

FINAL REPORT

TECHNICAL ASSISTANCE
to
GOVERNMENT
of
PAKISTAN

*International Cooperation Administration
United States Overseas Mission to Pakistan*



THE RALPH M. PARSONS COMPANY

FINAL REPORT

TECHNICAL ASSISTANCE
GOVERNMENT OF PAKISTAN

*International Cooperation Administration
United States Overseas Mission to Pakistan*

CONTRACT No. ICA-W-152

CONTRACTOR ENGINEERING JOB No. 1200



THE RALPH M. PARSONS COMPANY
617 WEST SEVENTH STREET, LOS ANGELES, CALIF.

MAY 1, 1961

The Ralph M. Parsons Company

Engineers • Constructors

617 WEST SEVENTH STREET, LOS ANGELES 17, CALIFORNIA

May 1, 1961

International Cooperation Administration
815 Connecticut Avenue
Washington 25, D. C.

SUBJECT: Technical Assistance, Government of Pakistan
Contract ICA/W-152
Final Report
Our Job 1200

Gentlemen:

In accordance with provisions of Article III of Contract No. ICA/W-152 between the International Cooperation Administration and The Ralph M. Parsons Company, dated June 25, 1956, transmitted herewith are twenty (20) copies of the "Final Report" on Technical Assistance Program to the Government of Pakistan.

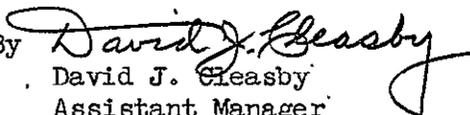
This provision of the contract requires a comprehensive final report summarizing the contractor's services under the contract analyzing needs and recommending methods of improvement in the fields covered by the contract. The final report to be submitted to the ICA Office in Washington, D. C. following the return of the field staff to the United States upon completion of their services in Pakistan.

Subsequent instructions under subject "Revised Reporting Instructions for Contractors Engaged in O/IND Projects" with reference to TOICA A-987 dated November 18, 1960, the final report is required to also "cover all financing of the project in detail as to when funds were made available, how expended, etc., both U.S. dollars and local currency." Section III of subject report summarizes the funds obligated and expended by The Ralph M. Parsons Company on this project.

This report covers the services of The Ralph M. Parsons Company for the period between June 25, 1956 through December 30, 1960.

Very truly yours,

THE RALPH M. PARSONS COMPANY

By 
David J. Gleasby
Assistant Manager
Foreign Operations Division

DJC: jp
Enclosures (20)

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SECTION I

INTRODUCTION

1. General

a. This document is the final report under a contract between International Cooperation Administration, United States Overseas Mission, an agency of the United States Government and The Ralph M. Parsons Company, Los Angeles, California.

b. This agreement was occasioned by the request of the Government of Pakistan for technical advice and assistance from the United States in programs requiring engineering and other services. The Contract is an extension and amendment of a prior contract, dated December 2, 1953, which expired June 1, 1956. This final report covers only that contract period from June 25, 1956 through subsequent amendments to December 31, 1960.

2. Definitions

a. The terminology used in this report is as defined in Article I of the basic contract.

3. Identification of Contract

a. The Ralph M. Parsons Company, Los Angeles, California, Job No. 1200 was executed under the terms of Contract No. ICA-W-152, P10/T 91-25-076, between the Contractor and the International Cooperation Administration.

b. Contract ICA-W-152, P10/T 91-25-076 dated June 25, 1956, was amended as follows:

(1) Amendment I, dated May 13, 1957, provided for two (2) Evaluation Engineers to investigate proposed projects in industrial, power, and mining fields and to make a complete project evaluation.

(2) Amendment II, dated December 31, 1957, provided for extension of the term of service for a period of two years and for additional personnel.

(3) Amendment III, dated November 20, 1958, provided for increasing the obligated funds and for furnishing additional technicians.

(4) Amendment IV, dated November 3, 1959, provided for deletion of certain provisions of contract.

(5) Amendment V, dated December 31, 1959, provided for an extension of the Contractor's services for one (1) year for the purpose of an orderly phasing out of the services described in the contract and the furnishing of additional personnel.

(6) Amendment VI, dated November 21, 1960, provided for increasing the maximum dollar limitation of the Contract and to provide the additional funds necessary to complete the orderly phasing out of the services described in the Contract.

4. Authority for Final Report

a. Article III, B, 2, Contract ICA-W-152 provides that prior to the conclusion of contract or upon its earlier terminations, and upon the conclusion of assignments by Contractor personnel, the Contractor shall prepare and submit to ICA and USOM for transmittal to the Government as appropriate,

a report summarizing the accomplishment of each assignment and task and make specific recommendations for progress and improvement in respect to the work undertaken.

5. Scope of Work

a. Article II of the basic contract defines the scope of services in which the Contractor agreed, within the limit of funds which were obligated for expenditure under the contract, to provide such engineering, professional, advisory, consulting and other services that were requested by USOM and in particular to provide services of qualified technicians.

b. In carrying out the purpose of the contract the Contractor, when requested by USOM, made available, technicians and short-term technicians to serve in Pakistan.

c. When necessary to supplement the Contractor Field Staff, supporting services of the Contractor's Home Office Staff were made available to inform and advise on professional and technical matters within the fields of activity in which the Field Staff is assigned. Such services included, but were not limited to the following (1) advice on preparation of necessary engineering and construction data, cost estimates and necessary plans and specifications, (2) advise on, review and make recommendations in respect to invitations for bid on materials and equipment, analysis of bids, selection of suppliers and substance of supplier's contracts (3) advice on supervision of starting operations and recommendations regarding the performance of plant and equipment.

d. The Contractor, utilizing his Field Staff and Home Office Staff, performed or arranged to have carried out such other engineering services in the fields of industry, power, mining, and other areas within his competence as were requested by USOM. These services included (1) preparation, study or review of specific engineering projects, preparation of plans and specifications, study of prices, availability, condition and sources of supply of materials and equipment and study of the time required for accomplishments and benefits derived therefrom; (2) procurement of such commodities and equipment within the fields in which the Contractor has competence and as authorized by USOM.

