

AL HADI PERMANENT POLICE  
STATION  
BASRAH, IRAQ



**SIGIR PA-09-190**  
**APRIL 21, 2010**



## Summary of Report: PA-09-190

### Why SIGIR Did this Study

SIGIR is charged to conduct assessments of Iraq reconstruction projects funded with amounts appropriated or made available by the U.S. Congress. SIGIR assessed this project to provide real-time information on relief and reconstruction to interested parties to enable appropriate action, when warranted.

The objective of this project assessment was to determine if:

- project components were adequately designed
- construction complied with design standards
- adequate quality management programs were used
- project sustainability was addressed
- project results were consistent with original objectives

### What SIGIR Recommends

This report does not contain any negative findings. As a result, no recommendations for corrective action were made and management comments were not required.

### Management Comments

United States Forces-Iraq provided a response to a draft of this report indicating that it concurred with the report as written.

## Al Hadi Permanent Police Station

### What SIGIR Found

The objective of this \$1.2 million Iraq Security Forces Fund project was to design and construct a local police station compound near the city of Basrah, Iraq.

On 30 September 2009, SIGIR performed an on-site assessment of the Al Hadi Permanent Police Station project. During the site visit, the GRS Adder Area Office representative and security team accompanied SIGIR. Due to scheduling, the total time available on site was approximately one hour.

The Statement of Work required the contractor to prepare the site and construct the two-story building, to include: 11 offices, an armory, a jail with a bathroom, a break room, a small kitchen, two main bathroom and shower areas, three office bathrooms, four dormitories, two utility rooms, and a communication and electrical room.

Project components were adequately designed prior to construction. Although only 32% complete, construction was in compliance with the design standards. The contractor's quality control and the U.S. government's quality assurance programs were effective. SIGIR reviewed the daily quality assurance reports and found that they were effective in showing construction problems identified and corrected at the project site.

Sustainability was addressed in the contract requirements. The contract included sustainability elements to assist the Iraqis in operating this project after turnover.

If the observed construction and oversight continue, project results should be consistent with their original objective of constructing a new local police station.





## SPECIAL INSPECTOR GENERAL FOR IRAQ RECONSTRUCTION

April 21, 2010

MEMORANDUM FOR COMMANDING GENERAL, UNITED STATES CENTRAL  
COMMAND  
COMMANDING GENERAL, UNITED STATES FORCES-  
IRAQ  
COMMANDING GENERAL, JOINT CONTRACTING  
COMMAND-IRAQ/AFGHANISTAN  
DIRECTOR, IRAQ TRANSITION ASSISTANCE OFFICE

SUBJECT: Report on the Al Hadi Permanent Police Station, Basrah, Iraq  
(SIGIR Report Number PA-09-190)

We are providing this project assessment report for your information and use. We assessed the design and construction work performed at the Al Hadi Permanent Police Station, Basrah, Iraq to determine its status and whether objectives intended will be achieved. This assessment was made to provide you and other interested parties with real-time information on a relief and reconstruction project underway and in order to enable appropriate action to be taken, if warranted.

This report does not contain any negative findings. As a result, no recommendations for corrective action were made and management comments were not required. However, United States Forces-Iraq provided a response to a draft of this report indicating that it concurred with the report as written.

We appreciate the courtesies extended to our staff by the United States Forces-Iraq and the offices of the Gulf Region District of the U.S. Army Corps of Engineers. If you have any questions please contact Mr. Brian M. Flynn at [brian.flynn@sigir.mil](mailto:brian.flynn@sigir.mil) or at 240-553-0581, extension 2485. For public queries concerning this report, please contact SIGIR Public Affairs at [publicaffairs@sigir.mil](mailto:publicaffairs@sigir.mil) or at 703-428-1100.

A handwritten signature in black ink, appearing to read "Stuart Bowen, Jr.", followed by a period.

Stuart W. Bowen, Jr.  
Inspector General

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# Introduction

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## Objective of the Project Assessment

The objective of this project assessment was to provide real-time relief and reconstruction project information to interested parties to enable appropriate action, if warranted. Specifically, the Special Inspector General for Iraq Reconstruction (SIGIR) determined whether:

1. Project components were adequately designed prior to construction or installation;
2. Construction or rehabilitation is in compliance with the standards of the design;
3. Adequate quality management programs are being utilized;
4. Sustainability was addressed in the contract or task order for the project; and
5. Project results were or will be consistent with their original objectives.

## Pre-Site Assessment Background

### Contract, Costs and Payments

On 9 September 2008, the Joint Contracting Command – Iraq/Afghanistan, Multi-National Security Transition Command – Iraq Support Division awarded Contract W91GY0-08-C-0054, a firm-fixed-price contract to a local Iraqi company in the amount of \$5,950,000.

The firm-fixed-price contract, funded by the Iraq Security Forces Fund, was to design and construct five local police stations, and the contract was divided into five contract line item numbers (CLINs) that specified the unit price for each police station as shown below.

CLIN 0001	Al Garap Local Police Station	\$1,174,839.00
CLIN 0002	Al Hadi Local Police Station <sup>1</sup>	\$1,174,839.00
CLIN 0003	Al Haffar Local Police Station	\$1,233,424.00
CLIN 0004	Al Jamhoriyah Local Police Station	\$1,183,449.00
CLIN 0005	Al Nagasiyah Local Police Station	\$1,183,449.00
	Total Contract Price	\$5,950,000.00

Although the contract is for the construction of five local police stations, SIGIR inspected only the Al Hadi Permanent Police Station project.

