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ER
Final Report
2005

PARTICIPATING AGENCY SERVICE AGREEMENT

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REPORT
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BY

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MOBILE DISTRICT

EL SALVADOR PROGRAMS OFFICE

ISSUED MARCH 31, 2005

TO:

USAID EARTHQUAKE RECONSTRUCTION PROGRAM
EL SALVADOR

MR. BRADEN W. ENROTH
CONTRACTING OFFICER

US Army Corps
of Engineers
Mobile District

MEMORANDUM

TO: USAID/El Salvador Braden W. Enroth – Contracting Officer

FROM: U.S. ARMY Corps of Engineers/El Salvador, Manny Urquilla

SUBJECT: Final Report Earthquake Reconstruction Program

Attached please find our report on subject program including: background, findings, lessons learned, and recommendations.

I take this opportunity to thank you for your cooperation and trust extended to our team.

Regards,

CONTENTS:

- Report Summary
- Status Report Charts
- Report Forms (USCOE)
- Inventory of Equipment
- Pending Projects and Activities
- Pictures

ABREVIATIONS

PA= Participating Agency

REDES= Salvadorian Foundation for Construction and Development

QA= Quality Assurance

FI= Final Inspection

NGO= Non-government Organization

CTO= Cognant Technical Officer

QC= Quality Control

FISDL= Social Investment Fund for the Local Development

FONAVIPO= Fondo Nacional de Vivienda Popular

SOP= Standard Operation Procedure

BACKGROUND INFORMATION

According to the terms of the PASA and those requirements identified during the program execution, the following is a narrative description of the findings and lessons learned.

The US Army Corps of Engineers (COE) is the Partner Agency (PA) responsible for the overall technical support provided during this program.

The main objectives of our mission was to provide the means and ways to obtain a better construction of the infrastructure of the country. Our challenge to "build better" was the goal established earlier by the USAID management on their efforts to provide durable construction and to establish some acceptable standards of construction and durability using El Salvador construction codes and similar US standards.

The PA or COE was tasked with the mission to provide support thru Quality Assurance. COE with the total support of USAID from the Directors level to the ER Team, was able to introduce the quality control program badly needed in this construction environment and to establish those methods for controlling the quality of the infrastructure; the end results, better construction.

The PA support included the following:

a) Site inspections including environmental inspection and site risk assessment condition followed by a recommendation for approval provide with an environmental guide designed for this purpose in coordination with the NGO's big effort accepting lots.

b) Inspection during construction (QA Inspections): Sample inspection of construction sites to determinate the progress and to inspect the quality of the product being built. A field inspection report with findings provided after each inspection by unit inspected. Community leader implemented health and safety procedures to enhance the social cooperation and education of those communities.

c) Final Inspection (FI): After being notified that the units have been completed the COE conducted final inspection of the units and provided a report with findings and recommendations as required. FI follow-ups were necessary due to deficiencies encountered during FI. Most projects required follow-up FI. Please note that this phase was not identified "as required" but it was incorporated on a latter date mainly to see if the occurring earthquakes were affecting the construction.

d) A selection sample method was adopted to inspect each community (Housing). A goal of 20 – 30 % coverage was established.

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e) For Clinics, Markets, Municipal Buildings and Schools a 100% inspection rate was established; a quality assurance inspection report was provided for each inspection visit and for each project. Parameters for acceptance were established prior to concluding acceptance or non-acceptance recommendations to include structural, functional and cosmetic reasons. COE provided coverage of these sites, on a frequent schedule (weekly or bi-weekly).

f) Review and recommendations of the design of all permanent structures, comparisons with local codes and recommend construction practices and standards.

g) Advise CTO's on acceptability requirements and resolve controversial issues involving workmanship and materials as well as some code recommendations/violations. Degree of coordination required depended on project needs.

h) Provide Quality Control (QC)/Quality Assurance (QA) training for QC and supervisory personnel, as well as CTO's and incorporated safety acquirement based on US ARMY COE Safety Manual, EM385-1-1.

i) Provide project surveillance and field support for ER-Team.

All COE Quality Assurance inspectors (local staff) were given training on inspections methods to provide consistency and continuity on our inspections and on our reporting. Lessons on effective communication, proper methods or reporting, professional, and ethical values on their jobs and teamwork.

Forms were developed to meet the requirements of the mission and to standardize the reporting procedures. CTO's were also provided with indoctrination to able them to understand our methods and procedures. A total of one US supervisor construction representative and Project Manager, 11 quality assurance inspectors, including one electrical inspector, and one logistic technician were enlisted by the PA to support the mission.

With the participation of the NGO's, local USGS agency, and government agencies such as FISDL and Ministry of Education, Ministry of Housing, FONAVIPO; the COE or PA and AID-ER Team were able to present training to the quality control personnel, supervision, and upper management of those agencies; a program to enable them to produce a better product thru quality control. Obtain the cooperation of builders' upper management to back up fields operations.

The overall program was very ambitious, included approximate 26,625 housing units for both phase I and II of this program, on a sample basis a total of 14,399 sites were inspected for compliance, 10,550 sites were visited during construction, and 11,213 housing units were inspected for final acceptance, a total of 43% sample coverage overall

for both, NGO's and FONAVIPO, exceeding the initial goal of 20 – 30% for NGO housing and 40% for FONAVIPO housing.

Also inspected during different phases of construction were: 40 Rural Schools, 7 Health Units, 5 Municipal Markets, 19 Municipal Buildings, and various Small Infrastructure (i.e. bridges, culvers, roads) activities as requested. All these projects required multiple visits depending mostly on complexity of the project.

POSITIVE EVENTS:

One of the main goals was to give the earthquake victims a quality construction in a timely fashion. Set standards procedures to do business between AID and COE. Set up methodology for existing government construction agency for the QA/QC system that the USACE implemented and to be used in their future projects. A standard operation procedure (SOP) was established during the process and is available for review on request.

During the execution of the program, there were many positive events that enhanced the final output of the program. The local staff was trained and the manpower was increased from the initial man force planned. The partners recognized the need and the number of local staff was increased to satisfy the inspection demands and proper coverage of project sites. Coordination between the PA and AID (CTO'S) was outstanding with few exceptions and good report developed between these entities resulting on full cooperation and mutual understanding of the mission as well as setting mutual goals.

We were also able to partner with the participating NGO'S. It is important to mention that the inclusion of the NGO's such as CARE, Save the Children, World Vision, Salvation Army, CHF, Samaritan Purse, Mercy Corps and Catholic Relief Services was an excellent option and with the inclusion of the local agencies such as REDES, the program was able to be successful and to take off as soon as it was practicable.

USACE recommended AID to staff during execution to make a geographical distribution of the task, assigning inspectors to specific geographical areas, and suggesting the same for NGO's. This action was a good choice. The action simplified the commitment of resources by both, the government and the NGO's.

We found out that during the construction phase some contracts were getting behind and this was due to improper funds distribution to get the projects started. Recommendations on administrative changes were made to help with the funding flow.

Finally the inclusion of beneficiaries to contribute to the execution of the work provided a needed amount of participation and pride from the community, at the same time training was able to be given to the local community on construction and hygienic matters as well as to participate on the overall planning of the communities as part of the NGO's contribution.

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MITIGATIONS:

Mitigation measures were implemented on most of the communities and municipalities served. Geographical information plus site evaluations were made to establish mitigation solutions. Risk assessments, included, floods, soil erosion, land slides, seismic effects.

OTHER CHALLENGES/LESSONS LEARNED:

Quality control manage did receive training and instructions to perform their duties; however, the concepts were new and required the complete commitment of the upper management and in many cases this did not take place. QC manger did not receive the proper authority to execute their jobs. Over all they lacked a system to implement, follow up methods to correct deficiencies and usually were given other responsibilities other than quality control. It is important to mention that those contractors that adopted the system did perform better than those who did not. The results were as anticipated, less repetitive work within budget and closer to the completion schedule resulting on a better quality job.

In the areas of LESSONS LEARNED we find ourselves focusing on construction and design practices more than other elements of administration and program management; however, our input will cover most of these areas based on findings and actual experiences.

The use of concrete, grout and mortar was drastically missing used during these projects. There is a lack of understanding from contractors on the proper use and application of these materials. Numerous attempts were made to correct this problem and even the local design engineers showed frustration with the contractor's field practices. There was a lack of mix designs for all of these elements and it is a deficient cultural issue to be resolved.

Most construction involved the use of reinforced Cement Masonry Units (CMU). Again, there is a lack of proper understanding by the construction industry that creates faulty installation of steel and CMU combinations; problems ranged from, improper steel placement to lack of lay outs, cutting of units and mainly improper application of mortar for grout.

There are sufficient reference materials available at all levels on the proper installation of CMU and related items. Some construction companies do know how to use the material properly; however, lack of supervision and lack of efficient QC increased the margin of deficiencies detected.

Some NGO's started the construction phase without the support of proper qualified personnel such as architects or engineers, or qualified technicians. This problem was corrected by hiring the proper disciplines as the projects moved along.

