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CONSTRUCTION IMPLEMENTATION PLAN (CIP)

SHEJEH SALAM

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CONSTRUCTION IMPLEMENTATION PLAN (CIP)

SHEJEH SALAM

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DISCLAIMER:

The authors' views expressed in this document do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS

ADS	Automated Directives System
A/E	Architecture and Engineering
AEC	A/E Design Contractor
AIDAR	Agency for International Development Acquisition Regulations
AM	Activity Manual
CC	Construction Contractor
CFR	Code of Federal Regulations
CIP	Construction Implementation Plan
CLIN	Contract Line Item Number
CO	Contracting Officer
COP	Chief of Party
COR	Contracting Officer's Representative
CMC	Community Management Committee
CPM	Critical Path Method
DCOP-STA	Deputy Chief of Party-Senior Technical Advisor
DDGS	Direct Distribution of Goods and Services
EM	Environmental Manual
EMMP	Environmental Mitigation and Monitoring Plan
ERR	Environmental Review Report
FAA	Fixed Amount Award
FAR	Federal Acquisition Regulations
GIS	Geographic Information Systems
HSSP	Health, Safety and Security Plan
NCR	Non-conformance Report
POC	Point of Contact
QA	Quality Assurance
QC	Quality Control
QCP	Quality Control Plan
RFP	Request for Proposals
RPM	Regional Program Manager
SMT	Senior Management Team
SOW	Scope of Work
VIP	Ventilated improved pit latrines
USAID	United States Agency for International Development

TERMS

A/E Contractor (AEC) – refers to the qualified architecture and engineering company that will be awarded a competitively bid sub-contract to carry out engineering design and construction oversight for a specific construction activity. The contract and A/E Contractor will be managed by Shejeh Salam.

Action Submittals – Written and graphic information and physical samples that require Shejeh Salam OR AEC's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."

Activity – A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

"Approved" – When used to convey COR and/or Shejeh Salam OR AEC action on CC's submittals, applications, and requests, "approved" is limited to Construction's duties and responsibilities as stated in the Conditions of the Contract.

As-built designs – the final set of detailed drawings or designs with actual dimensions, geometry and location of all project components built by a construction contractor, submitted by the contractor upon completion of a construction project.

Basis-of-Design Product Specification – A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

Comparable Product – Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

Construction Contractor (CC) – refers to the qualified construction company that will be awarded a competitively bid sub-contract to carry out construction for a specific activity. The contract and Construction Contractor will be managed by Shejeh Salam.

Construction Waste – Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

Cost Loading – the allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.

Critical Activity – An activity on the critical path that must start and finish on the planned early start and finish times.

Critical Path – the longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

Critical Path Method (CPM) – a method of planning and scheduling a construction project where activities are arranged based on activity relationships; network calculations determine when activities can be performed and the critical path of the project.

Date of Substantial Completion – The date determined by the COR as of when substantial completion of the works has been achieved.

Demolition Waste – Building and site improvement materials resulting from demolition or selective demolition operations.

"Directed" – A command or instruction by Contracting Officer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

Disposal – Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

Environmental Mitigation and Monitoring Plan (EMMP) – plan prepared in accordance with USAID environmental regulation 22 CFR 216 that specifies required mitigation measures and monitoring indicators to minimize or eliminate potential negative environmental impacts

Equipment - All the machinery, tools, and apparatus necessary for the proper construction and acceptable completion of a project.

Event – The starting or ending point of an activity.

File Transfer Protocol (FTP) – Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

Final Acceptance – The stage in the progress of the work as determined by the COR and confirmed in writing to the CC, on which all work required under the contract has been completed in a satisfactory manner, subject to the discovery of defects after Final Acceptance, except for items specifically excluded in the “Notice of Final Acceptance” and the warranty period.

"Indicated" – Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

Float – The measure of leeway in starting and completing an activity. Float time is not for the exclusive use or benefit of either Owner or CC except as noted otherwise, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date. **Free float** is the amount of time an activity can be delayed without adversely affecting

the early start of the successor activity. **Total float** is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

Force Account Work - Work ordered on a construction project without an existing agreement on its cost, and performed with the understanding the CC will bill the owner according to the cost of labor, materials, and equipment, plus a certain percentage for overhead and profit.

"Furnish" – Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

General - Basic Contract definitions are included in the Conditions of the Contract.

