

F. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present as many projects as requested by the agency, or 10 projects, if not specified. Complete One Section F for each project.)

20. EXAMPLE PROJECT KEY NUMBER

21. TITLE AND LOCATION <i>(City and State)</i> Design for Upper Guard Wall, Monongahela River Locks and Dam No. 2 Pittsburgh, PA	22. YEAR COMPLETED	
	PROFESSIONAL SERVICES 1999	CONSTRUCTION <i>(if applicable)</i>

23. PROJECT OWNER'S INFORMATION

a. PROJECT OWNER USACE - Pittsburgh District	b. POINT OF CONTACT NAME Mr. Bill Karaffa	d. POINT OF CONTACT TELEPHONE NUMBER 412-395-7305
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24. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT *(Include scope, size and cost)*

AWK was responsible for preparation of contract drawings (**MicroStation**), specifications (**SPECSINTACT**), design analyses, and an **MCACES** cost estimate for construction of a new wall at the Upper Guard Wall for the Monongahela River Locks and Dam 2. The new wall was used to strengthen and support the existing Upper Guard Wall against additional loads resulting from the construction of a new dam. The design called for 3,100 cubic yards of dredging, 8,000 lineal feet of PZ27 sheet piling with fabricated Tees for future tie-in with a new float-in fixed crested weir, 850 lineal feet of 6-foot diameter drilled caissons, 1,500 cubic yards of concrete cap beam, 2,100 pounds of steel wall armor, 750 lineal feet of guard fence, a 25-foot long walkway bridge, 35-foot long composite fender system, electrical work, and an instrumentation system.

To complete the design, AWK developed a project specific Quality Control Plan, developed recommendations for selection of design criteria, selected soil and rock design parameters, evaluated the impact of new loads on the internal and external stability of the existing diaphragm cells, and assessed seepage control and wall rebound effects on water-tightness with the new float-in dam structure. AWK used the results of the evaluations to develop design alternatives and make recommendations for the new structure. AWK developed a three-dimensional model to complete a space frame analysis with STAAD3 based on normal, loss of pool, and barge impact loading conditions. AWK used the results from the space frame analyses to complete the structural design. AWK also developed an instrumentation plan for long-term monitoring of the structure. The instrumentation system is remote sensing and generally includes alignment pins, electrolytic in-place slope inclinometers, vibrating-strip piezometers, vibrating-wire strain gages, electro-barometers, load cells, and data loggers.



25. FIRMS FROM SECTION C INVOLVED WITH THIS PROJECT

	(1) FIRM NAME	(2) FIRM LOCATION <i>(City and State)</i>	(3) ROLE
a	AWK Consulting Engineers, Inc.	Pittsburgh, PA	Prime Contractor
b	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
c	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE
d	(1) FIRM NAME	(2) FIRM LOCATION (City and State)	(3) ROLE