



C&S Companies
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June 8, 2021

Mr. Matthew J. Kulhanek
Airport Manager
City of Ann Arbor
Ann Arbor Municipal Airport
801 Airport Drive
Ann Arbor · MI · 48108

Re: Design, Bidding, Administrative & Construction Administration Services
Proposed Scope and Fee – Final Design and Construction Administration Phase
Construct Hangar

Dear Mr. Kulhanek:

File: N75.004.002

Following our recent discussion, we are pleased to provide a proposal for engineering services associated with the design of this Construct Hangar project. We have provided the below summary as well as our scope and fee documentation to this letter.

Project Description:

The Project involves construction of 4-bay pre-engineered metal box-hangar, including wiring, lighting, gas powered radiant heating and foundations, located to the east of an existing taxilane which will require some additional pavement, drainage and site grading, as shown on the Approved Airport Layout Plan. All development shall include necessary site pavement, drainage, mechanical and electrical systems.

Professional services to be provided by C&S shall include final building design, civil, electrical, structural, and mechanical engineering services, as applicable, required to accomplish the following items:

Scope of Services:

Considering the above Scope of Work, C&S's Scope of Services are as follows:

- Site/Civil:
 - Coordinate and obtain a new topographic info
 - Define final site layout and approximate grading requirements to accommodate existing grade

- Define final drainage improvements needed
- Define final construction details and materials
- Coordinate and submit to the City of Ann Arbor, Pittsfield Township and Washtenaw County for site plan review and storm water permitting.
- Hangar:
 - Coordinate and submit to City of Ann Arbor for building permitting review.
 - Building Design/Documentation
 - Obtain new geotechnical investigation for foundation design.
 - Develop final building footprints and door openings to define the site layout spaces and circulation
 - Develop final elevations and building sections to define clearances.
 - Define approximate equipment sizes and capacities for heating and ventilation
 - Establish sizes of major electrical components and overall project loads
 - Establish equipment space requirements
 - Review and identify possible sustainability and energy efficiency options and alternatives for consideration in the final project design. All options and alternatives shall be evaluated and incorporated based on feasibility and overall cost impacts to the project.
- Review meeting (assumed virtual) to review submission and discuss questions, comments, and concerns.
- Final Submission:
 - Final building and site layout options for bidding.
 - Final layout and utility detail drawings showing utility point of connection and site routing.
 - Final specifications for bidding.
 - Opinion of Probable Construction Cost for bidding.
 - Permitting submittals to City of Ann Arbor, Pittsfield Township and Washtenaw County.

Assumptions:

- Design basis aircraft for T-Hangar will be an ADG I, TDG IB (door opening 44' wide by 14' height).
- Costs of permits and reviews will be paid by the City of Ann Arbor separately from this proposal.
- Design to include metering for individual bays for electrical and natural gas services.
- Design to include emergency generator hook ups for each bay.

Exclusions:

- Permit and review costs.
- Construction Observation, if desired, will be negotiated separately. Construction Administration will include limited site visits to review project progress.

Fee:

We propose to provide the services associated with this project for a lump sum fees, as shown below, which includes direct expenses. If additional work is requested or the Scope of Services change, this amount may require revision. However, no additional amount will be expended without your prior authorization.

If you have any questions or require additional information, please do not hesitate to contact me.

A breakdown of our lump sum fees is as follows:

<i>Part A - Preliminary design</i>	<i>Included in Previous Authorization</i>
Part B – Final Design and Bidding	\$46,604.37
<u>Part C – Construction Administration</u>	<u>\$15,921.85</u>
TOTAL	\$62,196.22

Please contact me directly at (734) 953-2571 or email at aaljets@cscos.com if you have any questions or require additional information.

Sincerely,

C&S ENGINEERS, INC.



Aaron M. Aljets, P.E.
Managing Engineer

Cc: M. LaMontagne
R. Koller

SCHEDULE A
SCOPE OF WORK
DESIGN & CONSTRUCTION ADMINISTRATION

Project Title: Construct Hangar
Airport Name: Ann Arbor Municipal Airport
Services Provided: Design, Bidding, Administrative & Construction Administration Services

Project Description:

The CONSULTANT shall provide required services to design the 4-Bay Box Hangar project (the “Project”). The Project will be performed and constructed by the SPONSOR.

The Project involves construction of 4-bay pre-engineered metal box-hangar, including wiring, lighting, gas powered radiant heating and foundations, located to the east of an existing taxiway which will require some additional pavement, drainage and site grading, as shown on the Approved Airport Layout Plan. The total budgeted amount for construction is \$830,000.00.