Informational Submittals – Written and graphic information and physical samples that do not require Shejeh Salam OR AEC's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

"Install" – Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

Labor - Effort expended by people for wages or salary. Generally classified as either direct or indirect. **direct labor** is applied to meeting project objectives and is a principal element used in costing, pricing, and profit determination; **indirect labor** is a component of indirect cost, such as overhead or general and administrative costs.

Material - Any product or substance specified for use in the construction of a project.

Named Products – Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.

New Products – Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.

Non-Conformance Report (NCR) - a formal notification to the construction contractor that work does not meet the plans or the specifications for the project.

Portable Document Format (PDF) – An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

Predecessor Activity - an activity that precedes another activity in the network.

Products – Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

Project Site – Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

"Provide" – Furnish and install, complete and ready for the intended use.

Quality Control Plan (QCP) – plan developed by the CC and approved by Shejeh Salam and/or AEC that specifies measures to ensure that construction activities are compliant with health and safety, environmental guidelines, and regulations; permit and licensing requirements; materials testing and quality; and building code and design standards. The QCP specifies monitoring, testing, follow-up, and reporting measures to ensure compliance.

Recycle – Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

Regulations – Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

Request for Information (RFI) - Request from Owner, Shejeh Salam, AEC, or CC seeking information required by or clarifications of the Contract Documents.

Request for Proposal (RFP) – the tender documentation Shejeh Salam will prepare in order to solicit responses through a restricted or full and open competitive process for all infrastructure related programming.

Resource Loading – The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

Salvage – Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

Salvage and Reuse – Recovery of demolition or construction waste and subsequent incorporation into the Work.

Substitutions – Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by CC.

Substitutions for Cause – Changes proposed by CC that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.

Substitutions for Convenience – Changes proposed by CC or USAID that are not required in order to meet other Project requirements but may offer advantage to CC or USAID.

Successor Activity – an activity that follows another activity in the network.

Subsystem – A portion of a system with characteristics similar to a system.

System - An organized collection of parts, equipment, or subsystems united by regular interaction.

I. INTRODUCTION

This Shejeh Salam Construction Implementation Plan (CIP) will serve as the primary reference point for the standard operating procedures and risk mitigation measures employed for construction related activities under Shejeh Salam. Directives provided in the CIP are based on DT Global Inc.'s Contract Modification Number 72066820C0003 with USAID, as well as applicable regulations for acquisitions as found in the Automated Directives System (ADS) Series 300, including the USAID Acquisition and Assistance Regulations under ADS 302 and ADS 303, USAID environmental regulation 22 CFR 216, and the Federal Acquisition Regulations (FAR) and USAID Acquisition Regulations (AIDAR). FAR, and ADS clauses are cited throughout the document. The CIP will be updated to incorporate any changes to USAID policy or regulations as they occur.

I.1 SHEJEH SALAM BACKGROUND

On September 30, 2020, USAID launched Shejeh Salam to complement overall USAID efforts to support South Sudan's transition from war to peace through the following four objectives:

1. Local actors are building crossline interdependence and intra-community cohesion to promote peace processes and peaceful co-existence
2. Civil society actors are advocating for peace, justice, reconciliation, and reform; and participating in political and civic processes
3. Key partners are providing trauma awareness services to communities
4. Print, radio, and other media are providing accurate, fair and thorough information to mitigate the destructive impact of rumor and misinformation.

I.2 PURPOSE AND SCOPE OF THE CIP

This CIP describes the approach to construction activities throughout the life of the project and describes the requirements that will be followed in each phase of a construction project. It contains guidance, policies, and standards for the design, selection, award, and administration of construction sub-contracts following specific building and design codes under Shejeh Salam. Construction related activities may include but are not exclusive of the following:

- Installation of photovoltaic systems, inclusive of wiring compounds as needed.
- Construction, rehabilitation, or refurbishment of small-scale buildings, such as vegetable or market stalls, traditional courts, civil society office spaces, and women's or youth centers
- Installation of livestock infrastructure, including slaughter slabs, holding pens, and drying racks
- Installation of photovoltaic systems such as water system pumps or solar panels for radio stations
- Installation of small diesel generators
- Installation of FM radio repeaters on existing mobile network towers
- Construction of VIP latrines (typically accompanying building construction)
- Development or rehabilitation of small scale or community water supplies, such as boreholes or extension of existing pipes and distribution systems.

The building and design codes that will be used will depend on the type of infrastructure activity. These will be determined by the Shejeh Salam Infrastructure Manager, and each design package will be reviewed by the AEC to ensure that the appropriate codes are implemented (see Section 1.3 below).

