

Memorandum

August 25, 2008

To: Milorad Popovic, AD
From: Russ Alber, FESS Engineering
Subject: Project Definition Report
G-2 Experimental Hall

FESS/E has investigated the proposed G-2 Experimental Hall addition near the AP-0 Target Building and has developed suggested budgetary cost estimates for the conventional construction portion of the work.

Project Description

This project will erect a new Experimental Hall to house the G-2 experiment near the AP-0 Target Building. (See Figure 1 for Location Plan)

The construction materials and methods will be similar to existing Service Buildings located along the Main Injector. The items listed below are included in the construction cost estimates:

- Site construction, including; final grading, 480V and 120V electrical service and telecommunications service and an access roadway and parking/staging area,
- Concrete foundation with concrete slab-on-grade construction, steel superstructure, insulated wall panels and metal deck w/built-up roofing.
- Walls and finishes, including; painting and roofing,
- Mechanical and Electrical Equipment, including; lighting, heating and cooling (HVAC).

The following assumptions were used in preparing this cost estimate;

- No water services are required from the existing AP-0 Target Building,
- A 40-ton building bridge crane will be provided spanning the building width of 80',
- Typical experimental building HVAC requirements, i.e. heating and cooling required, and
- Fire protection throughout new facility.

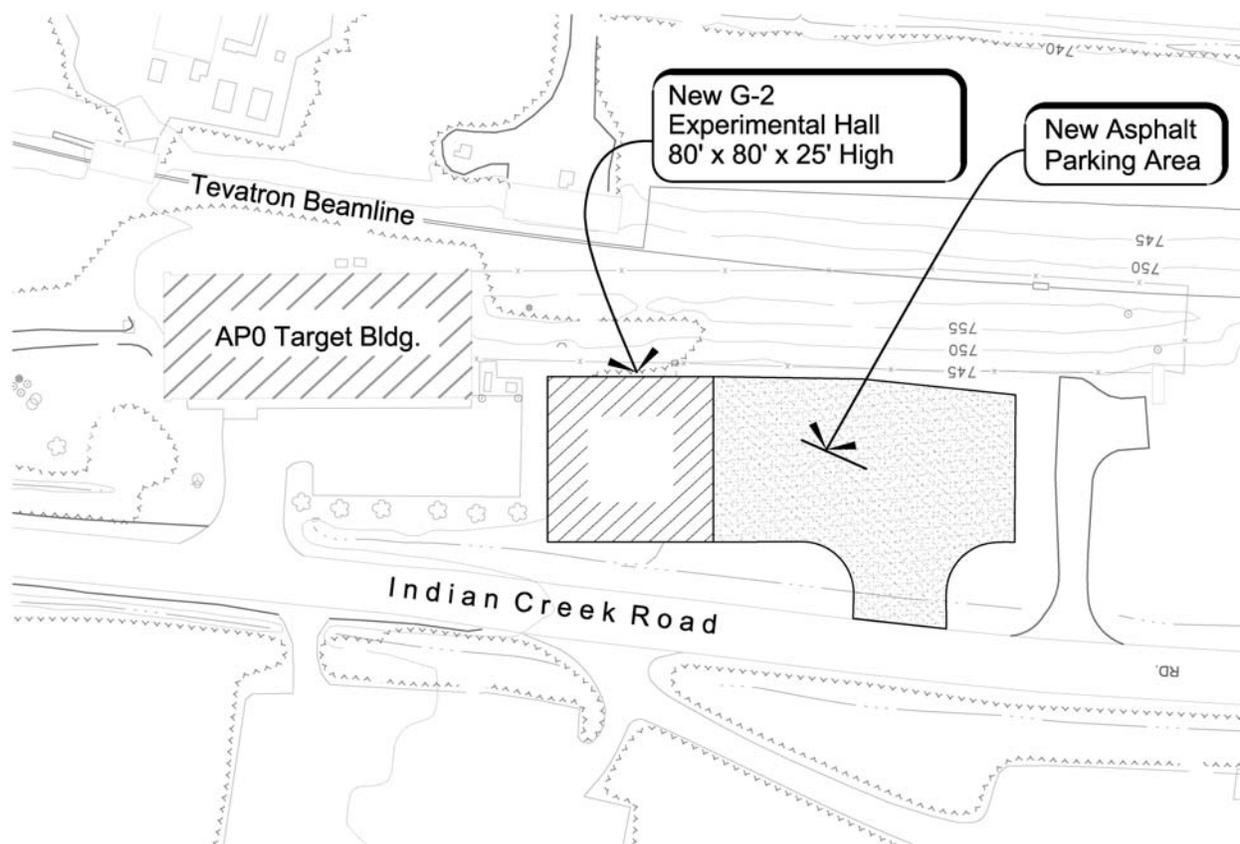


Figure 1 - Location Plan of the New G-2 experimental Hall

Suggested Project Budget

Listed below is the estimated construction cost for this project as described in the sections above:

	G-2 Experimental Hall
Construction	\$2,200,000
EDIA @ 22%	\$485,000
Management Reserve @ 25%	\$675,000
Indirects	\$640,000
CONSTRUCTION TOTAL	\$4,000,000

Cost Estimate Basis

The costs ranges contained in this Project Definition Report are based on FY2008 dollars. Appropriate escalation will need to be applied once a funding source and schedule is identified.