SECTION II

PROJECTS GENERAL REPORT6. Contractor Organization

a. This entire project has operated with a relatively small nucleus of key engineering personnel with technical and administrative support from the Contractor's Home Office, to supervise and guide Pakistani engineers, surveyors and draftsmen. The Contractor's organization supported field surveys of existing water supply and sewage installations, hydrological studies of potential water sources for most feasible methods of increasing supplies, design and engineering of water distribution, maintained continuous services as technical advisors and engineers on land reclamation, irrigation, proposed legislation and trained Pakistani personnel in all phases of the project under a series of contracts beginning in 1953.

b. Contractor-employed key personnel, technicians and engineers as specified in Article II and Exhibit I of the basic contract, dated June 25, 1956, and as cited in subsequent contract amending documents, may be found in the accompanying table. The listing provides information as to personnel arrivals and terminations and the numbered sub-projects to which they were assigned for that contract period beginning June 25, 1956 through December 31, 1960.

TABLE I

THE RALPH M. PARSONS COMPANY JOB NO. 1200

- KEY PERSONNEL UTILIZATION -

CONTRACT ICA-W-152

NO.	NAME	TITLE	ARRIVED	STATIONED	DEPARTED	PROJECT
1	2	3	4	5	6	7
1.	BARTELL, R. Grant	Mechanical Supt.	2-19-58(Kra) 7-27-59	Dacca Karachi	7-27-59 12-29-60	026 024
2.	BEAR, Walter M.	Tunnel Foreman	4-1-60	Karachi	8-3-60	024
3.	BJORK, A. C.	Hydrologist Dam Engineer	12-30-53* 1-15-56.	Karachi Karachi	11-26-55 11-26-57	016; 020 011, 024, 026
4.	BORNCAMP, R. P.	Groundwater Engineer	10-8-54* 3-4-56* 3-13-56* 5-6-56* 5-11-56* 11-27-57-	Karachi Lahore Karachi Karachi Lahore Karachi	3-2-56 3-13-56 3-16-56 5-11-56 11-26-57 12-4-57	035
5.	BRAITHWAITE, A. W.	Project Manager	1-29-60	Karachi	Transferred to Dacca	
6.	CASSATT, Wayne A. Jr.	Lab. Tech. Op. Adv.	3-11-59	Karachi		104
7.	CLEASBY, D. J.	Project Manager	12-14-53* 1-15-56*	Karachi Karachi	11-30-55 1-30-58	076

*Pre-contract arrival date indicates personnel retained from prior contracts.



TABLE I

THE RALPH M. PARSONS COMPANY JOB NO. 1200

- KEY PERSONNEL UTILIZATION -

CONTRACT ICA-W-152

1	2	3	4	5	6	7
8.	CONNER, A. H.	Diamond Drilling. Superintendent	1-6-55* 9-29-57*	Karachi Quetta	9-27-57 4-20-58	020 073
9.	CUDLIPP, Edward A.	Water & Sewage Engineer	2-12-58	Karachi	11-30-59	024
10.	DUNLAP, Charles F.	Evaluation Engineer	5-11-59	Karachi	9-30-60 Trans- ferred to Dacca	DLF, I & T, PWD, 024
11.	ERDMAN, Oliver E.	Drilling Sup't.	2-11-59	Lahore	8-10-59	WAPDA
12.	FEUERLEIN, Willy J.	DLF Liaison Officer	9-18-57	Karachi	9-21-59	DLF Transferred to ICA
13.	GEEN, Samuel B.	Pre-Project Eval. Engineer	6-8-57 1-4-60	Karachi	11-22-59 12-29-60	Industry, Agric. PWD, Education Training
14.	GILLILAND, H. L.	Diamond Drilling Superintendent	10-25-58 11-2-58	Karachi Quetta	11-1-59 9-30-60	073

*Pre-contract arrival date indicates personnel retained from prior contracts.

PARSONS

TABLE I

THE RALPH M. PARSONS COMPANY JOB NO. 1200

- KEY PERSONNEL UTILIZATION -

CONTRACT ICA-W-152

1	2	3	4	5	6	7
15.	GOULD, M.M. Mrs.	Office Manager	3-6-56* 5-31-58.	Karachi Karachi	4-25-58 1-11-60	076 076
16.	HAMILTON, Peter	Port & Harbor Engr.	5-10-56* 6-24-58.	Karachi Karachi	5-16-58 6-30-59	011 011, 054, 055
17.	KAHLER, A. A.	Heavy Equip. Sup't.	10-20-55* 11-24-55* 9-26-56* 4-14-58. 4-3-59	Karachi Taunsa Barrage Karachi Karachi Lahore	11-22-55 9-24-56 3-7-58 4-1-59 12-3-59	028 017 024
18.	KEENER, Karl H.	Pumpcrete Mach.Opr.	5-16-59	Karachi	9-1-60	024
19.	KENT, Charles D.	Drilling Sup't.	5-4-58	Lahore	6-21-60	035
20.	KLAVON, T. A.	Tunnel Foreman	9-23-54* 6-1-58.	Karachi Karachi	4-15-58 12-31-60	024 024
21.	MARKEL, Lyman A.	Hydrologist	3-26-58	Karachi	12-3-59	008, 026, 035, 076

*Pre-contract arrival date indicates personnel retained from prior contracts.

