Technical Response to Request for Quote - Contract No.: DGS 2020-SWCE

DGS Public Works, Bureau of Capital Projects - Design

DGS C-0107-0008 - 001 - Point State Park

May 31, 2022

SKANSKA

SKANSKA

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A. Understanding of the Project

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A. Understanding of the Project

Detailed Work Statement

Understanding of the Project

We understand that Point State Park commemorates and preserves the strategic and historic heritage of the area during the French and Indian War (1754-1763). This Park is a National Historic Landmark. DCNR works in collaboration with the Heinz History Center and the Fort Pitt Society of the Daughters of the American Revolution to interpret the history of the Forks of the Ohio for Park visitors.

The Park is located at the confluence of three rivers at the tip of Pittsburgh's "Golden Triangle." The proposed development site for this project is located at the southeast corner of the Park and the includes the Flag Bastion and an existing parking lot.

Adjacent to the parking area, the Flag Bastion that overlooks the Monongahela River, was recreated out of brick on the footprint of the original Fort Pitt fortification in the late 1950's.

The scope of this project includes a new park office with necessary utilities (incorporated into the existing flag bastion in a similar fashion to the existing museum architecture within the Park), improved parking and circulation (with consideration of operations and costs involved with self-serve pay parking vs. concession operated), pedestrian circulation (with connections between the new office, parking area, and the rest of the Park), and landscaping. Also included is the desire for incorporating PV solar, possibly in the form of parking shade canopies, as well as EV charging stations.

Other potential upgrades, scope items, quantities, and priorities will be evaluated during the program development study and throughout the design process, with the overall goal of determining the best options that fit within the approved budget.

Because of the need to develop accurate and durable cost estimates during the Pre-Design Stage of this program, DGS is looking for an experienced construction and cost estimating firm that will prepare estimates as though they were bidding on a Department of General Services construction contract. Because Skanska is a builder, a program/project manager, and a cost estimating consultant, we have all of the attributes and resources required for success on this assignment.

Work Statement Summary

The services requested in your RFQ focus on Pre-Design Stage Services, including Project Budget Validation and Program Development Study. Our initial estimates, even at a programmatic level, will be developed to create a framework for evaluating options as this project moves forward. Baseline quantification and pricing, preliminary phasing and logistics, and constructability will be established even in these very initial stages. In addition, we are also able to incorporate and maintain a multitude of cost centers and/or breakout values to support decision making and reporting. Our estimates will be built as a tool to support the project as it transitions from the current pre-design stage into subsequent stages.

In-House Estimating Resources

Skanska has a staff of in-house estimators that includes architectural, civil, mechanical and electrical estimators. Software that our estimators employ includes BIM Revit Modeling, Assemble Systems, On Screen Takeoff (OST), SAGE Estimating, and Metriks™ (our national construction cost estimating database). These tools provide a powerful tool for establishing cost.

Our estimating team sets Skanska apart from our competitors. Their sole function is to develop estimates for our projects, work with teams to identify cost saving opportunities and validate the project budget as part of each estimate deliverable. In addition, our preconstruction team's day-to-day interaction with the construction market ensures that the unit pricing is accurate and based on real-time market information. Most of Skanska's estimators started their careers in the subcontractor market and understand the factors that influence bid pricing. This ensures that our deliverables are accurate.

Our in-house estimating team prices projects as though they were bidding on the work and as if they were developing a Guaranteed Maximum Prices (GMP) for a project where our fee was at risk.

This distinguishes us from pure cost estimating firms that do not build. Their initial budget figures are based on "estimates" from prior assignments, not on the final cost of those projects and not on real-time market intelligence.

As a result, we are capable of producing accurate and durable estimates during the pre-design stage of this project. The benefit for DGS is that you will not have to request additional funding as this program moves forward into design and construction.

				Expected Range of Accuracy		
AACE Class	ANSI Classification	Typical Use	Project Definition	Low Expected Actual Cost	High Expected Actual Cost	Other Terms
Class 5	Order-of-Magnitude	Strategic Planning; Concept Screening	0% to 2%	-50% to -20%	+30% to +100%	ROM; Ballpark; Blue Sky; Ratio
Class 4		Feasibility Study	1% to 15%	-30% to -15%	+20% to +50%	Feasibility; Top-down; Screening; Pre-design
Class 3	Budgetary	Budgeting	10% to 40%	-20% to -10%	+10% to +30%	Budget; Basic Engineering Phase; Semi-detailed
Class 2	Definitive	Bidding; Project Controls; Change Management	30% to 75%	-15% to -5%	+5% to +20%	Engineering; Bid; Detailed Control; Forced Detail
Class 1		Bidding; Project Controls; Change Management	65% to 100%	-10% to -3%	+3% to +15%	Bottoms Up; Full Detail; Firm Price

Data from Similar Projects: Skanska Metriks™

As stated in your RFQ, estimates in the early stages of this project are expected to utilize data and experience from similar projects. We are well aligned with this expectation because of our experience both developing scope options for and carrying out HVAC, plumbing, electrical, and fire protection systems upgrades in commercial and park facilities and because of our national construction cost database, known as Skanska Metriks. We use Skanska Metriks to harvest close to 400 specific, quantified attributes from every project in order to help customers and design firms optimize results.

Because it contains data from similar projects, Skanska Metriks will enable an understanding of the costs and cost drivers in the implementation of your construction program.

We will use our cost benchmarking capabilities during the Project Budget Validation and Program Development Study phases to convey the relationship of program to cost and of cost to value to project stakeholders. Should our involvement continue beyond the Program Development Study phase, we will also use this data to provide continuous, and collaborative input throughout the design process.

Cost estimating and budget development

We will utilize the latest estimating tools as well as our extensive database of completed urban park projects to validate the budget for your project and to provide quick, continuous feedback throughout the design process.

Skanska has a staff of in-house estimators that includes architectural, civil, mechanical and electrical estimators. Our estimating team sets Skanska apart from our competitors. Our team of dedicated professionals has tremendous experience in all disciplines. Their sole function is to develop estimates for our projects, work with teams to identify cost saving opportunities and validate the project budget at each estimate deliverable. In addition, our preconstruction team's day to day interaction with the construction market ensures that the unit pricing is accurate and based on real time market information. Most of Skanska's estimators started their careers in the subcontractor market and understand the factors that influence bid pricing. This ensures that our estimate deliverables are accurate.