The above suggested project budget is based on cost data taken from Means Cost Estimating Guides, historical data and recent construction history here at Fermilab. While the suggested project budget can provide input for the feasibility of the project, further design refinement will affect the final cost of the project.

Engineering Design and Inspection (ED&I) activities are included in the suggested project budget. ED&I activities include the engineering and design activities in Titles I and II, the inspection activities associated with Title III. The descriptions are based on DOE Directive G430.1-1, Chapter 6. Administration activities include those defined by DOE Directive G430.1-1, Chapter 6 as Project Management (PM) and Construction Management (CM). Past historical data and DOE Directive G430.1-1, Chapter 25 indicate that 18%-25% of the construction costs is an appropriate range.

Based on DOE Directive G430.1-1, Chapter 11 DOE guidelines and the pre-conceptual nature of the design at this stage a Management Reserve of 15%-35% of the above costs is considered an appropriate range. Based on the scope and scale of the proposed project, the determination of the suggested Management Reserve did not include a Monte-Carlo analysis. If required, this analysis can be accomplished. The suggested project budget listed above contains a 25% multiplier for Management Reserve.

Indirect Costs rates are defined by DOE Order 4700.1 that states indirect costs are "...costs incurred by an organization for common or joint objectives and which cannot be identified specifically with a particular activity or project. If this work should become a GPP project, Indirect Costs will have to be applied, but the amount will be affected by the rates in effect at the time this project is initiated. Currently, the Indirect Cost multiplier is approximately 19% of the above costs.

Schedule

Listed below is an estimated schedule for the work described above:

S + 0 days - Start

S + 120 days - Develop Subcontract Documents - issue for Comment and Compliance Review

S + 150 days - Complete drawings, ready to send out for bids

S + 210 days - Award subcontract

S + 390-420 days - Complete Construction

Summary

This Project Definition Report provides suggested budgetary cost estimates based on preliminary designs and conversations and is intended for planning purposes. The information produced is subject to refinement during the subsequent design process.

Please contact me at x2501 with questions.

Encl. Construction Cost Estimate

cc: E. Crumpley, FESS/E (w/encl.)
T. Lackowski, FESS/E (w/encl.)
Project File (electronic copy)

FERMILAB: FESS COST ESTIMATE

Project Title:		Project No.	Status:	Date:	Revision Date:
G-2 Experimental Hall				8/25/2008	
ITEM NO.	DESCRIPTION OF WORK:	QUANTITY	UNITS	UNIT COST	AMOUNT
01	SITE CONSTRUCTION				\$240,000
	Demolition of Offsetting Square Footage	6400	SF	\$20.00	\$128,000.00
	Mobilization	1	Lot	\$5,000.00	\$5,000.00
	Soil Erosion Control	1	Lot	\$5,000.00	\$5,000.00
	Clear & grub	1400	SY	\$10.00	\$14,000.00
	Excavation	1	Lot	\$10,000.00	\$10,000.00
	Electrical service from AP-0 Target Building	1	Lot	\$30,000.00	\$30,000.00
	Tele/Fiber service from AP-0 Target Building	1	Lot	\$7,500.00	\$7,500.00
	ICW connection to existing service/FP	1	Lot	\$15,000.00	\$15,000.00
	Access roadway and parking area	900	SY	\$30.00	\$27,000.00
	Final grading and seeding	1	Lot	\$2,500.00	\$2,500.00
02	BUILDING				\$1,430,000
	Typical High-Bay Building	6400	SF	\$200.00	\$1,280,000.00
	25' High - Insulated Metal Service Building				
	40 Ton Bridge Crane - 80' span	1	Lot	\$150,000.00	\$150,000.00
04	MECHANICAL/ELECTRICAL				\$140,000
	Lighting	6400	SF	\$7.50	\$48,000.00
	HVAC	6400	SF	\$10.00	\$64,000.00
	Receptacles	50	Ea	\$250.00	\$12,500.00
	Misc. panelboards and electrical supplies	1	Lot	\$20,000.00	\$20,000.00
	SUBTOTAL:			\$1,810,000	
	OVERHEAD & PROFIT @ 20%			\$362,000	
	TOTAL:				\$2,200,000