

Memorandum

Date: March 6, 2019
To: Project File
From: S. Dixon
Re: **A/E Firm Tasking Durations**
Proton Improvement Plan II (PIP-II)
PIP-II-doc-318

Steven Dixon
Conventional Facilities

PIP-II Division
P.O. Box 500, MS 312
Kirk Road and Pine Street
Batavia, Illinois 60510-5011
USA
Office: 630.840.8501
steveo@fnal.gov

This memo describes the historical data and assumptions used to estimate the durations required to task an Architect/Engineering (A/E) firm for support of the conventional facilities portion of the PIP-II project.

Background

A July 15, 2015 presentation titled “Fermilab Projects Procurement Support” by Joe Collins indicated that the procurement cycle (defined as the time frame when an approved requisition is received in FI/Procurement until a purchase order is issued) for A/E selection may take as long 160 calendar days.

The A/E firm for the conventional facilities portion of PIP-II was selected following FI/Procurement’s selection guidance. An indefinite deliverables/indefinite quantity (IDIQ) subcontract was established with the A/E firm and will result in shorter procurement cycles since the overall selection is complete and task orders issued under the master IDIQ agreement typically require a shorter duration to establish a purchase order.

The FESS/Engineering Standard Operating Procedure 9.3.5.1 includes the requirements for developing tasking purchase orders for A/E consultants. This includes developing a memorandum with the proposed work scope for tasking, issuing this request for proposal to the A/E and review of the A/E proposal prior to creating a requisition. This procedure will generally be followed with appropriate PIP-II tailoring.

Historic Data

Seven (7) recent purchase orders for A/E tasking was reviewed to understand trends. As with PIP-II, these A/E firms were already under master agreements and the individual tasking was issued under those agreements. Listed below is a summary chart of those purchase orders with the summary average below.

	Durations in Working Days				
	Base Cost	RFP Turnaround	Req Approval	Approved Req to PO (Procurement Cycle)	A/E Tasking Period
SBN Far Detector Building - Final Design	\$575,844	14	8	11	33
SBN Near Detector Building - Final Design	\$193,864	14	9	15	38
UUP ICW Final Design	\$300,000	13	8	2	23
UUP Field Support	\$236,348	38	3	3	44
MSS AP Design	\$426,161	38	3	2	43
IERC Management Support	\$158,534	6	4	3	13
IERC Conceptual Design Support	\$517,296	10	4	5	19
Average		19	6	6	30

The “**RFP Turnaround**” column is the time period in working days from the creation of the work scope memorandum until the requisition was begun. The “**Req Approval**” column indicates the number of working days that was required to receive the electronic approvals. This time frame started when the requisition entered the approval system until it was received at FI/Procurement. The “**Approved Req to PO**” column is the working days required for the procurement cycle. The “**A/E Tasking Period**” column is the overall duration - from the start of the work scope memorandum until a purchase order was issued.

PIP-II Assumptions

The A/E tasking for the conventional facilities portion of the PIP-II project assumes that the historic data is a good indicator for this type of tasking. Listed below is the work breakdown structure of the conventional facilities along with the tasking assumptions:

WBS	Construction Package	A/E Base Cost (FY18\$)	RFP Turnaround	Req Approval	Approved Req to PO (Procurement Cycle)	A/E Tasking Period	Basis
121.06.02	Site Preparation						
	Design	\$1,549,838	19	6	6	30	Historical Average
	Construction Support	\$1,184,000	19	6	6	30	Historical Average
	Construction Coordination Support	\$442,000	19	6	6	30	Historical Average
121.06.03	Cryo Plant Building						
	Design	\$1,045,000	19	6	6	30	Historical Average
	Construction Support	\$1,179,000	19	6	6	30	Historical Average
	Construction Coordination Support	\$463,000	19	6	6	30	Historical Average
121.06.04	Utility Plant Building						
	Design	\$620,000	19	6	6	30	Historical Average
	Construction Support	\$698,000	19	6	6	30	Historical Average
	Construction Coordination Support	\$274,000	19	6	6	30	Historical Average
121.06.05	Linac Complex						
	Design	\$4,418,000	19	6	6	30	Historical Average
	Construction Support	\$4,986,000	19	6	6	30	Historical Average
	Construction Coordination Support	\$1,957,000	19	6	6	30	Historical Average
121.06.06	Booster Connection						
	Design	\$395,000	19	6	6	30	Historical Average
	Construction Support	\$446,000	19	6	6	30	Historical Average
	Construction Coordination Support	\$175,000	19	6	6	30	Historical Average

These durations are shorter than the recommendations contained in the “Fermilab Projects Procurement Support” presentations and reflect the use of an A/E already under indefinite quantity/indefinite deliverable agreement and recent historic data.