Key Variables

As part of preparing Cost Estimates, we use our builder's expertise and project management experience to consider the effect of the expected construction schedule on construction costs. We use our estimating experience to take into account such variables as escalation, union and non-union construction, bidding requirements, anticipated number of prime contracts, the nature of construction, and the influence of government regulations on construction costs.

> Skanska understands that establishing an accurate budget isn't restricted to construction materials and labor. Other key factors need to be taken into account, including known project risks, owner cost and constraints, logistics/ phasing, escalation, market conditions, and schedule.

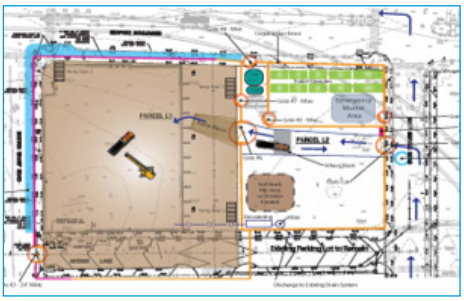
SKANSKA COST INDEX

Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual Escalation	5 Year Average	10 Year Average
2022	1.00%	1.38%	1.48%										3.87% year to date	15.11% last 12 months	
2021	0.27%	0.56%	0.84%	1.07%	2.19%	1.85%	1.93%	2.82%	0.21%	0.47%	0.19%	0.50%	12.91%		
2020	0.28%	0.10%	0.06%	0.29%	0.12%	0.17%	0.22%	0.20%	0.55%	0.73%	0.80%	0.88%	4.40%		
2019	0.08%	0.05%	0.07%	0.04%	0.07%	0.15%	0.26%	0.29%	0.05%	0.40%	0.20%	0.36%	2.03%		
2018	0.35%	0.04%	0.21%	0.24%	0.73%	0.20%	0.68%	0.33%	0.39%	0.23%	0.05%	0.24%	3.69%		
2017	0.05%	0.03%	0.23%	1.23%	0.28%	0.04%	0.53%	0.35%	0.22%	-0.06%	0.64%	0.24%	3.79%	5.37%	
2016	0.01%	0.51%	0.36%	0.53%	0.12%	0.03%	0.45%	0.22%	-0.17%	0.47%	0.20%	0.61%	3.33%	3.45%	
2015	0.50%	-0.12%	0.03%	0.29%	0.27%	-0.07%	0.10%	0.12%	0.52%	0.09%	0.39%	0.04%	2.17%	3.00%	
2014	0.01%	0.04%	0.26%	0.44%	0.28%	0.14%	0.19%	0.18%	0.38%	0.66%	0.52%	0.12%	3.21%	3.24%	
2013	0.46%	0.43%	0.10%	0.19%	0.32%	0.31%	-0.05%	-0.03%	0.19%	0.48%	0.20%	0.21%	2.82%	3.06%	
2012	0.15%	0.07%	0.49%	0.15%	0.37%	0.10%	0.04%	0.70%	-0.13%	0.22%	0.04%	0.04%	2.23%	2.75%	4.06%
2011	-0.06%	0.82%	0.09%	0.30%	0.29%	0.52%	0.34%	0.37%	0.04%	0.31%	0.22%	0.06%	3.29%	2.75%	3.10%
2010	0.15%	0.28%	0.03%	0.16%	0.91%	0.66%	0.48%	-0.06%	0.16%	0.78%	0.48%	0.16%	4.17%	3.15%	3.07%
2009	-0.28%	-0.30%	0.07%	-0.08%	0.30%	-0.02%	-0.15%	0.18%	-0.04%	-0.01%	-0.05%	0.84%	0.47%	2.60%	2.92%
2008	0.06%	0.02%	0.04%	0.50%	0.53%	0.93%	1.83%	0.27%	2.02%	0.87%	-0.37%	-1.00%	5.70%	3.17%	3.12%
2007	-0.14%	0.04%	-0.44%	0.14%	1.38%	-0.03%	0.54%	0.47%	0.49%	0.08%	0.55%	0.01%	3.09%	3.34%	3.05%
2006	0.18%	0.10%	-0.12%	0.16%	-0.07%	0.25%	0.42%	0.13%	0.38%	1.34%	0.74%	-0.45%	3.06%	3.30%	3.02%
2005	-0.23%	0.14%	0.39%	1.12%	0.63%	0.27%	0.17%	0.43%	0.33%	1.23%	1.22%	0.52%	6.23%	3.71%	3.43%
2004	0.39%	1.05%	1.62%	1.39%	1.35%	1.14%	0.55%	0.47%	1.99%	0.78%	0.10%	0.00%	10.85%	5.79%	4.19%
2003	0.26%	0.23%	-0.12%	0.12%	0.26%	0.51%	0.20%	0.83%	0.18%	0.79%	0.58%	-0.17%	3.67%	5.38%	4.28%
2002	0.15%	0.04%	0.49%	-0.35%	0.85%	0.37%	0.81%	-0.07%	0.23%	-0.07%	0.12%	-0.34%	2.26%	5.21%	4.28%
2001	-0.04%	-0.21%	0.18%	0.04%	0.21%	0.75%	1.53%	-0.51%	-0.18%	0.18%	-0.12%	-0.49%	1.33%	4.87%	4.08%
2000	0.21%	0.61%	0.41%	-0.01%	0.72%	-0.10%	-0.18%	0.07%	-0.16%	0.27%	-0.13%	0.24%	1.95%	4.01%	3.86%

Recognizing the vital importance of understanding each key variable, our estimates will be accomplished by a narrative that outlines the facts, assumptions, construction logistics, and other insights that form the basis of our order of magnitude estimates, budget estimates, and control estimate.

Logistics Planning:

Logistic greatly impacts the cost of construction. Correctly defining logistics and phasing requirements upfront significantly improves budget certainly by clearly defining requirements to contractors.



Contingencies

In support of the collaborative cost estimating process, we will also work with you to develop contingencies to hedge against unforeseen cost events. In past projects, we have devoted one team wide meeting to establish common definitions for each contingency type: Design Contingency, Project Contingency, and Construction Contingency. Given the range of uses and types of contingencies, establishing common definitions up-front creates dialog among all project team members as to key project issues, cost drivers and budgetary constraints.

Conclusion

We will provide accurate, durable estimates to DGS that will enable complete and comprehensive comparisons between scope options for the proposed project at Point State Park. Our approach will be to:

- Provide you with cost certainty and an exceptional level of accuracy
- Draw upon the experience of Skanska's estimators in developing construction costs for building systems renovation and upgrade projects in urban park settings
- Utilize Skanska's national database of construction costs
- Utilize Skanska's relationships with vendors and subcontractors to validate pricing
- Factor in escalation
- Establish contingencies commensurate with risks and "unknowns"
- Integrate cost, technical, and qualitative observations into the comparative evaluation process

The result will be a control estimate that will serve as the baseline for assessing and controlling project costs throughout the design and construction of this program.

