

PROJECT M TELEPHONE SYSTEM

REPORT TO PROJECT M - NO. ABA-14
STANFORD UNIVERSITY SUBCONTRACT S-128
UNDER A.E.C. CONTRACT AT(04-3)-363

SLAC AHO 1991-012B14

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A. INTRODUCTION

The public telephone system criteria has been developed jointly by ABA and Stanford through coordinated meetings with Pacific Telephone & Telegraph Company. Pertinent data had to be developed and decisions rendered to establish the temporary facility requirements, the permanent facility requirements, the type and extent of system required, and the entrance of the permanent and temporary cable to the site. An analysis of the jointly developed criteria is included in this report.

B. CABLE ACCESS TO SITE AND TELEPHONE EXCHANGE

P.T.&T. is planning a new Ulrich exchange to be completed in time to serve the permanent switchboard. The new exchange building will front on Sand Hill Road 1,600 ft east of Walsh Road. New underground ducts for exchange cables will run north of and adjacent to Sand Hill Road, with manholes spaced on 800 ft centers. The point of access to the site for the permanent line will be established at the time the temporary system is designed; therefore, conduit will be installed under Sand Hill Road to satisfy both the temporary and permanent project requirements.

1. Temporary Provisions. A temporary cable will be direct-buried in an adequate trench provided by the customer. This cable will run from the under-road conduit to the temporary switchboard in the field office. A part of this trench might also be utilized for temporary distribution of local extension lines to the Test Laboratory Building in case the permanent duct system is not ready at the time required for these extension lines.

2. Permanent Provisions. The permanent cable, 400 pairs, will run in customer-installed underground duct from the under-road conduit to the equipment

room in the Administration-Engineering Building.

C. TYPE OF SYSTEM

1. Temporary Telephone. The temporary system will be a one position manual switchboard installed in the ABA field office for Period A noted in the installation period chart. A second position will be added for Period B and utilized until the permanent system is activated.

2. Permanent Telephone. 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 permanent facilities will contain a three position switchboard with a future provision for adding two more positions.

Space Requirements. Space requirements in the Administration-Engineering Building for telephone equipment are as shown below.

a. Operator's Room. - The Operator's Room requires a floor area 16' x 21'. In addition to the three position switchboard the room will contain a supervisor's desk, a storage cabinet, and a lounge.

b. Dial Equipment Room. - The dial equipment requires a floor area 16' x 24'. This will be adequate for the initial 400 local lines with provision for future addition of another 400 local lines.

c. TWX Room. - The TWX Room will require a minimum of 6' x 8'. This cannot be a part of the Operator's Room because of the high noise level of the teletype machines. A special room will be provided for the TWX equipment.

d. Miscellaneous Space. - Space requirements in other buildings are not yet defined. However, accessible space should be reserved for terminal

cabinets and auxiliary relays. This is best determined for each building individually.

3. Telephone Installation Periods. The project telephone installation will be divided into four periods as shown on the following chart.

CHART NO. 1			
Period	Length Months	Approx. Date	Event
A	2	10-15-61	Contractors on site.
B	8	12-15-61	1 position manual switchboard installed in ABA field office.
C	5	8-1-62	2nd position added to manual switchboard in ABA field office.
D	Indef.	1-1-63	4 position switchboard & dial equipment installed in Administration-Engineering Building.

4. Telephone Lines Required. Tentative line requirements for Periods A, B, C and D are shown on the following charts.

D. SUMMARY

The telephone system plans have been developed jointly by Stanford and ABA, complemented by P.T.&T. on the basis of personnel classification and occupancy of each building. The temporary system will be a one position manual switchboard. The permanent system will be a three digit dial installation with provisions for adding another digit for special coding. A "restrictor" will be incorporated into the system to limit the dialing range. The switchboard and dial equipment will be located in the Administration-Engineering Building. The

temporary and permanent systems will be installed underground. The extent of the system is identified in detail in the incorporated charts.

CHART NO. 2

PUBLIC TELEPHONE LINES - SUMMARY					
Service	Period				
	A	B	C	D	D
Flat Business (Direct) - ABA	0	0	5		
Flat Business (Direct) - Proj. M	0	0	0		
Flat Business (Direct) - Contract.	12	12	12		
Pay Phones (Direct)	0				
Tie Lines - ABA	0	1	2		
Tie Lines - Stanford	0	4	6		
Tie Lines - Misc.	0	0	0		
Tie Lines - Emergency	0	2	2		
Trunks to Ulrich or Davenport	0	5	10		
Locals to ABA Field Ofc.	0	28	28		
Locals to Contractor's Ofc.	0	24	24		
Locals to Test Lab - Proj. M	0	0	25		
Locals to Warehouse - ABA	0	2	4		
Locals along Accelerator - ABA	0	0	0		
Locals - Misc.	0	0	0		
Total Locals	0	54	67		
Active Off-Site Lines	12	24	37		
Switchboard Spare Local Jacks	0	6	39		
Switchboard Local Jacks - Total	0	60	120		
Switchboard Trunk Jacks - Active	0	12	20		
Switchboard Sections	0	1	2		

(D E F E R R E D)

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