Summary

This memo describes the basis for the A/E tasking durations of the conventional facilities portions of the PIP-II project. This information will be revisited in subsequent design phases to validate the assumptions.

Update History

- December 2017 after the DOE Independent Project Review
- May 2018 with costs in FY18 dollars and revised WBS
- December 2018 after WBS re-organization
- March 2019 update based on added scope from room data sheet validation

Encl: Fermilab Projects Procurement Support, dated July 15, 2015
FESS/Engineering Standard Operating Procedure 9.3.5.1, dated December 15, 2011
Historic Data Breakdown

Cc: L. Merminga, PIP-II
M. Kaducak, PIP-II
L. Lari, PIP-II
F. Minton, PIP-II
PIP-II-doc-318



Managed by Fermi Research Alliance, LLC for the U.S. Department of Energy Office of Science

Fermilab Projects Procurement Support

Joe Collins

FESS Presentation

July 15, 2015

WHAT WE DO

- Acquire Goods and Services for the Laboratory
- Support Procurement Requirements from Initial Development to Closeout
- Adhere to a Best Value Philosophy

WHO WE ARE

Joe Collins, Procurement Manager, x4169
Joanne Hall, Administrative Assistant, x4168
Monika Lasota, Functional Analyst, x2114

Operations Procurement

Bill Koncelik, Supervisor, x4173
Chris Rossman, x4439
Gary Davis, x4171
Pamela Noyes, x5779
Scott Engel, x2733
Brian Niccolai, x4177
Joe Morgan, x4181
Bob Johnson, x4179
Mark Graczyk, x4895
Don Rogus, x4177
Nancy Yackle, x2555

Project Procurement

Bob Cibic, Supervisor, x3258
Ron Evans, x4166
Steve Gaugel, x5782
Jim Hohbein, x6782
Steve Cozzens, x4183
Jane Graves, x4194
Terry Cross, x3763

Construction Procurement

Tom Powers, Supervisor, x4255
Jerry King, x2697
Sandra Efstathiou, x5784
Gordon Bagby, x3388

ProCard Administration

Nancy Yackle, x2555

Support Staff

Joyce Serritella, x4155
Julie Wiley, x8048

PROJECT LIAISON

The Procurement Liaison is assigned to a specific project, and acts as the point of contact for all procurement issues. This person will generally handle the Project's high dollar value, and complex procurements, from planning through closeout, while also tracking status, coordinating all other Project Procurement actions, and keeping Procurement staff members advised of Project schedules, and priorities.

The Liaison also acts in the capacity of Procurement Department representative at Project meetings, and DOE reviews.

Project Liaisons:

- Sandra Efstathiou, x5784, LBN
- Steve Gaugel, x5782, Mu2e
- Bob Cibic, x3528, LCLSII
- Gary Davis, x4171, CMS
- Jim Hohbein, x6782, UUP

RESPONSIBILITY

- Serve the customer
 - You
 - DOE
 - Stakeholders

OPERATING RULES

Procedural Requirement based on:

- FRA Prime Contract
- Commercially Accepted Practice
- DOE Acquisition Regulations
- Federal Acquisition Regulations
- DOE Property Management Regulations

OPERATING RULES

- Ethical
- Equitable
- Transparent

OPERATING RULES

- Maximum Practical Opportunities to:
 - Small Disadvantaged Businesses
 - Small Businesses
 - Women-Owned Businesses
 - HUBZones
 - Veterans
 - Service Disabled Veterans
- Annual Goals Established
- SB Set Asides
- All Construction subcontracts \$3.5 million or less, are set aside for Small Business; per the Prime Contract, Appendix H

