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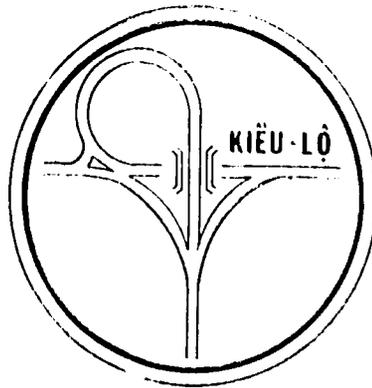
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CONTRACT ADMINISTRATION
TECHNICAL ADVISORY SERVICES

To

VIETNAM HIGHWAY ADMINISTRATION



(formerly Directorate General of Highways)

By

ROY JORGENSEN ASSOCIATES, INC.

FIRST YEAR PROGRESS REPORT

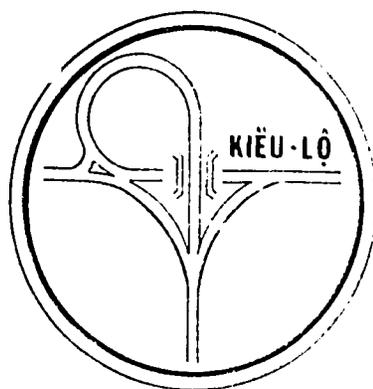
CONTRACT No. AID 730-3577

MAY, 1974

CONTRACT ADMINISTRATION TECHNICAL ADVISORY SERVICES

To

VIETNAM HIGHWAY ADMINISTRATION



(formerly Directorate General of Highways)

By

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FIRST YEAR PROGRESS REPORT

CONTRACT No. AID 730 - 3577

MAY, 1974

ROY JORGENSEN ASSOCIATES, INC.

Engineering and Management Consultants

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94 CONG LY
SAIGON VIETNAM

May 4, 1974

Mr. Phan Dinh Tang
Director General
Vietnam Highway Administration
94 Cong Ly
Saigon, Vietnam

Dear Mr. Tang:

It is with pleasure that I submit to you the year end report delineating accomplishment under Contract AID 730-3577 which was to provide technical advisory services to Vietnam Highway Administration in the Contract Administration area.

It was necessary to revise our plan of action in a few areas because the lack of contracts being administered by the Highway Administration, however, this time was utilized very successfully in assisting your District Engineers in the CPDC programs and in getting acquainted with all District personnel, province engineers, and to become acquainted with the Geographical features of the districts.

It also afforded us the opportunity of assembling the Bridge and Road Specifications, to prepare the Design Manual and other items that were required under the contract.

Our project staff has greatly appreciated the opportunity afforded us to work with your fine staff and members of the USAID Engineering Division. We are looking forward with great expectation for another great year of significant accomplishment in reaching goals for Vietnam Highway Administration.

Yours Very Truly,


Lewis M. Chittim
Chief of Party

INTRODUCTION

This report presents a comprehensive review of the progress made from May 1973 to May 1974 in the Contract Administration Technical Advisory Services Contract to the Vietnam Highway Administration (VHA), formerly Directorate General of Highways (DGOH), by Roy Jorgensen Associates, Inc. under contract No. AID 730-3577. This contract also provides continuity to the Booz, Allen Applied Research Management Study conducted from 1971 to August 1972 which established the basis of the needs in the Directorate General of Highways.

The report is compiled in six chapters. The first is a summary of progress and the overall accomplishment. The following five present the work performed:

1. Summary of Progress
2. Policies and Legislation
3. Standard Specifications and Documents
4. Design and Procedural Manual
5. District Assistance Program
6. Environmental Impact Statement

Each chapter gives a description of the accomplishments in its area.

Additional documentation of accomplishments is provided in a separate "Compilation of Supporting Documents" to Contract AID 730-3577. These

supporting documents are copies of actual material being prepared and reviewed with VHA during the past year.

They are the working documents such as copies, Design Manual, Contractor's Prequalification Statement, Bridge Standards, Construction Specifications etc. Because they are working documents and many changes may be made before all have been finalized, only a limited number of the Supporting Documents have been produced.

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1. SUMMARY OF PROGRESS

General

In May of 1973, Roy Jorgensen Associates, Inc. entered into a USAID financed contract with the Directorate General of Highways (later Vietnam Highway Administration VHA) to provide direction and assistance in improving contract administration and construction management procedures and in performing district administration of construction and maintenance. The services thus provided were expected to supplement and complement general management and training services provided by the firm under Contract Number AID 730-3560.

Although the original Project Description emphasized improved contract administration and construction management as the objective of the new agreement, subsequent conversations with USAID and VHA (DGOH) officials indicated that additionally the contract was expected to provide substantial assistance to District staffs in the administration of all field activities including construction, maintenance and support activities, both those performed by contractors as well as those performed by the field forces of the Vietnam Highway Administration. However the need for construction management has not become extensive and this switch in emphasis did not constitute a problem to our Advisory staff.

The construction program has been limited and largely administered by AID pending development of VHA capability. This capability, in turn, is dependent on establishment of standard specifications and procedures for

contract administration and construction management. Accordingly the Consultant is systematically developing specifications and procedures under the terms of the contract.

While differences in project characteristics were easily adjusted, some differences in the project environment have affected the Consultant's ability to perform work and accomplish objectives as outlined either in the Project Description appended to the Contract or in the Consultant's initial proposal. For example, item 3 of Section IV, Scope of Services, of the Project Description states in part.

"The U.S. advisors will be required to supplement the management skills of the DGOH counterparts during initial contract stages"

The minimal number of contracts for which VHA (DGOH) has currently active results in lack of opportunity for the Consultant to exercise his responsibility. However, full advantage has been taken of District responsibilities for project review and inspection functions in connection with certain Provincial projects (CPCD projects) and USAID administered projects. To the extent practicable, the Consultant's advisors have involved themselves in the review and inspection functions in order to "supplement the managerial skills of the counterparts" and advise District personnel.

In the case of item I.f of the Project Description which refers to on-the-job training for such things as procurement and administration of contracts and supervision and inspection of contract construction, the lack of responsibility of VHA for contract construction has curtailed ability

to accomplish contract requirements. However, in this case also, some guidance and training has been accomplished in connection with the CPCD and USAID projects.

Scope of Services

With the exception of the work described under paragraphs f and g, there has been substantial accomplishment of requirements under item I of the Scope of Services. This is summarized as follows:

- a. Policy - Explicit VHA policies defining the role and governing the use of private sector contractors have been developed in connection with the development of Prequalification Procedures. This item is approximately 50 percent complete.

- b. Legislation - Review of existing GVN legislation, decrees, regulations and practices pertaining to the procurement and administration of contracts has been completed. The new decrees and arretes establishing the VHA as an autonomous agency, which were formulated with the help of the Consultant, have taken care of many of the legislative requirements to provide a sound basis for contract administration. However, it is not absolutely clear at this time that problems of maintaining continuity of construction work and paying contractors expeditiously can be altogether overcome under existing legislation. A determination of this necessarily must await the review and approval of the recommended contract administration

procedures. However, the Consultant believes the present legislation is adequate. Therefore, this item is judged to be approximately 95 percent complete.

- c. Contract Administration - There has been significant accomplishment in the preparation for VHA of modernized procedures and recommended practices and methods for the administration of contracts. Essentially, procedures and documents have been completely developed relating to advertising, evaluation of proposals, award and execution of contracts (Specifications - General Provisions; Prequalification Procedures). Development of budgeting procedures is complete. However, because of the absence of an approved organizational framework, little work has been done in developing procedures for contract planning, estimating, scheduling, voucher processing, payment, handling of disputes and final acceptance. This item is approximately 50 percent complete.
- d. Contractor Qualification Standards - Development of prequalification procedures and contract rating standards and bonding practices applicable to engineering and construction contractors and suppliers of other goods and services has been completed in final draft form. (Prequalification Procedures; Contract Documents; Specifications - General Provisions). Drafts have been submitted to the Review Committee for approval. Since there still may be need for some revisions, this item is judged to be 95 percent complete.