Services to be provided by the CONSULTANT shall include civil, electrical, mechanical, structural, topographic survey and geotechnical engineering services, as applicable, required to accomplish the following items (“Basic Services”):

PART A – PRELIMINARY DESIGN – INCLUDED IN PREVIOUS AUTHORIZATION

ADMINISTRATION PHASE

The CONSULTANT shall aid the SPONSOR by acting as its liaison and Project coordinator during the Project’s design. In addition, the CONSULTANT shall assist the SPONSOR in the preparation of paperwork required to secure funds for the Project. The specific services to be provided or furnished for this Phase of the Project are the following:

1. During the Preliminary and Final Design Phase coordinate with MDOT AERO and FAA to support the City with coordination of the Airport Layout Plan (ALP) Update and NEPA documentation. The ALP Update is assumed to be a pen and ink as-constructed change only. The NEPA documentation is assumed to be able to use the previously submitted CAT Ex and no additional effort is included in this proposal.
2. During the Preliminary and Final Design Phase coordinate with the City for building permit, Township with Site Plan Review and Soil Erosion and Sedimentation Control Permit and the County for storm water drainage permitting.

3. The construction budget for the Project is \$830,000. The Consultant shall evaluate the feasibility of this budget, based upon the Consultant's experience as a design professional, and keep the Sponsor apprised during each phase of the Project of the results of such evaluation. The Consultant shall advise the Sponsor as to options available for reducing construction costs to stay within the budget, if it appears likely that contractor bid prices will exceed this budget.
4. The design schedule is anticipated to be as follows:

	<u>Time from Receipt of NTP</u>	<u>Anticipated Completion Date</u>
Contract Execution		April 29, 2021
Notice to Proceed (NTP)	0 days	April 29, 2021
Preliminary Design	4 weeks	June 30, 2021
Final Design	3 weeks	September 1, 2021
Bidding Phase	4 weeks	TBD
Construction Administration Phase	TBD	TBD

PRELIMINARY DESIGN

The services to be performed during this Part consist generally of services required to furnish the SPONSOR with a set of Preliminary Plans and Specifications.

The specific services to be provided or furnished for this Part of the Project are the following:

1. Coordinate, acquire and analyze data obtained from subsurface soils and existing pavement investigation program and determine properties of existing pavement and soil materials.
2. Coordinate and acquire topographic survey of area where Hangar is to be placed.
3. Investigate existing electrical system capacities and perform preliminary design of electrical power distribution and control systems.
4. Investigate existing natural gas system capacities and perform preliminary design of natural gas distribution and control systems.
5. Perform Code Review.
6. Develop preliminary design of building foundation. Foundation designs shall be based on typical pre-engineered hangar building design requirements.
7. Develop preliminary site plan showing building layout, site plan improvements (pavements, drainage design).
8. Develop preliminary layouts for interior and exterior lighting, electrical outlets, emergency generator connection, panels and controls.
9. Develop preliminary building sections and elevations, including proposed colors.
10. Prepare preliminary Contract Drawings (approximately 50% complete) providing sufficient detail for review of design concepts by the SPONSOR and the interested adjacent Municipalities.
11. Prepare general specifications and preliminarily develop technical specifications expected to be required for the proposed work.
12. Develop a draft construction phasing and operations plan that endeavors to limit interference by the Project's construction with airport and tenant operations, in accordance with FAA advisory circular 150/5370-2 (current edition).

13. Update opinion of probable construction cost to reflect the outcomes of preliminary Project design.
14. Submit sufficient copies of preliminary design documents to the SPONSOR and stakeholders for their review and comment.
15. Schedule and conduct a preliminary design review meeting to discuss and resolve SPONSOR comments.

PART B – FINAL DESIGN AND BIDDING

FINAL DESIGN PHASE

The services included under this Phase shall generally consist of services required to furnish the SPONSOR with a complete set of Contract Documents for the Project, including Final Plans, Specifications, and opinion of probable construction costs. Services to be performed or furnished during this Phase may include revising the preliminary submittal information to comply with comments received and then completion of the final design. Plans and Specifications, suitable for bidding, will be completed; final design will be coordinated with the SPONSOR; and a complete set of bid documents will be furnished to the SPONSOR. A final opinion of probable construction cost will also be prepared and submitted. A final Construction Phasing and Operations Plan will be included as part of the specifications.