VISIBILITY

- Audits
 - Department of Energy
 - Office of Inspector General
 - General Accounting Office
 - Small Business Administration
 - Internal Auditors
 - External Auditors
- Lab Management
- Lab Customers

VISIBILITY

- Vendors
- Socioeconomic Program Advocates
- Business Community
- Competition Advocates
- Congress
- News Media
- General Public
- Unions

OPERATION

Buyers Responsible “From Cradle to Grave”

- Planning
- Developing
- Negotiating
- Awarding
- Administration
- Close-Out

REQUIREMENTS

- Over \$10,000
 - Competition Required
- Over \$150K
 - Advanced Notification to DOE/FSO is required, for sole source actions, and procurements that include a patent rights clause.
- Over \$5M
 - Advanced Procurement Plan (APP) and proposed Solicitation (RFP) must be approved by FSO prior to distributing the solicitation to potential subcontractors
- Over \$10M
 - Acquisition Plan (AP) must receive FSO approval. FSO has the authority to approve, an AP estimated up to \$25M.
- Over \$25M
 - AP and Solicitation must be reviewed by the Science Deputy Director for Field Operations/Head of the Contracting Activity (HCA)
- Over \$50M
 - The review chain also includes the DOE Director, Office of Procurement and Assistance Management, and the DOE Acquisition Planning and Liaison Division (ALPD-Business Clearance Unit). Note: This step may take six weeks to complete.

PROCUREMENT CYCLE TIME - COMMERCIAL

Procurement cycle time extends from receipt of the approved requisition (with complete drawings, specifications and other attachments) to subcontract award.

PROCUREMENT CYCLE TIME - COMMERCIAL

Commercial, Off-the-Shelf Items and Services from Domestic Sources

- \$10,000 or less 1-9 calendar days
- >\$10,000-\$50,000 10-30 calendar days
- >\$50,000-\$1,000,000 31-50 calendar days
- Greater than \$1,000,000 51-60 calendar days
- Greater than \$5,000,000 61-90 calendar days
- Greater than \$25,000,000 91-120 calendar days
- Greater than \$50,000,000 121-160 calendar days

– Note: Use the Stockroom as needed. Use a ProCard if it benefits you.

PROCUREMENT CYCLE TIME

NON-COMMERCIAL

Non-Commercial (Construction, T&M, University A&E, Labor Hour Subcontracts, Unique Equipment and Fabrications, Sole Source Foreign Procurements)

- 30-160 calendar days depending on complexity
- University subcontracts are closer to 60 days while A&E, labor hour, major construction, security, and cafeteria services may take 160 days
- Sole source foreign procurements may take up to 160 days; especially those priced in excess of \$500,000.

EMERGENCIES

If your requirement is urgent:

- 1) Contact your Procurement Liaison
- 2) Call a Group Leader or the Procurement Manager
- 3) Ensure that the urgency is stated on the requisition

ORACLE HELP

Joanne Hall, x4168

Authority to Commit the Laboratory

- FRA, Fermilab Director
 - CFO
 - Deputy Head, Finance
 - Procurement
 - ProCard Holders (\$2,500)
 - Construction Coordinators (\$5,000 field changes)
 - Engineering Department Head, FESS (\$25,000 field change)

Responsibility of Staff in Dealing with Outside Organizations

- Do not commit the Lab unless you possess specific delegated signature authority

AFTER-THE-FACT REQUISITIONS/RATIFICATIONS:

- Personnel without the authority to commit the Lab
- Specific authority is delegated in a written memo from the Deputy Head, Finance; Procurement Manager, or as delegated by job position such as Construction Manager, Construction Coordinator, or ProCard holder.
- Ratifications are the acts of approving unauthorized agreements (purchase commitments) with vendors (or other parties) made by FRA personnel who do not possess authority to make such commitments. The Lab Director, CFO, Deputy Head, Finance, and Procurement Manager (or designee) are the only individuals with authority to ratify actions.

- Ratification of an unauthorized action may only be exercised when:
 - Supplies or services have been provided to and accepted by FRA, or if FRA otherwise has obtained or will obtain a benefit resulting from performance of the unauthorized commitment;
 - The resulting subcontract would otherwise have been proper if made by the appropriate Procurement Administrator,
 - The Procurement Administrator reviewing the unauthorized commitment determines the price to be fair and reasonable;
 - Funds are available and were available at the time the unauthorized commitment was made.