The contract contained one amendment. Amendment 00001, dated 4 January 2009, changed the grid coordinates and added demolition work. In addition, the CLIN for the Al Hadi Permanent Police Station was increased by \$99,500 increasing the total contract amount from \$5,950,000 to \$6,049,500, and increasing the amount for Al Hadi from \$1,174,839 to \$1,274,339. The period of performance for CLIN0002 is 255 calendar days from 10 December 2008, indicating a required completion date of 22 August 2009.

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<sup>1</sup> Al Hadi Local Police Station is referred to as the Al Hadi Permanent Police Station throughout this report.

The contractor received the Notice to Proceed on 5 October 2008. The Notice to Proceed addressed the contractor's performance, and stated that "*...under this contract, no changes in plans or specifications, no substitution of materials, no increase in prices and no changes of any kind will be made by your firm without such prior written authorization of the Contracting Officer.*"

### **Project Objective**

The overall objective of this contract was to design and construct five local police stations located in the Basrah and Qadissiya provinces of Iraq. Specifically, the intent of CLIN 0002 for the Al Hadi Permanent Police Station was to construct a local police station compound near the city of Basrah.

### **Pre-Construction Description**

According to documentation provided by the U.S. Army Corps of Engineers (USACE), Gulf Region South District (GRS), Adder Area Office (AAO)<sup>2</sup>, which was responsible for oversight of the construction, the Al Hadi Permanent Police Station was initially to be located on vacant land, near a residential neighborhood in Basrah, Iraq (Figure 1). The project site was bounded on three sides by vacant and public-use land and is fronted by an existing residential street.

Amendment 00001, dated 4 January 2009, changed the location of the project site, (Figure 2) and removed the squatter's residences and all temporary utilities above and below ground from the project site to prepare for the actual construction of the project (Site Photo 1).

### **Statement of Work**

The Statement of Work (SOW) required the contractor to design and construct a local police station. Specifically, the contract required the following:

- site survey, investigation, design, and layout
- site work and demolition
- perimeter wall

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<sup>2</sup> Formerly, the USACE organization in Iraq consisted of the Gulf Region Division under which were the Gulf Region North District (GRN), Gulf Region Central District (GRC), and Gulf Region South District (GRS). Each of the Districts had local area, resident and project offices. The designation of a local office as an area, resident or project office depended on the number of reconstruction projects that it was responsible for overseeing.

Since July 2009, the USACE in Iraq has been undergoing reorganization to downsize as the number of reconstruction projects has diminished. The Gulf Region Division was disestablished. GRN, GRC, and GRS were combined to form the Gulf Region District. The reduced number of reconstruction projects has also resulted in the closing or reduction in size of many of the local area, resident and project offices. The local offices that have been reduced in size have had their designations changed from area offices to resident or project offices.

In the body of this report, the names of USACE organizations at the time of the actions cited are used. Recommendations are directed to the current designations of the organizations able to take corrective action.



**Figure 1. Aerial view of the initial site for the Al Hadi Permanent Police Station (Courtesy of GRS)**



**Figure 2. Aerial view of actual project site (Courtesy of GRS)**

- construct a 3.6 meter (m) tall T-wall<sup>3</sup> perimeter around the 50 m by 50 m police compound
- secure the top of the T-walls using a single wrap of concertina wire
- construct a single pedestrian entry gate
- construct four reinforced concrete observation towers, located in the four corners of the perimeter interior
- concrete sidewalks and paving
- site utilities
  - install a water supply and distribution system, which will include a potable water storage tank, and connection to the local water network, if available
  - install a wastewater collection and treatment system, which will include a septic tank or package treatment system
- fuel point
  - install a 5000 liter fuel tank to store and distribute benzene to the police vehicles
  - construct a reinforced concrete slab for the elevated fuel tank, fuel containment system, and fuel distribution station
- construct police station
  - two-story reinforced concrete frame structure with masonry brick partition walls
  - 11 offices
  - armory
  - jail with bathroom and shower
  - break room
  - small kitchen and food storage area
  - two main bathroom and shower areas (one upstairs and one downstairs)
  - three office bathrooms
  - four dormitories
  - two utility rooms
  - communication and electrical room
- construct an 8 m by 14 m, two-bay open-front maintenance facility

### **Project Design and Specifications**

The GRS AAO provided the contractor with a set of contract drawings and specifications. After gathering information from the site survey, the contractor was to develop a conceptual 35% set of design drawings. Incorporating comments from the customer and GRS, the contractor's design drawings were to progress to 99% and then the final 100% design.

The contract required conformance to the standard Iraqi specifications appropriate to each work activity. In the case of no applicable standards, the contractor was to comply with the 2006 International Building Codes. In addition, the contract referenced the following specifications appropriate to each work activity:

- Iraqi Material Specification and Construction (2004)

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<sup>3</sup> T-walls are made of concrete and stand about 16 feet high with a five foot base. They are called T-walls because they look like an upside down "T".