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B. Contractor Prior Experience

Menokin Foundation, Menokin Glass House Project
Warsaw, VA

Project Description

Multi-phase project involving the preservation of Francis Lightfoot Lee's house. Scope includes overseeing the conservation and repair of the historic manor house. Phase I of the project included stabilization and retention of the original fabric of the house to include portions of the exterior walls and foundation walls up to and including the water table that was reconstructed using original materials to the greatest extent possible and keeping with the highest preservation practices; creation of an envelope (walls, roof, floors) to protect the original fabric and interpret the original volume of the house; creation of a stabilized climate; minimal power and lighting for interpretation and display; and construction that met all applicable building codes, safety standards, accessibility regulations and security measures.

"Through the project's innovative glass enclosure, the Menokin manor house ruins will in effect be a full size artifact that invites everyone to inspect, touch and experience eighteenth century construction techniques and methods," said Senior Project Manager James Ingle. "It will merge art and architecture."

The Menokin house was built in 1769 and was designated as a historical landmark in 1971 for its significance as the home of a signer of the Declaration of Independence. It sits on a 500-acre property along the shoreline of the Chesapeake Gateway.

"This is one of the first times this method of preservation is being used, and I believe it will be replicated in the future because it is an incredibly sustainable solution," James explained. Only 20 percent of the home remains standing, and this project will mimic the missing volume and manor house profile.

Cost Estimating Work Engaged In

Skanska worked closely with the designer and owner during preconstruction. Our work included conducting constructability reviews, continuous cost estimating, recommending cost alternatives, identifying Long Lead Items, developing construction schedules, developing Site Logistics and Phasing & Sequencing, and preparing cost estimates and overall project budgets to establish funding requirements.

Project Information

Start date:
02/17/2020 (Phase I)

End date:
10/31/2021 (Phase I)

Cost

Gross Construction Cost:
$9,500,000 (All Phases Combined)

Amount Responsible For:
$9,500,000 (All Phases Combined)

Firm's Fees:
Total Fee: $126,420 (Phase I)

Preconstruction & Cost Estimating Fee: $56,800

Reference

Menokin Foundation
4037 Menokin Road
Warsaw, VA 22572
Sam McKelvey
Executive Director
804.333.1776
smckelvey@menokin.org

Accuracy

Design Estimate:
$7,000,000

Actual Cost:
Actual cost is unknown, as the project is being built in phases as funding becomes available. Because of the rapid rise in construction costs since 2020, the current estimate for the completion of all phases now stands at $9.5 million.

Elizabeth River Project, Ryan Resilience Lab and Beazley River Academy | Norfolk and Portsmouth, VA

Project Description

Skanska is serving as Owner's Representative Project Manager on two boutique, state-of-the-art environmental education facilities for the Elizabeth River Project, a non-profit organization with the goal of restoring the Elizabeth River to the highest practical level of environmental quality. These facilities include the 6,460-SF Ryan Resilience Lab in Norfolk, VA and a 2,240-SF addition to the Beazley River Academy at Paradise Creek Nature Park in Portsmouth, VA.

The goal for the Ryan Resilience Lab is to be the first facility in Virginia intentionally located in the urban flood plain to provide a demonstration of emerging practices for environmental resilience to sea level rise. The 6,460-SF multi-use building will include offices, meeting space and educational space along with a living shoreline and learning park as well as amphibious storage buildings, dock and kayak launch. ERP's Resilience Lab, which will be the first light commercial Earthcraft Gold Certified building in Virginia, will be the only green building in the region that emphasizes practical approaches that can be reasonably replicated by local homes and businesses.

The 2,240-SF addition to the Beazley River Academy will house flex work student space with open work stations, private offices, and outdoor shower. The project will also consist of renovations to the existing building to make more efficient use of the space.

Cost Estimating Work Engaged In

Skanska worked closely with the designer and owner during preconstruction. Our work included conducting constructability reviews, continuous cost estimating, recommending cost alternatives, identifying Long Lead Items, developing construction schedules, developing Site Logistics and Phasing & Sequencing, and preparing cost estimates and overall project budgets to establish funding requirements.

Project Information

Start date:
03/18/2020

End date:
Estimated 05/2023

Cost

Gross Construction Cost:
$9,486,000

Amount Responsible For:
$9,486,000

Firm's Fees:
Total Fee: $194,284

Preconstruction & Cost Estimating Fee: $50,000

Reference

Elizabeth River Project
5205 Colley Avenue
Norfolk, VA 23508
Marjorie Jackson
Executive Director
757.399.7487
mmayfield@elizabethriver.org

Accuracy

Design Estimate:
$9,486,000

Actual Cost:
Actual cost is unknown because the project is still under way.

Brock Environmental Center
Virginia Beach, VA

Project Description

Skanska provided program management services for the state-of-the-art 10,000-SF Environmental Education Center on Pleasure House Point in Virginia Beach, Virginia. The center houses office space for the Chesapeake Bay Foundation (CBF) and local conservation partner Lynnhaven River NOW. It also includes space for community meetings and CBF's award-winning environmental education program which provides outdoor watershed experiences for 2,500 students and teachers across Hampton Roads each year. The Brock Environmental Center was designed to meet the Living Building Challenge™, a rare designation that requires that the building be so in tune with its site that it has "net zero" impact on the surrounding land, air and water. As such, the center is the first of its kind in Virginia and among only 18 prospective Living Buildings on the East Coast.

As a leader in Living Building Challenge (LBC) certification and working in collaboration with the owner, designer and construction team, Skanska facilitated "green charrettes" that outlined sustainable design elements and materials approved for use on the project, as well as "red-list charrettes" that outlined unhealthy materials and chemicals not to be used on the project. Skanska was responsible for overseeing the success of the project on behalf of the owner, assisted to facilitate proper LEED and LBC administration and provided insight for innovation with regard to sustainable design and construction practices.

A $20 million campaign was launched to support the creation of the Brock Environmental Center, enhance environmental education programs, improve habitat and create a venue for community collaboration. The campaign included $10 million to acquire the land and construct the building; $5 million for programs to improve water quality, including advocacy, environmental education, restoration and outreach; and $5 million to endow the center and its education and community programs. The new environmental education and community center engages, informs and inspires the Hampton Roads community to solve the Bay's challenges in innovative, sustainable and collaborative ways.