NON-COMPETITIVE CONTRACTING

- The Lab has a responsibility to obtain competition. It generally results in securing best value. This does not mean that we have to accept the lowest price.
- Trade offs between price and technical evaluation factors are acceptable. We must plan together and document accordingly.

If you have a Procurement question,
please call:

Joe Collins, x4169

Bob Cibic, x3528

Tom Powers, x4255

Bill Koncelik, x4173

Joanne Hall, x4168

Standard Operating Procedure

SOP Identifier: 9.3.5.1
Revision Number: 2
Effective Date: December 15, 2011

Subject Matter Expert: S. Dixon (steveo@fnal.gov)

Title: **Architectural/Engineering Consultant Tasking**

I Applicability

This procedure applies to the establishing tasking purchase orders under a master subcontract with architectural and engineering (A/E) consultant firms.

II Responsibilities

The following responsibilities have been identified:

FESS/E Project Engineer

- Develop scope, schedule and budget criteria with the Customer contact;
- Prepare Request for Proposal memorandum to FS/Procurement;
- Review A/E Consultant proposal;
- Prepare and circulate purchase requisition.

FS/Procurement Contract Administrator

- Issue Request for Proposal to A/E Consultant
- Review A/E Consultant proposal;
- Issue purchase order.

III Procedure

1.0 Develop Memorandum

The FESS/E Project Engineer is responsible for meeting with client and developing an understanding of the scope, schedule and budget requirements for the project. This information shall be incorporated into a memorandum to Finance Section, Procurement Department (FS/P).

The FESS/E Project Engineer will develop a memorandum to FS/P that requests that a formal Request for Proposal (RFP) be issued to an A/E Consultant. The RFP should, as a minimum, contain the following information:

- Project Description;
- Scope of Services;
- Expected Deliverables;
- Preliminary Schedule;

This memorandum should be addressed to Contract Administrator of FS/P with copies to the Project File, Division/Section/Research Center Client contact and FESS/E Department Head.

Standard Operating Procedure

2.0 Issue Request For Proposal

BSS/Procurement will issue a formal letter-format RFP to the A/E Consultant.

3.0 Proposal Preparation

Upon receiving a written request for proposal from FS/Procurement the A/E Consultant is responsible for preparing a proposal that accurately reflects the cost and schedule implication of the scope of services described in the RFP.

During the proposal preparation, the A/E Consultant may contact the Project Engineer to answer technical questions and to arrange site visits. All contractual issues shall be directed to the FS/Procurement Contract Administrator.

Unless otherwise specified in the RFP, all proposals shall be submitted within ten (10) business days after receipt.

Fee Proposals shall be sent to the FS/Procurement Subcontract Administrator with a copy to the FESS/E Project Engineer.

The A/E proposal shall include, as a minimum, the following information:

- Project description, describing the A/E's understanding of the program requirements of the task.
- Scope of Services, listing the services and the deliverables offered by the A/E for the fees quoted. Itemize variations, if any, to the requirements stated in this handbook and the A/E Services Subcontract.
- Schedule, proposing the time the task or each phase of the task will take to complete, indicated in days or weeks. The time should start from a "NTP" date and not actual dates.
- Cost, providing a detailed labor hour and rate breakdown of the proposed fee maximum by phase and task, listing personnel titles as they appear in the A/E Subcontract. Supplement this detail with the submittal of a completed Consultant Price Summary. Include a proposed cap cost for reimbursable expenses if allowed by the A/E Subcontract.
- Baseline Progress Reporting Requirements, for the tasking that includes, as a minimum, the following information:
 - Logical, sequential listing of tasks;
 - Expected cost associated with task (including both labor and reimbursables)
 - Monthly projection of expected costs
- All other requirements required by the A/E Subcontract or RFP.

4.0 Proposal Review

Upon receipt of the A/E proposal, the FS/P Contract Administrator will forward the proposal to the FESS/E Project Engineer for review and action. If acceptable, a purchase requisition will be written.

5.0 Purchase Requisition

After completing the review of the proposal, the FESS/E Project Engineer develop a purchase requisition and circulates it for signatures.