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On larger construction projects such as clinics, schools, markets and municipal buildings, we encounter that builders lack the willingness to apply existing construction standards and proper methods of construction. Supervisors in the area took the role of designer and made decisions and provided solutions that normally belong to the designer of a particular project. This was a repetitive deficiency supported by the cultural practices unique of this country. We enforced the procedures to have the designer provide their own solutions, especially on structural matters; small, but some progress was obtained on this issue.

Specifications and construction drawings were also deficient, lacking the required information to provide a quality project. Most contractors are used to build under these conditions and they solve most of their problems "as they go" creating an unbalanced construction system and preventing proper material procurement and construction planning. Our seminars cover this issue intensively.

Supervision was in general deficient and lacked the proper structure. The role of the supervisor is not understood in general. Supervisors are tasked with the responsibility of making decisions at the field level, decisions that contractually are the responsibility of the designer. Supervisors make decisions that alter the structure and some of these supervisors lack the proper training and knowledge about construction. In general, most supervisors demonstrated that they do not have the proper training required to execute the job properly. On the other hand, there were some supervisors that did posses the training and knowledge and use proper procedures to solve the conflicts and construction problems at the job site; however, this was exception rather than the rule. In some cases the tools required to do the job were not provided; some of these tools included proper drawings and specifications, attendance to preparatory meeting and follow ups during construction using inspections tools, supervisors presence during critical activities such as concrete placement generally not assuming the role of quality assurance, some of them lacked motivation to exercise the task.

LABORATORIES:

Laboratories were in general non-reliable; there are some elements of deficiency in this industry where the contractors can manipulate the system by bribing laboratory officers and obtain adjusted results to show compliance. The same applies to professionals that due to friendship relation and maybe money, look the other way and allow deficiencies to go uncorrected, etc. In addition, this type of testing was not institutionalized in the agreement but implemented. It is important to mention that our agencies were able to identify and hire laboratories that provided the required support.

MODIFICATIONS:

There was a resistance to perform modifications on these projects. Modifications are an essential part of the construction business and are required to enhance the jobs or in some cases to save monies or time. The process of modifying a contract encountered resistance

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from the local government agencies; maybe it has to do with the time elements associated with modifications or lack of system structure.

SAFETY:

This program did not include requirements on safety regulation of the industry in El Salvador, there are no references to construction safety rules and regulations except for some existing labor safety guidelines; these are poor and general in character. Our efforts did include enforcing security and safety on the job, but since there is a lack of motivation to comply with safety on this culture, the results were limited. Contractually (COE/AID) the safety requirements were not included. It is important to note that there were no casualties directly related to construction. Some minor accidents took place; however, the casualty count was due to health related issues or crime at adjacent communities or personnel related to the program, away from the job sites. We feel that our efforts on safety, even though non-contractual, made a significant impact on the overall program.

Some of the issues mentioned above, may serve to understand why the program took longer to be completed; the lack of proper contractors schedules, the inability to procure materials on a timely manner, the lack of QC management requiring some work to be repeated, the lack of good management tools especially in the financial and management areas of the construction firms. In some cases, obtaining responses on construction problems also contributed to the delays, lack of proper and trained labor force became very critical.

Due to the low payment for designs, they were not complete and lacked information, especially in the area of soil evaluation and testing. Also, the designers are released after the design is presented and they have little involvement during the construction of the projects. Weather is generally ignored as an influential element on the completion of these projects.

The low bidder was awarded contracts that were unrealistically low, way below the government estimate. Note that time to execute these projects was also unrealistic; as a result no single project was executed within the time allotted to be completed.

Due to inconsistencies on schedule compliance by builders, COR technical services were initially extended from original scheduled completion date of June 04; first extension to September 04, second extension to December 04, third extension to January 31, 2005, and finally extended to March 05.

RECOMMENDATIONS:

USAID should include on future projects the requirement to have a follow up system that will provide for inspections 4 and 9 months after completion to detect latten deficiencies and to have provisions on the agreements to force contractors to go back and correct those deficiencies. These are industry standard practices on permanent projects. Ref.

Follow-up inspections noted on sheet 1, section c. Due to the time elements required under this type of program, this may not be practical.

Also, is strongly recommended that the safety requirements be incorporated into the construction process. We recommend the use of Engineer Manual EM 385/1/1/ Engineer Safety Manual.

1. Additional seminar on the use of existing codes and standards should be provided to enhance the proper use of these materials as well as enforcement by government agencies.

2. Ensure that designers are retained as consultants as part of their contract to avoid other parties, such as supervisors, to make on the spot or otherwise decisions on structural matters. Designers should be required to visit construction sites a few times during the construction process.

3. Ensure that the quality of the project starts at the design level. Plan and specifications shall be completed before project is approved for construction.

4. Three phases of construction need to be implemented (as a minimum) for all projects as an important part of the quality control program.

PHASES OF CONSTRUCTIOIN IMPLEMENTED:

Preparatory Inspection:
Attended by QC/QA and contractor representatives to review documentation, materials and workmanship procedures prior to commence the activity or work feature. Present a job hazard analysis as part of this inspection.

Initial Inspection:
A check on the preliminary work conducted on a timely manner to determine if the work is being performed according to requirements, and as agreed on preparatory inspections, includes review of safety measures being implemented as per job hazard analysis.

Follow-up Inspection:
Also conducted by QC Manager and contractor to ensure that controls established during preparatory and initial inspections are being followed. Coordination also will include pre-final and final inspections, as required.

CONCLUSION:

This project has been both very demanding and very rewarding. I have the privilege to serve in this advisory capacity and I want to take this special opportunity to elevate our most sincere thanks to USAID management and the ER Program CTO's and team leaders for their unconditional support and dedication, their participation is commendable.

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I also would like to give a special thanks to COE-ER Team of professionals, without their support none of the great accomplishments of this program could be possible.

On behalf of the Earthquake Reconstruction Program – Corps of Engineers team we thank you and wish AID continues success on their task and support for the developments of this nation of El Salvador and other nations on this hemisphere that badly need assistance.

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CHARTS:

- **Housing Status (NGO's and FONAVIPO)**
- **Housing Status (FONAVIPO)**
- **Housing NGOs**
- **Municipal Buildings**
- **Markets**
- **Health Units**
- **Schools**

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HOUSING STATUS REPORT AS OF 31 MARCH 2005

NGO	APPROVED QUANTITY	SITE INSPECTIONS	UNDER CONSTRUCTION INSPECTIONS	FINAL INSPECTIONS			
				SCHEDULED INSPECTION	SAMPLE		
					INSPECTED	RECOMMEND ACCEPT.	RECOMM. NOT ACCEPT.
NGO'S PHASE I	4,672	4,549	766	4,672	2,640	2,640	0
NGO'S PHASE II	13,404	6,934	4,860	13,404	4,855	4,855	0
FONAVIPO	8,549	2,916	2,901	8,225	3,718	3,718	*
TOTALS	26,625	14,399	8,527	26,301	11,213	11,213	0

* See pending projects and activities

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ER PROGRAM STATUS REPORT AS OF 31 MARCH 2005

FONAVIPO

NGO	APPROVED QUANTITY	INITIAL SITE INSPECTIONS		UNDER CONSTRUCTION INSPECTIONS	FINAL INSPECTIONS			
		REQUESTED	CONDUCTED		REQUESTED	INSPECTED	RECOM. ACCEPTED	RECOM. N/ACCEPT.
FONAVIPO	8550	9593	2916	7405/2901	8,225	3,727	3,718	*

* See pending projects and activities.

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ER PROGRAM PHASE II STATUS REPORT AS OF 31 MARCH 2005

NGO	Quantity to be built	Site Inspec. Requested	Site Inspect. Conducted	% Total	U. C. Conducted	% Total U.C.Insp.	Final Inspections: Scheduled Inspected	Sample: Inspected	Sample: Recomm. Accept.	Sample: Recom. N/Accep.	Sample: % Total
CHF	4703	6039	2739	45%	4339/1813	42%	4703	1698	1698	0	36%
CARE	3068	3744	1461	39%	2774/1083	39%	3068	1123	1123	0	37%
Sam. Purse	1561	1909	822	43%	1466/511	35%	1561	587	587	0	38%
STC	1448	1944	708	36%	1268/476	38%	1448	486	486	0	34%
CRS	851	918	382	42%	760/318	42%	851	316	319	0	37%
Mercy Corps	1001	1339	495	37%	924/381	41%	1001	346	346	0	35%
Salvation Army	772	825	327	40%	676/278	41%	772	299	303	0	39%
TOTALS	13404	16718	6934	41%	12207/4860	40%	13404	4855	4862	0	36%

3 units of El Carrizal , Nahuizalco were not inspected due to security reasons

4 units of Los Garcia, La Breña, Ozatlan, Usulutan were not inspected due to security reasons

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MUNICIPALITY BUILDINGS CONTROL, COE/ER.