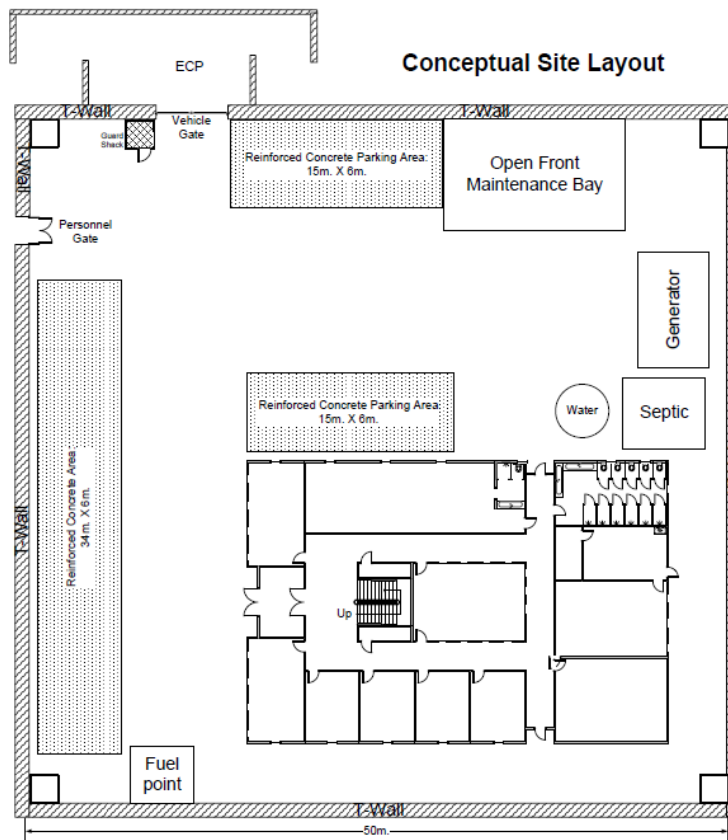


- International Code Council codes (2006)
- Technical Specifications for Sanitary Works (2002)
- American Concrete Institute 318 Specifications for Concrete (2008)
- Iraqi Minister of Electricity Standards
- National Fire Protection Association Life Safety Codes (2008)
- American Society of Mechanical Engineers
- American Standards for Testing and Materials
- American Society of Heating, Refrigeration, and Air Conditioning Engineers Standard 62 – Indoor Air Quality (2007)
- Iraqi General Technical Specifications (2002)
- Sheet Metal and Air-conditioning Contractor’s National Association
- Underwriter’s Laboratories
- American Institute for Steel Construction
- Illuminating Engineering Society

The GRS AAO provided SIGIR with the contractor’s design documents, which included detailed design drawings, specifications, and technical requirements.

### Site Plan

A conceptual site layout was provided with the SOW (Figure 3). The conceptual site layout included all the major items stated in the SOW, and functioned as a guide for the contractor.



**Figure 3. Conceptual site layout (Courtesy of GRS)**

The contractor submitted an actual site plan for the project (Figure 4). The contractor's site plan included all of the items stated in the SOW and accommodated the actual conditions of the project site.

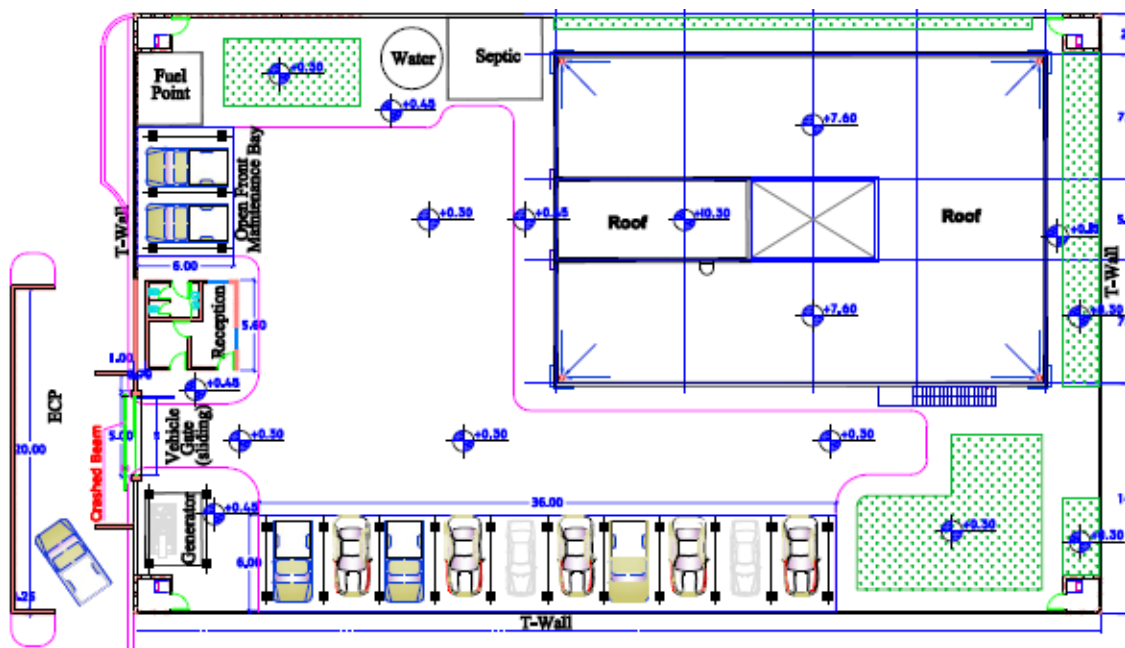


Figure 4. Contractor's site design (Courtesy of GRS)

### Architectural Plan

In addition to providing a conceptual site layout, the SOW included conceptual floor plans for the proposed police station building. The conceptual floor plans included provisions for the armory, jail, offices, dormitories, and other logistical support areas.

The contractor's final architectural plans for the project were similar to the conceptual floor plans provided, with some minor modifications. The plans provide a good utilization of space and include the items stated in the SOW.

### Foundation Design

Foundation design drawings were included with the project documentation provided by GRS. The type of foundation proposed for the project is a raft foundation<sup>4</sup>. Due to the low allowable bearing capacity<sup>5</sup> recommended in the geotechnical investigation, this type of foundation will be appropriate.

The proposed foundation consists of a continuous 400 millimeter (mm) thick slab of reinforced concrete. The steel reinforcement bars consist of two layers of 16 mm diameter bars at 200 mm on center. There are areas in the foundation in which the planned use of the foundation requires a recess of the foundation slab. The

<sup>4</sup> A raft foundation is usually where the ground is soft and provides an extended layer of reinforced concrete.