Standard Operating Procedure

6.0 Issue Purchase Order

Upon receipt of the approved purchase requisition, the FS/P Contract Administrator will issue a purchase order for the task. The issuance of the purchase order signifies that point at which the A/E may begin work on the task.

IV References

The following references have been identified:

- FESS/Engineering Policy FEP 9 - Consultant Support
- FESS/Engineering Policy FEP 5 - Tailoring
- FESS/Engineering Standard Operating Procedure 8.4.5.1 – AE Quality Assurance
- FESS/Engineering Standard Operating Procedure 7.4.5.1 – AE Progress Reporting
- FESS/Engineering Standard Operating Procedure 12.4.5.1 – AE Invoicing

V Revision History


Version Number	Date	Author	Change Summary
0	04/15/2008	S. Dixon	Initial Release
1	12/15/2011	R. Alber	Triennial Review
2	04/15/2015	R. Alber	Triennial Review

VI Other

- 1.0 Example of memorandum to FS/P
- 2.0 Example of RFP memo to A/E firm
- 3.0 Example of A/E proposal

Standard Operating Procedure

1.0 Example of memorandum to FS/P

	Engineering Department Facilities Engineering Services Section 630.840.8501 (phone) 630.840.4980 (fax)
Memorandum	
October 5, 2007	
To:	B. Cibic, BSS/Procurement
From:	S. Dixon, FESS/Engineering
Subject:	Request for Professional Services Lab BEG Lighting Upgrade FESS/Engineering Project No. 8-2-151C
Please request a Not-To-Exceed proposal for professional A/E services from Crawford Murphy & Tilly Inc. (CMT) for engineering services for the Lab BEG Lighting Upgrade project.	
<u>Description:</u> The existing interior lighting at the Lab BEG Connection is based on unit fixtures intended for an industrial setting. Recent analysis and client input has determined that a more conventional lighting arrangement is preferred. Such a system was included in the original design, but removed as part of a value management exercise. This task will investigate the possibility of removing the existing system and installing the original design.	
<u>Scope:</u> The tasking should request engineering support for the following phases:	
Phase 1 – Investigation This phase will evaluate the existing electrical systems and develop a recommendation for replacement fixtures. In addition, budget cost estimates will be provided for the proposed upgrades. Specific tasks include:	
<ol style="list-style-type: none">1. Meetings at Fermilab;2. Field visits to inspect existing conditions;3. Investigation of proposed upgrades;4. Development of budgetary cost estimates;5. Report preparation	
Phase 2 – Title 2 Documents This phase will prepare the construction documents suitable for competitive bidding purposes. Specific tasks include:	
<ol style="list-style-type: none">1. Meetings at Fermilab;2. Development of drawings;3. Development of specifications;	

Standard Operating Procedure

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Deliverables:

The following is the minimum expected deliverables:

Phase 1: Summary report of investigation/evaluation results

Phase 2: Construction documents

Schedule:

Start Task: November 2007

Complete Phase 1: Start Date + 4 weeks

Complete Phase 2: Start Date + 8 weeks


Bob, could you please forward this proposal to CMT and ask that they contact me to discuss this request for proposal in greater detail. Please request that they return their proposal by October 22, 2007

Please contact me at x8501 with questions.