Cost Estimating Work Engaged In

Skanska worked closely with the designer and owner during preconstruction. Our work included conducting constructability reviews, continuous cost estimating, recommending cost alternatives, identifying Long Lead Items, developing construction schedules, developing Site Logistics and Phasing & Sequencing, and preparing cost estimates and overall project budgets to establish funding requirements.

Project Information

Start date:
03/18/2020

End date:
Estimated 05/2023

Cost

Gross Construction Cost:
$8,100,000

Amount Responsible For:
$8,100,000

Firm's Fees:
Total Fee: $384,000

Preconstruction & Cost Estimating Fee: $60,000

Reference

Chesapeake Bay Foundation
Philip Merrill Environmental Center
Annapolis, MD 21403
Chris Gorri
General Manager
757.622.1964
cgorri@cbf.org

Accuracy

Design Estimate:
$7,250,000

Actual Cost:
$8,100,000
(Cost increase results from owner-requested scope changes.)

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C. Contractor Personnel and Qualifications

Christopher Anderson, CEA, LEED AP | Principal-in-Charge

28 years in industry
19 years with Skanska

Villanova University
Certificate, Project Management

University of Maryland
B.S., Electrical Engineering

Community College of the Air Force
A.S., Electronic Systems Technology

CEA

LEED AP

OSHA 10

Member, Association of Energy Engineers, Certified Energy Auditor

Member, Building Commissioning Association (BCA)

Member, Delaware Valley Green Building Council

Pennsylvania Department of General Services (DGS) -Collaborative Cost Estimating Services

California University of Pennsylvania, PASSHE Science Building Construction

The new California University of Pennsylvania Science Building will be a facility supporting evolving science education and research in the coming years. This building will include state-of-the-art technologies for active learning classrooms, flexible laboratories, offices, and social spaces to foster engagement aimed at scientific training, inquiry, and discovery.

The new facility ideally will be a new two to three-story building that is in the range of 70,000 – 90,000 square feet. The program will include classrooms, offices, meeting rooms, as well as research spaces along with contemporary, flexible laboratories for general, biology, chemistry, environmental, and physics sciences. Additional support spaces include chemical, specimen, animal care, greenhouses, instrumentation, walk-in cooler, and cleaning will be required.

Phase 1, Ebensburg Center – HVAC, Sprinkler, Electrical & Misc. Improvements

Located on a 70-acre campus in Cambria Township, the Center currently features seven licensed patient buildings that were built starting in the 1950s and that have been modified over the years. The general scope of the proposed construction program includes upgrades to and/or replacements of existing HVAC, plumbing, and electrical systems and the addition of a wet pipe fire protection system in one or more of the seven residential buildings.

Phase 1 Norristown New Building Construction - Forensic Psychiatric Hospital

Norristown State Hospital is a 255-bed forensic psychiatric facility that currently houses patients in two buildings: Building 10 (constructed in 1965) and Building 51 (constructed in 1947). Both buildings are in need of substantial upgrades in order to provide a recovery-oriented environment for patients, but they cannot be renovated while occupied. As a result, it has been determined that the best and most cost-effective solution is to construct a new 420-bed, Forensic Psychiatric Hospital. Because construction activity (including infrastructure upgrades) will take place on an active healthcare campus, it must be carried out in a manner that poses minimal disruption to existing patient care functions.

P1 State Police Greensburg-DNA Laboratory Facility New Building

Construct two new buildings: 1) The original design was a three-story approximately 59,800 s.f. laboratory and office building, (the third floor is a mechanical penthouse), and, 2) an 1850 s.f. one-story maintenance building to house landscaping and snow removal equipment.

New Jersey Economic Development Authority, Waterfront Technology Center at Camden Camden, NJ

$18.2 million, 100,000-SF, new five-story, multi-tenant, high technology core and shell building. The project included the master planning of a ten-acre portion of an entire city block and complete design services and the reconfiguration and/or supplement of associated parking. This multitenant building was designed to contain several high technology office tenants with unique information technology requirements and some wet-lab, research and development space. Skanska completed the fit-out of four of the five floors. The project received five individual LEED certifications. Each of the five floors separately pursued LEED certification, and each is LEED Gold certified for Core and Shell.

City of St. Petersburg, New St. Pete Pier, St. Petersburg, FL

$72 million new pier district that will provide interactive experiences along its 3,065-foot length. Visitors can choose their experience throughout the area, and its exploration and activity areas provide a multitude of flexible programs and experiences for both tourists and the local community – from children to seniors, nature lovers to boaters, fishermen to fine diners.

Gulf State Park Project, Gulf Shores, AL

Skanska provided program management, commissioning and sustainability consultant services. The $140 million project involved enhancing the 6,100-acre Gulf State Park to include a new 350-room lodge. The project has received LEED Gold, SITES Platinum and Fortified Commercial Certifications. Currently, the Interpretive Center is pending certification by Living Building Challenge 3.0, and LEED Platinum certifications.

Gary Warren, EIT | Project Executive

14 years in industry
12 years with Skanska

The Pennsylvania State University
B.S., Structural Engineering

EIT (Engineer in Training)

OSHA 30-1926 Construction Safety

OSHA Hazmat 40

Choose to Save a Life (Fall Protection) Training

CPR and First Aid Training

Pennsylvania Department of General Services (DGS) -Collaborative Cost Estimating Services

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Phase 1 Norristown New Building Construction - Forensic Psychiatric Hospital

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P1 State Police Greensburg-DNA Laboratory Facility New Building

Construct two new buildings: 1) The original design was a three-story approximately 59,800 s.f. laboratory and office building, (the third floor is a mechanical penthouse), and, 2) an 1850 s.f. one-story maintenance building to house landscaping and snow removal equipment.

The Pennsylvania State University, Water Treatment Plant Upgrades, University Park, PA

$60 million, 28,000-SF replacement and reconstruction of an on-campus water treatment facility, including an underground storage tank, pump station, 750,000-gallon wastewater tank and a $2 million amphitheater/performance space. The project also encompassed the rehabilitation of three existing elevated steel water tanks and 100,000-SF of hardscaping and landscaping, such as concrete paving; blue stone pavers; stairs; retaining walls; lighting: stormwater management/ drainage systems; and over 500 native trees, shrubs and plants.