- e. Contract Documents - Preparation of all contract documents has been completed in final draft form and these also have been submitted to the Review Committee. Therefore, to provide for any revisions that may be required, this item is 95 percent complete.
- f. Training - On-the-job training and assistance to VHA engineers and technicians has been carried out to the extent possible. Assistance has been provided to VHA district engineers in reviewing and setting priorities for betterment projects administered by USAID which currently are getting under way. Assistance also has been provided in monitoring contractor performance on similar projects which have been under construction. In addition, assistance has been rendered in reviewing contract documents (dossiers) for CPCD improvement projects on secondary roads and in monitoring performance under these contracts. Although the field assistance and training performed in these respects may not altogether be the same as originally intended, it nevertheless is accomplishing the objectives of the contract with as much progress during the year as reasonably could be expected. With respect to the training of technicians, plans are formulated to assign appropriate technicians to monitor training laboratory and inspection processes established under the A and E contracts. All training is being coordinated with the overall training activity under the general management contract. In this connection, the following relevant training

courses have been completed or are under development as noted:

1. Construction Mathematics One
2. Materials Sampling
3. Penetration Test & Split Barrel Sampling of Soils
4. Thin Walled Tube Sampling of Soils
5. Soils Investigation and Sampling by Auger Borings
6. Test for Density of Soil In-Place by the Sand Cone Method
7. Test for Slump of Portland Cement Concrete
8. Test for Density of Soil In-Place by Balloon Method

The first course, which has been prepared as a self instructional course, has been completed. The remaining courses will be audio visual are currently being prepared.

- g. Maintenance Contracts - In the Consultant's judgment, the maintenance organization has not been sufficiently developed to profit from advice on the principles, methods and economics involved in the utilization of contracting for major maintenance projects. Work on this contract so far has been limited to providing field advice and guidance to VHA district engineers and maintenance engineers with respect to maintenance practices, methods and the use of equipment.
- h. Reporting System - Because of lack of VHA responsibility for contract work, nothing has been done so far to design and implement a reporting system covering contract activities.

Item 2 of the Scope of Services called for under the contract refers to the assignment of counterpart personnel to the VHA management staffs responsible for contract administration and supervision. This item has been carried out with the assignment of the required complement of Consultant personnel.

As already indicated, it has not been possible so far to carry out item 3, as described under the Scope of Services, because of the limited present involvement of VHA in contract administration.

In addition to items specified under the Scope of Services as outlined above, Contract USAID 730-3577 was amended on December 3, 1973 to provide for additional contract services relative to environmental impact statements. Under this Amendment the Consultant was required to prepare one environmental impact statement for each district covering the projects being designed by the A and E contractors in the Da Nang, Nha Trang, Da Lat, Saigon and Can Tho Districts. Field trips and studies were undertaken to assess the environmental impacts of all of the projects indicated. The statements were completed on schedule. In two cases, the Consultant recommended specific project treatments to reduce adverse impacts to an extent where they should not be of significant concern. In both cases, these impacts were due to illegal encroachments on the right-of-way. For the majority of projects, because these are rehabilitative projects on existing alignments, there were no significant adverse environmental impacts.

Use of Descriptive Headings

Although the direction of the services provided under Contract USAID 730-3577 may have changed from what was contemplated initially, the Consultant believes there has been sound and steady progress toward the basic objectives for which the contract was initiated.

There has not been any digression from the objective as originally spelled out: " to improve the managerial and operating effectiveness and capacity of the DGOH relative to contract implementation and administration." It is only that developments beyond the control of the Consultant have prevented effective accomplishment of some work items. On the other hand, it has been possible to provide direction and assistance in other important areas of field administration such as maintenance and provision of support services for planning--inventory and traffic counts--accounting and training.

Even without the change in direction, the headings of work items under the contract Scope of Services and those used by the Consultant in his Proposal lack appropriateness for the best description of accomplishments so far achieved under Contract 730-3577.

According to standard highway department practice in the United States, some work items in these two documents, such as Contract Administration, cover more than one distinctly different work activity. Contract planning, estimating, scheduling, budgeting, voucher processing, payment, handling of disputes and final acceptance represent working

procedures which are appropriately covered in one or more internal procedural manuals. Advertising, evaluation, award and execution of contracts, on the other hand, have legal implications which largely may be documented in the General Provisions section of the Standard Specifications.

Because the work performed under USAID 730-3577 has been carried out in general conformance with standard practice, the following set of descriptive headings have been used for the succeeding chapters to describe in detail the accomplishments which have been achieved under this Contract.

1. Policies and legislation
2. Standard Specifications & Documents
 - a. General Provisions
 - b. Highway Construction Specifications
 - c. Bridge Construction Specifications
 - d. Materials Specifications
 - e. Contract Documents
3. Design and Procedural Manuals
 - a. Prequalification of Contractors
 - b. Highway Design Manual
 - c. Bridge Design Standards
 - d. Manual for Sampling and Testing Materials
 - e. Manual of Policies and Procedures for Contract Administration

4. District Assistance Program

- a. Construction Management
- b. Maintenance Management
- c. Supporting Services

5. Environmental Impact Statements

Work activities under the above headings will include all functions and tasks outlined in the contract Scope of Services and the Consultant's proposal. They will also include functions and tasks associated with providing guidance, assistance and training to district personnel in administering and supervising maintenance and support activities performed by VHA forces, with the exception of equipment maintenance which is covered under another contract.

Figure 1 shows the initially proposed schedule of activities for Contract 730-3577 applicable to the year now completed. Beside each item is the actual percent completion at the end of the year.

Figure 2 gives a summary of percent completion under the more descriptive headings used in the succeeding chapters of this annual report.

Construction Management System

Figure 3 shows the relevance of several of the descriptive headings used in succeeding chapters to a construction contract administration system. It may be noted that these headings apply to standard manuals,

specifications and regulatory documents that are used in different stages of the administration process--some being applicable to all projects.

Figure 3 is not intended to portray all steps in a construction administration system or the relevance of all standard documents that may be utilized. The complete system, including provision for such steps as budgeting, contract planning, scheduling, information systems and control is currently under development as a joint undertaking of the general management project AID 730-3560 and this project AID 730-3577. It will be discussed in subsequent reports.

Recommendation for Maintenance System

In order to make the best use of the Consultant's District Advisors in developing the capabilities of the districts for fully effective administration and supervision of both construction and maintenance--under contract or performed by VNA forces--it is recommended that the Scope of Services for continuing work under Contract USAID 730-3577 be amended to make specific provision for maintenance management services.

FIGURE 1

WORK ACTIVITY	MONTHS												PERCENT COMPLETION	
	1	2	3	4	5	6	7	8	9	10	11	12	Expected	Actual
1. Develop Objectives, Policies & Procedures	-----												100	
2. Orientation and Assignment of RJA Personnel	-----												100	100
3. Current Status Review	-----								-----				100	100
4. District Review of Interim Program	-----												100	100
5. Contact with A & E Contractor	-----												100	100
6. Development of Road & Bridge Specifications	-----												100	95
7. Involvement of DGOH Field Personnel								-----						
8. Develop Contract Administration Procedures								-----					46	60
9. Organize and Implement District Laboratories *								-----					100	0 *
10. Provide Training and Assistance									-----				25	0
11. Development Phase of DGOH District Personnel										-----			14	14
12. Review Maintenance Program & Procedures							-----						23	75
13. Develop Construction Management System													43	50
14. Phase Out USAID Construction Work	Not applicable to this year												0	
15. Final Report	Not applicable to this year												0	