<sup>5</sup> Allowable bearing capacity is the maximum permissible pressure on foundation soil that provides adequate safety against rupture of the soil mass or movement of the foundation of such magnitude as to impair the structure imposing the pressure.

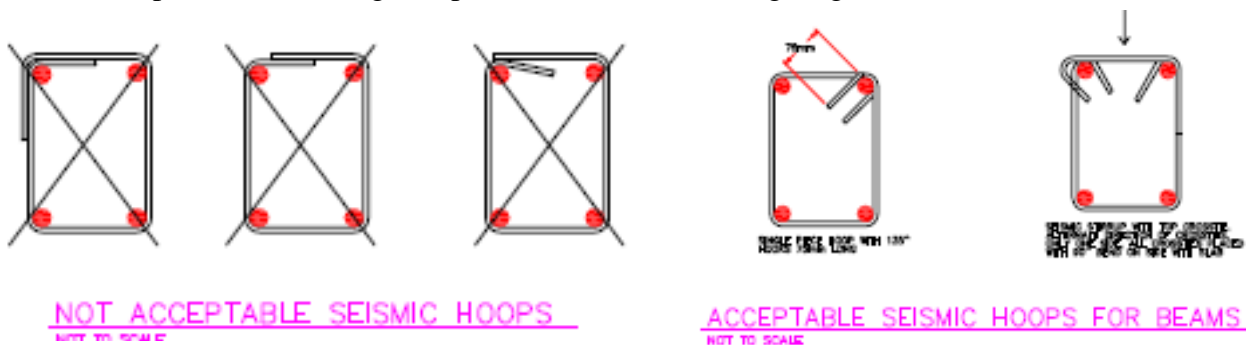
foundation drawings address this with an offset footing detail. The detail appears to provide adequate direction to the contractor to construct the offset footings.

### Structural Design

The facility was designed as a reinforced concrete frame with masonry infill. To resist seismic loading, the structure used reinforced concrete shear walls<sup>6</sup>. This was done in lieu of using ductile frame connections in order to conform to local building practices. The masonry infill was detailed on the plans with reinforcement and attachment clips where required.

The contractor's structural drawings were included with the project documentation. The structural drawings were comprehensive and included details for construction of the primary structural members. In addition, the drawings provide details for construction of minor elements and clarify areas of the project that could be problematic for construction personnel.

The design drawings included details for the reinforced concrete beams and columns. These details include the typical beam cross section, required primary moment<sup>7</sup> reinforcing, and the shear reinforcing for the reinforced concrete beams. Details are also provided detailing acceptable seismic reinforcing (Figure 5).



**Figure 5. Non-acceptable and acceptable seismic reinforcing details (Courtesy of GRS)**

### Electrical Design

The contractor provided detailed electrical drawings for the project. The electrical drawings included information for the lighting; Heating, Ventilating, and Air Conditioning (HVAC) units; outlets; main circuit panels; and other ancillary items.

In addition to the design drawings, the contractor provided electrical load calculations for the facility. The load calculations include accommodations for the air conditioning, heating, lighting, outlets, and other appliances. It appeared that the contractor designed the electrical system to handle the anticipated loads.

### Heating, Ventilating, and Air Conditioning Design

The contractor provided detailed HVAC drawings and calculations. The contractor proposed the use of split-unit air conditioning for the facility. Since the facility is segmented into a series of smaller rooms, this choice appeared appropriate. To

<sup>6</sup> A shear wall is a wall composed of braced panels (also known as shear panels) to counter the effects of lateral load acting on a structure.

<sup>7</sup> Moment is the general term for the tendency of one or more applied forces to rotate an object about an axis (the concept which in physics is called torque).

provide adequate internal circulation of air, the contractor also proposed ceiling fans in most areas and ventilation fans in several of the enclosed areas.

Calculations were provided in the drawings for sizing the HVAC equipment. The calculations account for the materials used in the construction of the facility and the equipment expected to generate heat in the building. Also, ventilation equipment was sized for the facility and provided for adequate turnover of air in enclosed areas. The calculations were based on the International Mechanical Code and the American Society of Heating, Refrigeration, and Air Conditioning Engineers code as required in the SOW.

### Plumbing Design

The contractor provided detailed plumbing drawings which included specifics for construction of all elements of the plumbing system for both a potable water supply and a sanitary sewer. Included in the drawings were calculations for water demand, pipe sizing, water tank sizing, and septic tank sizing.

Based on SIGIR's review of the documentation, the contract included detailed requirements and specifications that adequately instructed the contractor on how to design and construct the facility. The contractor provided the design drawings to GRS for review and approval. Based on the detailed drawings and technical specifications and the inclusion by reference of other applicable codes and standards, there was adequate information provided in the specifications to complete the final design and construct the facility. SIGIR determined that the architectural, structural, electrical, and plumbing design drawings, with the inclusion of additional calculations and design submittals, were adequate to construct the facility.

## Site Assessment

On 30 September 2009, SIGIR performed an on-site assessment of the Al Hadi Permanent Police Station project. During the site visit, the GRS Adder Area Office representative and security team accompanied SIGIR. Due to scheduling, the total time available on site was approximately one hour. This afforded SIGIR with the ability to conduct a limited project overview. Consequently, SIGIR performed an assessment of the representative project work completed. The on-going project construction was approximately 32% complete.

The SIGIR inspection team noted that the general topography of the area was flat, and that the adjoining properties are public use (Figure 6). The Al Hadi Permanent Police Station project is fronted by an existing residential street (Site Photo 2).