Cc: E. Crumpley, FESS/E
E. McHugh m/s 355
J. Niehoff, FESS/E
Project File 6-7-16

Standard Operating Procedure

2.0 Example of RFP memo to A/E firm

 Fermilab	Fermi National Accelerator Laboratory P.O. Box 500 • Batavia, Illinois • 60510-0500 Phone: 630/840-4255 FAX 630/840-2907 Procurement, Mail Station 210
October 8, 2007	
Mr. Bernard D. Held, P.E. Crawford, Murphy & Tilly, Inc. 600 North Commons Drive, Suite 107 Aurora, IL 60504	
Subject:	Request for Professional Services Lab BEG Lighting Upgrade FESS/Engineering Project No. 8-2-151C
Dear Mr. Held:	
Please submit a Not-To-Exceed proposal for professional A/E services for engineering services for the Lab BEG Lighting Upgrade project.	
<u>Description:</u>	
The existing interior lighting at the Lab BEG Connection is based on unit fixtures intended for an industrial setting. Recent analysis and client input has determined that a more conventional lighting arrangement is preferred. Such a system was included in the original design, but removed as part of a value management exercise. This task will investigate the possibility of removing the existing system and installing the original design.	
<u>Scope:</u>	
The tasking should request engineering support for the following phases:	
Phase 1 – Investigation	
This phase will evaluate the existing electrical systems and develop a recommendation for replacement fixtures. In addition, budget cost estimates will be provided for the proposed upgrades. Specific tasks include:	
<ol style="list-style-type: none">1. Meetings at Fermilab;2. Field visits to inspect existing conditions;3. Investigation of proposed upgrades;4. Development of budgetary cost estimates;5. Report preparation	
Phase 2 – Title 2 Documents	
This phase will prepare the construction documents suitable for competitive bidding purposes. Specific tasks include:	
<ol style="list-style-type: none">1. Meetings at Fermilab;2. Development of drawings;3. Development of specifications;	

Standard Operating Procedure

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Deliverables:

The following is the minimum expected deliverables:

Phase 1: Summary report of investigation/evaluation results
Phase 2: Construction documents

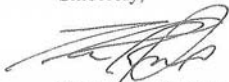
Schedule:

Start Task: November 2007
Complete Phase 1: Start Date + 4 weeks
Complete Phase 2: Start Date + 8 weeks

Please submit your proposal by close of business October 22, 2007. Also, please contact Steve Dixon at (630) 840-8501 to discuss this RFP in greater detail.

If you have any questions please feel free to contact me at (630)840-4255.

Sincerely,




Thomas R. Powers
Procurement Administrator

cc: Steve Dixon, MS 214
Bob Cibic, MS 210
File

Standard Operating Procedure

3.0 Example of A/E proposal

	AVIATION HIGHWAYS & BRIDGES WATER & WASTEWATER LAND DEVELOPMENT
Crawford, Murphy & Tilly, Inc.	Consulting Engineers

October 22, 2007

Thomas R. Powers
Procurement Administrator
Fermilab
PO Box 500, Mail Station 210
Batavia, IL 60510

Dear Mr. Powers:

Re: Fermilab -- Lab BEG Lighting Upgrade
FESS Engineering Project Number: 8-2-151C

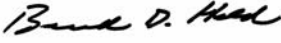
This letter is our response to the October 8 request for proposals for the Lab BEG Lighting Upgrade project. Our proposal is based on a site visit made by CMT's [REDACTED], as well as the information provided in the RFP.

Background Information:
The existing interior lighting at the Lab BEG Connection is based on unit fixtures intended for an industrial setting. Recent analysis and user input suggests that a more conventional lighting arrangement would better serve the buildings use. This project will investigate the possibility of replacing the existing lighting system with a lighting system that conforms with Fermi conventional lighting systems. As a part of this project, CMT will be available for general electrical questions related to the facility.

Project Approach:
CMT intends to perform this project with personnel from our Aurora office. [REDACTED] will provide the engineering services with AutoCAD assistance from CMT Aurora office technicians. Our staff is familiar with Fermi design and drafting standards and will follow them for this project. It is our understanding that this project requires an investigative phase to evaluate the existing system and determine requirements for a replacement lighting system, and estimate the costs of replacement. A summary report of these findings will be presented that would conclude Phase 1 (the investigative phase). Fermilab will then determine if the project will proceed. If so, in Phase 2, CMT will design the replacement system, prepare plans, specifications and estimates for the project. CMT will not proceed with Phase 2 without authorization by Fermilab's project manager.

Schedule and Cost:
CMT is prepared to perform this project in substantial conformance with the schedule proposed in the RFP. We understand that a notice to proceed will be issued in November, 2007 with Phase 1 to be completed in four (4) weeks. Once authorized, Phase 2 would follow in approximately eight (8) weeks. We estimate the effort and cost of this project to include 112 man-hours at a cost of [REDACTED]. Phase 1 would be approximately 33% of the total effort or [REDACTED].

Please call if you have any questions.

Sincerely,
CRAWFORD, MURPHY & TILLY, INC.