* Under other contracts

FIGURE 2

PERCENT COMPLETIONS

MAY 4, 1974

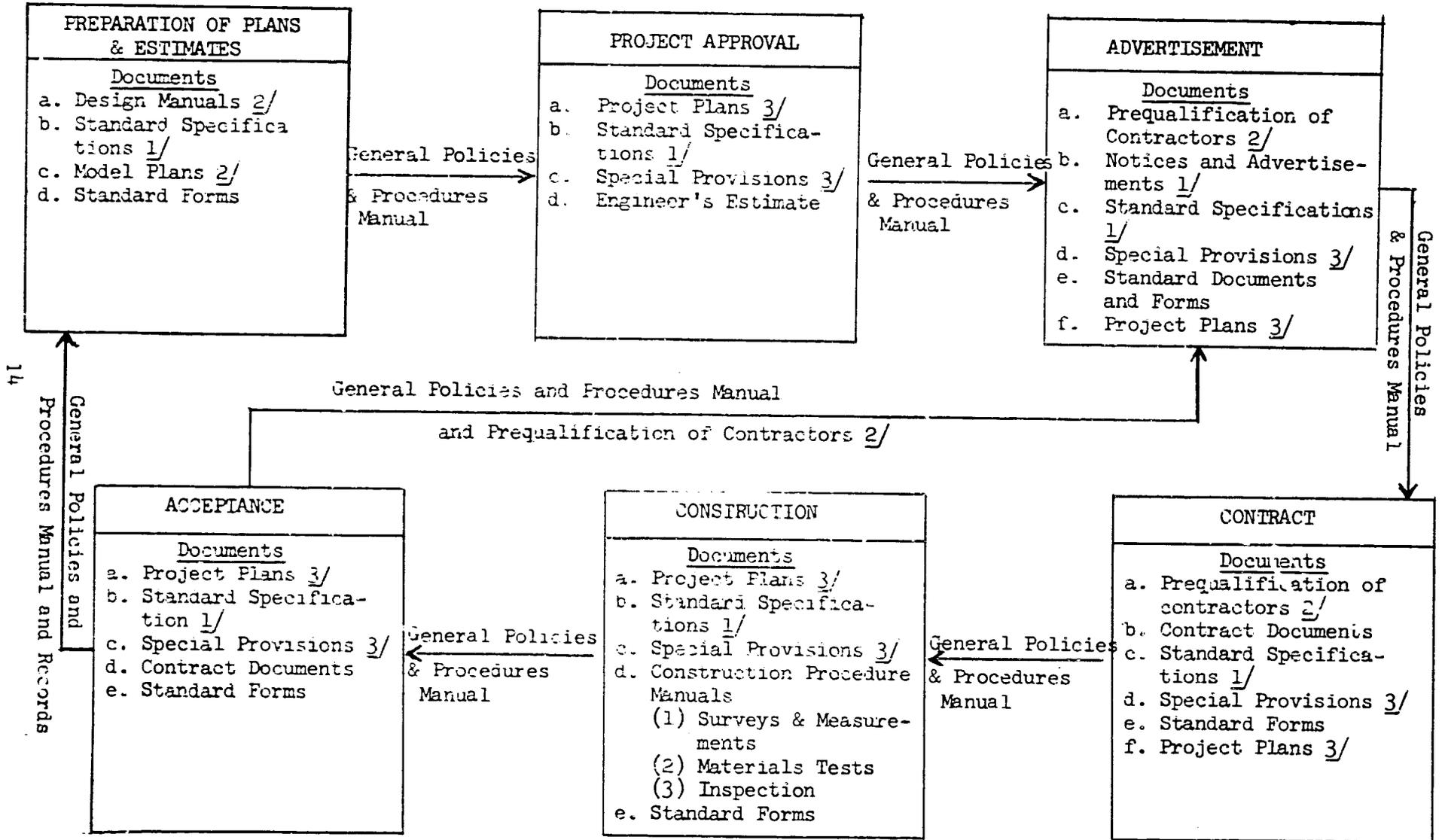
SUMMARY OF CONSTRUCTION SYSTEM ACCOMPLISHMENTS

<u>WORK AREAS</u>	<u>DEVELOPMENTAL WORK</u>	<u>TRANSLATION</u>
1. Policies and Legislation	25%	0%
* 2. Standard Specifications	77%	17%
+ 3. Design and Procedural Manuals	52%	4%
4. District Assistance Program	30%	Not Applicable
5. Environmental Impact Statements	100%	Not Required

	<u>% of Total</u>	<u>% Completion</u>	<u>Weighted Averages</u>	
			<u>Development</u>	<u>Translation</u>
*2. Highway Specifications	35%	60	21	0
Bridge Specification	35%	95	33	17
General Provisions	15%	95	14	0
Materials	<u>15%</u>	60	<u>9</u>	<u>0</u>
	100%		77%	17%
+3. Contract Administration	30	15	5	0
Highway Design Manual	35	90	32	4
Bridge Design Standards	10	95	10	Not necessary
Test & Sampling Manual	25	20	<u>5</u>	<u>0</u>
			52%	4

FIGURE 3

GENERAL USE OF MANUALS, SPECIFICATIONS AND DOCUMENTS
IN
CONSTRUCTION CONTRACT ADMINISTRATION SYSTEM



1/ Same for all projects and all stages of administration
2/ Same for all projects and some stages of administration
3/ Different for different projects

2. POLICIES AND LEGISLATION

During the first year of work under Contract USAID 730-3577 for the provision of Contract Administration Technical Advisory Services, all relevant legislation, regulations, and policies pertaining to contract administration in VHA have been carefully reviewed and analyzed. Special attention has been given to problem areas associated with legislation, regulations and external policies under which DGOH formerly operated. Some of these problem areas were referred to in the Booz-Allen Management Study completed in 1972 such as problems of inefficiency relative to the expeditious processing of contracts and problems with providing continuity of payments to contractors. These problem areas have been re-examined in the light of the new legislation, which the Consultant helped to formulate, establishing VHA as an autonomous agency.

So far, it appears that the current legislation will allow policies and procedures to be developed that can overcome the basic problems. This is important because the former inability of contractors to be sure of continued funding as well as the time lags in receiving progress and final payments has made highway contracting in Viet Nam expensive and unrewarding. This has not provided needed stimulus for the development of a Viet Nam highway contracting industry.

Although it appears that all or most of the problems can be solved satisfactorily under the current legislation, this cannot be altogether assured until the new policies and procedures have been completely formulated

and submitted to the project Steering Committee and higher authorities for approval.

Development of proposed policies for contract administration is well under way. Many of these already have been submitted in connection with the recommended policies and procedures for prequalification of contractors. Others are in various stages of development including stages of discussion with VHA counterparts as well as formulative stages.

Policies being developed include basic policies such as those relating to such things as: preferences to be given to in-country contractors (rating systems); contract performance requirements; basic fiscal practices; obligation of project funds; and changes in contract scope. They also include operating policies such as those relating to: contract planning and scheduling; progress payment requirements and procedures; handling of contract change and extra work orders; and final acceptance.

The development of policies for contract administration is being closely coordinated with the general management project. The end result is expected to be a Manual of Policies and Procedures for Contract Administration covered under Chapter 4. This manual will detail policies and procedures governing all stages of contract management beginning with advertising for bids and ending with final acceptance, and cover functional processes such as contract administration, construction or maintenance management as applicable, and financial management.

Although no beginning has yet been made toward the compilation of the policies and procedures manual, work on the policies themselves is well under way.

Figure 4 shows the percentage completion of four items under the heading of Policies and Legislation, namely: (1) review of legislation and policies; (2) development of legislation; (3) development of basic policies; and (4) development of operating policies.

Expected Accomplishments Next Two Years

1. It is anticipated that the specifications and documents will be completed, reviewed and approved by August 1974. Translation will be completed by September 1, 1974.
2. All aspects of Contract Administration will be implemented by V.H.A. When available and needed.
3. Continued advice and counsel of our District Advisor will available to the VHA District Engineer.
4. A Management Seminar, in two groups, will be conducted for V.H.A. Administrative Level personnel, stressing highway Management techniques. This will be conducted from 15 July to 7 August 1974.
5. A Maintenance Management Study and System will be conducted and implemented. The following will be developed. Annual Maintenance Program, Maintenance Performance Standards and Work Reporting and Evaluation Procedures.

FIGURE 4

PERCENT COMPLETIONS

MAY 4, 1974

POLICIES AND LEGISLATION

	<u>DEVELOPMENT</u> (%)	<u>TRANSLATION</u> (%)
1. Review of Legislation and Policies	100	Not applicable
2. Development of Legislation	Not applicable	
3. Development of basic policies	90	0
4. Development of Operating Policies	90	0
OVERALL	90	0

3. STANDARD SPECIFICATIONS AND DOCUMENTS

In contracting for highway construction, as for other types of construction, it is common practice for contracting agencies to impose specific uniform requirements on contractors by means of a set of standard specifications.