PARSONS

TABLE I

THE RALPH M. PARSONS COMPANY JOB NO. 1200

- KEY PERSONNEL UTILIZATION -

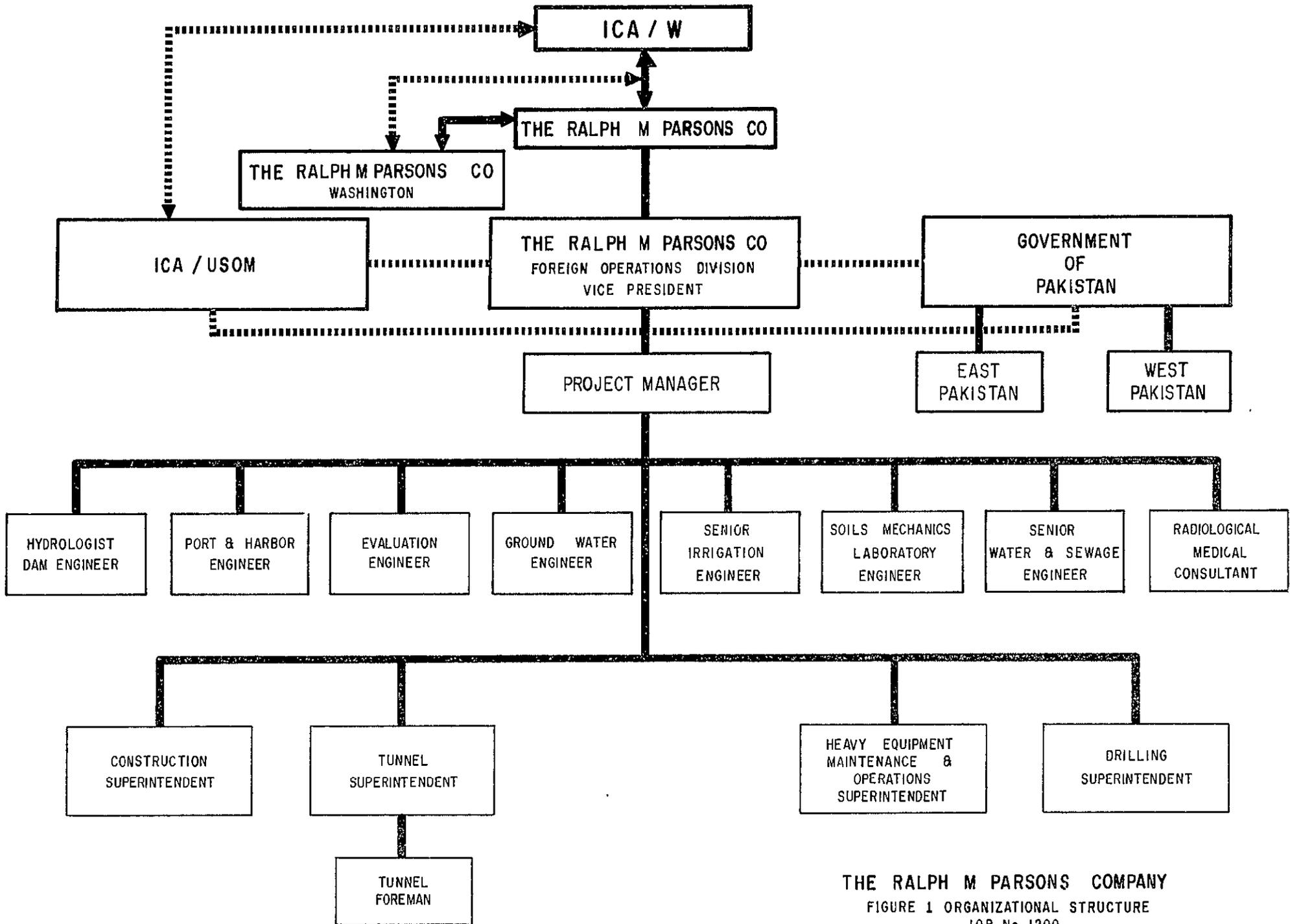
CONTRACT ICA-W-152

1	2	3	4	5	6	7
22.	O'NEILL, R. W.	Sr. Water & Sewage Eng'r.	3-1-56	Karachi	12-31-57	024
23.	POOTS, Beatrice N.	Office Manager	12-23-59	Karachi	12-29-60	076
24.	SOULE, John E.	Project Manager	1-23-58	Karachi	2-15-60	
25.	STEWART, T. G.	Concrete Foreman	10-25-59	Karachi	5-4-60	024
26.	TILESTON, F. M.	Irrigation Engr.	4-15-56* 6-1-58. Sept. 58	Karachi Karachi Lahore	4-11-58 Sept. 58 5-11-60	017 025
27.	WEDEKIND, H. O.	Gen. Const. Sup't.	9-23-54* 6-9-58	Karachi Karachi	4-27-58	024 024
28.	WILSON, David M.	Soils Lab. Engr.	2-1-58	Karachi	12-10-60	024
29.	MOORS, J. D.	Drilling Engineer	3-3-56* 3-7-56* 5-12-58.	Karachi Lahore Lahore	3-7-56 4-23-58 1-11-60 Deceased	035 035 035

*Pre-contract arrival date indicates personnel retained from prior contracts.