Bernard D. Held, P.E.
Sr. Vice President

Standard Operating Procedure

FERMILAB CONSULTANT PRICE SUMMARY

DATE 23-Oct-07

CONSULTANT NAME: CRAWFORD, MURPHY & TILLY, INC.

CONTRACT NO.: _____

TASK ORDER NO.: _____

PROJECT NAME: Lab BEG Lighting Upgrade

PERSONNEL DESCRIPTION*	HOURS	CONTRACT RATE*	ESTIMATED COST (ALL PHASES)
PRINCIPAL	4		
SENIOR PROJECT ENGINEER	2		
PROJECT ENGINEER	78		
SENIOR ENGINEER	0		
ENGINEER	0		
TECHNICAL MANAGER	0		
PLANNER	0		
REGISTER LAND SURVEYOR	0		
SENIOR ENGINEERING TECHNICIAN	0		
ENGINEER TECHNICIAN	28		
ENGINEER ASSISTANT	0		
CLERICAL	0		
TOTAL LABOR			
LABOR BY PHASE:	STUDY OR CDR		
	TITLE I		
	TITLE II		
	BIDDING		
	TITLE III (Constr. a		
COMPUTER CHARGES (Attach Detail)			\$0.00
REIMBURSABLE EXPENSES ESTIMATE			
TOTAL MAXIMUM FEE	(rounded)		

Standard Operating Procedure

CONTRACT ATTACHMENT / EXHIBIT: A - PROFESSIONAL SERVICES COST ESTIMATE															
CLIENT: FERMLAB															
PROJECT DESCRIPTION: Lab BEG Lighting Upgrade															
CMT PROJECT NUMBER: TBD															
CRAWFORD MURPHY & TILLY, INC. CONSULTING ENGINEERS															
		Prep By: AB		DATE: 10/23/07		Apprvd: BDH		DATE: 10/23/07							
TASK NO.	TASKS \ CLASSIFICATIONS	PRINCIPAL	SR PROJECT ENGR / TECH MGR / ARCH	PROJECT ENGINEER	SR ENGINEER / TECHNICAL MGR	ENGINEER	SR TECHNICAL MGR	PLANNER	LAND SURVEYOR	SR TECHNICIAN	TECHNICIAN	TECHNICIAN ASSISTANT	CLERICAL	MAN HOURS & LABOR SUMMARY	
															TOTAL
2006 - 2008 HOURLY RATES															
1	Kick-off Meeting with Fermi Staff				4										4
2	Field collection of existing condition data				6										6
3	Review, analyze and prepare photometrics				6										6
4	Prepare Report with Exhibits and budgetary cost estimate				12							4			16
5	Report review meeting with Fermi Staff				4										4
6	Prepare pre-final plans, specs and estimate				24							16			40
7	Pre-final plans review meeting				4										4
8	Prepare final plans, specs and estimate				12							8			20
9	QA/QC	2	2		2										6
10	Project Management	2			4										6
11															
12															
13															
14															
15															
TOTAL MAN HOURS		4	2		78							28			112
SUBTOTAL - BASE LABOR EFFORT															
TASKS (CONTINUED)	TOTAL LABOR EFFORT	DIRECT EXPENSE & REIMBURSABLES										TOTAL EXPENSE	TOTAL FEE		
		TRAVEL MILEAGE	MEALS & LODGING	PRINTING	EQUIP-MENT	MISC	SURVEY MTL	SUBS	OTHER EXP	OTHER EXP	OTHER EXP				
1		\$10													\$10
2		\$10													\$10
3															
4					\$50										\$50
5		\$10													\$10
6					\$100										\$100
7		\$10													\$10
8					\$100										\$100
9															
10															
11															
12															
13															
14															
15															
TOTALS															
TIME PERIOD OF PROJECT		2004	2005	2006	2007	TOTAL	EST % OF OT HRS INCLUDED ABOVE						MULTI-YEAR + OT		
PERCENTAGE OF WORK TO BE PERFORMED BY YEAR				100%		100%	AVERAGE OVERTIME RATE PREMIUM						MLTPLR & AMT		
WEIGHTING FACTOR FOR 3% ANNUAL ADJUSTMENT				1.0609		1.0609	OT ADJUSTMENT FACTOR								
ESTIMATED CONTINGENCY												5%			
ROUNDING															
TOTAL FEE															