These are incorporated by reference and become a legal part of each construction contract let by the agency generally ranging over the entire spectrum of work for which the agency is responsible. They apply to such things as construction methods, quality of materials and workmanship, conditions of performance, methods of measurement and payment, and contract procedures. Because they can result from an amalgamation of past experience and thus represent the best current practices, they provide a sound basis for consistent effective contract control.

Because standard specifications are attached (by reference) and become a legal part of a contract, and because it obviously is desirable to minimize the number of such attachments, a book of standard specifications covering various sections and disciplines, in a single book, may contain sections on procedures, methods, and materials. The ideal is to provide a contractor with all of the information on agency controls he will need to have to bid a job soundly and carry out the work properly.

This characteristic of a book of standard specifications is important to understand because such a book includes sections which otherwise might be in a contract administration procedures manual as well as sections

which otherwise might be in a design manual. These sections are not usually duplicated in other manuals. Instead, in an integrated construction management system such as partially portrayed in Figure 3, other manuals are developed to supplement and compliment specifications by appropriate references.

Because the standard specifications are a more easily identifiable part of a contract administration or construction management system than, for example, specific categories of contract administration procedures, progress on Contract USAID 730-3577 is being reported in terms of the completion of the standard specifications, and of the other manuals which together will comprise documentation of the contract administration and construction management systems.

Standard specifications being prepared for VHA are divided into four basic sections, namely (1) General Provisions; (2) Highway Construction Specifications; (3) Bridge Construction Specifications; and (4) Materials Specifications. Progress will be reported under each of these headings. In addition, although closely related with the other sections, progress will be reported separately for (5) Contract Documents.

General Provisions

The General Provisions of the Standard Specifications is the section which prescribes contract administration regulations, procedures, methods and controls which are legally binding on both the contractor and VHA, since they become part of the contract.

These are usually supplemented by Special Provisions which apply only to a specific project. Special Provisions may contain material supplemental to General Provisions, Highway Construction Specifications or Bridge Construction Specifications. The Special Provisions are a convenient way of amending the Standard Specifications to make them specifically applicable to a project which may differ from most others in particular characteristics. Special Provisions may (1) add to Standard Specifications, (2) change some Standard Specifications, or (3) delete some Standard Specifications.

Another form of amending the Specifications is the use of Supplemental Specification, but they differ from Special Provisions in that they are not written for a specific project but are generally applicable to all projects. They too are used to supplement, change, or delete some portion of the Standard Specifications.

Work on developing the General Provisions (Section 100) part of the Standard Specifications for VHA consisted of (1) reviewing all similar provisions which generally have been applied in Vietnam Highway Administration, using Vietnamese, French and English document sources. Such provisions have been compared with the General Provisions recommended by the American Association of State Highway Officials and those utilized in selected highway organizations.

In addition, study has been given to special Viet Nam problems such as the availability of surety bonds to local contractors by underwriters other than banks.

As a result of these studies, the following nine (9) sections of General Provisions have been formulated in draft form:

1. Definition of terms
2. Contract type and bidding procedures
3. Bidding requirements and conditions
4. Award and execution of contract
5. Scope of work
6. Control of work
7. Control of material
8. Legal relations and responsibility to the public
9. Measurement and payment

These have been reviewed by RJA staff members and have been submitted for review to the VHA coordinating committee. Subsequently, they will be submitted to the VHA Director-General and Steering Committee and ultimately to USAID for approval. Work on the General Provisions portion of the Standard Specifications is considered to be 95 percent complete (exclusive of final reviews and approvals).

Highway Construction Specifications

Except that these specifications also apply to minor structures, they might more properly be called "roadway construction specifications" to distinguish them from "bridge construction specifications". However, "highway construction specifications" is in common usage.

Preparation for work on these specifications included review of recently applicable DGOH (VHA) specifications from Vietnamese, French and English sources dated from 1929 to 1962. Specification documents prepared for American military forces, Vietnamese military forces and some prepared for USAID were also carefully reviewed.

Specifications from these sources were compared with (1972) AASHO guide for highway construction as well as standard specification in selected American states. It should also be pointed out that many of the Consultant's personnel have extensive highway construction backgrounds--experience which obviously was not apparent in some of the earlier specifications documents proposed for Vietnam which were reviewed.

As a result of the studies and comparisons, the following construction specifications have been formulated, reviewed with VHA counterparts and the Coordinating Committee and are now being edited prior to submittal to the Director General and Steering Committee for approval.

Earthwork

Aggregate Bases and Surfaces

Bituminous Applications

In addition, the following construction specifications are currently in preparation and will be ready for approval by the end of May (1974):

1. Miscellaneous (8 Sections)
2. Highway Drainage
3. Fencing & Guard rail
4. Minor Highway Structures

In total, work on Highway Construction Specifications (exclusive of final reviews and approvals) is approximately 60 percent complete.

Bridge Construction Specifications

As in the case of design and construction requirements pertaining to the roadway, a careful distinction is being made between those bridge design and construction requirements that are included in construction contracts and those that are used by VHA or other bridge designers. Those included, along with special provisions and plans, in the construction contract document will be referred to as Construction Standard Requirements. Those used by VHA "in-house" or by designers under contract to VHA will be referred to as Bridge Design Standards, which will be discussed in the next Chapter.

Because the Standard Specifications must be read and understood by Vietnamese of varying backgrounds and educational exposures, both the English wording and translation into the vernacular must be appropriately simple and direct. This has meant that many applicable specifications derived from English sources have had to be carefully reworded.

Initial work in developing the Bridge Construction Specifications consisted of careful review of documents presently existing and having some status as specifications in VHA. These documents included:

- Diem kien sach chung
- Legal and Technical Capital Specifications (Vietnamese)
- Nghi-Dinh so 620 Cab/SG/SE
- Contracting Procedures (GVN: Vietnamese)
- Clauses et Conditions Generales
- Legal Aspects of Contracts (Public Works: French)
- Clauses et Conditions Diverres
- Miscellaneous Specifications (Public Works: French)
- Cahier des Charges General
- Materials Specifications (Public Works: French)
- Northern Bridge Program, Part 1, Technical Specifications
- Bridge and Highway Specifications (Capital Engineering Corporation: English)
- Construction, Improvement, Repair and Maintenance of Secondary Roads and Bridges (GENCOM)
- Basic Directives on Highway and Bridge Standards (GENCOM)
- Standard Highway Bridges (Quinton-Budlong)
- AASHO Standard Specifications for Highway Bridges

Using material from these sources, with specific reference to the AASHO specifications and some sections of the Capital Engineering specifications, as well as specifications from California, Vermont and Montana, a draft was developed of proposed VHA Bridge Construction Specifications.

These contain 19 sections as follows:

1. Foundation Excavation
2. Sheet Piles
3. Bearing Piles

4. Concrete Masonry
5. Reinforcement
6. Mortor Rubble Masonry
7. Dry Rubble Masonry
8. Brick Masonry
9. Steel Structures
10. Bronze or Cooper Alloy Bearing and Expansion Plates
11. Steel Grid Flooring
12. Railings
13. Painting Metal Structures
14. Protection of Embankments and Slopes
15. Concrete Cribbing
16. Timber Structures
17. Timber Cribbing
18. Structural Plate Pipes, pipe Arches and Arches
19. Temporary Bridges

As different sections of the draft specification were developed, they were presented to a three man committee of VHA department heads for comprehension and acceptance. Subsequently, they were reviewed by USAID. Translation is currently being carried out and is now approximately 80 percent complete. The completed Bridge Construction Specifications will ultimately be correlated with the Highway Construction Specifications for continuity and reference. Another procedural step remains, however, before these specifications can be finalized and submitted to the Director-General and Steering Committee of VHA for approval. This is a careful correlation

of the road and bridge specifications in construction areas where they interrelate such as the construction of approaches. This must wait until the road specifications are completed.