1.2.1 TERMS

The A/E firm awarded a subcontract for A/E design, quality control and construction supervision will hereinafter be referred to as the A/E Contractor or AEC. The construction firm awarded a subcontract for installation, refurbishment, rehabilitation or construction services will hereinafter be referred to as the Construction Contractor or CC.

1.2.2 PHASING OF CONSTRUCTION RELATED ACTIVITIES

To implement construction related activities, Shejeh Salam will undertake engineering and construction components through sub-contracts using a design-build-build delivery method where architect and engineering (A/E) services (AEC) and construction works through a construction contractor are performed under two separate but complementary subcontracts. The subcontractor that undertakes the AEC services (design and construction bidding support) will provide quality assurance and construction oversight services in the construction phase. The CC that undertakes the construction services will provide materials, install equipment, and refurbish, rehabilitate, or construct infrastructure as well as provide manuals and training on proper infrastructure operation and use. USAID Shejeh Salam will prepare the bid documents and manage the solicitation and award of the sub-contracts. The above-mentioned procedures for construction related activities will be implemented in the following five phases:

1. Pre-design
2. Design
3. Procurement
4. Execution
5. Handover.

This CIP is organized according to these five phases. All construction related activities will be managed in close collaboration with USAID at all phases of the construction cycle. Each phase is described in Table I below.

Table I: Phasing of Shejeh Salam Construction Related Activities

PHASING OF SHEJEH SALAM CONSTRUCTION RELATED ACTIVITIES	
CONSTRUCTION PHASE	DESCRIPTION
Pre-design	<ul style="list-style-type: none">– Identification of construction activity and coordination with beneficiaries and local authorities (Responsibility: Shejeh Salam)– Identification of minimum building design codes, standards and permits and licensing requirements necessary to meet safe standards and local regulations (relevant to the nature of the infrastructure to be constructed) (Shejeh Salam)– Planning, preparation, and development of initial engineering designs by Shejeh Salam for a construction activity (Shejeh Salam)–– Preparation of bid package for the procurement of A/E design and supervision services (Shejeh Salam)
Design	<ul style="list-style-type: none">– Quality assurance review of designs to ensure that all building codes, standards, and regulatory provisions have been met (AEC)– Review and refinement of pre-design package and preparation of final A/E designs and drawings (AEC)

PHASING OF SHEJEH SALAM CONSTRUCTION RELATED ACTIVITIES

CONSTRUCTION PHASE	DESCRIPTION
Procurement	<ul style="list-style-type: none"> – For the procurement of A/E supervision services: Preparation of competitively bid package for the procurement of A/E design and construction supervision services by a qualified AEC (Shejeh Salam) – For the procurement of construction services: Preparation of competitively bid packages for independent procurement of construction services by a qualified construction contracting firm (AEC) – Solicitation and award of AEC and CC contracts (Shejeh Salam)
Execution	<ul style="list-style-type: none"> – Construction carried out by the CC, following all standards and codes specified during design (CC) – Training for beneficiaries or owner on operations and maintenance requirements of the constructed facility (CC) – Construction supervision (carried out by the CC and QA/QC by the AEC) – Management oversight (Shejeh Salam Infrastructure Manager)
Handover	<ul style="list-style-type: none"> – Final inspections (AEC and Shejeh Salam) – Transfer of facility and operations manuals to the beneficiaries or owner – Final payments made by (Shejeh Salam)

Shejeh Salam has prepared templates that will be used for the preparation of major deliverable items for each construction activity. These templates are summarized in Table 2 below.

Table 2: Templates Shejeh Salam Will Use for Construction Related Activities

TEMPATES FOR SHEJEH SALAM CONSTRUCTION RELATED ACTIVITIES

TEMPLATES	LOCATION	PURPOSE
Scope of Work (SOW) Template	Annex 1 (CIP)	Summarizes the objectives, outcomes, and construction tasks, period of performance, and special requirements for the construction activity. Serves as the basis for preparing the tender and contract documents.
Technical Specifications Template	Annex 2 (CIP)	Provides detail on standards and requirements for permits and licenses, labor, materials, and conducting all aspects of the construction works following designs and guidance specified by the AEC. Serves as the basis for preparing the tender and contract documents.
Quality Control Plan (QCP) Template	Annex 3 (CIP)	Details the measures and reporting structure that the CC will implement to test the integrity of materials, follow standards and guidelines, and ensure quality
Health, Security and Safety Plan (HSSP) Template	Annex 4 (CIP)	Details the measures and reporting structure that the CC will implement to ensure employee and beneficiary safety as well as maintain site security
Environmental Review Report Template	Annex 3 (Environmental Manual)	Documents that analysis of site specific characteristics, socioeconomic and health and safety conditions against planned activities and identifies potential environmental impacts and mitigation measures to minimize negative environmental and social impacts of planned activities
Environmental Mitigation and Monitoring Plan (EMMP)	EM, Annex 1	Specifies mitigation measures, indicators, and reporting requirements to minimize or eliminate environmental and social impacts
Environmental Monitoring Checklists	EM, Annex 5	Serves as the reporting tool to monitor and track implementation of environmental mitigation measures specified in the EMMP