History - Details**SBN Far Detector Building - Final Design**

\$575,844 Req 25170 Amount

		Calendar Days	Work Days
6-Oct-14	Memo to Procurement		
7-Oct-14	RFP to A/E	1	2
23-Oct-14	A/E Proposal Received	17	14 <i>RFP Turnaround</i>
27-Oct-14	Start Req for Approval		
5-Nov-14	Req in Procurement	9	8 <i>Req Approval</i>
19-Nov-14	PO Issued	14	11 <i>Approved Req to PO</i>
Start Req to PO		23	18
A/E Tasking Period		44	33

SBN Near Detector Building - Final Design

\$193,864 Req 252885 Amount

		Calendar Days	Work Days
6-Oct-14	Memo to Procurement		
7-Oct-14	RFP to A/E	1	2
23-Oct-14	A/E Proposal Received	17	14 <i>RFP Turnaround</i>
5-Dec-14	Start Req for Approval		
17-Dec-14	Req in Procurement	12	9 <i>Req Approval</i>
6-Jan-15	PO Issued	20	15 <i>Approved Req to PO</i>
Start Req to PO		32	23
A/E Tasking Period		92	67

Note: Hold period based on expected start date

UUP ICW Final Design

\$300,000 Req 252580 Amount

		Calendar Days	Work Days
4-Feb-15	Memo to Procurement		
9-Feb-15	RFP to A/E	5	4
20-Feb-15	A/E Proposal Received	16	13 <i>RFP Turnaround</i>
15-Feb-15	Start Req for Approval		
25-Feb-15	Req in Procurement	10	8 <i>Req Approval</i>
26-Feb-15	PO Issued	1	2 <i>Approved Req to PO</i>
Start Req to PO		11	9
A/E Tasking Period		22	17

UUP Field Support

\$236,348 Req 259088 Amount

		Calendar Days	Work Days
10-Mar-15	Memo to Procurement		
13-Mar-15	RFP to A/E	3	4
30-Apr-15	A/E Proposal Received (<i>estimate</i>)	51	38 <i>RFP Turnaround</i>
18-Sep-15	Start Req for Approval		
22-Sep-15	Req in Procurement	4	3 <i>Req Approval</i>
24-Sep-15	PO Issued	2	3 <i>Approved Req to PO</i>
Start Req to PO		6	5
A/E Tasking Period		198	143

MSS AP Design

\$426,161 Req 259047 Amount

		Calendar Days	Work Days
10-Mar-15	Memo to Procurement (<i>estimate</i>)		
13-Mar-15	RFP to A/E (<i>estimate</i>)	3	4
30-Apr-15	A/E Proposal Received (<i>estimate</i>)	51	38 <i>RFP Turnaround</i>
17-Sep-15	Start Req for Approval		
21-Sep-15	Req in Procurement	4	3 <i>Req Approval</i>
29-Sep-15	PO Issued	8	7 <i>Approved Req to PO</i>
Start Req to PO		12	9
A/E Tasking Period		203	146

IERC Management Support

\$158,534 Req 259047 Amount

		Calendar Days	Work Days
26-Feb-15	Memo to Procurement		
27-Feb-15	RFP to A/E	1	2
5-Mar-15	A/E Proposal Received	7	6 <i>RFP Turnaround</i>
11-Mar-15	Start Req for Approval		
16-Mar-15	Req in Procurement	5	4 <i>Req Approval</i>
18-Mar-15	PO Issued	2	3 <i>Approved Req to PO</i>
Start Req to PO		7	6
A/E Tasking Period		20	15

IERC Conceptual Design Support

\$517,296 Req 254065 Amount

		Calendar Days	Work Days
16-Feb-15	Memo to Procurement		
17-Feb-15	RFP to A/E	1	2
27-Feb-15	A/E Proposal Received	11	10 <i>RFP Turnaround</i>
12-Feb-15	Start Req for Approval		
2-Mar-15	Req in Procurement	18	13 <i>Req Approval</i>
6-Mar-15	PO Issued	4	5 <i>Approved Req to PO</i>
Start Req to PO		22	17
A/E Tasking Period		18	15