Accordingly, at this time, the Bridge Construction Specifications, exclusive of reviews and final approval, are considered to be 95% complete.

Materials Specifications:

Those Materials Specifications referenced in the Construction Specifications that are commonly employed on most construction projects will be incorporated within the volume of Construction Specifications.

Those Materials Specifications that are less commonly used will be noted and filed with VHA, accessible for inclusion in the Contract's Special Provisions as the need dictates.

Contract Documents

Work on contract documents other than the Standard Specifications cannot be finalized until the General Provisions have been approved since these represent the primary document on which the others are based.

Nevertheless, preparation of the portion of the contract documents known as the "proposal package" is in progress along with standard forms that are included in this package and other forms and documents. Work is well under way on the following:

Invitation for Bids
Agreements
Notice of Award
Notice to proceed
Change Order
Supplemental Agreement
Approval of Sub-contractor

Several other contract forms and documents have also been prepared in connection with procedures for Prequalification of Contractors reported in the next Chapter.

In total, the preparation of Contract Documents and forms is considered to be approximately 50 percent complete, exclusive of final approval.

Summary

Figure 5 shows the percent completion to date of the Standard Specifications and Contract Documents.

Progress Next Year

Figure 6 shows the anticipated progress in completing the Standard Specifications and Contract Documents during the next year. It is anticipated that the specifications and documents will be completed, reviewed and approved by August. Translation will be completed by Sept 1, 1974.

FIGURE 5

PERCENT COMPLETIONS

MAY 4, 1974

1. STANDARD SPECIFICATIONS

<u>Major Sections</u>	<u>Development</u> (%)	<u>Translation</u> (%)
1. General Provisions	95	0
2. Highway Construction Specifications	80	
3. Bridge Construction Specifications	95	80
4. Materials Specifications	20	
Overall	77	19

2. CONTRACT DOCUMENTS

<u>Types</u>	<u>Development</u> (%)	<u>Translation</u> (%)
1. Proposal Package	50%	0
2. Others	10%	0
Overall	25%	

FIGURE 6

COMPLETION SCHEDULE: STANDARD SPECIFICATIONS AND
CONTRACT DOCUMENTS

WORK ITEM	MONTHS - 1974							
	May	June	July	Aug	Sept	Oct	Nov	Dec
1. STANDARD SPECIFICATIONS								
a. General Provisions	—							
-- Translation								
b. Highway Construction Specifications								
-- Translation								
c. Bridge Construction Specifications								
-- Translation			—					
d. Materials Specifications								
-- Translation								
2. CONTRACT DOCUMENTS								
a. Proposal Package		—						
-- Translation								
b. Others								
-- Translation								

4. DESIGN AND PROCEDURAL MANUALS

With respect to construction contracts, design and procedural manuals do not have the same use as Standard Specifications--see Figure 3--and thus are not compiled in the same volumes or packages. Instead of establishing standards, requirements and practices binding on both a construction contractor and VHA and instead of being a legal part of a construction contract, design and procedural manuals may be considered as in-house documents essentially governing VHA practices. There are exceptions to this. Since VHA may procure design by contract instead of carrying it out in-house, a design manual or portions of it may be incorporated as a legal part of a design (A & E) contract. In this case, however, the design contractor may be considered to be an extension of VHA's own forces. As another exception to the general characteristic of design and procedure manuals, some of the documents included or referenced in procedures for Prequalification of Contractors will become Contract Documents. However, in an efficient compilation of documents for contract administration and construction management, it is best to compile Standard Specifications and procedural manuals separately.

Prequalification of Contractors

In developing procedures and forms for prequalification of contractors in Vietnam many conversations have been held with knowledgeable persons, including VHA counterparts, USAID, and many materials have been reviewed to ascertain the status and problems of the highway contracting industry in Vietnam.

Based on the information thus obtained and the best American practice, the entire package of materials for contractor prequalification has been developed and is essentially complete with the exception of one form. This is the affidavit to be included in the contractor's financial statement. The absence of a formally recognized profession of public accountants in RVN is posing a problem with respect to this form. Efforts are being made to resolve the problem in a manner which will give credence to local contractor statements of financial condition and meet international requirements.

The remaining parts of the prequalification package are as follows:

BIDDER'S APPLICATION FOR PREQUALIFICATION AND REGISTRATION

1. Guidelines for Preparing Application (4 items)
2. Roles and Regulations Pertaining to the Prequalification and Registration of Prospective Bidders and Contractors (8 sections)
3. Bidders Statement of Organization and Experience
4. Bidders Statement of Available Equipment
5. Bidders Statement of Assets and Liabilities
6. Bidders Financial Balance Sheet

As indicated, these parts have been completed. They have been reviewed by Chief of Division of Contract Administration and are now submitted to the Director-General and Steering Committee. Translation is in progress. With the exception of final review and approval, this work is approximately 95 percent complete.

Highway Design Manual

Initial work on the highway design manual involved careful review of the standards and specifications then in use by the Director-General of Highways, later VHA. The source material consisted of the following:

- . 1958 Engineering Specifications--Capital Engineering Company
- . 1968 Bases Directive on Highway and Bridge Standards and Secondary Roads
- . 1933 and 1938 French Specifications
- . Standards developed by US Army and Navy
- . Basic Directives on Highway and Bridge Standards as developed by the Combined Central Highways and Waterways Committee.

Design standards and methods referred to in these source materials were compared with those recommended by the American Association of State Highway officials in the United States, which are the bases for practice in most States; the American federal-aid highway program; and in many foreign countries.

Based on the review and comparison, as well as the experience of RJA personnel, drafts were developed for 14 chapters of the highway design manual, including a chapter on highway design standards.

Because this manual, in conjunction with the bridge design section, provides direction for many pre-contract procedures and is therefore a significant document in the development of a construction management system, its content is briefly outlined below:

INTRODUCTION

The Introduction describes the purpose and use of the manual. It indicates approval authority and policy with respect to updates. It also describes the relationship to source material and references.

CHAPTER ONE: Design Standards

This chapter describes the controlling design standards adopted by VHA including standards for design speeds and geometrics, indicating their relationships. References are made to chapters describing use of the standards and illustrations are given to insure comprehension of standard nomenclature.

CHAPTER TWO: Design Source Materials

This chapter describes the sources of information for design indicating how field information is obtained and provided and the relationship of other engineering services and source information. It also references other pertinent VHA manuals and publications.

CHAPTER THREE: Horizontal Alignment

This chapter describes the relationships between horizontal alignment and design criteria such as design speeds. It details design procedures and includes the necessary equations, tables and charts as well as providing illustrations.

CHAPTER FOUR: Vertical Alignment

This chapter describes procedures and provides all necessary information, including equations, tables and charts, for vertical alignment design. It

also describes practices which should be avoided and relationships to such things as horizontal curvature, railroad grade crossings and structure clearances.

CHAPTER FIVE: Cross-Sections

This chapter describes the design of other highway geometrics including the plotting of cross-sections and their features and the use of templates. It shows how various types of information are presented on design drawings and plans including drainage structures, typical cross-sections and earthwork quantities.

CHAPTER SIX: Earth Computations

This chapter describes procedures for calculating and controlling earthwork and related construction item quantities such as haul distances. Various illustrations are presented and described including the use of mass diagrams.

CHAPTER SEVEN: Drainage

This is the longest and most technical of all the chapters. It covers run-off estimates, culvert design, conduit load and strength requirements, structure excavation measurements and a dissertation of open channel flow design. All necessary equations, nomographs and charts are provided.

CHAPTER EIGHT: highway Intersections

This chapter presents design methods and criteria for various kinds of highway intersections in various environments. Rural and urban intersections are treated along with traffic channelization, frontage roads and pedestrian provisions.

CHAPTER NINE: Surfacing

This chapter describes the estimation of surface and base quantities.

CHAPTER TEN: Right-of-Way

This chapter describes right-of-way plan preparation and notation and measurement of taking areas.

CHAPTER ELEVEN: Miscellaneous Design

This chapter treats incidental design items which may be applicable to a few or many projects. Included are considerations of airway highway clearances, guardrails and structural characteristics of woods.