Record of Environmental Compliance Template	EM, Annex 4	Completed at the end of construction following final walk-through to document that environmental mitigation measures were implemented as specified
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I.2.3 REVISIONS

As no construction activities are planned for the first year of the project, Shejeh Salam may update or revise the CIP as needs arise. Shejeh Salam will also hire an Infrastructure Manager to plan construction activities and oversee design. Shejeh Salam also anticipates hiring a Project Engineer to manage construction activities on a day-to-day basis during Year 2 of the project. At that time, the newly hired Infrastructure Manager and/or Engineer will review the CIP and work plan and update it accordingly. Revisions will be submitted to USAID for review and approval prior to commencement of any construction related work.

I.3 ROLES AND RESPONSIBILITIES

USAID and DT Global will function as an integrated team with a shared vision and commitment to the program's success. USAID and DT Global will regularly re-examine construction related needs and activities.

I.3.1 USAID RESPONSIBILITIES

The USAID team is led by the Contracting Officer's Representative (COR), working in close collaboration with USAID and the U.S. Embassy. USAID is responsible for program goals and objectives and holds final authority for activity approval. With support from the implementation team, the COR will provide technical direction to Shejeh Salam, driven by program and mission priorities.

I.3.2 DT GLOBAL RESPONSIBILITIES

DT Global is responsible for tendering, awarding, and managing subcontracts for construction activities through the Shejeh Salam project. Construction is not expected to commence until Year 2 of the project. At that time, Shejeh Salam will hire an Infrastructure Manager to oversee the processes described in this CIP. Shejeh Salam will also hire a CCN Project Engineer who will develop pre-designs and provide construction management oversight on site.

All rehabilitation / construction will be coded to CLIN 0001C in the base period, CLIN 0002C for option period one, CLIN 0003C for option period two, and CLIN 0004C for option period three,

Table 3 below provides an overview of how this partnership contributes to shared responsibilities between USAID, DT Global, and sub-contractors on UShejeh Salam.

Table 3: Shejeh Salam and USAID Partnership Responsibilities

SHEJEH SALAM CONSTRUCTION PARTNERSHIP		
USAID RESPONSIBILITIES	DT GLOBAL RESPONSIBILITIES	SUBCONTRACTOR RESPONSIBILITIES
<ul style="list-style-type: none"> – Provide overall direction and analysis of U.S. Government relations – Provide donor coordination 	<ul style="list-style-type: none"> – Manage communication of all activities with USAID – Develop activities – Provide local analysis to support USAID decisions – Procure and manage A/E and construction services through sub-contracts 	<ul style="list-style-type: none"> – Review, finalize and approve A/E designs (AEC) – Supervise and provide quality control of construction related activities (AEC) – Conduct site surveys, geotechnical testing, and/or design investigations as necessary to finalize A/E designs (AEC) – Conduct site surveys, geotechnical testing as necessary (CC)

SHEJEH SALAM CONSTRUCTION PARTNERSHIP		
USAID RESPONSIBILITIES	DT GLOBAL RESPONSIBILITIES	SUBCONTRACTOR RESPONSIBILITIES
<ul style="list-style-type: none"> – Provide construction activity Guidance, review and approval – Monitor overall program outcomes – Direct handover/ USAID exit 	<ul style="list-style-type: none"> – Oversee compliance with Quality Control, environmental and health and safety requirements – Manage local relations 	<ul style="list-style-type: none"> – Obtain relevant permits and licenses (CC) – Provide labor, materials, equipment, coordination, logistics necessary to install, refurbish, rehabilitate or construct infrastructure works (CC) – Provide training and operations manuals for infrastructure management (CC)

Working with USAID, DT Global will be involved in all phases of construction, providing advice to USAID regarding strategic programming decisions and implementing program activities based on USAID technical guidance and decision-making.