Montgomery County, One Montgomery Plaza Reskin Project, Norristown, PA

Skanska provided construction management agency services in support of the $25 million, 220,000-SF replacement of the façade of One Montgomery Plaza, a ten-story structure in Norristown, PA, serving as the county office building for Montgomery County, Pennsylvania. In addition to the Montgomery County reskin project, we also provided the following services: Montgomery Plaza - Mechanical and Electrical Systems Feasibility Analysis.

Montgomery County Justice Center and Hancock Square Expansion, Norristown, PA

$350 million, 455,000-SF project. Skanska is providing construction management agency services to the Montgomery County Board of Commissioners for a project that involves the construction of a new justice center, the renovation of a historic county courthouse and the redevelopment of the existing courthouse plaza known as Hancock Square. The project also involves the demolition of a parking garage, the installation of between 200 and 400 parking spaces and the re-opening of a public thoroughfare that traverses the site.

James Lane, ASPE | VP Pre-Construction/ Lead Estimator

34 years in industry
5 years with Skanska

University of Pittsburgh
B.S., Civil Engineering

Certified Professional Estimator (ASPE)

OSHA 30

Pennsylvania Department of General Services (DGS) -Collaborative Cost Estimating Services

California University of Pennsylvania, PASSHE Science Building Construction

The new California University of Pennsylvania Science Building will be a facility supporting evolving science education and research in the coming years. This building will include state-of-the-art technologies for active learning classrooms, flexible laboratories, offices, and social spaces to foster engagement aimed at scientific training, inquiry, and discovery.

The new facility ideally will be a new two to three-story building that is in the range of 70,000 – 90,000 square feet. The program will include classrooms, offices, meeting rooms, as well as research spaces along with contemporary, flexible laboratories for general, biology, chemistry, environmental, and physics sciences. Additional support spaces include chemical, specimen, animal care, greenhouses, instrumentation, walk-in cooler, and cleaning will be required.

Phase 1, Ebensburg Center – HVAC, Sprinkler, Electrical & Misc. Improvements

Located on a 70-acre campus in Cambria Township, the Center currently features seven licensed patient buildings that were built starting in the 1950s and that have been modified over the years. The general scope of the proposed construction program includes upgrades to and/or replacements of existing HVAC, plumbing, and electrical systems and the addition of a wet pipe fire protection system in one or more of the seven residential buildings.

Phase 1 Norristown New Building Construction - Forensic Psychiatric Hospital

Norristown State Hospital is a 255-bed forensic psychiatric facility that currently houses patients in two buildings: Building 10 (constructed in 1965) and Building 51 (constructed in 1947). Both buildings are in need of substantial upgrades in order to provide a recovery-oriented environment for patients, but they cannot be renovated while occupied. As a result, it has been determined that the best and most cost-effective solution is to construct a new 420-bed, Forensic Psychiatric Hospital. Because construction activity (including infrastructure upgrades) will take place on an active healthcare campus, it must be carried out in a manner that poses minimal disruption to existing patient care functions.

P1 State Police Greensburg-DNA Laboratory Facility New Building

Construct two new buildings: 1) The original design was a three-story approximately 59,800 s.f. laboratory and office building, (the third floor is a mechanical penthouse), and, 2) an 1850 s.f. one-story maintenance building to house landscaping and snow removal equipment.

Children's Hospital of Philadelphia, Middleman Family Pavilion, King of Prussia, PA

$220.4 million, 275,000-SF (new), 54,000-SF (renovation) project consisting of a new inpatient hospital in King of Prussia, PA. The hospital is approximately 252,000-GSF over seven floors, as well as a 22,000-SF penthouse. The project also includes renovation of approximately 54,000-SF of the existing Specialty Care Center (SCC), an expansion of the loading dock, and a 192-vehicle parking garage.

Montgomery County Justice Center and Hancock Square Expansion, Norristown, PA

$350 million, 455,000-SF project. Skanska is providing construction management agency services to the Montgomery County Board of Commissioners for a project that involves the construction of a new justice center, the renovation of a historic county courthouse and the redevelopment of the existing courthouse plaza known as Hancock Square. The project also involves the demolition of a parking garage, the installation of between 200 and 400 parking spaces and the re-opening of a public thoroughfare that traverses the site.

Variety Club Camp & Development Center, Worcester, PA

Skanska developed conceptual cost estimates of capital improvements, as part of an interdisciplinary project team lead by USA Architects to address all the site and building issues toward the creation of a successful master plan. The master plan for Variety Club Camp sets the institution's course for the next 10 to 20 years as it shifts its emphasis toward vocational training and education for its clients.

Nick Culver, AVS | Senior CSA Estimator

21 years in industry
21 years with Skanska

Stevens Institute of Technology
B.S., Engineering Management

Associate Value Specialist

Choose to Save a Life (Fall Protection) Training

Injury-Free Environment® (IFE) Training

ISO 14001 Training

Scheduling Boot Camp (Skanska)

Time Management Training

New York City Economic Development Corporation, Rockaway Boardwalks Reconstruction, Queens, NY

$322 million reconstruction of five miles of the Rockaway Beach Boardwalk destroyed by Hurricane Sandy. The project required enhanced durability—with a steel-reinforced concrete boardwalk on 5,000 steel pipe piles, 5,000 concrete planks and 1,000 concrete pile caps. We elevated the boardwalk 3' above the 100-year flood plain and incorporated a mile of baffle walls extended 4' below grade. The project also included railings, cast-in-place access ramps and stairs, landscaping, new utilities, and site work. The project won the American Planning Association's Silver 2018 National Planning Achievement Award for Urban Design.

New York City Economic Development Corporation, Citywide Ferry Service Program, New York, NY

$157 million expansion of the existing East River Ferry system involving the development of several new ferry landings and new routes; and upgrades to existing landings. Work will require the modification of barge and gangway infrastructure. Ferry landings will feature gangway, ticket machines, lighting, trash receptacles, bicycle parking and passenger shelters. Some ferry landings may require more extensive infrastructure, including bulkhead and pier construction.

New York City Economic Development Corporation, East Midtown Greenway E 53rd-61st, New York, NY

$166 million new construction of a new in-water structure that will serve as a public esplanade spanning nine city blocks along FDR Drive. A 115-foot pedestrian bridge will also be installed upland at East 54th Street to provide public access from the adjacent city streets.

New York City Economic Development Corporation, Various Waterfront Properties On-Call Projects, New York, NY

$135 million in contracted, on-call construction management services for different waterfront properties spanning 15,000-LF of shoreline. The initial contract was renewed several times, resulting in 34 projects ranging from $10 million to $20 million each. The scope of these projects included site condition surveys, pier rehabilitations, pile repairs, foundation restorations, bulkheads and seawalls rebuilds, waterway dredging and more. The project involved the use of SONAR 3D imaging to map underwater jobsites, enabling pile prefabrication.