CHAPTER TWELVE: Quantity Estimates

This chapter describes estimating procedures which will be used by VHA along with conventions and degrees of accuracy. It also discusses organizational working relationships in making and recording quantity estimates and illustrates form utilized.

CHAPTER THIRTEEN: Design Reviews

This chapter describes the relationship of various review and inspection stages in design and the procedures utilized.

CHAPTER FOURTEEN: Contract Plans Assembly

This chapter provides complete information on the preparation and assembly of standard contract plan sheets which are illustrated with examples. General information is also provided on such subjects as sheet sizes and abbreviated plans, revisions, additions and deletions.

.....

All of the above chapters of the Highway Design Manual are complete and have been reviewed by a Coordinating Committee composed of the Director of Engineering , Road Design Division Chief and Bridge Design Division Chief. The English language version is ready for submission to the Director-General and the Steering Committee. However, translation will be accomplished first with additional review by the Coordinating Committee prior to submitting same to Steering Committee. Translations are posing problems since it has proven to be difficult to get adequate technical translations. Exclusive of reviews and approvals, work in the highway design manual is considered to be about 90 percent complete.

Bridge Design Standards

Work in developing the procedures and standards will of both highway design and bridge design have been performed independently and with the exception of addendum material, the Bridge Design Standard will remain a separate document

For this reason and for clarity, these two sections will be treated separately in this report

After consideration of the different specifications, standards and procedures presently used for bridge design by VHA--these are listed under Bridge Construction Specifications, Chapter Two--it was mutually agreed by officials of RJA, VHA that the 1973 AASHTO Bridge Design Standards were entirely appropriate for Viet Nam. It also was agreed that these standards would not need to be translated into Vietnamese (at least, at present)

because (1) the technical language is difficult to translate, and (2) they can be handled by those who will be performing bridge design.

It was decided, however, that certain supplemental materials would need to be provided to amend the American text of the AASHO standards. These include:

1. Tables covering the conversion of measurements utilized in the standards to metric measurements;
2. Tabulation of design and physical properties and appropriate uses of local lumber to supplement the same kind of information provided in the AASHO Standards on U.S. grade lumber; and
3. Vietnam isohetric charts and detailed coverage, with examples, of elements of hydrology and its application in highway structural design.
4. Chart of maximum moments, shears, and reactions for AASHO H-20 loading in metric units.

Together with the AASHO Bridge Design Standards, this supplemental material will provide most of the procedural information required for bridge design. As indicated, it eventually will be incorporated with road design information discussed in the previous section of this report into a joint Highway and Bridge Design Manual.

Development work under this heading is complete except for review and approval by the Director-General and Steering Committee. All translations

have been completed and are now being checked for accuracy. Therefore, the work is 95% complete.

Manual for Sampling and Testing Materials

Work has just recently been initiated on the Manual for Sampling and Testing Materials. Source documents which have largely been reviewed include:

- . AASHO Tests and Materials Manuals
- . ASTM Tests and Specifications
- . Manuals from Vermont and Montana
- . VHA Sampling and Testing Procedures

Through investigation of sampling methods and tests presently used by VHA and discussion with the VHA materials laboratory officials, consideration is being given to procedures for sampling and testing that will be most readily applicable in Viet Nam.

The Sampling and Testing Manual will consist of:

1. An introduction, geared to field personnel covering logic, aims and duties, required for sampling and proper methods of handling materials.
2. A section that:
 - a. Describes in detail in English the AASHO test that will be conducted in the VHA Central Laboratory.

- b. A section that describes in detail in English and Vietnamese those tests that will be performed in the VHA District Laboratories.
 - c. A section that gives a detailed description of sampling methods as performed by VHA personnel at the job site. Subject matter will be both in English and Vietnamese.
3. The third section of the manual will be the tabulation of all the various samples and test required. The tables will itemize samples and test on a what when basis.

Work on this Manual is now estimated to be 10% complete.

Manual of Policies and Procedures for Contract Administration

This manual will fill in procedural gaps in contract administration and construction management not covered by other manuals and books of specifications. Several of the other manuals and books of specifications already have been described. Others eventually will be developed to document construction management procedures such as surveying and inspection. The relationship of the Manual of Policies and Procedures for contract Administration to the construction contract management system is generally shown in Figure 3.

In general, this manual--together with the other manuals and books of specifications--will fulfill all of the long-range contractual requirements specified under item I, Section IV, Scope of Services, Appendix A

of Contract AID 730-3577. In particular, the manual will provide for the following procedures as a minimum:

- contract planning and scheduling
- contract budgeting
- contract processing
- proposed progress schedules
- field administration procedures
- processing and approval of change and extra work orders
- voucher submittal and processing
- financial review
- contract acceptance
- progress and final reports
- final inspection and acceptance
- handling of disputes

Since it involves organization, fiscal administration, the management information system and other responsibilities of the Consultant under the general management contract, development of the Manual of Policies and Procedures for Contract Administration will be a shared task. Under Contract AID 730-3577, most of the policies and procedures will be developed. Under Contract AID 730-3560, they will be compiled. Survey and inspection manuals and other construction management procedures will be developed under Contract AID 730-3577.

So far, there has been little concentration of effort on developing these policies and procedures for two reasons: (1) concentration on

the design manuals which are needed as soon as possible for A & E contracts; and (2) an organizational stage has not been reached when these procedures could be reviewed profitably by VHA officials.

Nevertheless, work has been done on the initial development of these policies and procedures. This has consisted partially of a complete review of all procedures for contract administration and construction management currently used in Viet Nam. Documents also have been translated and reviewed which apply to general contract procedures, prequalification of contractors, and standard specifications. These include:

- . Contract Procedures in Vietnam and Contract Specifications
(extracted from "Financial Management" by Prof. Tran van Binh)
- . General Administrative Contract Specifications Applied to
Public Works Projects

In addition, procedures and recommendations have been developed--translation in progress--for the following:

- (a) Formulation of VHA Contract Letting & Review Committee
- (b) Administrative Procedure for Advertising of Contracts
- (c) Administrative Procedure for Award and Execution of Contracts
- (d) Administrative Procedure for Handling of Disputes
- (e) Administrative Procedure for Final Acceptance

With the above accomplishments, the work on Contract AID 730-3577 with respect to the Manual of Policies and Procedures for Contract Administration is considered to be 15 percent complete.

Summary

Figure 7 shows the percentage completion of work under Contract AID 730-3577 to develop Design and Procedure Manuals. Note that the following are entirely the responsibility of the staff on this contract, although there is close coordination with the general management project: (1) Prequalification of Contractors; (2) Highway Design Manual; (3) Bridge Design Specifications & Standards; and (4) Materials Testing Manual. On the other hand, responsibility for the general procedures manual--Manual of Policies and Procedures for Contract Administration--is shared with the advisors on Contract AID 730-3560. For this reason, the percentage completion in Figure 7 only reflects the amount to be completed under the contract which is the subject of this report.

Progress Next Year

Figure 8 shows the anticipated progress next year in completing the Design and Procedural Manuals. It is anticipated that work under this contract on all subject manuals will be completed by August, 1974. Translations will be completed by September 1, 1974.

FIGURE 7

PERCENT COMPLETIONS

MAY 4, 1974

DESIGN AND PROCEDURAL MANUALS

<u>Manual</u>	<u>Development</u> (%)	<u>Translation</u> (%)
1. Prequalification of Contractors	95	0
2. Highway Design Manual	100	10
3. Bridge Design Standards	99	Not required
4. Materials Testing Manual	20	0
5. General Policies & Procedures Manual	15 <u>1/</u>	<u>1/</u>

1/ Percentage completion of work under Contract AID 730-3577 only.

FIGURE 8

PROGRESS CONTRACT ADMINISTRATION

WORK ITEM	MONTHS - 1974							
	May	June	July	Aug	Sept	Oct	Nov	Dec
1. Prequalification of Contractors								
-- Translation								
2. Highway Design Manual								
-- Translation								
3. Bridge Design Specifications								
-- Translation								
4. Materials Sampling & Testing Manual								
-- Translation								
5. Policies and Procedures for Contract Administration								
-- Translation								

5. DISTRICT ASSISTANCE PROGRAM

District Activities

Although the rate of progress in the District Assistance Program is slower than originally anticipated, it does not necessarily follow that progress on this program is unsatisfactory.