March, 2005

No.	Municipality	Department	Organization	Actual Status	Date Completed
1	Cojutepeque	Cuscatlán	FISDL	Completed	August 23,2004
2	Santa Cruz Michapa	Cuscatlán	FISDL	Completed	17-Jun-04
3	Jucuapa	Usulután	FISDL	Completed	16-Nov-04
4	Santiago de María	Usulután	FISDL	Completed	26-Oct-04
5	Izalco	Sonsonate	FISDL	Completed	30-Sep-04
6	Atiquizaya	Ahuachapán	FISDL	Completed	5-Jan-05
7	Caluco	Sonsonate	STC	Completed	29-Jul-04
8	Chiltiupan	La Libertad	STC	Completed	25-Oct-04
9	San Cayetano Iztepeque	San Vicente	STC	Completed	20-Jul-04
10	El Rosario	Cuscatlán	STC	Completed	23-Sep-04
11	Sta. Cruz Analquito	Cuscatlán	STC	Completed	22-Sep-04
12	Jerusalem	La Paz	STC	Completed	5-Oct-04
13	Apastepeque	San Vicente	STC	Completed	15-Nov-04
14	San Juan Tepezontes	La Paz	CHF	Completed	21-Jan-05
15	Chapeltique	San Miguel	CHF	Completed	20-Oct-04
16	Santo Tomás	San Salvador	CHF	Completed	13-Jan-05
17	San Carlos	Morazán	CHF	Completed	28-Oct-04
18	San Francisco Javier	Usulután	CHF	Completed	29-Oct-04
19	San Agustín	Usulután	CHF	Completed	29-Oct-04

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USAID EARTHQUAKE RECONSTRUCTION PROGRAM, EL SALVADOR.

MARKETS PROGRAM, COE/ER.

31-Mar-05

No.	Market	Location	Contracting Time (d)	Contractual Initial Date	Contractual Final Date	Actual Status
1	Mercado Municipal de San Vicente.	San Vicente	180	24-Nov-02	23-May-03	Completed
2	Mercado Municipal de Tecoluca, San Vicente	Tecoluca San Salvador	120	24-May-04	21-Sep-04	Under Construction 93%
3	Mercado Municipal de Santiago de María, Usulután	Santiago de María, Usulután.	200	12-Feb-04	30-Aug-04	Completed
4	Mercado Municipal de San Sebastián, San Vicente (1).	San Sebastian, San Vicente.	155	20-Feb-04	24-Jul-04	* Cancelled
5	Mercado Municipal de Puerto El Triunfo, Usulután (1).	Puerto El Triunfo, Usulután.	158	20-Feb-04	27-Jul-04	* Cancelled

* Projects cancelled and transferred to central government for execution.

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USAID EARTHQUAKE RECONSTRUCTION PROGRAM, EL SALVADOR.

HEALTH UNITS CONTROL, COE/ER.

31-Mar-05

No.	Clinic	Location	Contracting Time (d)	Contractual Initial Date	Contractual Final Date	Actual Status
1	Clinica Asistencial para La Mujer y El Menor.	Santiago de Maria Usulután.	180	7-Oct-02	5-Apr-03	Completed
2	Unidad de Salud "Dr. Hugo Morán Quijada" (1)	Mejicanos San Salvador	225	26-Jun-03	6-Feb-04	Completed
3	Unidad de Salud "Dr. Francisco Lima" (2)	Jayaque, La Libertad	180	30-Jun-03	27-Dec-03	Completed
4	Unidad de Salud "Dr. Diaz del Pinal"	Sta. Tecla, La Libertad	180	15-Oct-03	12-Apr-04	Completed
5	Unidad de Salud "Santa Catarina Masahuat" (3)	Sta.Catarina Masahuat, Sonsonate	240	6-Oct-03	2-Jun-04	Under Construction 94%
6	Unidad de Salud	Nvo. Cuscatlan, La Libertad	120	1-Mar-04	29-Jun-04	Completed
7	Centro de Rehabilitación FUNTER, Modulos A,B,C y D	Ciudad Merliot, Ant. Cuscatlán, La Libertad	150	1-Dec-03	29-Apr-04	Completed

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USAID Eathquake Reconstruction Program
Schools Construction Final Status Report as of March 31, 2005

N°	School Name	Municipality	Status	Progress	Acceptance Recommended	Remarks
1	C.E. San J. Miraflores Abajo	Candelaria	Completed	100%	Yes	N/A
2	C.E. Ing. Carlos Velazquez	San José Guayabal	Completed	100%	Yes	N/A
3	C.E. San Pablo	San Ramon	Completed	100%	Yes	N/A
4	C.E. Estanzuelas	Suchitoto	Completed	100%	Yes	N/A
5	C.E. Corral Viejo	Tenancingo	Completed	100%	Yes	N/A
6	C.E.Chiltiupan	Chiltiupan	Completed	100%	Yes	FI was conducted but some deficiencies still pending. A/C protection cages don't have provisions for maitenance.
7	C.E. El Capulin	Colón	Completed	100%	Yes	N/A
8	C.E. San Luis El Coyolar	La Libertad	Completed	100%	Yes	N/A
9	C.E. San Fernando	Sacacoyo	Completed	100%	Yes	N/A
10	C.E. Espiritu Santo	San Jose Villanueva	Pre-Final	99%	NO	Very important observations, found during the Final Iinspection, are still pending. Electrical test pending There is not potable water at the school. Final acceptance will be recommeded conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations.
11	C.E. San Antonio	San Juan Opico	Completed	100%	Yes	N/A
12	C.E. Corral de Piedras	Tamanique	Completed	100%	Yes	N/A
13	C.E. Las Canoas	Teotepeque	Under Const.	95%	NO	Lack of Quality Control Plan. Poor construction quality. The most important deficiencies found were corrected. Final acceptance will be recommended conditioned to the implementation of mitigation works prior the beginning of the 2005 rainy season. See the Deficiencies Tracking Form for more details and observations. The following items were not completed by the time of the last inspection, therefore, they were not fully inspected: Doors, windows, roof sheets, earth slopes, retaining walls, gutters, exterior works, black boards, drainages, boundary fence, main gate, handicap ramps, stairs, bathrooms and principals office.
14	C. E. Marcial Serrano	El Rosario	Completed	100%	Yes	N/A
15	C.E. El Salto	San Juan Nonualco	Completed	100%	Yes	N/A
16	C.E. Amatecampo	San Luis Talpa	Completed	100%	Yes	N/A
17	C.E. Hda. Vieja	San Pedro Nonualco	Pre-Final	100%	NO	Final Inspection conducted but not accepted. Electrical test failed. Final accepance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations.
18	C.E. El Chaperno	Sta. Ma. Ostuma	Pre-Final	99%	NO	The retaining conditions of the retaining wall M-2 have changed from the ones observed and accepted during the visit of May 05, 2004, (Quality Assurance Report N° 20). See the Deficiencies Traking Form for more details and observations. Final acceptance will be recommended conditioned to the correction of all deficiencies and conductions of electrical tests. The following items were deficient by the time of the last inspection, therefore, they were not fully inspected: Second floor doors, book shelves, seismic joint between buildings, bathrooms, hydraulic tests, final painting, classroom lights, exterior lamps, electrical works, electrical tests.
19	C.E. Tte. Cnel. F. Benites	Sta. Ma. Ostuma	Pre-Final	100%	NO	Final Inspection conducted but there are many deficiencies left by the former contractor still pending. See the Deficiencies Tracking Form and Final Inspection Report for more details and observations. Electrica deficiencies pending. Electrical test pending. Final acceptance will be recommended conditioned to the correction of all deficiencies prior the beginning of the 2005 rainy season.
20	C.E. San José Abajo	Stgo. Nonualco	Completed	100%	Yes	N/A
21	C.E. La Magdalena	Zacatecoluca	Completed	100%	Yes	N/A

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USAID Eathquake Reconstruction Program
Schools Construction Final Status Report as of March 31, 2005