PARSONS

-9-



THE RALPH M PARSONS COMPANY

FIGURE 1 ORGANIZATIONAL STRUCTURE

JOB No. 1200

c. The Contractor Home Office Staff in support of field activity made periodic physical inspections of the multiple project efforts and reviewed the performance of technicians and engineers on site in the host country.

Principal inspecting and supervising personnel from the Home Office Staff and their dates of inspection are as follows:

- (1) George M. Frazier, Administrative Assistant, Foreign Operations Division, The Ralph M. Parsons Company - November, 1956.
- (2) James E. Halferty, Vice President, Manager Foreign Operations Division, The Ralph M. Parsons Company - May, 1957; March 4-8, 1959.
- (3) R. Barnett, Assistant Manager Foreign Operations Division, The Ralph M. Parsons Company - October, 1957; December 6-8, 1958; June 29, 1959.
- (4) Hilton C. Smith, Vice President in charge of U. S. Government Contracts, The Ralph M. Parsons Company - April 11, 1958.
- (5) David J. Cleasby, Regional Manager Water Resources and Assistant Manager, Foreign Operations Division, The Ralph M. Parsons Company - July 10-24, 1958; January 28-30, 1960; February 7-12, 1960; August 13-17, 1960.
- (6) P. S. Bennett, Chief Engineer, Foreign Operations Division, The Ralph M. Parsons Company - May 7-13, 1960.

7. Project Field Services

a. In compliance with contract agreements, the Contractor furnished project technicians and project advisors on a varied program of technical development for the area of Pakistan. Services were carried out under the general policies of USOM. The following is a partial listing of major areas of contractual project activity supported by the Contractor. For accounting convenience a project number as well as a project title was assigned by the Contractor.

- (1) Project 007 - Construction of Fertilizer Factory, Daud Khel
- (2) Project 011 - Karachi Fish Harbor
- (3) Project 013 - Soils Mechanics and Hydraulics Laboratory
- (4) Project 016 - Bolan Dam
- (5) Project 017 - Makhi Dhand Reclamation
- (6) Project 018 - Groundwater Exploration and Test Tubewells
- (7) Project 020 - Baluchistan States Union Development
- (8) Project 024 - Greater Karachi Water Supply and Sewage Disposal
- (9) Project 026 - Ganges Kobadak Irrigation
- (10) Project 028 - Taunsa Barrage Project
- (11) Project 029 - Agriculture Workshops
- (12) Project 034 - Modern Storage of Foodgrains
- (13) Project 035 - West Pakistan Groundwater Survey
- (14) Project 066 - Makarwal Collieries
- (15) Project 073 - Geological Survey of West Pakistan
- (16) Project 104 - Atomic Energy Research and Development
- (17) Project 106 - Multan-Iyallpur Power Transmission System

PARSONS PROJECTS

MIDDLE EAST & SOUTH ASIA



Figure 2

b. Length precludes more than a brief description of some of the projects and assignments executed under this technical assistance program. The following paragraphs describe examples of the projects upon which the Contractor has been engaged on Job 1200:

(1) Project 011 - Karachi Fish Harbor

The purpose of the Karachi Fish Harbor and other Pakistani fishery projects was to provide Karachi, the Baluchistan State Union Coast and Chittagong, East Pakistan, with modern harbor and/or facilities in conjunction with the motorization of the fishing fleets and for the use of commercial fishing interests. The Contractor's principal work was the design of breakwaters and the design and supervision of construction of modern facilities to service Pakistan's large fishing fleet. This work included dredging of channels and mooring basins, the construction of a large pier with marketing facilities, fish processing plant and cold storage warehouses, together with road approaches and other appurtenances for servicing the terminal.

(2) Project 016 - Bolan Dam

The project called for the construction of an irrigation system, control works and an earth-filled dam 70 feet high and 2,000 feet long across the Bolan River. The project was to reclaim and place under irrigation approximately 35,000 acres to increase the food supply and develop a permanent settlement for habitation. Survey results were analyzed, together with data collected by other agencies, to establish a program of dam construction, ground water development and irrigation. A report was prepared recommending a program agenda to be followed.

(3) Project 017 - Makhi Dhand Reclamation

The Contractor furnished the advisory engineers on the Makhi Dhand development project in Pakistan where nearly 100,000 acres of desert land were to be put under irrigation for the Government of Pakistan. The project is for the construction of a 120-mile main canal from the Indus River, distribution canals to serve the entire area, diversion structures, land leveling and soil classification.

(4) Project 020 - Baluchistan States Union Development

This project provided for study and development of water resources, surface and underground, for domestic and agricultural use; construction of an all-weather highway from Karachi to Quetta; exploration and development of mineral resources; development of fishing industry; improvement of public health and sanitation.

(5) Project 024 - Karachi Joint Water Board

The Contractor provided engineering field supervision for this major Pakistan development program to provide a new domestic water system for the City of Karachi. This project consists of a 70-mile canal from the Indus River, sized to carry 280-million gallons a day. A prime feature of this program has been a 7,000-foot horseshoe-type tunnel driven through a mountain from the north and south tunnel portals simultaneously, to permit fresh water to pass from one valley to another. The project embraced field surveys and evaluation of existing water supply and sewerage installations selection and layout of distribution systems to meet present and project population growth.

(6) Project 026 - Ganges - Kobadak - East Pakistan

The huge project was designed to irrigate and drain an area of approximately 1,750,000 acres to permit production of two or three crops per year. The Contractor acted as engineering advisor on the main entrance canal, power house and pump station. The project will divert approximately 2,000 cubic meters of water per second from the Ganges River into a large canal from which it is raised by low lift pumps into a canal system for dry season irrigation of East Pakistan rice lands.