In the first place, a significant construction program for VHA, so far, has not materialized. For this reason, there has been no strong impetus for VHA districts to organize for construction administration. Thus, ability to impart the extensive construction experience of the RJA district advisors to Vietnamese counterparts has been limited. Nevertheless, full advantage has been taken of opportunities provided by the GPCD program and contracts under USAID direction. In addition, the advisors have been able to help substantially with many administrative and technical requirements in the districts not related to existing construction programs but, nevertheless, of utmost importance in developing district capabilities.

The first tasks undertaken by the advisors were to: (1) become familiar with the entire district work situation in all spheres of effort; and (2) earn the confidence of the district personnel including the VHA District Engineers. These tasks, together, took several months initially since the work situation and field problems in the war-ravaged country of Viet Nam are considerably different than in the United States.

The extensive experience of the RJA advisors as District Engineers

in the United States was productive, however, and they soon were able to provide counsel on many road and bridge problems and administrative matters.

One of the first duties assigned to the district advisors was to review, in the field, the 1974 tentative road and bridge improvement program. Projects finally selected for this program would be contracted to Architectural and Engineering (A and E) firms for preliminary engineering, design, and construction inspection.

In the process of completing this activity, the advisors met all the Province Engineers and construction engineers, building up a confident and friendly relationship.

In connection with construction projects currently under way and administered by USAID and AKVN, these have been visited and inspected by the advisors and helpful recommendations have been made to those in charge and monitoring VHA personnel.

Safety of the travelling public in and around construction projects, particularly bridges, has been subject to considerable neglect in Viet Nam. There are literally hundreds of bridges inadequately protected to safeguard the public. Many are structurally inadequate to provide safely for the loads going over them. In several cases, observations by the RJA advisors have helped the construction and maintenance engineers to recognize and correct these defects.

In the latter part of 1973, the USAID contract with Quinton-Budlong for inspection of CPCD projects on secondary roads terminated.

Accordingly, USAID requested RJA advisors to act on their behalf in monitoring the CPCD program which is the only continuous construction work in the districts. The advisors have reviewed dossiers for those projects, visited the projects to observe construction methods, made final inspections along with USAID and Vietnamese District Engineers and used the opportunity to interact with their counterparts.

Presently, the advisors are working on programs in each of their districts to use A and E projects and materials laboratories--only now being established--for training of VHA inspection and materials personnel.

The advisors have participated in conferences with the VHA district engineers and their staffs to review job classifications and evaluations. They have monitored and assisted in carrying out truck weighing operations. And they have assisted in road and bridge inventories and traffic count programs and in the development of environmental impact statements (See Chapter 6).

One district--Da Nang--has been without an advisor since November 24, 1973 due to release of the advisor. Due to U.S. government policies restricting the entry of dependents, it has been difficult to get a replacement with district or related supervisory experience. However, appointment of a qualified individual now has been made and he should report momentarily.

In the interim, the Deputy Chief of Party has made two special visits to Da Nang, each included a 2 day field trip to review district activities.

In additon, he has traveled extensively through other districts covering all of the projects in the construction program by car or helicopter.

As well as accomplishments in the construction or betterment program area, the advisors have been particularly productive in providing advice to VHA District Engineers and maintenance personnel on the performance of maintenance operations including the use of materials, manpowers and equipment. However, as indicated in the next section, more is needed in the maintenance area.

Because of the nature of work in the districts and the inability, at this time, to develop or meet specific accomplishment schedules, activity charts are used to monitor and control RJA district advisors activities. Figure 9 shows the various activities the advisors are expected to carry out. Figure 10 shows the District Advisors Monthly Report of Progress.

Maintenance Program Needs

Because the differences between maintenance, betterments and construction were not spelled out in advance of this project, the initial Scope of Work of Contract AID 730-3577 did not foresee the specific nature of maintenance needs. Maintenance, as carried on by DGOH and the military was a blend of betterment and routine repairs. Under this contract, definitions have been developed which clearly distinguish between the different kinds of activities involved in maintaining highways. These definitions conform with the best practices in the United States. In any American state highway department, construction

almost invariably will be let to contract. Betterments may be performed under contract or by the state crews. Most routine maintenance is performed by state crews. In certain circumstances, some routine maintenance may be let to contract. The Consultant has recommended that practices in Vietnam conform to this for maximum effectiveness in meeting needs.

However, this leaves a gap in specific provisions for maintenance under the contract. Whereas the emphasis in the initial Scope of Work was on "contract maintenance", the majority of work in the districts, for some time, probably will be in the routine maintenance area. Because the advisory work at the district level can readily be provided by the Consultant's advisors, it is recommended that the contract be amended to specifically provide for development of a maintenance management system. There is substantial need for this. Besides improving maintenance performance, it will help tie all district operations together without encroaching on any other contract.

The RJA maintenance management system is well known throughout the United States. It allows positive control of maintenance performance and expenditures. States and foreign countries using it have experienced substantial increases in maintenance efficiency. It can be applied either to equipment oriented maintenance or maintenance oriented toward the intensive use of labor, as in Viet Nam.

Development of the system will require some modification of support effort by changing the role of one of the advisors at headquarters to that of maintenance assistant. It also will require part time services of a

maintenance management specialist out of the Consultant's home office who is expert in the development of the RJA system.

Work Anticipated Next Period

We anticipate continuation of all of the contract field activities during the next two years. As indicated in previous Chapters, the development of the specifications and contract documents, manuals and standards should be completed by August. This will permit reorientation of the work at VHA headquarters toward development of the maintenance management system with no de-emphasis of other objectives of the contract. Portions of manuals on general procedures which still need to be developed will be absorbed in the general management contract with no increase in the scope of that job. Figure 11 shows the continuing work anticipated.

FIGURE 9 - DISTRICT ACTIVITY

	MAINTENANCE MONITORING	CONSTRUCTION MONITORING	EQUIPMENT MONITORING	PLANNING & RESEARCH	DISTRICT ENGINEER	ADMINISTRATION TRAINING DESIGN
DATA GATHERING ACTIVITIES	VISIT APPROPRIATE SUB-AGENCY, PROVINCE, SUPPORT TEAM OR SUB DISTRICT TO LEARN MAINTENANCE PROGRAM.	VISIT DISTRICT ENGINEER TO LEARN CONSTRUCTION PROGRAM	VISIT SHOP, VISIT SITES WHERE EQUIPMENT IS BEING USED	INTERVIEW WITH DISTRICT ENGINEER, PLANNING COUNTERPART		
	OBSERVE MAINTENANCE CREW IN ACTION	OBSERVE CONSTRUCTION CREWS (CONTRACTOR) INSPECTORS & MATERIAL MEN IN ACTION	OBSERVE ACTIVITIES IN ON JOB SITES	VISIT PROPOSED SITES FOR NEW PROJECTS	REPORT ALL OBSERVATIONS AND RECOMMENDATIONS TO DISTRICT ENGINEER	
ACTIONS RESULTING FROM OBSERVATIONS	IMPROPER NUMBER OF MEN IN CREW. RECOMMEND TO DEPUTY CHIEF OF PARTY	IMPROPER ACTION BY CONTRACTOR. DISCUSS WITH DEPUTY CHIEF OF PARTY			→	DEPUTY CHIEF OF PARTY
	BAD MAINTENANCE OR EQUIPMENT OPERATING TECHNIQUES RECOMMEND TO TRAINING COUNTERPART	IMPROPER TECHNIQUE BY INSPECTORS. RECOMMEND TO TRAINING C. TERPART	IMPROPER TECHNIQUES BY MECHANICS OR BY EQUIPMENT OPERATORS. RECOMMEND TO TRAINING C. TERPART		→	TRAINING COUNTERPART
	DESIGN ERRORS CAUSING EXCESS MAINTENANCE. RECOMMEND TO DESIGN C. PART	DESIGN ERRORS OR ERRORS IN SPECIFICATIONS. RECOMMEND TO DESIGN C. PART		RECOMMEND TO PLANNING C. TERPART BASED ON DATA OBSERVED DURING SITE VISITS	→	DESIGN COUNTERPART
	USE NEW MATERIALS RECOMMEND TO RESEARCH C. TERPART	USE OF NEW MATERIALS RECOMMEND TO RESEARCH C. TERPART			→	RESEARCH COUNTERPART