At the time of the site assessment, the contractor was erecting T-walls around the perimeter of the project site (Site Photo 3). The T-walls were in good condition with minor cracks and spalls<sup>8</sup>. The contractor appeared to install the T-walls plumb and level and set on a straight alignment.

Also, the contractor was constructing the guard towers at the time of the site assessment. The guard towers are reinforced concrete masonry structures with one steel entry door at the base. The reinforced concrete masonry walls were partially constructed and the steel door frame was installed (Site Photo 4).

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<sup>8</sup> Spalls are small fragments or chips of stone.



Site Photo 2. Residential street



Site Photo 3. T-wall installation



Site Photo 4. 4 Guard towers

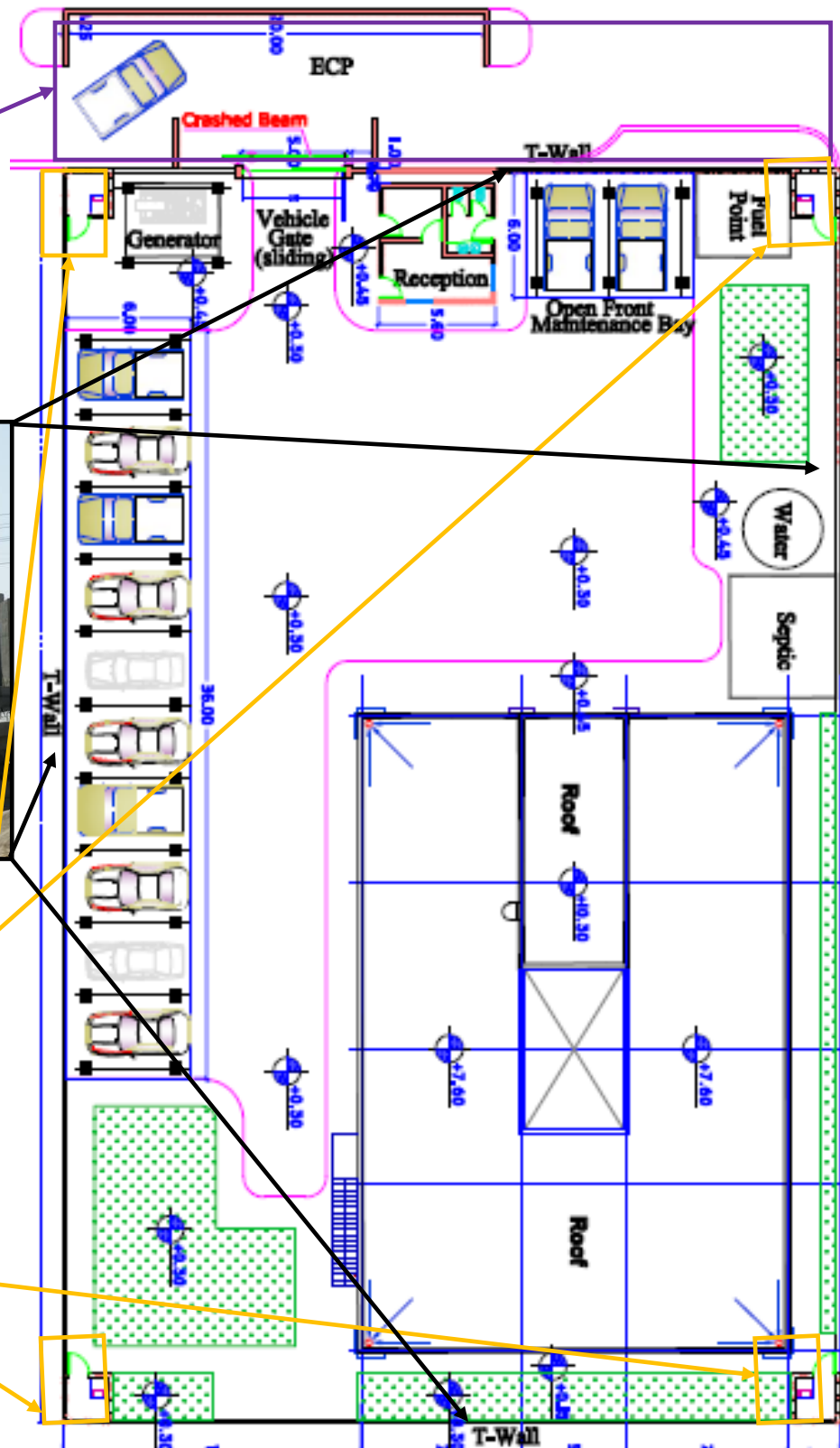


Figure 6. Al Hadi Police Station site (Courtesy of GRS)

The contractor was stockpiling materials on site for the project. At the time of the inspection, the contractor had a significant amount of reinforcing steel, cement, and sand on site. The contractor organized the stockpiles into one of steel (Site Photo 5), and a haphazard pile of fabricated reinforcing steel (Site Photo 6).



**Site Photo 5. Stockpiled reinforcing steel**



**Site Photo 6. Fabricated reinforcing steel**

SIGIR inspected the fabricated reinforcing steel and verified that the steel is shear reinforcing for the reinforced concrete beams. The reinforcing steel is fabricated according to the design drawings.

During the site inspection, the contractor was constructing the police station structure. The structure for the police station consists of a two-story reinforced concrete frame with reinforced concrete masonry infill. At the time of the site assessment, the contractor completed construction of the concrete columns for the first floor and had partially constructed the reinforced concrete masonry infill. While the masonry work was progressing with the walls, the contractor was constructing formwork to place the reinforced concrete beams for the second story (Site Photo 7).