N°	School Name	Municipality	Status	Progress	Acceptance Recommended	Remarks
22	C.E. Paredes	Zacatecoluca	Completed	100%	Yes	N/A
23	C.E. Ma. Viuda de Marín	San Ildefonso	Completed	100%	NO	Final acceptance will be recommended conditioned to the implementation of the drainage mitigation works prior the beginning of the 2005 rainy season. Electrical inspection pending. Electrical tests pending.
24	C.E. Los Almendros	San Ildefonso	Pre-Final	100%	NO	Final Inspection conducted but not accepted. A leakage underneath the toilets was observed. Electrical tests pending. Final accepance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations.
25	C.E. Sta Elena	Sn. Esteban Catarina	Completed	100%	Yes	N/A
26	C.E. San José La Ceiba	Tecoluca	Completed	100%	Yes	N/A
27	C.E. Monseñor Romero	Tecoluca	Completed	100%	Yes	N/A
28	C.E. El Carmen	Verapaz	Completed	100%	Yes	N/A
29	C.E. San Mariano	California	Completed	100%	NO	Electrical observations pending. Final Inspection of electrical works still pending. Final accepance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report.
30	C.E. Ereguayquin	Ereguayquin	Completed	100%	Yes	N/A
31	C.E. El Joco	Estanzuelas	Completed	100%	Yes	N/A
32	C.E. La Noria	Jiquilisco	Completed	100%	Yes	N/A
33	C.E. La Centroamericana	Jiquilisco	Completed	100%	Yes	N/A
34	C.E. La Cruzadilla	Jiquilisco	Completed	100%	Yes	N/A
35	C.E. Ozatlan	Ozatlan	Completed	100%	Yes	Electrical test pending.
36	C.E. Las Salinas	Pto. Parada	Completed	100%	Yes	N/A
37	La Joya	San Fco. Javier	Completed	100%	NO	Electrical observations pending. Final Inspection of electrical works still pending. Electrical tests pending. Wire color coding pending
38	C.E. Marchena	Usulutan	Completed	100%	NO	Final acceptance will be recommended conditioned to the implementation of adecuate structural repairs. See the Feb 24, 2005, report for more details and observations.
39	C.E. El Talpetate	Usulutan	Completed	100%	Yes	N/A
40	C.E. Salvador Castillo	Usulutan	Pre-Final	100%	Yes	Final Inspection conducted but not accepted. Some observations still pending. See Final Inspection Report for more details and observations.
		Overall Construction Progress =		99.8%		

Completed	33
Pre-final	6
Under Const.	1
Stopped	0
TOTAL	40

INSPECTION REPORTS (FORMS)

a. Environmental Guide
   (Risk Assessment)

b. Under Construction Inspection

c. Pre-final and Final Inspection

d. Deficiency Log

USAID/El Salvador 4 August, 2001

FIELD CHECKLIST
For Environmental Assessment of HOUSING Reconstruction Projects

Information on Implementing Organization and Assessment Specialist

1.	Environmental guideline #	
2.	Organization Name	
3.	Cooperative Agreement	
4.	Organization address	
5.	Organization phone	
6.	Name, title of field specialist completing guideline	
5.	Contact information for field specialist	

Date of Certification of Field Specialist: _____

IDENTIFICATION

No.	Intermediate Result	
1	Community infrastructure	
2	Economic Activity Reactivated	
3	Effects of Natural Disaster Mitigated	
4	Municipal Infrastructure refurbished	

	Activity		Intervention type	
1	Housing	1	Housing	
		2	Land titling assistance	

General Project Information

1.	Name of Project		
2.	Project code		
3.	Department		
4.	Municipality		
5.	Canton		
6.	Name of Barrio, Community, (population unit being analyzed)		
7.	Geographic coordinates	LAT (Y)	LONG (X)
8.	Other entities involved in project and their roles (including name of responsible person and contact information)		

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9.	Name and title of local project contact person (in the neighborhood or the community)	
10.	Same-site or new-site (for same-site construction, many issues will be "NA")	
11.	Number of households present in neighborhood or community	
12.	Number of households involved in activity	
13.	Number of families	
14.	Females benefited	
15.	Males benefited	
16.	USAID grant amount	
17.	Counterpart contribution	
18.	Initial date	
19.	Completion date	

PROJECT STATUS

No.	Status	Quantity	Observations
1	Planned		
2	Start up		
3	In execution		
4	Completed		

OBSERVACIONES:

FIELD CHECKLIST
for Environmental Assessment of HOUSING Reconstruction Projects

Please complete the following checklists, asking the question for the appropriate population unit (neighborhood, community):

"Are there possible problems or adverse impacts related to this issue?"

Answer each question using the following, (noting pertinent observations as well):

- "NA" = this issue is **Not Applicable** to this situation;
- "No" = There are NO problems or impacts related to this issue,
- "Y" = **YES** there is a problem or adverse impact, **MITIGATION** measures or **INVESTIGATION** requirements are described in the Mitigation Plan,

All issues that receive a "Y" must be addressed in the mitigation plan. The "observation" column is for the field specialist to note any clarifications that are felt to be necessary. Some issues, in particular those addressing service provision, require verification of the answer.

GOES Site Vulnerability Criteria

	Issue	NA	No	Y	Observation
	Government of El Salvador Considerations				
1.	Crevasses or Fractures				
2.	Slopes > 30% are < 5 meters in height and > 7.5 meters from structure				
3.	Slope >30% with no tree cover				
4.	Springs or sources of potable water				
5.	Natural waterway or lake or pond				
6.	Reconstruction causes change in land use				
7.	Terrain is greater than 1 hectare				
8.	Area of each construction site is > 200 square meters				
9.	Density of area is or will be > 400 persons per hectare				
10.	Protected area				
11.	Restricted development Area				

These GOES criteria are used internally by MARN to establish whether the site can be categorically excluded from the application of GOES environmental assessment regulations. If the answer to ALL of questions 1 through 11 is "NA" or "No", MARN can exclude the site from further consideration under the GOES Environmental Review Procedure. Note that USAID/El Salvador Guidelines and appropriate mitigation plan must still be completed whether the site is excluded from the GOES regulations or not.

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Checklist for **Housing Reconstruction** Projects

HOUSING RECONSTRUCTION - SITE				
#	ISSUE	Are there possible problems		
1.a	Is the site in side the boundaries or within 1 kilometer of an airport?	NA	No	Y
Observation:				
1.b	Is the site in side the boundaries or within 1 kilometer a military zone of any kind?	Are there possible problems		
		NA	No	Y
Observation:				
1.c	Is the site in side the boundaries or within 1 kilometer of any Protected Area? These can be Natural Areas such as forests, coral reefs, or areas protected for the preservation of certain plant or animal species.	Are there possible problems		
		NA	No	Y
Observation:				
1.d	Is the site in side the boundaries or within 1 kilometer of an archeological or historic site?	Are there possible problems		
		NA	No	Y
Observation:				
2.	Has the site been used for storage or disposal of hazardous materials or wastes? Gasoline tanks, paints, cleaning agents, pesticides? Is the site former agricultural land that received heavy pesticide application?	Are there possible problems		
		NA	No	Y
Observation:				
3.	Might there be impacts on endangered flora or fauna? Although the area might not be officially protected, construction at the site might impact biologically important plants or animals.	Are there possible problems		
		NA	No	Y
Observation:				
4.	Has legal title to the land been obtained?	Are there possible problems		
		NA	No	Y
Observation:				
5.	Are there impermeable soils and rocky areas? Impermeable and /or rocky soils can impact construction timelines, impact water distribution and sanitation infrastructure. Drainage is also impacted by impermeable or rocky terrain.	Are there possible problems		
		NA	No	Y
Observation:				

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HOUSING RECONSTRUCTION - SITE Continued.....				
#	ISSUE	Are there possible problems		
6.	Are there possible problems associated with the water table? High water table can indicate danger of inundation. It can also impact sanitation system design and construction as well as other construction that involves earth moving or excavation. Low water tables impact access to groundwater that may be used for drinking water. Water table should be observed in Wet and dry seasons.	NA	No	Y
Observation:				
7.	Are there rivers or streams nearby that threaten the site with erosion or flooding?	Are there possible problems		
		NA	No	Y
Observation:				
8.	Is the site threatened by flooding due to it being low-lying, downstream from a dam? Near a river or watercourse or lake?	Are there possible problems		
		NA	No	Y
Observation:				
9.	Is the site prone to landslide? Slopes, soil conditions, presence of crevasses or fractures, evidence of instability nearby, water courses, etc. (refer to GOES site vulnerability criteria)	Are there possible problems		
		NA	No	Y
Observation:				
10.	Is the site and surrounding area prone to fire? - Flammable vegetation	Are there possible problems		
		NA	No	Y
Observation:				
11.	Are there neighboring houses or settlements or communities that will be affected by the project? – use of local natural resources like fire wood, water, laundry spots on rivers, use of transport, etc. ATTACH SOCIAL SURVEY OF SURROUNDING COMMUNITES IF REQUIRED BY USAID.	Are there possible problems		
		NA	No	Y
Observation:				

HOUSING RECONSTRUCTION - DESIGN				
#	ISSUE	Are there possible problems		
1.	Is USAID criteria for house design being followed? The GOES and USAID are using structural designs that are resistant to seismic forces and other natural disasters. The design must be in agreement with these accepted guidelines.	NA	No	Y
Observation:				
2.	The materials used in construction should be appropriate for rainfall, wind, and tropical temperatures to provide comfortable and safe living conditions. Are proper materials being used?	Are there possible problems		
		NA	No	Y
Observation:				
3.	Is the planned community density within norms? GOES and USAID may promulgate criteria on community density that must be observed by the implementing entity.	Are there possible problems		
		NA	No	Y
Observation:				
4.	GOES and USAID may promulgate norms regarding the amount of space for recreation that is to be present in newly constructed communities. Are these norms being followed?	Are there possible problems		
		NA	No	Y
Observation:				
5.	GOES and USAID may promulgate norms regarding the amount of green space that is to be present in newly constructed communities. Are these norms being followed?	Are there possible problems		
		NA	No	Y
Observation:				

HOUSING RECONSTRUCTION - DESIGN Continued.....				
#	ISSUE	Are there possible problems		
6.	Is the design of a system for drinking water integrated into the design of the housing reconstruction?* Is the supply of water adequate according to norms?	NA	No	Y
Observation:				
7.	Is the design of a system for household sanitation integrated into the design of the housing reconstruction?*	Are there possible problems		
		NA	No	Y
Observation:				
8.	Is a system for solid waste management integrated into the design of the housing reconstruction?*	Are there possible problems		
		NA	No	Y
Observation:				
9.	Can the community or settlement grow with time? Is there sufficient space and legal mandate for any growth?	Are there possible problems		
		NA	No	Y
Observation:				
10.	Is the design for drainage of storm-water for the community or settlement adequate for the climatological and topographic conditions of the site?	Are there possible problems		
		NA	No	Y
Observation:				
11.	Is disposal of gray water at water tap-stands and households provided for according to norms?	Are there possible problems		
		NA	No	Y
Observation:				

* All answers must be verified for construction on new sites. Attach completed Verification Sheet.