FIGURE 10

ROY JORGENSEN ASSOCIATES, INC. CONTRACT AID 730-3577 DISTRICT ADVISOR'S MONTHLY REPORT OF PROGRESS

CHART 1 MONTHLY DISTRIBUTION OF TIME

1973												1974												1975												1976											
MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR												
[Grid area for Chart 1 with faint data points]																																															

CHART 2 MONTHLY BREAKDOWN OF ACTIVITIES

	1973												1974												1975												1976											
	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR												
MAINTENANCE MONITORING	[Grid area for Chart 2]																																															
INFORMATION GATHERING FIELD OBSERVATIONS TRAINING AND CORRECTING REPORTING																																																
EQUIPMENT MONITORING	[Grid area for Chart 2]																																															
INFORMATION GATHERING FIELD OBSERVATION SHOP OBSERVATION TRAINING AND CORRECTING REPORTING																																																
CONSTRUCTION MONITORING	[Grid area for Chart 2]																																															
INFORMATION GATHERING FIELD OBSERVATION TRAINING AND CORRECTION REPORTING																																																
PLANNING AND RESEARCH	[Grid area for Chart 2]																																															
INFORMATION GATHERING FIELD OBSERVATION TRAINING AND CORRECTION REPORTING																																																
TECHNICAL ASSISTANCE	[Grid area for Chart 2]																																															
OFFICE STUDIES FIELD STUDIES REPORTING																																																

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INSTRUCTION

CHART 1 REPORT THE PERCENT OF YOUR WORKING TIME SPENT ON EACH OF THE 9 ACTIVITIES LISTED. FILL IN THE BAR UNDER EACH PERCENTAGE TO FORM A SKYLINE GRAPH.

EXAMPLE 

CHART 2 DRAW HORIZONTAL LINES IN THE PROPER MONTH BOX IN LINE WITH EACH ACTIVITY BREAKDOWN IN WHICH YOU PARTICIPATED THAT MONTH. THE WEIGHT OF THE LINE WILL SHOW YOUR ESTIMATE OF THE TIME YOU DEVOTED TO EACH ACTIVITY BREAKDOWN.

INFORMATION GATHERING 

FIELD OBSERVATION 

THE "TECHNICAL ASSISTANCE" ACTIVITY REFERS TO ANY WORK OUTSIDE OUR CONTRACT WHERE WE MAY BE INVITED TO HELP.

eg. CRDC WORK, DCCC OBSERVATIONS ETC.

6. ENVIRONMENTAL IMPACT STATEMENTS

Supplemental Agreement

On November 27, 1973, Contract No. AID 730-3577 was amended to include provision for environmental planning services to USAID and VHA in the Republic of Vietnam. These services were to provide environmental assessments of the highway improvement program pursuant to the intent and objectives of the National Environmental Policy Act of 1969, the guidelines of the Presidents Council on Environmental Quality set forth in Part 1500, Chapter 5, Title 40, of the Code of Federal Regulations, and USAID Manual Circular 1214.1.

Scope of Work

An environmental statement was prepared for each Public Works District, covering all projects being designed by the A & E Constructors in the Can Tho, Da Lat, Da Nang, Nha Trang, and Saigon Districts. Each statement included the following:

1. Brief description of the physical, social, and economic characteristics of the district,
2. Brief description of the highway improvement program, including project identification and estimated cost;
3. Location and corridor description of each project;
4. Detailed discussion of the proposed improvement and possible alternatives;
5. Detailed discussion of probable environmental effects, unavoidable adverse effects, and steps to minimize adverse effects, including:

- a. physical effects, such as effects on land use, air quality, noise levels, and water quality;
 - b. economic effects, such as changes in road user operating costs, disruption of businesses, and loss of crops or farm land;
 - c. social effects, such as disruptions, displacements, and inconveniences experienced by land owners and tenants.
6. Discussion of the relationship between short-term use of the environment, and maintenance and enhancement of long-term productivity; and
 7. Discussion of irreversible and irretrievable commitments of resources

The information required for the environmental assessments was obtained by office and field investigations in each district.

Office Investigations

Office investigations consisted of discussions with representatives of USAID, VHA, A&E contractors, and Roy Jergensen Associates, Inc., and review of pertinent materials, including maps, books, and reports. These materials covered engineering characteristics (such as present deficiencies, proposed improvements, design standards, costs, and traffic estimates) and environmental data (such as climate, topography, geology, soils, vegetation, land use, and economic activity). Although a considerable amount of material was available, the study was handicapped somewhat by the scarcity of reliable cost data and the unavailability of large-scale maps and photographs.

Estimates of air pollution and noise levels were made, based on traffic estimates from a very limited four-day traffic count. Due to large volumes of trucks and two and three-wheeled vehicles, formulas, charts, and graphs developed for U.S. traffic conditions could not be used directly. However, by using individual emission rates and noise levels for each type of vehicle, the results could be combined to obtain the total value. Separate exhaust emission rates were applied to the estimated hourly volumes to determine the gross emissions for each type of vehicle. By superposition, the total concentration of pollutants in micrograms per square meter was obtained.

No data were available on noise levels for the vehicle mixes found in Viet Nam. The assumption was made, based on subjective observations, that two and three-wheeled vehicles were more noisy than cars and less noisy than trucks. Accordingly, the mid-point value between these two extremes was selected for this class of vehicles. Noise levels for all three type of vehicles were calculated and combined, using the rule for decibel addition, to get the total noise level for each highway project. In most cases truck volumes dictated (controlled) noise levels.

Field Investigations

Each of the proposed projects in each district was examined on the ground, except in areas where this was not possible due to security considerations. In the Saigon Public Works District, all project areas were inspected on the ground by car, except for the project on QL-13 (Chau Thanh to An Loc) which has been postponed indefinitely due to lack of security. In all other districts, project areas were examined both

by helicopter and by car. In most cases, the Environmental Advisor was accompanied by the Deputy Chief of Party, the Construction Advisor, and an interpreter. Whenever possible, the field party was also accompanied by the USAID District Highway Engineer, and A&E representative, and the VHA District Engineer and Province Engineer.

During the field investigations, particular attention was given to the following items:

1. Present road conditions and suitability of the proposed improvement,
2. Feasibility of implementing the proposed improvement within the existing right-of-way limits,
3. Other alternatives, including the no-build alternative,
4. Present and potential land use,
5. Encroachments on the existing right-of-way, and
6. Probable social, economic, and other environmental effects of the proposed improvement, including effects which may occur during construction and in the short and long term after construction.

Results of the Environmental Assessments

The proposed projects in all five districts consist of repairs or replacements of existing facilities and sufficient improvements to meet current design standards. Since all of the proposed improvements can be accomplished within existing right-of-way limits, except in a few cases where curve realignments are necessary, the only land affected

by the program is land which is already reserved for highway use. Furthermore, there is rarely a choice of routes in most areas and, as a result, no significant changes in traffic patterns or traffic volume (above normal growth rates) is anticipated. The program is, therefore, a modernization rather than a developmental program, which greatly reduces the potential for adverse effects on the environment.

In general, no significant adverse effects were identified. However, due to illegal encroachments on the highway right-of-way in some areas, some temporary disruptions, displacements, and inconveniences will be experienced by residents and businesses. In some cases, these effects will be eliminated or minimized by the use of curbed cross-sections or by compromising design widths in areas of low traffic volume. In one case (LTL-15 in Saigon District), there was no reasonable and prudent alternative, and these temporary effects were considered unavoidable. New alignment alternatives could not be justified because, due to limited funds, the substantial increase in cost would require elimination of badly needed projects in other areas, which would result in adverse effects of equal or greater significance.