**Site Photo 7. Reinforced concrete beam formwork**

The contractor installed reinforcing steel in the concrete masonry wall. SIGIR was able to verify that the contractor installed both the horizontal and vertical reinforcing bars in the wall. The vertical bars were placed in alternating cores of the block with sufficient length available for splicing to the next wall section (Site Photo 8). At the time of the site assessment, the horizontal reinforcing was placed along several of the unfinished levels of the walls (Site Photo 9).

The contractor installed expansion joints between the reinforced concrete frame and the concrete masonry infill. The expansion joints consisted of approximately three centimeters (cm) of polystyrene (plastic) foam placed against the reinforced concrete column (Site Photo 10). This joint will effectively isolate the concrete masonry unit (CMU)<sup>9</sup> from the reinforced concrete frame and allow for differential movement between the two elements.



**Site Photo 8. CMU vertical reinforcing**



**Site Photo 9. CMU horizontal reinforcing**



**Site Photo 10. Expansion joint between infill and frame**

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<sup>9</sup> A concrete masonry unit, also called concrete block, cement block, or foundation block, is a large rectangular brick used in construction.

During the construction of the reinforced CMU exterior walls, the contractor installed the steel window and door frames. The steel frames consist of welded steel sections and steel embedment tabs (Site Photo 11) securing the windows and doors to the walls. The embedment tabs are steel angle sections approximately 10 cm in length. The tabs are placed in the mortar joints of the CMU and held in place with the mortar. To plumb the windows, the opening in the CMU was constructed larger than required leaving a gap which can be used for leveling (Site Photo 12). Due to this gap, the actual length of embedment in some cases can be as little as 5 cm, so the strength of the window attachment is less than the strength of the surrounding concrete masonry wall.



**Site Photo 11. Embedment tab**



**Site Photo 12. CMU wall window frame**

At the time of the site assessment, the contractor constructed the first half-flight of stairs (Site Photo 13). The stairs are constructed of reinforced concrete. Dowels were present at the landing to tie the reinforcing material for the next flight. The construction appeared adequate. The risers were a uniform height and the treads were level and even.



**Site Photo 13. Reinforced concrete stairs**



# Project Quality Management

## Contractor's Quality Control Program

Department of the Army Engineering Regulation (ER) 1180-1-6, dated 30 September 1995, provides general policy and guidance for establishing quality management procedures in the execution of construction contracts. According to ER 1180-1-6, "...obtaining quality construction is a combined responsibility of the construction contractor and the government."

The SOW required the contractor to submit an overall quality control (QC) plan that included implementing a three-phase QC system (preparatory, initial, and follow-up phases) necessary to ensure the construction complies with the contract requirements. The contractor was required to maintain an adequate inspection system and ensure that work performed under the contract conformed to the requirements. In addition, the QC representative was required to provide a daily site work report that included work performed, number of workers on site, managers and supervisors on site, weather, materials procured and received, problems encountered, accidents, photographs, construction inspection reports, and testing and inspection reports.

The GRS AAO project documentation included the contractor QC plan. The GRS submittal form, dated 29 September 2008, documents that the QC plan "...was reviewed in detail and are correct and in strict conformance with the contract drawings and specifications...." The QC plan appeared to cover the SOW requirements and contained examples of reference materials.

The QC representatives monitored field activities and completed daily QC reports, which presented a brief background on the weather, number of workers on site, the work activities and testing performed, and documented construction problems identified and corrected. In addition, the QC representatives supplemented the daily QC reports with photographs reinforcing the information provided in the daily reports.

## Government Quality Assurance

According to ER 1180-1-6, dated 30 September 1995, "...QA [Quality Assurance] is the system by which the government fulfills its responsibility to be certain the CQC is functioning and the...end product is realized."

The QA representative (QAR) prepares the reports to ensure that deficiencies are documented with photographs. Also, the QAR assures that the contractor's QC is effective and producing a product conforming to the construction standards.

GRS AAO, responsible for the construction of the Al Hadi Permanent Police Station project, employs local-national Iraqi associate engineers to serve as QARs responsible for visiting the project site and writing QA reports. In addition, GRS AAO representatives visited the project site to verify the contractor's work.

Local-national QARs monitored field activities and completed daily QA reports. The reports document the number of workers on site and the work performed for the day. Also, the QARs supplement the daily QA reports with detailed photographs that reinforced the information provided in the reports.

SIGIR reviewed the daily QA reports and found that the QARs performed effectively in identifying and correcting construction deficiencies at the project site. In the documentation provided by the GRS AAO, the QA reports showed construction problems identified and corrected.

Obtaining quality construction is the combined responsibility of the contractor and the government. The mutual goal is a quality product conforming to the contract requirements, and the contract documents establish the quality required for the project. To date, the execution of the quality management program was effective in obtaining quality construction.

## **Project Sustainability**

The contract included sustainability elements to assist the Al Hadi Permanent Police Station project. The contract specifications require the following:

### *As-built Drawings*

Upon completion of the project, the contractor must provide all as-built technical information and drawings (both hard and electronic copies).

### *Warranty of Construction Work*

The contractor is required to provide and certify warranties in the name of the appropriate ministry for all material and/or equipment, including mechanical, electrical and/or electronic devices, and all operations for 12 months from the date of transfer to the appropriate ministry.

### *Operation and Maintenance*

The contractor must provide operations and maintenance (O&M) manuals that will include standard operating procedures for all equipment and systems, standard maintenance procedures, and recommended spare parts list for all equipment.

### *Commissioning*

Upon project completion, the contractor is required to demonstrate that the systems and components operate correctly. The contractor will perform tests on the following systems: electrical; communication; building openings; HVAC; electrical generation and distribution; exterior lighting; and plumbing and piping. The contractor will provide the contracting officer the written records of the test data and final settings.