Prior to approval of construction activities, Shejeh Salam is required to engage an Infrastructure Manager with experience in small-scale, low-cost, context-appropriate infrastructure design and management. At a minimum, the Infrastructure Manager must be a US-licensed Professional Engineer with a bachelor’s degree in civil engineering, and with experience in small-scale, low-cost, context-appropriate infrastructure design and management.

Shejeh Salam will also hire an experienced CCN Project Engineer to provide professional construction project management and related services in connection with the project.

A/E CONTRACTOR RESPONSIBILITIES

The A/E contractor will provide quality control and quality assurance during the construction phase as per the bill of quantities and the subcontract (Table 4).

CONSTRUCTION CONTRACTOR RESPONSIBILITIES

The construction contractor will hold all responsibility for completing the construction against the agreed bill of quantities and the subcontract (Table 4). The CC will ensure full access to the AEC and Shejeh Salam team for monitoring of the activity.

Table 4: Implementing Partner Roles and Responsibilities

ROLES AND RESPONSIBILITIES FOR CONSTRUCTION RELATED ACTIVITIES	
POSITION	ROLES AND RESPONSIBILITIES
SHEJEH SALAM (DT Global)	
Chief of Party	– Programmatic integrity and oversight
Deputy Chief of Party – Operations and Finance	– Oversight for environmental compliance and procurement
Infrastructure Manager	– Planning and pre-design
Project Engineer	– On-site construction supervision
	– Environmental compliance
	– Will prepare pre-designs to be submitted to the AEC for review

ROLES AND RESPONSIBILITIES FOR CONSTRUCTION RELATED ACTIVITIES	
POSITION	ROLES AND RESPONSIBILITIES
Regional Project Manager and/or Project Officer	<ul style="list-style-type: none"> - Activity identification - Coordination with beneficiary communities and local authorities
Grants and Procurement Specialist	<ul style="list-style-type: none"> - Preparation of bid and contract documents
DT Global Home Office lines of authority	<ul style="list-style-type: none"> - Risk management and compliance
A/E Contractor	
Project Manager	<ul style="list-style-type: none"> - Monitor the project schedule
Quality Control Manager	<ul style="list-style-type: none"> - Oversee Quality Assurance / Quality Control
Construction Contractor	
Project Manager	<ul style="list-style-type: none"> - Manage the project schedule - Manage the submission of documents and reports to AEC
Construction Manager / Site Supervisor	<ul style="list-style-type: none"> - Oversee construction works
Quality Control Manager	<ul style="list-style-type: none"> - Manage and implement the Construction Quality Control Plan - Ensure testing and monitoring is performed as outlined in the Quality Control Plan - Conduct QC meetings on a weekly basis with the AEC
Environmental, Health and Safety Officer	<ul style="list-style-type: none"> - Manage implementation of the EMMP and Health and Safety Plan - Conduct daily, weekly, and other required Environmental Monitoring Checklists - Responsible for administering or directing first aid on site

2. PLANNING AND PRE-DESIGN

Activity identification and selection will be conducted by the Regional Program Manager (RPM) and/or Program Officer (PO) and other Shejeh Salam staff following procedures outlined in the Shejeh Salam Activity Manual (AM). Environmental screening will be conducted during pre-design site visits.

2.1 DIFFERING SITE CONDITIONS

The Shejeh Salam Engineer will conduct initial site surveys, geotechnical testing, and pre-design investigations, surveys, and activities necessary or reasonably inferable to successfully complete the activity. These investigations will ensure that differing site conditions are taken into consideration during environmental review, as discussed in Section 2.3 below, and engineering design, discussed in Section 3. The AEC will use site specific investigations to develop a Scope of Work and determine whether any modifications are needed to the design templates and selected building codes and standards in order to accommodate local community needs or unique physical characteristics of the site.

2.2 PRE-DESIGN AND DEVELOPMENT OF SCOPES OF WORK

Following activity identification by the RFP/PO, under the guidance of the Shejeh Salam Infrastructure Manager, the Shejeh Salam Engineer will prepare pre-designs to be submitted to the AEC for review, finalization, and approval during the Design phase (see Section 3 below). Agreements that specify owner responsibilities for proper operations, maintenance and management of the infrastructure following construction will be drafted with beneficiaries during the pre-design phase. The RPM/PO will secure necessary authorization from government or local government entities for construction and/or access to identified sites. Specific permits and licenses in compliance with local laws, codes and regulations will be the responsibility of the CC.