(7) Project 028 - Taunsa Barrage

The Contractor was technical consultant on the Taunsa Barrage across the Indus River in Pakistan. This huge structure, over a mile in length, diverts 500 cubic meters per second of water from the Indus River to a large irrigation project in southern Pakistan. It consists of a low dam with 55 control gates, each 60 feet wide and 35 feet high to control the river and with large head works on each side to control canal flow. Each of the headworks will pass 250 cubic meters of water per second to the canals.

(8) Project 073 - West Pakistan Geological Survey

This is a key project in the development of Pakistan's natural resources which proposes to advise and develop uses for coal production to be displaced by Sui Gas; assist with the revision and formulation of a proper code of mining laws for Pakistan as regards safety regulations, development of Pakistani engineers in practical experience, and the creation of a statistics and record-keeping system suitable to a bureau of mines in Pakistan.



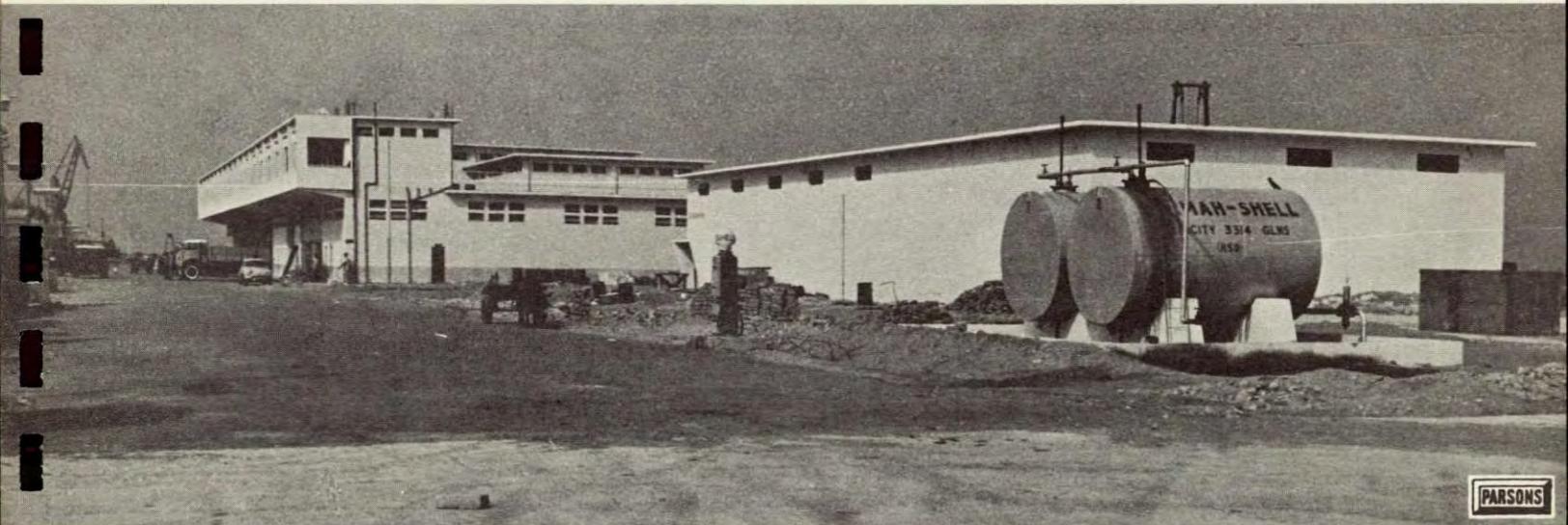
1200-2

FISHERIES LABORATORY



1200-7

ICA WAREHOUSE AND OFFICE



PARSONS

FISH MARKET AND ICE PLANT

1200-11

F-1200

Figure 3
CONSULTING AND ENGINEERING SERVICES
PAKISTAN

DISCHARGE LINE TO CURING YARD



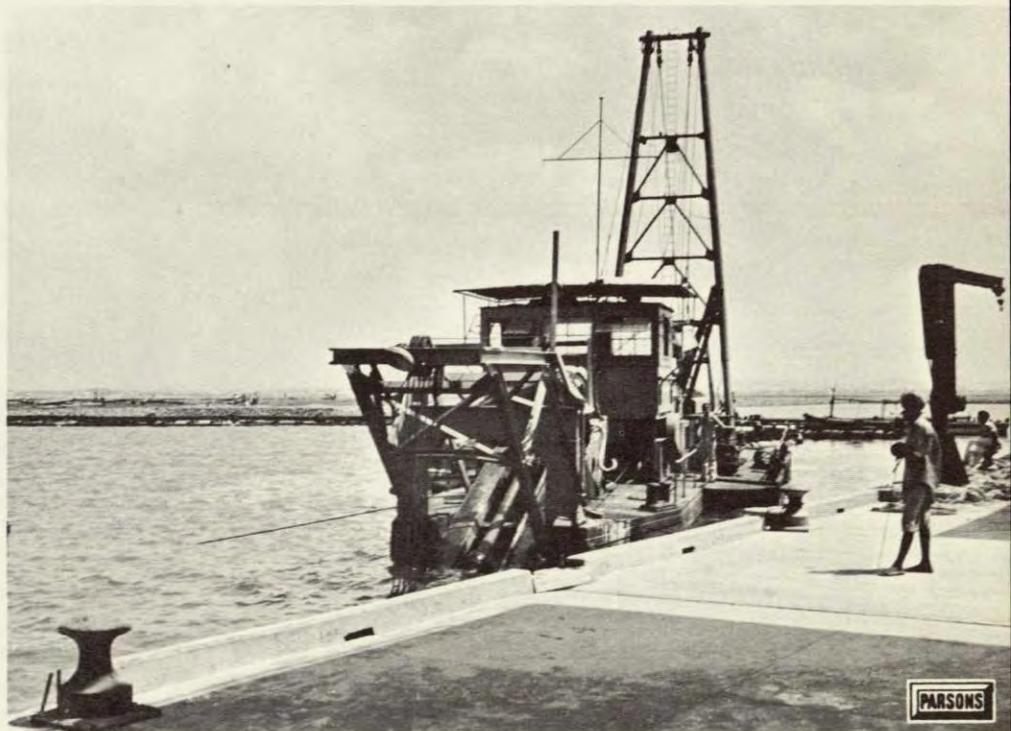
1200-6



JETTY — LOOKING TOWARD FISH MARKET

1200-4

DREDGE DEEPENING CHANNEL



F-1200

1200-5

Figure 4
HARBOR DEVELOPMENT PROGRAM
INTERNATIONAL COOPERATION ADMINISTRATION AND GOVERNMENT OF PAKISTAN



Figure 5
MAKHI DHAND LAND DEVELOPMENT PROJECT—WEST PAKISTAN





PARSONS



Figure 6

Constructing Aqueduct

CONSULTING AND ENGINEERING SERVICES
PAKISTAN

8. Contractor Home Office Support Services

a. Under continuing services as technical advisors, consultants and engineers, the Contractor's Home Office supported USOM/P in a variety of requests for technical assistance:

(1) A study was prepared covering the relative insulation value of cork and other materials, i.e., synthetic fibres, to be used in the Karachi Fish Harbor Ice and Cold Storage Plant. This study was extended to include the storage areas in the holds of fishing boats.

(2) In answer to a request by the Pakistan Public Works Department, advice was given on methods for the repair of aquatic life.

(3) Recommendations were made on steel cylinder and manufacturing equipment for piping specialties for the Karachi Joint Water Board.

(4) Specifications were prepared for tubewells, tubewell equipment and manufacturing facilities for the proposed Pakistan Groundwater Development Program.

(5) Technical information was supplied concerning the practicality of using compressed (machine) gas in trucks and busses to relieve the problems and loads generated by importing petroleum products.

(6) Reference material and construction criteria for the design of industrial community housing and appurtenant facilities was provided for PIDC.

(7) Techniques were furnished for jacking reinforced concrete pipe underneath the multitracked main line railway of Karachi Development Authority.

(8) An analysis was made of the Tennessee-Eastman Flame Cracking process for the simultaneous production of acetylene and ethylene from light hydro-carbons and the applicability of this process to production of Sui Gas. The study was extended to include any cracking process which could break down methane to an unsaturated condition. These studies were items in consideration of the possible foundation of a Pakistan petroleum chemical industry.

(9) A technical study was supplied on the effects of ammonia-sulphate fertilizer on concrete floors in highly humid atmospheric conditions.

