PROJECT M TELEPHONE SYSTEM

REPORT TO PROJECT M - No. ABA -14

STANFORD UNIVERSITY SUBCONTRACT S-128

UNDER AEC CONTRACT AT(04-3)-400

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INTRODUCTION

This report presents the public telephone system criteria which has been developed jointly by ABA and Stanford and through coordination with Pacific Telephone and Telegraph Company.

The telephone facilities described herein are for all buildings, underground services, temporary and permanent installations.

A. GENERAL

The phone allocation for each building is based on personnel and equipment occupancy. The number of locals may be supplemented by adding any quantity of extensions or by the use of key type service, utilizing four local lines with extensions to six or twelve phones.

The temporary phone facilities will be run overhead to the switchboard located in the Construction Office Building and extended to the Test Laboratory.

The permanent phone facilities will be underground cable running to and from the switchboard located in the Administration-Engineering Building.

B. TEMPORARY PROVISIONS

A temporary overhead 50 pair cable for the Construction Office Building will be installed parallel to the west side boundary as shown on Drawing D-601-901 and terminated in the temporary two-position manual switchboard located in the Construction Office Building. All poles will be removed after the permanent duct system is installed. Chart No. 1 details the line requirements.

1. The temporary system for the initial construction will consist of one phone located at the site and connected to the ABA switchboard for period "A" noted in the installation chart.

2. The temporary system for the Construction Office Building will consist of 69 phones for period "B" noted in the installation chart 2. At the completion of the project all telephone equipment and all phones except two will be removed. The two remaining phones will be connected to the permanent SLAC system.

3. The temporary system for the Test Laboratory will be the extension of 25-30 locals from the Construction Office Building switchboard for period "C" and utilized until the permanent system is activated.

C. PERMANENT PROVISIONS

1. Cable Access - Cable access to the site for the permanent system shall be installed by the telephone company under Sand Hill Road, 34.4 west of the center of the entrance road, and to a point 15 feet south on SLAC property as shown on Drawing DD 640-102 Rev. 1, "Initial Site Improvements Layout Plan 2".

The permanent cable, a minimum of 200 pairs, will run in customer-installed underground duct from the under-road conduit to the equipment room in the Administration-Engineering Building.

2. Type of System - The permanent telephone system will be a three digit dial system with a "restrictor" to disable the normal ability of a local telephone to dial outside the "free" exchange area. An additional digit may be added later for special coding.

The telephone equipment will be a three-position switchboard with a total capacity of 45 trunks and 392 locals and with future provisions for expansion to five position switchboard and 784 local lines.

3. Space Requirements

a. Space requirements in the Administration-Engineering Building for telephone equipment are as shown on Drawings D-541-100 and D-541-101. The dial equipment room is adequate for the initial 392 local lines with provisions for future expansion.

b. Space requirements in other buildings are determined by the number of phones located in the building. The exact space is best determined for each building individually.

4. Telephone Line Requirements - Estimated line assignment are shown on Chart No. 3.

DEFINITIONS

Trunks - Connecting lines between telephone exchanges.

Locals - Phones located in buildings with service to a local switchboard, or exchange.

Extensions - Two or more phones served by one local line.

Key Service - Secretary answering service connected to 6 or 12 phones.

CHART NO. 1

TEMPORARY PHONE SERVICE

SERVICE	QUANTITY
Flat business (direct service) Contractor (Contractor responsibility)	12
Trunklines - Stanford Exchange (Required when Test Laboratory is connected to Construction Office Building switchboard)	6
Trunk line - emergency (leased)	1
Trunks to telephone exchange (local)	17*
Trunks to telephone exchange (San Francisco)	2
Trunks to telephone exchange (East Bay)	1
Locals - Construction Office Building	69
Locals - Test Laboratory	25
Pay phone (direct) Test Laboratory	1

*Does not include "Trunk lines - Stanford (6)"

CHART NO. 2

INSTALLATION CHART

PERIOD	LENGTH MONTHS	APPROX. DATE	EVENT
A	To completion of ABA work	August, 1962	Initial construction
B	To completion of ABA work	January, 1963	Two-position manual switchboard installed in Construction Office Building
C	Four	March, 1963	Extension lines from Construction Office Building switchboard to Test Laboratory
D	Indef.	May, 1963	Four-position switchboard and dial equipment installed in Administration-Engineering Building

CHART NO. 3

PERMANENT TELEPHONE SYSTEM

BUILDING OR AREA	LOCALS	EXTENSIONS	PAY PHONE
Accelerator Housing	6		
Klystron Gallery	30	1	
Control Building	8		1
Switchyard	4		
Cryogenic Building (assumed)	6		
Utility Building A	1		
Electronics & Stores	15	5	1
Fabrication Building	14	7	
Heavy Assembly	2		
Central Laboratory	96	20	1
Administration-Engineering	150	27	3
Warehouse (Construction Office Building)	2		
Cafeteria	4		
Auditorium	4		
Test Laboratory	25	2	1
End Station A	3	2	
End Station B	2	1	
Utility Building C	1		
Guard House	1		
Unit Substations Klystron Gallery			
Master Substation	1		
West Cooling Tower	1		
East Cooling Tower	1		
Total	377		7
Maximum Limit	392	*	

*Any number of extension phones may be connected to a local.