

TITLE I REPORT

ON

CONSTRUCTION OFFICE BUILDING

REPORT TO STANFORD LINEAR ACCELERATOR CENTER - NO. ABA-43
STANFORD UNIVERSITY - ABA SUBCONTRACT S-128
UNDER STANFORD - AEC CONTRACT AT(04-3)-363

SLAC AHO 1991-012B14

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I. INTRODUCTION

This report presents the Title I work performed in regard to the Construction Office Building. The work includes preliminary drawings depicting the building, plot plan, and mechanical and electrical utilities; outline specifications; schedule of following work; and a preliminary construction cost estimate.

The facilities described herein are the building and all utilities equipment, piping, wiring, etc., within 5 feet from building or foundations. Utilities distribution wiring, piping and associated equipment outside the 5 foot limit are not part of this submittal.

The building will be located on SLAC site, west from the Shop Complex and approximately opposite of Accelerator Housing-Klystron Gallery Station 88. Refer to location map on drawing SK-535-100.

II. BASIS FOR DESIGN

A. GENERAL

The building as described herein is the result of a comprehensive planning study considering possible ultimate use as light shops, research area or as a warehouse and the minimum ABA requirements for temporary personnel and service facilities necessary to fulfill its contractual obligations.

The building will be designed, basically, as a low cost shell, i.e., all permanent features will be minimum. Framing will be designed for future installation of roll-up doors for possible future equipment or truck access. Conversion of this building into an office building will be achieved by addition of temporary partitions and mechanical-electrical services. The design will

incorporate some of the normal elements of the approved architectural vocabulary.

Several arrangements of the building were studied; the layout shown herein is considered commensurable to minimum ABA requirements.

B. DESCRIPTION

1. Site - The site will be graded and paved to allow easy access to employee and service vehicles. All site preparation work will be performed under a separate contract (i.e., Initial Site Improvements).

2. Building - The building will be conventional industrial-type one story structure of approximately 15,000 square feet. Interior division of the building into administrative, engineering and operations areas will be by temporary wood and gypsum board partitions. Minimum of interior area, i.e., offices for management personnel, conference room, and washrooms, will be provided with ceilings and full height partitions. The ceiling area is approximately 2800 sq. ft., full height partitions 500 lin. ft., and low (5 - 6 ft.) partitions 500 lin. ft. Floors will be concrete slab with asphalt tile. Various floor finishes and covers were investigated, e.g., painted concrete, mastipave, linoleum, asphalt tile, etc. Considering factors such as initial cost, life expectancy, maintenance, occupancy, personnel traffic, etc., it was decided that medium colored asphalt tile will be most suitable.

In addition to offices and related spaces, the building will also contain a small electrical equipment room, and a temporary switchboard and telephone equipment for the entire site until the equipment in Administration-Engineering Building is in operation. Thereafter all SLAC telephone traffic will be routed through the permanent installation.

Building Data

Length (exterior)	150 ft.
Width (exterior)	100 ft.
Height (average)	13 ft.
Cross Area	15,000 sq. ft.
Building Volume	195,000 cu. ft.
Occupancy	137

Area Analysis

Cross Area	15,000 sq. ft.
Net Usable Area	13,860 sq. ft.
Efficiency	92.4 per cent
Gross per Occupant	109 sq. ft.
Net per Occupant	101 sq. ft.

3. Utilities - Site utilities to be provided for the building will be domestic water, electric power, telephones, fire alarms, and sanitary line.

4. Health and Safety - The building will be a minimum office type facility and the attendant health and safety hazards can be considered ordinary and typical to working environment. All applicable codes such as the Uniform Building Code and the AEC Design Criteria will be followed in regard to health and safety and fire protection. The building will be constructed of noncombustible materials except for the temporary partitions, and fire protection will be provided by hand extinguishers.

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III. OUTLINE SPECIFICATIONS

A. GENERAL - (Per Uniform Building Code, 1961 Edition)

(1) Occupancy: Office Group F-2

(2) Type of Construction: Type IV (N)

(3) Number of Stories: 1

(4) Location on the Property: Separated on four sides.

(5) Area Limitations: (Per UBC)

Type IV (N) Fire Zone III. Entire Building Unsprinklered

(6) Area Limitations: (Per AEC)

AEC criteria limits noncombustible separated areas to 15,000 sq. ft. unsprinklered.

Actual gross area is 15,000 sq. ft. unsprinklered, which is within AEC requirements.

B. FOUNDATION

Concrete slab on grade designed for 100 pounds per square foot.

Individual reinforced concrete pads for columns.

C. STRUCTURAL FRAME

Steel rigid frame.

Lateral and seismic loads to be taken by moment connections in transverse direction by concrete shear walls in longitudinal direction.

D. ROOF

Steel rolled-ribbed panels with 1" rigid insulation and built-up roof.

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E. EXTERIOR WALLS

Steel rolled-ribbed panels. Exterior office walls will have fiber-glass insulation. Finished surface will be drywall, painted.

Windows - Architectural projected metal sash. Windows are separated from panels by metal mullions approximately 4" wide by 8" deep, full height.

Structural columns will be of a constant depth, exposed and painted.

F. PARTITIONS

All interior non-load bearing partitions are constructed of incombustible materials, i.e., gypsum board, on metal studs for permanent partitions, and on wood studs for temporary partitions, non-rated, (except as required for legal exit corridor requirements). 50% of interior partitions are limited to approximately 5 ft. in height.