## **Conclusions**

1. Project components were adequately designed prior to construction or installation. The U.S. government provided the contractor with a set of contract drawings and specifications. After the contractor completed the site survey, the contractor was to develop a conceptual 35% set of design drawings which would be completed and provided to GRS. Incorporating comments from the customer and GRS, the contractor's design drawings were to progress to 99% and then the final 100% design.

The contractor provided the design drawings to GRS for review and approval. SIGIR reviewed the contractor's detailed design drawings for the project, as well as specifications and technical requirements for the construction of the project. SIGIR determined that the contractor's design package, provided by GRS AAO, included detailed requirements and specification that adequately instructed the contractor on how to design and construct the facility.

2. Construction was in compliance with the standards of the design.

During the 30 September 2009 on-site assessment, SIGIR observed that construction work for the project was approximately 32% complete. The on-site visit was conducted in approximately one hour.

The project consisted of the construction of a small local police facility. The police facility consisted of a two-story building with 11 offices, an armory, a jail, a small kitchen, bathroom and shower areas, dormitories, utility rooms, and a communication and electrical room. The site improvements included grading and fill to raise the site, demolition, a perimeter wall, a perimeter sidewalk, site utilities, a small parking area, a fuel distribution station, and a two-bay open-front maintenance facility.

The building was square in shape. The structure for the police station consists of a two-story reinforced concrete frame with reinforced concrete masonry infill. At the time of the site assessment, the contractor completed construction of the concrete columns for the first floor and had partially constructed the reinforced concrete masonry infill. While the masonry work was progressing with the walls, the contractor was constructing formwork to place the reinforced concrete beams for the second story.

On the building interior, the contractor installed expansion joints between the reinforced concrete frame and the concrete masonry infill. The expansion joints consisted of approximately 3cm of polystyrene foam placed against the reinforced concrete column. This joint will effectively isolate the CMU from the reinforced concrete frame and allow for differential movement between the two elements. During the construction of the reinforced CMU exterior walls, the contractor installed the steel window and door frames. The steel frames consist of welded steel sections and steel embedment tabs. At the time of the site assessment, the contractor constructed the first half-flight of stairs. The stairs are constructed of reinforced concrete. Dowels were present at the landing to tie reinforcing for the next flight. The construction appeared adequate. The risers were a uniform height and the treads were level and even.

The contractor was erecting T-walls around the building perimeter. The T-walls were in good condition with minor cracks and spalls. SIGIR observed that the contractor appeared to install the T-walls plumb and level and set on a straight alignment. Also, the contractor was constructing the guard towers in the four corners of the facility perimeter. The guard towers are reinforced concrete masonry structures with one steel entry door at the base. The reinforced concrete masonry walls were partially constructed and the steel door frame was installed.

SIGIR observed that the contractor was stockpiling materials on site for the project. At the time of the inspection, the contractor had a significant amount of reinforcing steel, cement, and sand present on the site. SIGIR inspected the

fabricated reinforcing steel and verified that the steel is shear reinforcing for the reinforced concrete beams. The reinforcing steel is fabricated according to the design drawings provided by GRS. SIGIR verified that the shear steel was fabricated with adequate seismic hooks at the overlap

3. Adequate quality management programs were being effectively used.

The Statement of Work required the contractor to submit an overall QC plan that included implementing a three-phase QC system (preparatory, initial, and follow-up phases) necessary to ensure the construction complies with the requirements of the contract.

The GRS AAO project documentation included the contractor QC plan. The GRS submittal form, dated 29 September 2008, documents that the QC plan “...*was reviewed in detail and are correct and in strict conformance with the contract drawings and specifications....*” The QC plan appeared to cover the SOW requirements and contained examples of reference materials.

The QC representatives monitored field activities and completed daily QC reports, which presented a brief background on the weather, number of workers on site, the work activities and testing performed, and documented construction problems identified and corrected. In addition, the QC representatives supplemented the daily QC reports with photographs reinforcing the information provided in the daily reports.

According to ER 1180-1-6, dated 30 September 1995, “...*QA is the system by which the government fulfills its responsibility to be certain the CQC is functioning and the...end product is realized.*” GRS AAO was responsible for the construction of the Al Hadi Permanent Police Station project, and employed local-national Iraqi associate engineers to serve as QARs responsible for visiting the project site and writing QA reports. QARs monitored field activities and completed daily QA reports, supplemented with detailed photographs that reinforce the information provided in the reports. SIGIR reviewed the daily QA reports and found that the QA reports showed construction problems identified and corrected.

Obtaining quality construction is the combined responsibility of the construction contractor and the government. The mutual goal is a quality product conforming to the contract requirements, and the contract documents establish the quality required for the project. To date, the execution of the quality management program was effective in obtaining quality construction.

4. Sustainability was addressed in the contract for the project.

Sustainability was addressed in the contract requirements. The contract included sustainability elements to assist the Iraqi ministry ultimately responsible for operating this project after turnover. The contract specifications require the contractor to provide and certify warranties. In addition, the contractor is required to perform O&M training appropriate to the facilities and equipment installed or constructed in the scope of this project, along with providing O&M manuals. Further, upon completion of the project, the contractor must prepare and furnish as-built drawings, which are to be a record of the construction as installed and completed.

5. Project results will be consistent with their original objectives.

As of SIGIR's site assessment, the Al Hadi Permanent Police Station project was approximately 32% complete. The results are consistent with the original project objective to construct a new police station near the city of Basrah. The Al Hadi Permanent Police Station project results should meet the objective of providing a new police facility.

