

STUDY OF WATER SUPPLY TIE LINE ALTERNATES
FOR THE
STANFORD LINEAR ACCELERATOR CENTER (SLAC)

REPORT TO STANFORD LINEAR ACCELERATOR CENTER - NO. ABA-70
STANFORD UNIVERSITY SUBCONTRACT S-136
UNDER AEC CONTRACT AT(04-3)-400

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A Joint Venture

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Palo Alto, California

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SLAC AHO 1991-012B14

GENERAL

This report covers the economic study of the alternate methods of providing the tie line between the Klystron Gallery domestic water distribution line and the Menlo Park System. Authorization for this report is contained in a memorandum from L. Gallagher to W. Biebesheimer dated November 13, 1962.

DISCUSSION

The present design criteria for the domestic water system is based on Alternate IV of ABA-39 which plan was accepted and became the basis for a contract with the Menlo Park Water System. The budget allowance in Account Number 671 for the entire SLAC domestic water system is based on a material takeoff in accordance with ABA-39. This report indicates a 12 inch line along the Klystron Gallery to a point west of the first cooling tower at approximately Station 20 which point is also opposite the Sand Hill reservoir. From this point a 6 inch line continues westward along the Gallery to supply fire protection and nominal Gallery facilities. From this point also a 12 inch tie line is planned to connect to the end of the 16 inch main on Sand Hill Road thus completing a loop with the tap at the Campus area. This tie line is approximately 1880 ft. in length and would traverse Stanford property some 1400 ft. At the time of publishing ABA-39, no objections to an easement were anticipated. Since the easement could be objectional and might interfere with future development of their property the University has suggested that the main be extended along Sand Hill Road to the end of the accelerator where the connection could be made to the Klystron Gallery line. This method would require that the main extension be 12 inch and that the 6 inch line along the Klystron Gallery be increased to 12 inch, the same size as the remainder of the line along the Klystron Gallery from the campus area.

The cost of the 12 inch main extension along Sand Hill Road shown as DA on the attached Drawing SK 1423 is estimated to be:

DA = 2880 L.F. @ \$11.00/FT. = \$31,680

If Stanford's share of the above cost is based on an equivalent 8 inch line the costs would divide as follows:

Stanford	2880	L.F.	@	\$ 7.50	=	\$21,600
SLAC	2880	L.F.	@	3.50	=	<u>10,080</u>
						\$31,680

SLAC'S presently planned costs per ABA-39

B to A	1880	L.F.	12"	@	\$ 11.00	\$20,680
B to C	2200	L.F.	6"	@	6.00	<u>13,200</u>
Total allowance in Budget Account 671						\$33,880

SLAC'S cost per suggested alternate method

BC	2200	L.F.	12"	@	\$ 11.00	\$24,200
CD	200	L.F.	12"	@	11.00	2,200
SLAC'S share of allocation of DA						<u>10,080</u>
						\$36,480
SLAC'S cost per ABA-39						- 33,880
Increased cost to SLAC of Alternate BCDA						\$ 2,600

NOTE: PIPE PRICES USED ABOVE ARE REVISED ESTIMATING VALUES BASED ON LATEST AVAILABLE INFORMATION.

RECOMMENDATIONS AND CONCLUSIONS

Stanford's plans for development of the land South of the accelerator were discussed with Mr. Larry Brian who stated that he could see little chance for development and practically no value to Stanford of a line beyond the West end of the accelerator. The value to Stanford of the 12 inch tie line crossing Stanford property was also discussed and recognized.

The 12 inch line size along the gallery had been considered a minimum size for the loop to provide 3000 gpm to the campus area in the event the 16 inch line along Sand Hill Road becomes inoperative. Alternate BCDA increases the length of the 12 inch loop line by 3400 ft. making it almost impossible to obtain the 3000 gpm fire flow. To guarantee 3000 gpm fire flow by route BCDA would require a 14 inch line.

In view of the above we recommend that Stanford grant an easement for the 12 inch tie line with the privilege of its use. It should be located by a mutual study in the area least likely to interfere with future development of the land (The present plan follows a natural "draw"). If it ever becomes necessary it could be relocated at equal expense to SLAC and Stanford.

The above plan would not require capital expenditure by Stanford for which they may not realize a return for several years. The extension of the main along Sand Hill Road for Stanford use can always be accomplished at a later date using 8 inch pipe at no appreciable cost over their share of an immediate 12 inch line.

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