	Remove paint, carefully remove damaged and deteriorated wood, remove glue from surfaces receiving repair at exterior columns	EA	\$1,000.00			6	\$6,000
172	Custom stave repairs to exterior wood columns	EA	\$3,500.00			6	\$21,000
173	Allow for repairs to columns above 7'	AL	\$13,500.00			1	\$13,500
174	Subtotal						\$296,250
175	Burdens and Markups						
176	Phase 1A		19.2%				
177	Phase 1B		21.7%				\$64,221
178	06 20 13 Exterior Finish Carpentry Total						\$360,471
179							
180	06 61 00 Architectural Fiberglass						
181	Phase 1A						
182	Fabricate fiberglass reinforced polyester cornice at North & South eaves	LF		176	Alternate #1		
183	Subtotal						
184	Burdens and Markups						
185	Phase 1A		19.2%				
186	Phase 1B		21.7%				
187	06 61 00 Architectural Fiberglass Total				Alternate #1		
188							
189							
190							
191							
192							



DIRECT TRADE COST DETAILS

ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
			QUANTITY	COST	QUANTITY	COST
07-THERMAL & MOISTURE PROTECTION						
07 61 00 Sheet Metal Roofing						
07 62 00 Sheet Metal Flashing & Trim						
Phase 1A						
New built-in gutter at North & South elevations, det 2/A300a	LF	\$125.00	210	\$26,250		
Allow for repairs to pole gutter	LS	\$1,575.00	1	\$1,575		
Replace downspout w/new 7"Ø LCC	EA	\$1,800.00	6	\$10,800		
Relocate downspout	EA	\$1,500.00	2	deleted		
Existing to remain downspout	EA		2	deleted		
Install new leaders	EA	\$250.00	6	\$1,500		
Repair/install LCC patch above holes caused by old snow guards; budget provided by A C Gentry, Inc. adjusted for 250 patch plates	BUD	\$80,218.75	1	\$80,219		
New snow guards at standing seam metal roof; budget provided by A C Gentry, Inc. (deduct staging & access provided in Div 01)	BUD	\$27,510.00	1	\$27,510		
Replace existing stepped counter flashing at west end of roof w/new lead coated copper regleted stepped counter flashing; det 2/A300	LF	\$100.00	60	\$6,000		
Phase 1B						
New lead cap flashing at capitals, and decorative molding	EA	\$1,500.00			6	\$9,000
New flat pan flashing on top of pediment entablature; 2' wide	LF	\$75.00			70	\$5,250
Subtotal				\$153,854		\$9,000
Burdens and Markups						
Phase 1A		19.2%		\$29,538		
Phase 1B		21.7%				\$1,951
07 61 00 Sheet Metal Roofing Total				\$183,392		\$10,951
09-FINISHES						
09 03 20 Historic Treatment of Plaster						
Phase 1B						
Plaster removal and replacement on interior walls, qty provided	SF	\$50.00			800	\$40,000
Scaffolding for selective plaster restoration	LOC	\$2,500.00			7	\$17,500
Subtotal						\$57,500
Burdens and Markups						
Phase 1A		19.2%				
Phase 1B		21.7%				\$12,465
09 03 20 Historic Treatment of Plaster Total						\$69,965
09 24 00 Stucco Restoration						
Phase 1A						
Stucco patching, including run of stucco at the exterior cornice	LF	\$150.00	50	\$7,500		
Stucco patches at wall below cornice; remove and replace	SF	\$75.00	420	\$31,500		
Subtotal				\$39,000		
Burdens and Markups						
Phase 1A		19.2%		\$7,487		
Phase 1B		21.7%				
09 24 00 Stucco Restoration Total				\$46,487		
09 91 13 Painting						
Phase 1A						
Paint new fiberglass cornice			176	Alternate #1		
Sanded finish of cornice at North and South elevations	LS	\$13,200.00	1	\$13,200		