(10) An analysis of the power and lighting requirements of the city of Karachi, Pakistan, was developed.

9. Additional Supporting Services

a. In support of USOM/P, Contractor personnel performed many specific services over and above normal contract assignments in the interest of further implementation of the technical assistance program. These activities were performed through available local services and did not necessitate technical support from the Contractor Home Office.

(1) Functioned as Chief of Water Resources Branch from May 1956 through October 1956. In addition to normal engineering duties of this bureau, the Contractor performed in a major arbitration between Brown and Root (an ICA-sponsored contractor for the manufacture of gates and bearings for the Taunsa Barrage) and the Irrigation Department of West Pakistan. This controversy was successfully resolved to the mutual satisfaction of all concerned.

(2) Visited the fishing village of Pasni and Chittagong for consultation, technical advice and to proffer assistance on a proposal for the development of fishing facilities at those locations.

(3) Conducted a physical inventory of all USOM property, setting up stock records and indices and marking all property with identifying symbols.

(4) Conducted field investigations at Chittagong to determine suitability of granary sites, specifically with a view towards foundation construction.

(5) Organized and coordinated the 1956-57 Afghan Wheat Movement Program involving the receipt of approximately 50,000 tons of wheat in Karachi and its delivery to Afghanistan.

(6) Inspected construction to determine suitability of building conversion for use as a film processing laboratory.

(7) Held continuing consultation on plans for the development of permanent ICA office and warehouse facilities, including both site planning, grading and facility layout.

(8) Furnished technical advice concerning grading and drainage and similar engineering problems at leased quarters in Karachi.

(9) Reviewed specifications for building materials proposed by Village AID.

(10) Made field investigations and reported on the feasibility of constructing a natural gas pipe line from Sylhet gas field in East Pakistan and the practicality of constructing a fertilizer plant to use Sylhet gas.

- (11) Interviewed Pakistani engineering students and recommended their suitability as participants in ICA supported higher education programs.
- (12) Furnished advice to GOP and USOM/P concerning airport facilities.
- (13) Reviewed engineering documentation in support of DLF loan applications to insure technical adequacy and sufficiency.
- (14) At USOM request, made test borings for load bearings for foundation of the new American Embassy Building and reported to the American Embassy through USOM/P.
- (15) Conducted sub-surface investigations and appraisal of foundation conditions and problems for the proposed Jinnah Memorial Structure.
- (16) Furnished representation to the U. S. Ambassador to advise and assist the committee appointed by the President of Pakistan for the reconstruction of the Bori Bazar following a disastrous fire on March 6, 1958.
- (17) Reviewed quantity and cost estimates and made recommendations for changes to the Public Administration Institute of Karachi.
- (18) Prepared quantity survey and cost estimates for the College of Education, University of the Punjab.
- (19) Prepared quantity survey and cost estimates for East Pakistan College of Education, Dacca.
- (20) Provided advisory and consulting services for the American Embassy (J. H. Lennon) concerning problems encountered by the Embassy in providing water to State Department personnel.