The specific services to be provided or furnished for this Phase of the Project are the following:

1. Finalize foundation design and detail concrete floor slab including reinforcing bar and other related details.
2. Finalize building layout, floor plans, elevations and sections.
3. Finalize electrical power distribution and system designs and detail installations.
4. Finalize civil site work including pavement, grading and drainage design to meet City, Township and County requirements.
5. Finalize natural gas system distribution and system designs and detail installations.
6. Review and identify possible sustainability and energy efficiency options and alternatives for consideration in the final project design. All options and alternatives shall be evaluated and incorporated based on feasibility and overall cost impacts to the project.
7. Prepare final Contract Drawings.
8. Perform a detailed quantity takeoff of all bid items to be included on the Contract Drawings and in the General Specifications of the Contract Documents.
9. Finalize General Specifications and prepare written Technical Specifications for all construction materials and installations. Finalize construction phasing and operations plan and include in Specifications.
10. Prepare final opinion of probable construction costs based upon the actual bid items.
11. Submit draft final documents to the SPONSOR for final review and comment. Schedule and conduct draft final review meeting with the SPONSOR to discuss and resolve final comments.
12. Reproduce and submit sufficient copies of bid documents to SPONSOR for bidding purposes. Bid documents shall consist of the Contract Drawings and Specifications.

BID PHASE

The Bid Phase is that time frame between completion of the design process and beginning of actual construction when the SPONSOR publicly advertises and receives bids, awards contracts to the lowest responsible bidder, and executes a construction contract to perform the work with the successful contractor(s). The CONSULTANT shall assist the SPONSOR during this Phase as required.

The specific services to be provided or furnished for this Phase of the Project are the following:

1. Receive and respond as required to questions from potential bidders regarding the Contract Documents.
2. Schedule and conduct pre-bid conference(s) if requested by the SPONSOR and advise the SPONSOR on matters relating to design. Prepare meeting minutes of the pre-bid conference(s).
3. Prepare addenda to the bid documents after advertisement and prior to bidding as required upon the SPONSOR's approval.
4. Attend bid opening. Upon receipt of bids, perform bid reviews.
5. Prepare a final bid tabulation, recommendation/rejection of award to the SPONSOR, and a sample award letter.

PART C - CONSTRUCTION CONTRACT ADMINISTRATION PHASE

The Construction Contract Administration Phase shall consist of limited observation of the construction to become generally familiar with the progress and quality of the Contractor's work to determine if the work is proceeding in general conformity with the Contract Documents. This scope of work is not inclusive of full or part time construction observation. Construction Contract Administration comprises the following:

1. Provide consultation and advice to the SPONSOR during construction, including the holding of a pre-construction conference, and bi-weekly construction coordination meetings. Prepare and distribute minutes of all meetings. This assumes work will be completed over 60 calendar days with four total construction coordination meetings.
2. Review, approve, or take other appropriate action on all Contractor-required submittals, such as construction schedules and phasing programs, shop drawings, product data, catalog cuts, and samples.
3. Review alternative construction methods proposed by the Contractor and advise the SPONSOR of the impact of these methods on the schedule and quality of the Project.
4. Prepare supplemental drawings and change orders necessary for the Contractor to execute the work properly within the intended scope. Assist the SPONSOR in resolving contractor claims and disputes.
5. Provide interpretation of the Contract Document requirements and advise the Contractor of these on behalf of the SPONSOR when necessary.
6. Furnish the SPONSOR one (1) reproducible set of the record drawings for the completed Project taken from the annotated record drawings prepared by the engineer based upon SPONSOR and Contractor-provided information.
7. Conduct a final inspection of the completed Project with the SPONSOR's airport personnel and the Contractor.
8. Issue certificates of construction completion to the SPONSOR.
9. Perform an orderly closeout of the Project as required by the SPONSOR.



**ARCHITECTURAL/ENGINEERING
COST SUMMARY
SCHEDULE "B"
DESIGN & CONSTRUCTION
PHASE**

PROJECT NAME: Construct Hangar
 PROJ DESCRIPTION: Construct new 4 bay hangar
 CLIENT: City of Ann Arbor
 CLIENT MANAGER: Aaron M. Aljets, PE

DATE: 08-Jun-21
 A/E: C & S ENGINEERS, INC.
 PROJECT NO: N75MKT
 C&S CONTACT: AMA

I. ESTIMATE OF DIRECT SALARY COSTS:

	TITLE	MAXIMUM RATE OF PAY (\$/HR)	AVERAGE RATE OF PAY (\$/HR)	@	ESTIMATED HOURS		ESTIMATED COST
C.	Service Group Manager	\$105.00	\$82.16	X	4	=	\$328.64
D.	Department Manager	\$85.00	\$70.77	X	40	=	\$2,830.80
G.	Managing Engineer	\$80.00	\$64.71	X	61	=	\$3,947.31
I.	Senior Project Engineer	\$60.00	\$55.38	X	48	=	\$2,658.24
J.	Project Engineer	\$52.00	\$41.91	X	108	=	\$4,526.28
N.	Senior Project Designer	\$50.00	\$43.55	X	120	=	\$5,226.00
TOTAL ESTIMATED DIRECT SALARY COST:							\$19,517.27