DIRECT TRADE COST DETAILS

	ELEMENT	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
				QUANTITY	COST	QUANTITY	COST
243	Sanded finish on new wood cornice box below cornice on North and South elevations	LS	\$6,200.00	1	\$6,200		
244	<i>Phase 1B</i>						
245	Careful remove paint from wood elements 100% and sanded finish on historic insitu woodwork entablature	LF	\$150.00			120	\$18,000
246	decorative frieze	LF	\$175.00			127	\$22,225
247	columns and capitals	EA	\$7,500.00			6	\$45,000
248	Protect decorative frieze and unpainted wood from moisture after paint removal	LS	\$5,000.00			1	\$5,000
249	Remove paint and repaint stucco w/potassium silicate at triangle of pediment	SF	\$25.00			525	\$13,125
250	<i>Handrails and historic ferrous metal fences and railings</i>						
251	Remove paint, prep, prime and repaint offsite; metal fence, stair rail and portico south and north elevation railing	LF	\$75.00			154	\$11,550
252	Interior painting including balcony walls at all elevations and white portions above altar	SF	\$5.00			12,540	\$62,700
253	Paint new wood box	LF	\$40.00	210	\$8,400		
254	Miscellaneous painting	LS	\$5,000.00	1	\$5,000	1	\$5,000
255	Subtotal				\$32,800		\$182,600
256	Burdens and Markups						
257	Phase 1A		19.2%		\$6,297		
258	Phase 1B		21.7%				\$39,584
259	09 91 13 Painting Total				\$39,097		\$222,184
260							
261							
262	12-FURNISHINGS						
263							
264	12 19 00 Restoration of Religious Murals						
265	Keynote 3. Careful removal of murals, transport to studio, clean and repair, reinstall; approx. 27' x 9'	EA	\$27,000.00			1	\$27,000
266	Subtotal						\$27,000
267	Burdens and Markups						
268	Phase 1A		19.2%				
269	Phase 1B		21.7%				\$5,853
270	12 19 00 Restoration of Religious Murals Total						\$27,000
271							
272							
273							
274	Estimate Construction Cost Total				\$691,472		\$1,390,365
275							
276							