Hudson River Park Trust, Pier 54 Connector, New York, NY

$1.6 million, three-phase waterfront pedestrian esplanade, walkway and bus stop along the Hudson River stretching from Bloomfield Street to West 14th Street in lower Manhattan. Work includes in-water marine construction encompassing an over-water marine platform structure, pile caps, edge beams, planks and topping slab; temporary and new bikeway, Route 9a lay-by land to taxi and bus pick-up/drop-off; and paving, site utility infrastructure, lighting, furnishings, soils and fills.

Columbia University, Muscota Marsh, New York, NY

$6 million, 1.2-acre upgrade to the marsh area of Columbia University's boathouse along the Harlem River waterfront into a park with public access. Work included a marshland for natural habitats, landscaping, a new wooden esplanade walkway with lighting and park benches, and bike racks and gated entrances.

Metropolitan Museum of Art, British Galleries, New York, NY

$13 million, 11,500-SF renovation of an art gallery. The scope of work included selective demolition, relocation and construction of partitions, ceilings, flooring, casework, high-end finishes, new architectural arches and a mezzanine—all within an active museum. We installed sprinklers, electrical and a lighting system, and replaced two existing air handling units as well as performed work in a mechanical room on the ground floor below.

Colleen Demark, LEED AP, AVS | Electrical Senior Estimator

22 years in industry
19 years with Skanska

Pennsylvania State University
B.S., Mineral Engineering

SAVE International Associate Value Specialist (AVS)

LEED AP

CPR and First Aid Training

Pennsylvania Department of General Services (DGS) -Collaborative Cost Estimating Services

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Children's Hospital of Philadelphia, Middleman Family Pavilion, King of Prussia, PA

$220.4 million, 275,000-SF (new); 54,000-SF (renovation), the project consists of a new inpatient hospital located in King of Prussia, PA. The hospital is approximately 252,000-GSF over seven floors, as well as a 22,000-SF penthouse. The project also includes renovation of approximately 54,000-SF of the existing Specialty Care Center (SCC) which involved administrative office suite and full-service kitchen and cafeteria space. In addition to the new Inpatient Buildings and the SCC renovations, the project includes an expansion to the existing loading dock and a 192-vehicle precast parking garage. Among its features are a 16-bed pediatric intensive care unit, a 36-bed medical surgical unit, a broad range of pediatric specialties, including orthopaedics, plastic surgery and ear, nose and throat and a 20-bay emergency department, open 24/7, specializing in pediatric care. The new hospital also has four operating rooms, specializing in elective services requiring overnight stays; comprehensive radiology services; and transitional care for chronic complex patients with assisted breathing. The new hospital has the capacity to expand to 100 inpatient beds.

The Pennsylvania State University, Water Treatment Plant Upgrades, University Park, PA

$60 million, 28,000-SF replacement and reconstruction of an on-campus water treatment facility, including an underground storage tank, pump station, 750,000-gallon wastewater tank and a $2 million amphitheater/performance space. The project also encompassed the rehabilitation of three existing elevated steel water tanks and 100,000-SF of hardscaping and landscaping, such as concrete paving; blue stone pavers; stairs; retaining walls; lighting: stormwater management/ drainage systems; and over 500 native trees, shrubs and plants.

31 years in industry
21 years with Skanska

Villanova University
B.S., Mechanical Engineering

Phil Colonna | Mechanical Senior Estimator

Pennsylvania Department of General Services (DGS) -Collaborative Cost Estimating Services

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4 years in industry
4 years with Skanska

Drexel University
B.S., Civil Engineering

Steven Gobac | CSA Estimator

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23 years in industry
10 years with Skanska

Community College of Philadelphia
A.S. Applied Science

SAVE International Associate Value Specialist (AVS)

CPR and First Aid Training

Mary Judge, AVS | Estimator

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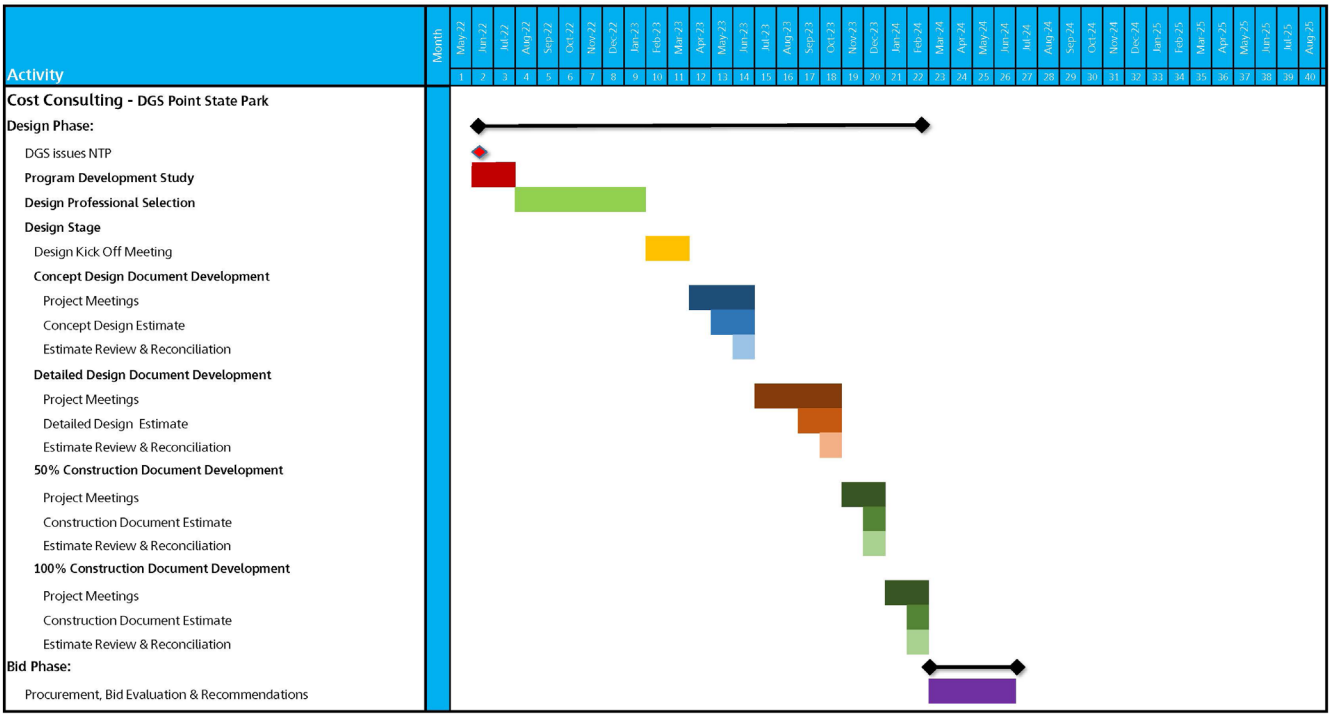
SKANSKA

D. Project Work Plan

SKANSKA

D. Project Work Plan

I. Include a high-level summary that shows all the tasks and deliverables to complete the project. Explain your approach to deliverables.