HOUSING RECONSTRUCTION - CONSTRUCTION				
#	ISSUE	Are there possible problems		
1.	Are any conditions in construction of this system that pose serious risks to the safety of workers or others in the area? Will large trees be felled? Will slopes be terraced? Will towers, bridges be built? Is dynamite to be used? Are deep pits to be dug? Will there be a large increase in truck traffic that could threaten inhabitants?	NA	No	Y
Observation:				
2.	Are there problems associated with water during construction? Will water be drained from the site onto slopes or into water courses? Will water be needed at the site?	Are there possible problems		
		NA	No	Y
Observation:				
3.	If large amounts of earth are moved, will the disposal of the earth cause any problems? Is there a threat of erosion of the moved earth (from trenches) and sedimentation into nearby water bodies?	Are there possible problems		
		NA	No	Y
Observation:				
4.	Will construction be a noisy endeavor that bothers nearby inhabitants? (See Social survey)	Are there possible problems		
		NA	No	Y
Observation:				

HOUSING RECONSTRUCTION - CONSTRUCTION Continued….				
#	ISSUE	Are there possible problems		
5.	Will construction cause dust or mud that will cause a nuisance?	NA	No	Y
Observation:				
6.	Does construction require a local labor contribution that might impact the local populace adversely? Will laborers be brought in for construction that must be fed and housed?	Are there possible problems		
		NA	No	Y
Observation:				
7.	Will construction block roads, train tracks, or otherwise inhibit transportation?	Are there possible problems		
		NA	No	Y
Observation:				
8.	Are there members of local Community Development committee or other local citizens involved in construction decision-making or construction planning? Are there members with a supervisory role during construction?	Are there possible problems		
		NA	No	Y
Observation:				

HOUSING RECONSTRUCTION - OCCUPATION				
#	ISSUE	Are there possible problems		
1.	What is the extent of the community's contribution to this project? Local materials, unskilled labor, cash? Nothing?	NA	No	Y
Observation:				
2.	Will inhabitants of this project have reasonable access to employment?	Are there possible problems		
		NA	No	Y
Observation:				
3.	Is drinking water to be supplied according to USAID norms?*	Are there possible problems		
		NA	No	Y
Observation:				
4.	Is household sanitation for human waste disposal to be supplied according to USAID norms? Is there a plan for hygiene education*	Are there possible problems		
		NA	No	Y
Observation:				
5.	Does the populace have an adequate system for solid waste management as defined in USAID norms?*	Are there possible problems		
		NA	No	Y
Observation:				

* ALL answers to be verified for construction on new sites. Attach completed Verification Sheet.

HOUSING RECONSTRUCTION - OCCUPATION Continued.....				
#	ISSUE	Are there possible problems		
6.	Will children have access to suitable educational facilities as defined in USAID norms?*	NA	No	Y
Observation:				
7.	Does the populace have adequate access to health care as defined in USAID norms?*	Are there possible problems		
		NA	No	Y
Observation:				
8.	Does the populace have access to a sustainable source of fuel for cooking that will not be in conflict with existing resource users?*	Are there possible problems		
		NA	No	Y
Observation:				
9.	Is management capacity being created in the community to *ensure sustainable* provision of all services?**	Are there possible problems		
		NA	No	Y
Observation:				
10.	Is an operation and maintenance capacity being built in the community that will ensure upkeep of all services?**	Are there possible problems		
		NA	No	Y
Observation:				
11.	Is there a tariff to be charged for services?	Are there possible problems		
		NA	No	Y
Observation:				

* ALL answers to be verified for construction on new sites. Attach completed Verification Sheets.

** These issues to be addressed on Verification Sheets.

MITIGATION PLAN
for USAID/El Salvador Reconstruction Projects

Name of Organization: _____
Name of Field Specialist: _____
Name of Neighborhood, Community, Communities: _____
Name of Facility: _____
Date of Field Visit: _____

Enter the number # of the Issue as it is listed in the field checklist.

#	Description of Impact	Prescribed Mitigation or Investigation Measures
	SITE	
	DESIGN	
	CONSTRUCTION	
	OCCUPATION	

NOTES:

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EXAMPLE **Mitigation Plan for Housing Reconstruction Activities**

Name of Organization: _____
Name of Field Specialist: _____
Name of Neighborhood, Community, Communities : _____
Date of Field Visit: _____

Enter the number # of the Issue as it is listed in the field checklist.

#	Description of Impact	Prescribed Mitigation or Investigation Measures
	SITE	
1a.	site in or within 1 km of an - airport	Move site, receive permission from airport that traffic will not pose threat to safety of population
1b.	Military Zone	Move site, receive permission from military facility that there will not be a threat to safety of population
1c.	Protected Area	Move site, receive official permission
1d.	Archeological or historic area	Move site, receive official permission
2.	Hazardous Materials or Pesticides	Change sites, insure removal of materials stored, conduct a site-specific environmental assessment to address threat caused by chemicals, monitor groundwater if it is used as a water source
3.	Biodiversity or endangered flora or fauna	Change site, environmental education so as to not impact
4.	Land rights obtained	Change sites, cancel project activity, pursue legal means to obtain title, find funds for land purchase
5.	Impermeable soils and rocky areas (difficulty in construction)	Designs for impacted infrastructure adjusted, bring in heavy machinery for construction, use dynamite, new site,
6.	Water table	Install drains to lower water table, adjust designs of infrastructure i.e. sanitation, solid waste disposal to not contaminate , change site
7.	Rivers and quebradas adjacent to site - erosion	Change site, harden riverbank with rip rap, gabion, vegetative plantings, perform site-specific environmental assessment to identify possible mitigation measures
8.	Site vulnerability to flood	Change site, raise homesteads, provide drainage, perform site-specific environmental assessment to identify possible mitigation measures
9.	Site vulnerability to landslide	Change site, perform site-specific environmental assessment to identify possible mitigation measures
10.	Fire Danger	Design program to cut brush and small trees, change site
11.	Problems with Neighboring populations	Depends on specific issue - access to water, laundry washing spots, fuel, work, etc. Problems will require formulation of resource management plans with signed agreements between parties on implementation.
12.	ATTACH SOCIAL SURVEY FOR NEW-SITE CONSTRUCTION if REQUIRED by USAID/El Salvador	Social survey to be done for new community construction on new sites at the discretion of USAID/El Salvador. Decision to be made after preliminary site visit.

EXAMPLE **Mitigation Plan for Housing Reconstruction Activities……. Continued….**

#	Description of Impact	Prescribed Mitigation or Investigation Measures
	DESIGN	
1.	USAID criteria for house design followed	Field Specialist must be in possession of design norms, Seismic and disaster–resistant designs, appropriate size
2.	Building materials appropriate for climate and local	Use locally-available materials, ensure quality and appropriateness. Follow design criteria, receive written, official approval for any deviation from norms
3.	USAID criteria for community density followed	Change site, Follow design criteria, receive written, official approval for any deviation from norms
4.	USAID criteria for recreational space followed	Change site, Follow design criteria, receive written, official approval for any deviation from norms
5.	USAID criteria for green space followed	Change site, Follow design criteria, receive written, official approval for any deviation from norms
6.	Access to drinking water as defined in USAID criteria*	Change site, Written verification of design, signed agreement for provision,
7.	Access to household sanitation as defined in USAID criteria*	Change site, design systems in response to existing conditions – e.g. above-ground vault composting latrines for areas with high water table
8.	Access to Solid Waste Management as defined in USAID criteria*	Change site, sign agreement with garbage collectors, build local facility. Organize and train operators and management
9.	Contingency for Community expansion	Space in on site set aside, neighboring communities or cities noted
10.	Drainage provided - stormwater	Change site, Use of heavy machinery in difficult terrain, check-dams in steep sections
11.	Drainage provided – gray-water	Change site, adapt design to site-specific conditions – e.g. shallow trenches instead of pits where water table is high
	HOUSING RECONSTRUCTION - CONSTRUCTION	
1.	Worker Safety	Insure that workers have proper protective equipment, use safety ropes, practice proper blasting safety, insure that pits are covered or access impeded during construction
2.	Supply and control of water during construction	Divert water back into a natural channels immediately, drain pools or saturated areas, use shallow wells or streams for construction water
3.	Proper earth handling and disposal	Excavate and rebury trenches quickly, dispose of other spoils away from water courses. Install checks and barriers to trap sediment runoff, Revegetate disturbed areas
4.	Noise	Schedule work so as to minimize impact, use less noisy construction techniques
5.	Dust or mud	Schedule certain construction to avoid dry or wet conditions if possible, spread water to keep dust down, drain areas prone to mud
6.	Labor issues – community supplies labor, labor with lodging and food	Consider food for work, community contribution of labor, housing or food provided to external laborers by community