ALTERNATE DETAILS

DESCRIPTION	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
			QUANTITY	COSTS	QUANTITY	COSTS
9 Alternate #1: Fabricate FRP Cornice at North & South Eaves						
<i>10 Deduct base scope</i>						
11 Remove paint down to original stucco at cornice, det. 3/A301	LF	\$25.00	(176)	(\$4,400)		
12 Remove damaged portions of ogee stucco cornice; assumed 30% of cr	LF	\$70.00	(50)	(\$3,500)		
13 Stucco patching, including run of stucco at the exterior cornice	LF	\$150.00	(50)	(\$7,500)		
14 Sanded finish of cornice at North and South elevations	LS	\$13,200.00	(1)	(\$13,200)		
<i>15 Fabricate FRP cornice and paint</i>						
16 Remove existing stucco cornice	LF	\$50.00	176	\$8,800		
17 Fabricate fiberglass reinforced polyester cornice at North & South eave	LF	\$225.00	176	\$39,600		
18 Paint cornice	LF	\$25.00	176	\$4,400		
19 Burden and Markups						
20 Phase 1A		19.2%		\$4,646		
21 Phase 1B		21.7%				
22 Alternate #1: Fabricate FRP Cornice at North & South Eaves Total				\$28,900		
23						
24						
25 Alternate #2: Paint Exterior Woodwork with Regular Paint ILO Sanded Finish						
26 Paint exterior wood box at cornice with 1 coat of oil primer and 2 coats alkyd paint high gloss ilo sanded finish	LS	(\$2,200.00)	1	(\$2,200)		
27 pediment entablature, decorative frieze, columns and capitals	LS	(\$43,000.00)			1	(\$43,000)
28 Burden and Markups						
29 Phase 1A		19.2%		(\$422)		
30 Phase 1B		21.7%				(\$9,322)
31 Alternate #2: Paint Exterior Woodwork with Regular Paint ILO Sanded Finish Total				(\$2,700)		(\$52,400)
32						
33						
34 Alternate #3A: Reconstruct/Repair Stem and Knee Wall between Columns 4 & 5						
Temporary remove stone treads and first landing stone between						
35 columns 1, 2, 3 to allow access to brick stem and knee walls, store and protect	BAY	\$1,700.00			1	\$1,700
36 Knee wall; rake out and repoint bottom 18" of wall, remove brick and rebuilt top 18" of wall - 8' long	LOC	\$6,120.00			1	\$6,120
37 Rebuild stem walls below exterior stairs, carefully remove top 18" of masonry along stem wall and replace w/SW tooth new brick, re-install stone treads; det 3/S-400	LOC	\$7,500.00			3	\$22,500
38 Repoint brick pier face below column	LOC	\$2,100.00			2	\$4,200
39 Burden and Markups						
40 Phase 1A		19.2%				
41 Phase 1B		21.7%				\$7,483
42 Alternate #3A: Reconstruct/Repair Stem and Knee Wall between Columns 4 & 5 Total						\$42,100
43						
44						
45 Alternate #3B: Reconstruct/Repair Stem and Knee Wall between Columns 5 & 6						
Temporary remove stone treads and first landing stone between						
46 columns 1, 2, 3 to allow access to brick stem and knee walls, store and protect	BAY	\$1,700.00			1	\$1,700
47 Knee wall; rake out and repoint bottom 18" of wall, remove brick and rebuilt top 18" of wall - 8' long	LOC	\$6,120.00			1	\$6,120
48 Rebuild stem walls below exterior stairs, carefully remove top 18" of masonry along stem wall and replace w/SW tooth new brick, re-install stone treads; det 3/S-400	LOC	\$7,500.00			2	\$15,000
49 Repoint brick pier face below column	LOC	\$2,100.00			1	\$2,100
50 Burden and Markups						
51 Phase 1A		19.2%				



ALTERNATE DETAILS

DESCRIPTION	UNIT	UNIT RATE	PHASE 1A		PHASE 1B	
			QUANTITY	COSTS	QUANTITY	COSTS
52 Phase 1B		21.7%				\$5,402
53 Alternate #3B: Reconstruct/Repair Stem and Knee Wall between Columns 5 & 6 Total						\$30,400
54						
55						
56 Alternate #4: Cast Iron Railing and Fence Repair/Replacement						
57 Remove cast iron railing, shop repair and replacement of components, reinstall after restoration and painting (in Div 09); stair rail and portico south and north elevation railing	LF	\$325.00			34	\$11,050
58 Cast iron fence along building and parking space	LF	\$275.00			120	\$33,000
59 Burden and Markups						
60 Phase 1A		19.2%				
61 Phase 1B		21.7%				\$9,549
62 Alternate #4: Cast Iron Railing and Fence Repair/Replacement Total						\$53,600
63						
64						
65 Alternate #5: Restoration of Religious Murals						
66 Keynote 2. Clean in place murals incl's access staging	EA	\$5,100.00			11	\$56,100
67 Keynote 3. Careful removal of murals, transport to studio, clean and repair, reinstall; approx 9' x 9'	EA	\$15,600.00			8	\$124,800
68 Burden and Markups						
69 Phase 1A		19.2%				
70 Phase 1B		21.7%				\$39,216
71 Alternate #5: Restoration of Religious Murals Total						\$220,200
72						
73						
74 Alternate #6: Non Phased Construction Cost						
75 Non Phased Construction; Construction start September 2021, duration 12 months	LS	\$1,526,088.75	1	\$1,526,089		
76 Burden and Markups						\$292,988
77 Alternate #6: Non Phased Construction Cost Total						\$1,819,100
78						
79						
80						