Approach to Deliverables

Skanska's approach starts with us participating in the initial project Kick-Off meeting. This is where our team will get up to speed on understanding lines of communication, the project goals and in particular the Conditions of Satisfaction (CoS).

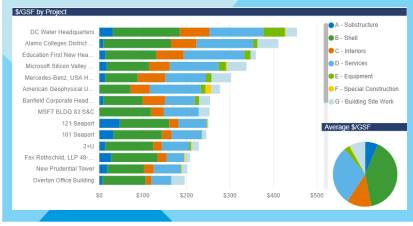
Order of magnitude estimate (Cost Benchmarking)

Based on the information gained from the Gemba site walk and the available project information along with our experience and database of commercial and park facility construction costs, we can validate cost projections quickly and ensure that the estimate remains valid throughout the project.

Skanska's benchmarking capabilities are unique in that we not only provide clients with cost and efficiency metrics from comparable projects, we also provide qualitative "data" from this same set of projects and space types. The former is critical to budget validation, evaluation of alternative design approaches, and cost control. The latter is essential for communicating how qualitative parameters factor into the larger equation of creating projects that support a given organization's mission, goals, and priorities.

Benchmarking with Skanska Metriks™

We collect close to 400 specific, quantified attributes from every project we build to help our customers and design team members achieve optimization. Skanska Metriks™ provides greater confidence in budget, schedule and overall project efficiency.



Skanska Metriks™ is a benchmarking tool that harvests and compares close to 400 specific, quantifiable attributes from every project we build. Unlike traditional cost benchmarking, Skanska Metriks™ incorporates quantified program and systems information enabling teams to better understand final building product and develop a more accurate cost model. Being able to evaluate the efficiency of building systems relative to similar institutions, teams can also identify attributes to target for improvement long before construction starts or the design is developed.

Our process will begin with the identification in our database, Skanska Metriks™, of recently completed commercial, park, and other relevant projects that are comparable in scale, space types and complexity to the proposed Point State Park project. For each project deemed to be truly comparable, we will review final costs to determine the total reported cost of construction.

Perhaps most importantly, benchmarking also saves time and money by enabling the Project Team to "model" costs of various design options while all team members are present in the same room. This approach is preferable to expending design fees to study options and pricing each option on a case-by-case basis and is a highly effective tool in an efficient decision-making environment.

Approach to Constructability Risks

Our interdisciplinary approach to constructability reviews helps eliminate unworkable details within the design. The object is to find any issues early during design and before the start of construction, which helps prevent budget overruns long-term.

During the on-site Gemba walk and throughout the PDS workshops, Skanska will advise on constructability risks the project should avoid or mitigate and determine which construction methods and types are most feasible. Four main issues that Skanska focuses on when evaluating Constructability risks are:

1. Interdisciplinary coordination. Interdisciplinary coordination seeks to identify clashes between design disciples, such as structural engineering and mechanical engineering.

2. Build-ability. Build-ability is addressed by reviewing the capability of the local workforce and dimensional issues. We will ask questions to determine if tolerances prescribed are workable or exceed normal conditions of the local workforce. We will also ask whether building components that are scheduled to be installed first create a work area too constrained for subsequent work.

3. Sequencing, phasing, and logistics. The impact of sequencing, phasing and logistics will also be evaluated. One of the key issues we will focus on is whether construction phasing will create unsafe conditions or have negative impacts on the Point State Park Campus.

4. Materials and systems integrity. We will confirm that materials and systems selected for your project are the best choices for the long-term performance.

Continuous Cost Modeling

Skanska regularly collaborates with design partners on streamlining the model-to-estimate process in order to provide real-time cost feedback as the design team explores options. Our team understands the key cost drives for this type of project and will work to target measure that can provide significant impact.

Throughout the pre-design phase, we will use our cost estimating skills for continuous budget validation and estimate reconciliation. Our team will work closely with DGS to identify, recommend, and price alternative design concepts, systems and material recommendations that provide benefits to the program. Skanska's estimating team is experienced working on similar projects that have been constructed and can offer unique perspectives that will significantly improve the program quality. We will provide order of magnitude pricing for each item which will be documented and tracked via our cost log. The cost log will provide detailed breakdowns and assumptions for each item. This provides value as the team evaluates final decisions and formalizes the PDS report.

Dynamic cost modeling with this type of accuracy and reliability is virtually unavailable from other firms.

Conceptual Estimate (control estimate)

Our control estimates, even at a programmatic level, are developed to create a framework for the project moving forward. Baseline quantification and pricing, preliminary logistic, phasing and constructability are being established even in these very initial stages. In addition, as determined by the team we are able to incorporate and maintain a multitude of cost centers and/or breakout values to support decision making and reporting needs. Our estimate is truly built as a tool to facilitate the project on a real time basis throughout the pre-design stage of the proposed Point State Park project process.

Design Phase Approach

Skanska's approach starts with us participating in the initial Design Kick-Off meeting. This is where we can get up to speed on understanding what is important to the stakeholders and work towards setting up meetings (who and when) for monthly Design Progress meetings, that will occur during the duration of the design process.

General Estimate and Associated Report Approach

As part of preparing Cost Estimates, we use our Project Management experience to consider the effect of the expected construction schedule/sequencing on construction costs. We use our estimating experience to take into account such variables as escalation, union and non-union construction, bidding requirements, anticipated number of prime contracts, the nature of construction, and the influence of government regulations on construction costs.

Our estimating process is forward-thinking and predictive in nature. There are many factors that influence construction cost estimate reports, such as current labor rates, material prices, and site constraints. Additionally, there are external factors such as macroeconomic trends and the political landscape that can influence the construction cost estimate report. We also consider market volatility, commodity prices, appropriate contingencies and the availability of labor for a given project location.