EXAMPLE **Mitigation Plan for Housing Reconstruction Activities……. Continued….**

	HOUSING RECONSTRUCTION - CONSTRUCTION continued…	
7.	Transportation affected by construction	Schedule construction for low traffic days, or hours, phase construction to block portion of road at different times
8.	Participation of Community Development committee	Committee member(s) part of supervisory team during construction.
	OCCUPATION - *describe how these will be addressed, a mitigation plan is not required.*	
1.	Community Contribution (please detail in Observation)	(e.g.)Community performs unskilled labor, contributes all sand and gravel, and pays for transportation of materials
2.	Access to employment in the area	(e.g.) Community lies 20 minute walk from main road where transport services (cooperatives A, B, C, and D) run to communities and markets
3.	Access to Markets	(e.g.)Community lies 20 minute walk from main road where transport services (cooperatives A, B, C, and D) run to communities and markets
4.	Access to drinking water*	(e.g.) Verification sheet shows that the Municipality of ZZ will allow community to hook into its ANDA-managed system for $100.00 per month plus the cost of connections.
5.	Access to Sanitation (Human waste)*	The NGO WW and the MOH are working to provide household composting latrines for each family. *Agreement is attached in Verification section.
6.	Solid Waste Management System*	(e.g.) A site is set aside for composting of organic waste and another site for disposal of waste. The Community is working with NGO WW to manage these systems. *Signed agreements are in the Verification Section.
7.	Access to Educational facilities*	(e.g.) A primary school is being constructed for the community by the Ministry of Education and FISDL. The Colegio in the town of SS, is accessible by transport
8	Access to Health Facility*	(e.g.)There is a primary and secondary health care facility in the municipal seat 20 minutes form the community by cooperative transport.
9	Access to Fuel (fuel efficient stoves)*	(e.g.) There are approximately 100 hectares of shade coffee and 20 hectares of secondary forest within a 30 minute walk from the community where local populace collects fuel wood. All houses are to be provided with fuel efficient woodstoves. Signed agreement with NGO XX for provision of these stoves is in Verification Section.
10	Community Development Committee or other groups to manage basic service provision**	(e.g.) NGO WW is training leaders to form a Water/San committee for management, operation and maintenance of water system, sanitation, and solid waste management. This is detailed in Verification Section.
11.	Trained personnel to operate and Maintain services**	(e.g.) NGO WW is training technicians for operation and maintenance of water system, sanitation, and solid waste management. This is detailed in Verification Section.
12.	Tariff established for basic services**	(e.g.)Monthly tariff for water is $5.00 per month, for solid waste is $1.20 per month. See Verification Section.

NOTES:

US Army Corps of Engineers
Mobile District

FORMULARIO DE INSPECCION DE CONTROL DE CALIDAD DURANTE LA CONSTRUCCION DE VIVIENDAS

Fecha: _____ Inspector: _____
ONG _____ Tipo de Const.: _____
Dept: _____ Municipio: _____ Canton: _____

PROGRESO	CODIGO	ETAPA CONSTRUCTIVA
dicar etapa constructiva, avance general : vivienda.		

VERIFICACION DE CONTROL DE CALIDAD (QA) VIVIENDA

CONTROL DE CALIDAD	CODIGO	OBSERVACIONES
Cimentaciones: Indique si soleras, patas, excavaciones, rellenos, etc., tienen fectos, omisiones. (diám. y espaciamiento l refuerzo, recubrimientos mínimos, mensiones, colmenas, limpieza, traslapes, slapes de mallas 1.5 cuadros, etc.)		
Pisos: Indique si losa de piso tiene fectos u omisiones. (aristas, juntas, pesor, colmenas, acabado, nivel, etc)		
Calidad de materiales: Indique si los nteriales son de la calidad requerida y se nejan adecuadamente. (acero, cemento, na, grava, agua, bloques, mallas, etc.)		
Acero de Refuerzo: verificar si el fuerzo se encuentra limpio, diámetros ropiados, longitudes de desarrollo opias, ubicación correcta, traslapes, paciamientos y separaciones, etc.		
Pared exterior: Indique si tiene defectos u isiones. (adherencia del concreto al uerzo, espesor, nivel, verticalidad, sisas, etas, refuerzo vertical y horizontal, otección, acabado, calidad de concreto, idad de bloques, calidad de mortero, etc.)		
Pared Interior: Indique si tiene defectos u isiones. (calidad de materiales, herencia del concreto al refuerzo, espesor, el y plomo, sisa, grietas, refuerzo vertical orizontal, acabado, calidad de concreto ido)		

US Army Corps
of Engineers
Mobile District

FORMULARIO DE INSPECCION DE CONTROL DE CALIDAD DURANTE LA CONSTRUCCION DE VIVIENDAS

CONTROL DE CALIDAD	CODIGO	OBSERVACIONES
Instalaciones Electricas: Indique si tienen fectos u omisiones, (altura y nivel, ntidad, acabado, calibre, etc).		
Techo: Indique si el sistema de cubierta, tructura de techo y conexiones tienen fectos u omisiones. (aleros, tramos, alapes, polines, anclajes, soldaduras, tiocorrosivo, etc.)		
Puertas y Ventanas: Indique si tienen fectos u omisiones. (Acabados, nivel, ncionamiento, chapas, haladeras, ibidor, soldadura, mochets, sellos, etc.)		
. Obras de Mitigación: Indique istencia, avances, defectos u omisiones aros, protección taludes, barreras vivas, aletas, gradas, arborización etc.)		
. Obras Sanitarias: Indique existencia, ance, si existe alguna deficiencia para las ructuras de aguas grises, pilas y/o rimas.		

RECOMENDACIONES.

_____

_____

_____

_____

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_____

_____

_____

_____
NGO Representative

US Army Corps of Engineers
Mobile District

FINAL INSPECTION QUALITY ASSURANCE REPORT

Earthquake Reconstruction Program

COE INSPECTOR:		DATE:
NGO:	NGO REPRES.:	
DEPARTMENT:	MUNICIPALITY:	FORM:
CTON.	COMMUNITY:	/

GENERAL REMARKS

CONSTRUCTION TYPE:

DIMENSIONS:

	House ID	SPECIFIC REMARKS	General Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	EXTERIOR WALLS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	INTERIOR WALLS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	FLOOR	Acceptance
1			
2			
3			
4			
5			
6			
7			

	House ID	ROOF	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	DOORS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	WINDOWS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	ELECTRICALS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	MITIGATION WORKS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

	House ID	SANITARY WORKS	Acceptance
1			
2			
3			
4			
5			
6			
7			
8			

QUALITY ASSURANCE REPORT, QAR No.

US Army Corps of Engineers Mobile District	General Information	
	INSPECTION DATE:	
	SITE:	
	ORGANIZATION:	
	CONTRACTOR:	

General Comments and Facts.	
General comments	
CQC inspection phases attended and instruction given:	
Results of QA activities and tests, deficiencies observed, actions taken and corrective action of contractor. Include comment pertaining to contractors CQC activities.	

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Has anything developed on the work, which might lead to a Change Order or Finding of Fact.	
Information of progress of work, causes for delays and extend of delays, weather, plant, material, etc.	
SAFETY: (Include any infractions of approved safety plan, safety manual or instructions from Government personnel. Specify corrective action taken.)	
REMARKS: (Include visitors to project and miscellaneous pertinent to work.)	

MEMORANDUM

US Army Corps of Engineers Mobile District San Salvador, ES.	DATE:	
	TO:	
	THROUGH:	
	FROM :	
	SUBJECT:	
	ATTACHMENTS:	

SCHOOLS CONSTRUCTION QA REPORT

General Information		
INSPECTION DATE:		Report N°:
SCHOOL NAME:		
SITE:	Community:	Cantón:
	Municipality:	Depto:
ORGANIZATION:		
SUPERVISOR:		
CONTRACTOR:		
ASSISTANTS:	1. 2. 3. 4. 5. 6.	
General Comments and Facts.		
CQC Inspection phases attended and instructions given:		
Results of QA activities and tests, deficiencies observed, actions taken and corrective action of contractor. Include comments pertaining to contractors CQC activities.		