## **Recommendations**

This report does not contain any recommendations for corrective action; therefore, management comments are not required.

## **Management Comments**

Though not required, SIGIR received comments on the draft of this report from the United States Forces - Iraq indicating that it concurred with the report as written. The complete texts of the comments are provided in Appendix C.

## **Appendix A. Scope and Methodology**

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SIGIR performed this project assessment from August 2009 through April 2010 in accordance with the Quality Standards for Inspections issued by the Council of Inspectors General on Integrity and Efficiency. The assessment team included two engineers/inspectors and two auditors/inspectors.

In performing this Project Assessment SIGIR:

- Reviewed documentation to include the following: contract W91GY0-08-C-0054, contract amendments and/or modifications, Notice to Proceed, Statement of Work, and Bill of Quantities;
- Reviewed contractor quality control reports and photographs, government quality assurance reports and photographs;
- Reviewed the design package (plans) and submittals; and
- Conducted an on-site assessment on 30 September 2009 and documented the results of the Al Hadi Permanent Police Station project in Basrah, Iraq.

**Scope Limitation.** The time allotted for the Al Hadi Permanent Police Station project site assessment was approximately one hour; therefore, a complete review of all work completed and on-going was not possible.

## Appendix B. Acronyms

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AAO	Adder Area Office
CLIN	Contract Line Item Number
cm	centimeters
CMU	Concrete Masonry Unit
ER	Engineering Regulation
GRC	Gulf Region Central District
GRN	Gulf Region North District
GRS	Gulf Region South District
HVAC	Heating, Ventilating, and Air Conditioning
m	meter
mm	millimeter
O&M	Operations and Maintenance
QA	Quality Assurance
QAR	Quality Assurance Representative
QC	Quality Control
SIGIR	Special Inspector General for Iraq Reconstruction
SOW	Statement of Work
USACE	U.S. Army Corps of Engineers
USF-I	U.S. Forces-Iraq

## **Appendix C. USF-I Comments on Draft Report**

**UNCLASSIFIED**

**USF-I RESPONSE TO 20100402-026 (USF-I ITO1009307225)  
Al Hadi Permanent Police Station**

**BACKGROUND:** Objectives: Project components were adequately designed prior to construction or installation; Construction or rehabilitation is in compliance with the standards of the design; Adequate quality management programs are being utilized; Sustainability is addressed in the contracts or task orders for the projects; and Project results are or will be consistent with their original objectives.

**QUESTION:** To provide USF-I comment on draft report. Since there are no recommendations, only comments, or a "negative response" is required. Please provide name of O6 Reviewer.

**USF-I RESPONSE:** USF-I responds with following:

USF-I concurs with report as written.

O6 Reviewer: CAPT Richard Whipple

**UNCLASSIFIED**

This is an official USF-I RFI response.

USF-I SJS RFI MANAGER//DSN 318-435-2809//scissacorfirmgr@s-iraq.centcom.smil.mil

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## **Appendix D. Report Distribution**

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### **Department of State**

Secretary of State

Senior Advisor to the Secretary and Coordinator for Iraq

Director of U.S. Foreign Assistance/Administrator, U.S. Agency for  
International Development

Director, Office of Iraq Reconstruction

Assistant Secretary for Resource Management/Chief Financial Officer,  
Bureau of Resource Management

U.S. Ambassador to Iraq

Director, Iraq Transition Assistance Office

Mission Director-Iraq, U.S. Agency for International Development

Inspector General, Department of State

### **Department of Defense**

Secretary of Defense

Deputy Secretary of Defense

Under Secretary of Defense (Comptroller)/Chief Financial Officer

Deputy Chief Financial Officer

Deputy Comptroller (Program/Budget)

Deputy Assistant Secretary of Defense-Middle East, Office of Policy/International  
Security Affairs

Inspector General, Department of Defense

Director, Defense Contract Audit Agency

Director, Defense Finance and Accounting Service

Director, Defense Contract Management Agency

### **Department of the Army**

Assistant Secretary of the Army for Acquisition, Logistics, and Technology

Principal Deputy to the Assistant Secretary of the Army for Acquisition,  
Logistics, and Technology

Deputy Assistant Secretary of the Army (Policy and Procurement)

Commanding General, Joint Contracting Command-Iraq/Afghanistan

Assistant Secretary of the Army for Financial Management and Comptroller

Chief of Engineers and Commander, U.S. Army Corps of Engineers

Commanding General, Gulf Region Division

Chief Financial Officer, U.S. Army Corps of Engineers

Auditor General of the Army

### **U.S. Central Command**

Commanding General, Multi-National Force-Iraq

Commanding General, Multi-National Corps-Iraq

Commanding General, Multi-National Security Transition Command-Iraq

Commander, Joint Area Support Group-Central

## **Other Federal Government Organizations**

Director, Office of Management and Budget  
Comptroller General of the United States  
Inspector General, Department of the Treasury  
Inspector General, Department of Commerce  
Inspector General, Department of Health and Human Services  
Inspector General, U.S. Agency for International Development  
President, Overseas Private Investment Corporation  
President, U.S. Institute of Peace

## **Congressional Committees**

### **U.S. Senate**

Senate Committee on Appropriations  
Senate Committee on Armed Services  
Senate Committee on Foreign Relations  
Senate Committee on Homeland Security and Governmental Affairs

### **U.S. House of Representatives**

House Committee on Appropriations  
House Committee on Armed Services  
House Committee on Oversight and Government Reform  
House Committee on Foreign Affairs

## **Appendix E. Project Assessment Team Members**

The Office of the Assistant Inspector General for Inspections, Office of the Special Inspector General for Iraq Reconstruction, prepared this report. The principal staff members who contributed to the report were:

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