Skanska will produce complete estimates in the appropriate format required by the DGS, based current Pittsburgh Metro labor and material costs along with agreed-upon markups, including taxes, insurances, contingencies, and fees. The report will include a narrative describing assumptions, qualifications, exclusions, and allowances.

Bidding Stage Approach:

Indicate all resources needed to complete the assignment, including staff assignments, consultants, and reimbursements. All resources needed to complete the assignment, including staff assignments, consultants are indicated in the table below. Anticipated reimbursements: Skanska anticipates reimbursements for activities such as onsite PDS workshops and onsite Gemba walks according to ITQ NO. DGS 2020-SWCE, Appendix C -REIMBURSABLES Other Direct Costs. The reimbursements would include: Vehicle mileage in excess of 50 total miles roundtrip, Tolls and Travel, lodging and meal costs. Note inefficiencies or risks to successful implementation, and any planning efforts to mitigate issues such as travel distance, schedule conflicts and required coordination. If Gemba Walk can be conducted on the same day as the PDS workshop this will save on hours and reimbursables

II. Indicate all resources needed to complete the assignment, including staff assignments, consultants, and reimbursements.

All resources needed to complete the assignment, including staff assignments, consultants are indicated in the table below.

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III. Note inefficiencies or risks to successful implementation, and any planning efforts to mitigate issues such as travel distance, schedule conflicts and required coordination.

If the Cost Consultant can attend the PDS Workshop virtually both days along with a virtual Gemba walk. This can eliminate 16 proposed hours along with the anticipated reimbursements indicated above.

IV. Indicate the anticipated number of hours required for each personnel assigned to the project based on task for completion of the work described in the Scope of Work (Attachment A).

Activity / Role	Project Executive /Sr. Project Manager	CSA Lead /Senior Estimator	Electrical Senior Estimator	Mechanical Senior Estimator	CSA Estimator	Estimator
[Traditional Cost Estimating Program]						
Program Development Study (PDS)						
Prior to the PDS workshop, participate in the on-site Gemba walk with the Project team. The PDS workshop is scheduled for 6/14/2022 with the Gemba walk the afternoon before.	8	8				
Develop a preliminary order of magnitude estimate and BCE in Uniformat (Level 2 and 3) based on all available project information. The estimate and BCE should be prepared, submitted, and reviewed with the DGS Agency Liaison prior to the PDS workshop.	2	16	8	8		
Actively participate in the **1-day** Program Development Study (PDS) workshop. -Throughout the workshop, use conceptual estimating to provide estimates of scope items, alternative design concepts, systems, program spaces and/or project phases to assist in scope and budget reconciliation. -Organize and document appropriately to facilitate tracking of deviations. -Documentation of changes should be visible to the project team during the PDS Workshop.	8	8				
Participate in a risk and opportunity analysis. -Advise the project team on constructability risks and develop strategies to mitigate risks. -Determine which construction methods and types are most feasible. -develop a list of design or construction opportunities the team should consider maximizing value.	8	8				
Participate in the development of the PDS report via virtual meetings, phone calls, and/or emails and provide updated estimates to reflect any scope changes during this process. Provide a review of the final PDS report to ensure it accurately reflects the results of PDS cost estimating activities.	8	10				
Provide a final PDS cost estimate and BCE organized by Uniformat (Level II or III) using primarily parametric and some quantity estimating. The final PDS cost estimate and BCE includes a summary of the value decisions and discussions, a report on the risk and opportunities discussed and their impacts on the project costs, and a thorough documentation on the assumptions included in the estimate.	2	24	20	16	16	
SUB TOTAL PDS HOURS	**36**	**74**	**28**	**24**	**16**	**0**
Design Phase Cost Estimating						
Participate in the initial Design Kick-Off meeting and (12) 1 hour Monthly Design Process Meetings	13	13				
Programming, Schematic or Concept Design Estimating – (Assume 1 estimate) -Provide an estimate and BCE at the milestone based on all documents in the Professional's submission. -The estimate and BCE should be organized by Uniformat (Level II or III) using primarily parametric and some quantity estimating. -For renovation projects the estimate should also include a breakdown of scope items and their costs. -Participate in a design review meeting and present the cost estimate and BCE to the project team. -Respond to comments until the estimate is approved by the Design Project Manager.	4	32	8	8	24	
Design Development Estimating - -Provide an estimate and BCE at the Design Development milestone based on all documents in the Professional's submission. -The estimate and BCE should be organized by either Uniformat (Level IV) or CSI MasterFormat using primarily quantity and some parametric estimating. For Uniformat estimates unit prices at this stage should be broken down into labor, materials, and equipment. -For CSI MasterFormat estimates provide the greatest detail that the drawings and specifications will support. -Participate in a design review meeting and present the cost estimate and BCE to the project team. -Respond to comments until the estimate is approved by the Design Project Manager.	4	24	16	16	24	8
Interim Construction Documents Estimating - -Provide an estimate and BCE at Interim Construction Documents milestone based on all documents in the Professional's submission. -The estimate and BCE should be organized by CSI MasterFormat. The level of detail of the cost estimate in CSI MasterFormat should correspond to Uniformat Level IV. Unit prices should be broken down into labor, materials, and equipment. -Participate in a design review meeting and present the cost estimate and BCE to the project team. -Respond to comments until the estimate is approved by the Design Project Manager.	4	40	32	16	32	16
Construction Documents (Final) Estimating - -Provide an estimate and BCE at Construction Documents milestone based on all documents in the Professional's submission. -The estimate and BCE should be organized by CSI MasterFormat. The level of detail of the cost estimate in CSI MasterFormat should correspond to Uniformat Level V. Unit prices should be broken down into labor, materials, and equipment. -Participate in a design review meeting and present the cost estimate and BCE to the project team. -Respond to comments until the estimate is approved by the Design Project Manager.	8	32	32	24	32	8
SUB TOTAL DESIGN PHASE HOURS	**33**	**141**	**88**	**64**	**112**	**32**
Bidding Stage Services:						
When a project's procurement method is determined to be based on the Best Value (rather than Low bid), review contractor's proposals for scope and responsiveness to the project.	16	8				
Confirm accuracy of proposed project schedule and work force requirements with contractor's labor hours. Review base bid scope submissions for completeness and understanding.	16					
Provide cost consulting services to assist in a post-bid value engineering process, as needed if Base Bid #1 is above the base construction allocation.	2	12	8	8		
SUB TOTAL BIDDING PHASE HOURS	**34**	**20**	**8**	**8**	**0**	**0**

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