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Has anything developed on the work, which may lead to a Change of Order or Finding of Fact.	
Information of progress of work, causes for delays and extend of delays, weather, plant, material, etc.	Initial Contract day: Contracting time: Elapsed time: Actual delay:
SAFETY: (Include any infractions of approved safety plan, safety manual or instructions from Government personnel. Specify corrective action taken.)	**Safety Violations:** 1. 2. 3. 4. **Good Practices:** 1. 2. 3. 4. 5.
REMARKS: (Include visitors to project and miscellaneous pertinent to work.)	

US Army Corps of Engineers
Mobile District

USAID EARTHQUAKE RECONSTRUCTION PROGRAM

QA TRACKING OF DEFICIENCIES.

PROJECT:

LOCATION:

NGO/CONTRACTOR:

INSPECTOR:

No	FINDING DATE	DEFICIENCY DESCRIPTION	NOTIFICATION			CORRECTION DATE	CORRECTION PROCEDURE
			QC	S	D		

Equipment/Inventory returned to USAID as per PASA agreement Section A.6.B

Bar Tag	Serial No.	Description	ACQUISITION COST
06624	6Y1A-KGMZ-50F	Computer Compaq EVO	$1,450.00
06627	6Y1C-KGMZ-B03S	Computer Compaq EVO	$1,450.00
06628	140BM26GE767	Monitor ADP	$350.00
06633	OBER FADB00750	Printer Cannon	$121.24
06634	OBER FADD00757	Printer Cannon	$121.24
06635	208BM26GH746	Monitor ADP	$350.00
06637	DQRY184853	Printer Epson	$149.00
06638	0007955FEA847	Clone	$800.00
06644	1J4GL48K73W709605	Jeep Cherokee sport vehicle	$19,560.25
68849	93006385	Receiver GPS	$451.80
75143	401811	Digital camera Sony	$374.00
75144	401246	Digital camera Sony	$374.00
84920	350130	Digital camera Sony	$485.00
84971	414247	Digital camera Sony	$385.00
84973	414243	Digital camera Sony	$385.00
86120	96468495	GPS	$349.00

PENDING PROJECTS/ACTIVITIES

- Schools
- Markets
- Health Unit
- Housing

Eight (8) schools were left pending from acceptance; the listing provided on sheet 1/1 indicates the status and reason why acceptance is not recommended at this time.

The recommendation of non-acceptance can be overcome by correcting the deficiencies listed on the remark section and those listed on the deficiency list, on the last Final Report.

USAID Earthquake Reconstruction Program

Schools Construction Final Status Report of Pending Items as of March 31, 2005

Nº	School Name	Municipality	Status	Progress	Acceptance Recommended	Remarks, Pending Items
1	C.E. Espíritu Santo	San Jose Villanueva	Pre-Final	99%	NO	Very important observations, found during the Final Inspection, are still pending. Electrical test pending. There is not potable water at the school. Final acceptance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations
2	C.E. Las Canoas	Tecapeque	Under Const.	95%	NO	Lack of Quality Control Plan. Poor construction quality. The most important deficiencies found were corrected. Final acceptance will be recommended conditioned to the implementation of mitigation works prior the beginning of the 2005 rainy season. See the Deficiencies Tracking Form for more details and observations. The following items were not completed by the time of the last inspection, therefore, they were not fully inspected: Doors, windows, roof sheets, earth slopes, retaining walls, gutters, exterior works, black boards, drainages, boundary fence, main gate, handicap ramps, stairs, bathrooms and principals office.
3	C.E. Hda. Vieja	San Pedro Nonualco	Pre-Final	100%	NO	Final Inspection conducted but not accepted. Electrical test failed. Final acceptance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations.
4	C.E. El Chaparro	Sta. Ma. Ostuma	Pre-Final	99%	NO	The retaining conditions of the retaining wall M-2 have changed from the ones observed and accepted during the visit of May 05, 2004, (Quality Assurance Report Nº 20). See the Deficiencies Tracking Form for more details and observations. Final acceptance will be recommended conditioned to the correction of all deficiencies and conductions of electrical tests. The following items were deficient by the time of the last inspection, therefore, they were not fully inspected: Second floor doors, book shelves, seismic joint between buildings, bathrooms, hydraulic tests, final painting, classroom lights, exterior lamps, electrical works, electrical tests.
5	C.E. Tte. Cnel. F. Bonilla	Sta. Ma. Ostuma	Pre-Final	100%	NO	Final Inspection conducted but there are many deficiencies left by the former contractor still pending. See the Deficiencies Tracking Form and Final Inspection Report for more details and observations. Electrical deficiencies pending. Electrical test pending. Final acceptance will be recommended conditioned to the correction of all deficiencies prior the beginning of the 2005 rainy season.
6	C.E. Ma. Viuda de Marín	San Ildefonso	Completed	100%	NO	Final acceptance will be recommended conditioned to the implementation of the drainage mitigation works prior the beginning of the 2005 rainy season. Electrical inspection pending. Electrical tests pending.
7	C.E. Los Almendros	San Ildefonso	Pre-Final	100%	NO	Final Inspection conducted but not accepted. A leakage underneath the toilets was observed. Electrical tests pending. Final acceptance will be recommended conditioned to the correction of all deficiencies. See Final Inspection Report for more details and observations
8	C.E. Marchena	Usulután	Completed	100%	NO	Final acceptance will be recommended conditioned to the implementation of adequate structural repairs. See the Feb 24, 2005, report for more details and observations.

Completed	33
Pre-final	6
Under Const.	1
TOTAL	40

USAID Earthquake Reconstruction Program.

Markets Construction, Final Status Report of Pending Projects.

No.	Market	Municipality	Status	Progress	Remarks
1	San Vicente	San Vicente	Completed	100%	Acceptance not recommended until completion of satisfactory structural roof calculations.
2	Tecoluca	Tecoluca, San Vicente.	Under Construction	97%	Acceptance not recommended until completion of remaining activities and correction of deficiencies registered in QAR30. Reinforcement of nursery walls, replacement of damaged roof sheets, repair of floor areas, are main issues in the correction of deficiencies. Electrical pending issues are: • Some market stalls without electrical outlets (not considered in design). • Relocation of panels in some market stalls, away from the wet area. • Proper canalization in confined areas (ceilings). • General connection and final electrical tests must be conducted.

USAID Earthquake Reconstruction Program.

Clinics Construction, Final Status Report of Pending Projects.

No.	Clinic	Municipality	Status	Progress	Remarks
1	Masahuat	Santa Caterina Masahuat, Sonsonate	Under Construction	94%	Acceptance not recommended until completion of remaining activities and correction of deficiencies registered in QAR38. Remaining activities not completed and not finally inspected are: Roof, Ceilings, partitions, doors, windows, water facilities, drainages, electrical installations and exteriors works. Electrical pending issues are: • Concrete protection for underground conduits. • 23,000 V isolation capability in high tension elements must be verified. • General connection and final electrical tests must be conducted.

HOUSING PENDING

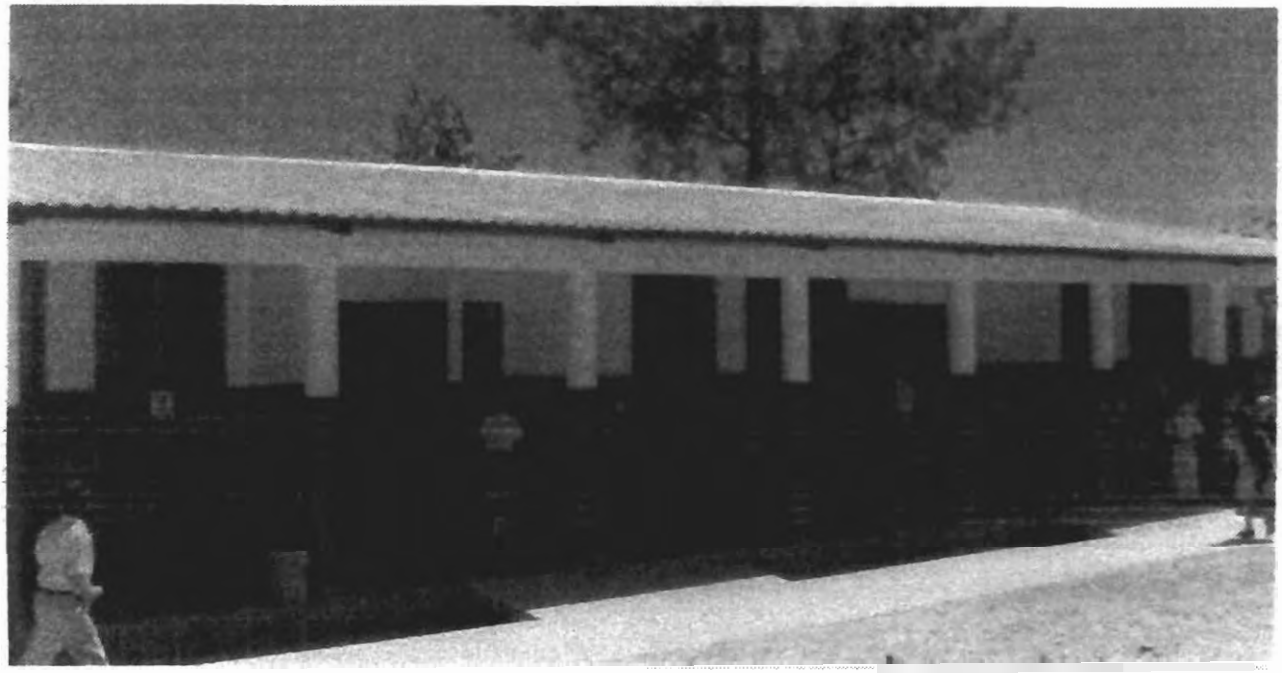
About FONAVIPO, the only project in process is La Cruzadilla de San Juan in Jiquilisco. As of March 31st, 2005, 415 houses have been completed and 34 are still in process. 128 of the completed houses have been requested for Final inspection. Out of this, 105 have been recommended for acceptance. Houses still in progress are expected to be finished by April 15th, 2005.