(21) Prepared preliminary estimates and recommendations, reviewed estimates made by outside interests, and provided miscellaneous advisory services to Regional Aviation Advisor Milliken, USOM/P Director Killen, Program Office FWD, on Karachi Airport Jet Runway.

(22) Advised on erection of Poulson Liquid Plant M-200 for the manufacture of emulsion-type insecticides.

(23) Coordinated certain miscellaneous items of Ford, Bacon, and Davis' activities dealing particularly on coke for the Industrial Development of Pakistan. (There is a question as to whether to make coke from indigenous coal, a petroleum coking facility or from imported coal in by-product coke ovens that would yield bensol, rolroil and other organic chemicals. Merits and economics of this situation are under investigation.)

(24) Investigated and reported upon feasibility and comparative cost of specialized mining equipment (Joy Twin Borer) for use in the Quetta area. Preliminary report rendered was based on inquiries made in USA.

(25) Hong Kong Fish Harbor Facilities were visited by the Contractor's Port and Harbor Engineer during a 4-day TDY stopover enroute from home leave. A report was submitted recommending certain local applications of model operations observed in Hong Kong.

(26) Reviewed requirements and documents and drafted action required to collect necessary engineering documentation on the Chittagong Hill Tracts Sawmill. Reviewing Technician was subsequently assigned as Project Advisor.

- (27) Evaluated specifications for equipment furnished in relationship to requirements for Gas Generating plant for Tando Jam Agriculture College.
- (28) Supervised load tests on new American Embassy, Karachi, as requested by Foreign Buildings Operation, State Department, through USOM/P.
- (29) Reported on feasibility of using centrifugal pumps for irrigation in East Pakistan. Made recommendations as to size and types of pumps similar to those proposed by GOP Planning Commission.
- (30) Recommended spare parts provisioning to be considered for two year maintenance program for equipment on hand and specifically on equipment bought from M-K for rupees.
- (31) Cooperated with Water Resources on development of Command Area of Ghulam Mohammad Barrage. Maintained contact with Col. S. H. Haider, Project Director for Makhi Dhand, who had been instructed by Field Marshal Ayub to prepare plans for this project.
- (32) Participated in a number of conferences involving advice on many engineering aspects of the Korangi, Ministry of Rehabilitation, Housing Project.
- (33) Visited Chittagong and Narayanganj to inspect Fishing Facilities at request of the Government of Pakistan's Project Director and Mission Fishery Advisor.
- (34) Reviewed and made recommendations on proposed specifications for Windmill Water Pumps upon request of Agriculture Division.

(35) Prepared specifications for 500 single-deck urban buses for Karachi and arbitrated controversy raised by various bidders and other interested Pakistanis, as to compliance with specifications.

(36) Made recommendations for solution of air conditioning problems for contemplated vaccine laboratories - one in Peshawar and one near Dacca.

(37) In providing and maintaining transport equipment for Agriculture Field Staff, the Contractor reviewed technical problems incident to type and numbers.

(38) Prepared, at the request of the Government of Pakistan, specifications for a Custom launch.

(39) Participated in conferences to assist the Government of Pakistan in resolving problems regarding timely completion of dredging of Karachi Fish Harbor (a sole responsibility of GOP) to permit use of Fish Harbor Facilities.

(40) Studied the problem of damage to film undergoing process. Contaminated water was suspected of causing scratches and other film damage and this proved true after investigation. Recommended the installation of filters and prepared specifications and instruction for these items.

(41) Information was furnished the ICA Regional Transportation Officer on the technical aspects of handling molasses in tank cars.

(42) Furnished U. S. Naval Attache with information as to local terrain, water and wave actions, prevailing winds and other pertinent planning

data on Gwadar Port. Had previously participated with Fish Advisor and GOP representatives in the investigation of the necessity and/or feasibility of establishing a fishing port at this site.

(43) Prepared an estimate for Regional Transportation Officer for single rail road track extension across the Pakistan-Afghanistan border to provide track on which grain could be transported across the Afghan border.

(44) Advised the Industry and Transportation Division on items to be considered in formulating a proposed "Scope of Work" for a possible management or management advisory contract involving Wah Ordinance Plant.

(45) Prepared a scope of work and recommendations for possible Management Survey and Report on over-all PIDC operations with recommendations as to team-requirement and estimate of cost.

(46) Escorted John Lighfoot, S/Ind, ICA/W, on an orientation tour of West Pakistan and Brig. General James Glore, U.S. Army Retired, on preliminary phases of pilot survey on over-all transportation needs of East Pakistan.

(47) Gave an estimated quantity and cost of cement needed for proposed new USOM/P offices contemplated on top floor of Metropole Hotel and technical advice on the over-all project.

(48) Assisted in the development of plans for a joint Pakistan-American engineering re-evaluation of the problems on lift pump size for the Ganges-Kobadak project. Proposed a scope of work, terms of reference, and job description for American members of the joint team.

(49) Made a reconnaissance survey of the proposed sites in Pakistan on the proposed CENTO Micro-Wave Teli-communication System. It was recommended that five (5) of the proposed site locations be changed because of the inaccessibility for construction and maintenance.

(50) Investigated request from the Ministry of Defense for assistance in obtaining thirty-five (35) specialized portable air compressors to determine if type compressors desired were not available from a supply of the compressors previously imported under the ICA Program in Pakistan or if still manufactured.