II. OVERHEAD EXPENSES & PAYROLL BURDEN PER SCHEDULE "C" -

(AGREED OVERHEAD EXPRESSED AS A PERCENTAGE
OF DIRECT SALARY COST):

166.00%

\$32,398.67

III. SUBTOTAL OF ITEMS I & II:

\$51,915.94

IV. ESTIMATE OF DIRECT EXPENSES:

A.	TRAVEL, BY AUTO:						
		6	TRIPS @	20	MILES/TRIP @	\$0.575	= \$69.00
B.	TRAVEL, BY AIR:						
		0	TRIPS @	0	PERSONS @	\$0.00	= \$0.00
C.	PER DIEM:						
		0	DAYS @	0	PERSONS @	\$151.00	= \$0.00

TOTAL ESTIMATE OF DIRECT EXPENSES:

\$69.53

V. FIXED FEE (PROFIT, LUMP SUM):

A.	LABOR PLUS OVERHEAD:	11%	(OF III.)	\$5,710.75
B.	DIRECT EXPENSES:	0%	(OF IV.)	\$0.00

TOTAL FIXED FEE:

\$5,710.75

VI. SUBCONTRACTS:

A.	ESTIMATE OF TOPOGRAPHICAL SURVEYS:	\$4,500.00
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B. ESTIMATE OF SUBSURFACE INVESTIGATION & TESTS:

Total SBOs

\$4,500.00

VII. TOTALS:

A. **MAXIMUM TOTAL COST FOR DESIGN SERVICES:**

\$62,196.22

C&S ENGINEERS, INC.
ARCHITECTURAL/ENGINEERING
WORK SUMMARY

Date: 6/8/21

PROJECT: Construct Hangar
SERVICES: Design and CA
CLIENT: City of Ann Arbor
CLIENT MGR: Aaron M. Aljets, PE

Service Group Mgr: RJK
Facility Manager: AMA
Project Manager: AMA
Project Number: N75MKT

CONT NO.	PHASE NO.	TASK	GROUP MGR	DEPT MAN	MAN ENG	SEN PROJ ENG	PROJ ENG	SEN PROJ DES	DIRECT COSTS	SERVICES BY OTHERS	TOTALS	TOTAL HOURS PER TASK
		200 PROJECT ADMINISTRATION										
		203 MEETINGS										
		210 PRELIMINARY DESIGN - CIVIL										
		230 PRELIMINARY DESIGN - STRUCTURAL										
		240 PRELIMINARY DESIGN - ARCHITECTURAL										
		260 PRELIMINARY DESIGN - ELECTRICAL										
		280 QUALITY ASSURANCE/QUALITY CONTROL										
		790 SERVICES BY OTHERS - GEOTECHNICAL										
		Part A - Preliminary Design - Included in Previous Authorization							\$ -	\$ -		
		303 MEETINGS		20	22		20				\$10,857.36	62
		304 BIDDING & AWARD SERVICES			8		8	4			\$3,032.79	20
		310 GENERAL DESIGN - CIVIL			11		32	40			\$11,204.91	83
		330 GENERAL DESIGN - STRUCTURAL		4				32			\$4,950.57	36
		340 GENERAL DESIGN - ARCHITECTURAL		4				32			\$4,950.57	36
		360 GENERAL DESIGN - ELECTRICAL		4							\$835.82	4
		380 QUALITY ASSURANCE/QUALITY CONTROL	4			32					\$6,202.82	36
		600 DIRECT EXPENSES (ALL)							\$69.53		\$69.53	
		790 SERVICES BY OTHERS - TOPOGRAPHIC SURVEY								\$4,500.00	\$4,500.00	
		Part B - Final Design and Bidding	4	32	41	32	60	108	\$ 69.53	\$4,500.00	\$46,604.37	277
		500 CONSTRUCTION ADMINISTRATION		8	20	16	48	12			\$15,591.85	104
		Part C - Construction Administration		8	20	16	48	12	\$ -	\$ -	\$ 15,591.85	104
OVERALL PROJECT COST (INCLUDES Part 2 AND 3)			4	40	61	48	108	120	\$ 69.53	\$ 4,500.00	\$ 62,196.22	381