The contract for the "Obras Exteriores, drenajes y Carreteras" in La Cruzadilla, just started last week. It's expected to be completed in the second week of May. Due to the lack of earthquake funding in FONAVIPO, this works will be funded by the Local Currency Program.

All the others "in situ" housing projects have already finished, and Final Inspections completed as well. Final figures for FONAVIPO as of March 31st, 2005, are:

Houses contracted: 8,549
Houses completed: 8,515
Houses in process: 34
Houses requested for FI: 8,225
Houses recommended for acceptance: 8,202

03/30/2005

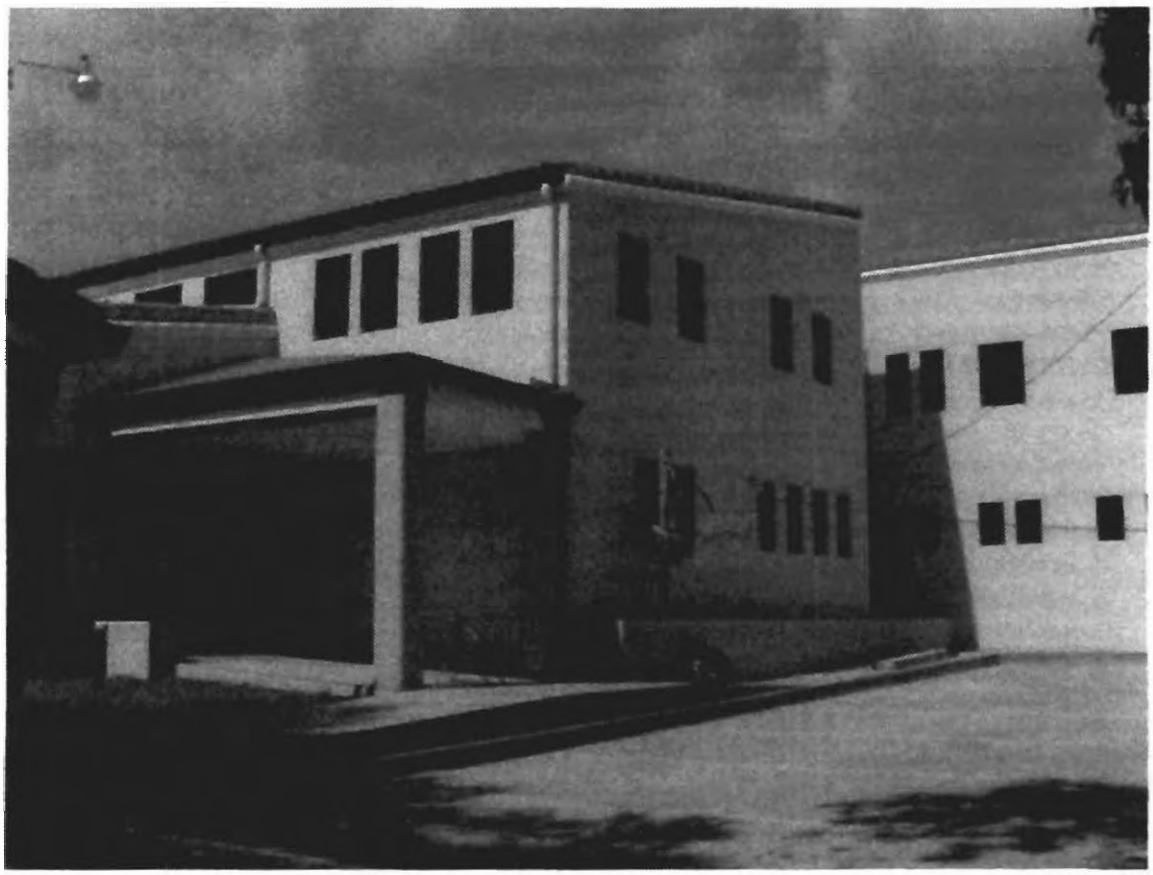


Centro Escolar Teniente Coronel Flores Benites, ubicada en el municipio de Santa María Ostuma, Departamento de La Paz.

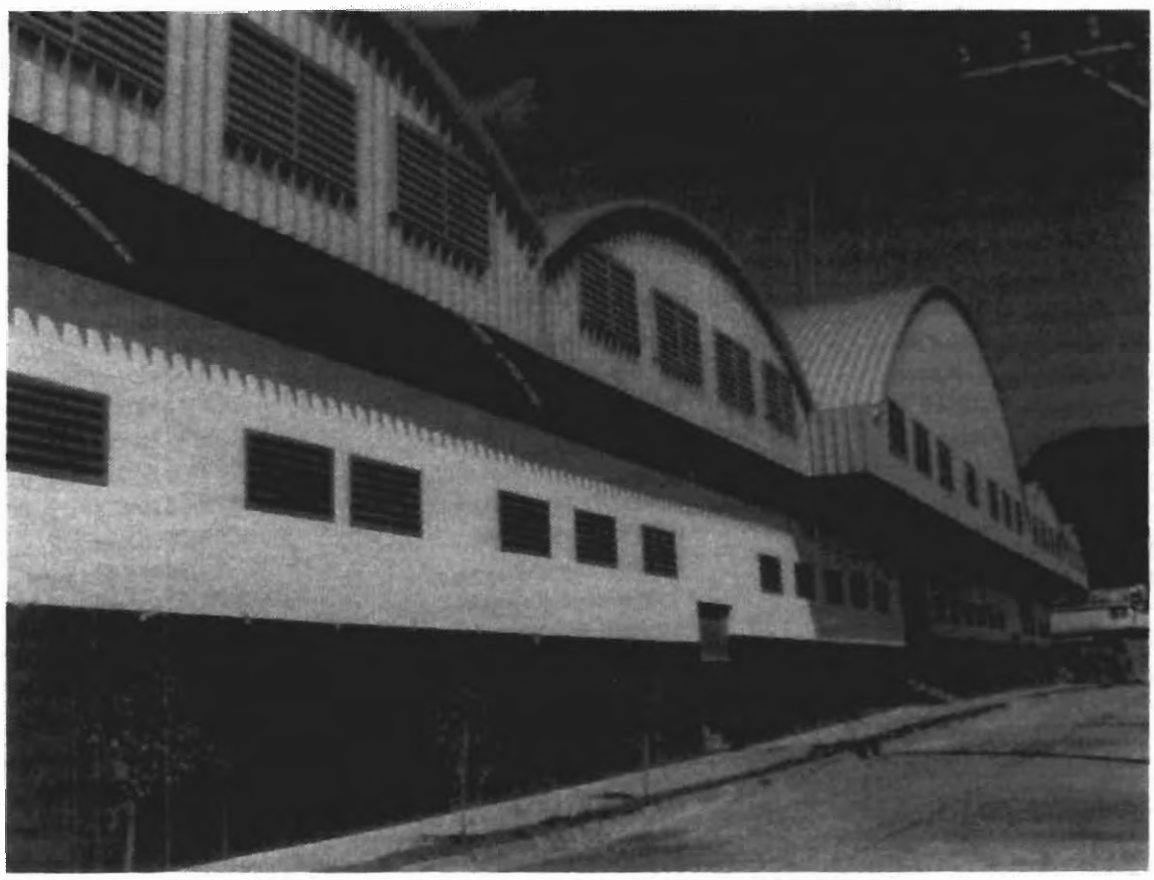
Centro Escolar San Luis El Coyolar, ubicado en el municipio de La Libertad, Departamento de La Libertad.

MUNICIPAL BUILDING OF JUCUAPA, DPT. USULUTÁN

MUNICIPAL BUILDING OF ATIQUIZAYA, DPT. AHUACHAPÁN



DIAZ DEL PINAL CLINIC, SANTA TECLA.



SAN VICENTE MUNICIPAL MARKET.

HOUSES IN SANTA CATARINA MASAHUAT.