Interior wall and partition surfaces painted.

G. FLOORS

Asphalt tile minimum grade on concrete, rubber base in office area only.

H. CEILINGS

Suspended noncombustible acoustic tile in office area only. In utility areas gypsum board will be used.

Nine-foot ceiling height throughout office area, all other spaces are open to roof.

I. DOORS

Interior - Hollow core wood flush panel doors.

Rated doors - Class A metal.

Exterior - Hollow metal flush, with metal and glass doors at main entrance.

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J. WINDOWS

See exterior walls.

3/16" heavy sheet.

K. ELECTRICAL

50 foot-candle (maintained) illumination in office and drafting areas.

Building load requirements:

Lighting, @ 50 F. C.	50 KVA
Convenience outlets	20 KVA
Air Conditioning equipment	90 KVA
* Trailers, service	<u>15 KVA</u>
	175 KVA

Electrical power service will be overhead. Distribution by drops as required.

L. MECHANICAL

Entire building air conditioned.

Package heating and air conditioning units, completely self-contained on roof. Ducting exposed and minimum. The package units will have high salvage value.

M. FIRE PROTECTION

Fire alarm system will consist of two non-code manual stations and two alarm horns.

Eight fire extinguishers (2 - CO₂, 6-^{press. water}pressurized water) will be located throughout the building.

A 6" hydrant will be located north of the building on the 6" main, a second 6" hydrant will be located south of the building on the other 6" main.

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N. TELEPHONE EQUIPMENT

A switchboard will be maintained for all communications relative to the development of and construction on the site.

Temporary switchboard and equipment facilities for Stanford's needs (the Test Laboratory), will be centered here until equipment in the Administration and Engineering Building is in operation.

O. UTILITIES

All utilities to the building, except telephone and electric power will be underground. Utilities to five feet outside of the building are included in this report.

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<u>Service</u>	<u>SITE UTILITIES</u>	
	<u>Off Site Location</u>	<u>Direction of on Site Supply</u>
Electricity	South of Site	West
Telephone	North side of Sand Hill Road	South
Fire Alarm	North side of Sand Hill Road	South
Domestic Water	Main site service	West
Fire Protection Water	Main site service	West
Sanitary Line	Main site service	West

* As soon as possible, three trailers will be located adjacent to the Construction Office Building site to house the field engineering, inspection and site safety personnel. (Reference: Letter from G. G. Bawden to F. V. L. Pindar on June 22, 1962). Upon completion of construction, the electric power and telephone service will be supplied to the trailers from the Construction Office Building.

IV. SCHEDULE

	<u>Time</u>	<u>Date</u>
Title I Submittal		4-6-62
Revisions	2 weeks	6-8-62
Review and Approval by SLAC and AEC		7-6-62
Start of Title II work	-	5-18-62
Title II 90% Submittal	8 weeks	7-18-62
Review and Approval by SLAC and AEC	2 weeks	8-3-62
Revisions	2 weeks	8-17-62
Reproduction of Contract Documents	1 week	8-24-62
Title II 100% Submittal		8-27-62
Bidding Period	3 weeks	9-18-62
Analysis of Bids and Award of Contract	3 weeks	10-9-62
Construction Period	4 months	2-15-63

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V. LIST OF DRAWINGS

<u>Drawing No.</u>	<u>Date</u>	<u>Title</u>
SK-535-100	5-28-62	Construction Office Building

VI. TITLE I COST ESTIMATE, PRELIMINARY

<u>Item</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Cost</u>	<u>Total Cost</u>
<u>Architectural-Structural</u>				
Earthwork, Rock Fill	400 CY	5.40	\$ 2,150	
Concrete Foot., Slab	285 CY	41.50	11,800	
Concrete Shear Walls	37 CY	100.00	3,700	
Structural Steel	70 Tons	350.00	24,500	
Metal Siding, Decking	21,600 SF	.625	13,500	
Metal Sash, Glazing	650 SF	3.00	1,950	
Roofing, Rigid Insul.	17,600 SF	.40	7,000	
Sheet Metal	700 SF	1.00	700	
Ext. Doors, Frames, Hdwe.	7 ea.	100.00	700	
Interior Insul.	4,000 SF	.15	600	
Full Part., Doors, Hdwe.	12,000 SF	1.00	12,000	
Low Partitions	3,000 SF	1.50	4,500	
Toilet Partitions	9 ea.	80.00	700	
Painting	60,000 SF	.10	6,000	
Asphalt Tile	14,500 SF	.29	4,200	
Marlite Wainscot	200 SF	1.00	200	
Rubber Base	1,300 LF	.45	600	
Ceilings	2,800 SF	1.00	2,800	
Misc. (Hose Cab., Fire Ext., etc.)	LS		1,200	
			<hr/>	\$ 98,600
<u>HVAC & Plumbing</u>				
Heat., Air Cond., Vent., Plumbing	24 ea.	400.00	37,000 9,600	
			<hr/>	\$ 46,600
<u>Electrical</u>				
Lighting & Conv. Outlets			21,000	
Heat., Air Cond. Loads			10,000	
			<hr/>	\$ 31,000
<u>Commun. & Fire Alarm</u>				
Teleph., Fire Alarm & Switchboard			3,500	
			<hr/>	\$ 3,500
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		TOTAL		\$179,700

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