(51) Assisted in the finalizing of the contract between the Mission and Gammons Pakistan Limited for the building of the new ICA warehouse. This was later converted to the ICA office building and another building constructed for the warehouse. Continued to furnish technical inspection of contractors performance on the building structures and electrical and mechanical installations.

(52) Investigated and reported upon information available concerning the prospects for any improvement in the electrical power supply for Karachi.

(53) Evaluated the FIDC Shipyard foundry, in respect to equipment, capacity, working tolerances, tooling time to determine the manufacturing capacity for pipe and valves needed by two KDA sewage plants.

(54) Made a survey and study of the feasibility of converting one KPT barge to a floating workshop for ship repairs in port.

(55) Made study, report and recommendations for changes in construction plans for 800 small go-downs to be built in East Pakistan. Made recommendations for changes in plans for 500-500 ton go-downs contemplated for construction in East Pakistan.

(56) Made study and recommendations on construction plans for 500 ton grain go-downs for West Pakistan.

(57) Provided an analysis of available information on a section of the proposed GENCO Road Project Pakistan for the GENCO Economics Coordinator.

(58) Prepared an engineering survey of the USOM/P Staff House to determine if the building was structurally safe without engaging in costly repairs and alterations.

SECTION III

SUMMATION10. Reports

a. The Contractor has maintained a continuous flow of reports on all projects upon which the Contractor's personnel has worked or for which the Contractor had contractual responsibility. These periodic reports, in many instances with a weekly frequency when necessary, were forwarded through the Contractor Project Manager to the Project Advisor on the individual engineer or technician's assignment. These reports covered in detail the work implemented by the Contractor in support of the United States Overseas Mission. Where pertinent or required, USOM/P has received report copies.

b. In addition to the above reports, the Contractor engineers and technicians have submitted Terminal Reports in compliance with USOM/P Manual Order Number 220.1.

11. Funding Summation

a. The following account is a general tabular resume of funds allocated for The Ralph M. Parsons Company - Job No. 1200. Only those contractual changes involving a financial amendment increasing the total obligated funds of the contract are noted under the original contract:

TABLE II
Allocated Funds

<u>Original Contract</u>	\$ 703,763.00	
Amendment No. 2	(111,292.00)	to be spent in local currency
Amendment No. 2	<u>\$ 1,430,364.00</u>	
Amendment No. 5 (Adjusts Total Contract for Period June 25, 1956 thru Dec. 31, 1960)	<u>\$ 1,832,176.00</u>	
Amendment No. 6 Adjusts Total Contract Funds		\$1,884,740.00
Total Costs thru Dec. 31, 1960		<u>1,815,745.06</u>
BALANCE		\$ 68,994.94 *

* Amendment No. 7 extended the contract period for six (6) months time for two (2) men, one to serve six (6) months and the other four (4) months or a total of ten (10) man months. Costs and fee per Amendment No. 7 to be applied against this balance.

12. Conclusions

a. Relationship between USOM/P and the Contractor has been one of mutual cooperation. The Contractor has supported the Mission in every way possible in order to complete the projects programmed by ICA and make them a success. The Contractor has in return received full support and cooperation from the Mission Director and his entire staff. The Director of USOM/P seems to have complete control of the assistance program and is fully aware of the needs of the Host country. He is also aware of the many obstacles that have to be overcome in order to meet those needs.

b. Despite obstacles much progress has been made and during the term of contract covered by this report progress has increased. This progress would most likely never have been accomplished had USOM/P not been there. When dealing with a people whose culture, customs, standards and methods are so divergent from those introduced by foreigners, acceptance is quite naturally slow. The Director is making every effort to eliminate and overcome obstacles met by the Contractor and the USOM/P technical staff.

c. The effectiveness of the technicians is compromised by his being in an advisory position only, with considerable responsibility and no authority.

d. Out-moded regulations and inefficient procedures within the Host Government contribute to frustrating delays and increased costs.

13. Recommendations

a. The operating technique in Pakistan, even though the country is divided into two parts over 1,000 miles apart, is analogous whether it be in East or West Pakistan. The top echelon of ministers, first secretaries, and chiefs of departments who administer the work adhere to many antiquated policies and policy-making, while those in lower echelons or subordinate positions rarely have an opportunity to place in practice modern methods of execution which they have acquired while attending school or training in the United States. One of the weaknesses in the assistance program is the lack of sufficient technicians for large projects. This is especially true for a project of the magnitude of the Ganges-Kobadak Project. The caliber and experience of Pakistani placed in charge of work execution requires continual guidance by a competent staff of technicians in order to expedite the work. An acceptable alternate would be for the USOM to employ or engage American contractor personnel to prosecute the work, with Pakistani personnel in all key positions as observers, thus converting into observable practice the sound theories and know-how as used by American engineers and contractors. This method would serve as an excellent training ground for Pakistani engineers and supervisors, preparing them for execution of future projects.

b. To the extent politically expedient, contract and project agreements should be ameliorated to give the contract technicians some power and authority in addition to their responsibilities. To accomplish this the contractor technicians should be in a position to

control local personnel assigned to specific projects even to the extent of replacement of individuals, if necessary.

c. Contractor technicians should have limited purchasing power or the ability to expedite the purchase of items necessary for project movement and avoidance of unreasonable delays.

d. Consideration should be given towards further contract services for the completion of additional USOM planned projects.



The Ralph M. Parsons Company, Los Angeles. United States Offices: Houston, Huntsville, New York, Pasadena, Washington. International Offices: Ankara, Asmara, Baghdad, Bangkok, Cairo, Calgary, Dacca, Jeddah, Karachi, London, New Delhi, Paris, Teheran, Tokyo, Toronto.

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