Prior to any construction activity, Shejeh Salam will contact the appropriate community management committee (CMC), at the community level, to discuss community engagement in the planning, implementation, and post-implementation phases of the construction and obtain community buy-in and ownership of the project. If a CMC does not exist, Shejeh Salam will establish one and build its capacity to an appropriate level. Shejeh Salam will obtain written agreement from the existing community management committee that they will operate and maintain the finished work and certify that the existing community management committee has the current capacity to do so. If capacity is lacking, Shejeh Salam will train the committee in relevant topics, such as financial and user management.

2.3 ENVIRONMENTAL SCREENING AND COMPLIANCE

In accordance with USAID environmental regulation 22 CFR 216, Shejeh Salam has prepared an Environmental Manual (EM) with guidelines and processes for ensuring environmental compliance. The EM includes a project-wide Environmental Mitigation and Monitoring Plan (EMMP) to minimize or eliminate potential negative environmental impacts of construction related activities. Using the EM as a guide, the Shejeh Salam Project Engineer will prepare an environmental screening of the proposed construction at each site using the Environmental Review Form and Environmental Review Report (ERF-ERR) template in the EM. Report preparation may involve additional visits to the site and will incorporate any site investigations or geotechnical studies conducted during the Pre-design phase.

Based on baseline site-specific information, the Project Engineer will customize the project-wide EMMP from the EM to address the unique biotic and physical site characteristics in order to minimize negative environmental impact. This customized EMMP will be included in the ERF-ERR report and submitted to USAID review and approval.

As required by USAID environmental regulation 22 CFR 216, Shejeh Salam must obtain approval of the ERF-ERR prior to construction. For this reason, it is critical that the environmental compliance process be initiated with environmental screening during the Pre-design phase. Through environmental screening, Shejeh Salam will set forth the remainder of environmental processes that will be implemented by the CC, AEC, and/or Shejeh Salam during subsequent phases. These are described below and summarized in Table 5.

Following approval of the ERF-ERR, Environmental Monitoring Checklists will be developed for monitoring implementation of the mitigation measures in the EMMP, using the Checklist template in the EM. These checklists will be provided to the AEC and included in the Quality Control Plan to ensure compliance. The Monitoring Checklists will also be provided to the CC during the Pre-Construction kick-off meeting following award of the construction sub-contract.

Day to day monitoring of environmental protection measures will be carried by the CC in accordance with the EMMP. To document and ensure implementation, the CC will complete daily and weekly Environmental Monitoring Checklists, and any infractions or discrepancies will be noted in the Daily Construction Reports submitted by the CC Construction Manager. The AEC will review the Environmental Monitoring Checklists on a daily basis, and track follow-up. Any non-compliance with the environmental and social protection measures that is observed will be included in the Non-conformance Reports described in Section 5 below and then monitored until further corrective actions have been carried out and completed.

It is important to note that health and safety requirements to be addressed by the Health and Safety Plan are included as a mitigation measure in the EMMP.

Table 5: Environmental Compliance Requirements by Construction Phase

PHASING OF ENVIRONMENTAL COMPLIANCE REQUIREMENTS	
PHASE	DESCRIPTION
Pre-design	<ul style="list-style-type: none"> – Conduct environmental screening and document results in ERF-ERR – Tailor project-wide EMMP to meet site specific characteristics and screening results in the ERF-ERR – Submit ERF-ERR with site-specific EMMP to USAID for review and approval – Prepare Environmental Monitoring Checklists following USAID approval of EMMP in ERF-ERR – Review EMMP and ERF-ERR with AEC to ensure that all mitigation measures relevant to A/E design activities can be implemented
Design	<ul style="list-style-type: none"> – Incorporate relevant environmental mitigation measures in the EMMP in A/E designs
Procurement	<ul style="list-style-type: none"> – Incorporate environmental mitigation measures as requirements in RFP – Append EMMP to RFP for tenderers – Include environmental compliance criteria in scoring of proposals and selecting awardee – Address the EMMP and Environmental Monitoring requirements in the Kick-off Meetings
Execution	<ul style="list-style-type: none"> – Include environmental monitoring in the Quality Control Plan

	<ul style="list-style-type: none"> - Require that the CC prepare and submit Environmental Monitoring Checklists to AEC and Shejeh Salam on a regular basis for review - Report non-compliance on the Non-conformance Reports and follow-up to ensure that corrective measures are taken - Include relevant mitigation regarding operation and maintenance procedures in the O&M training manuals and trainings
Handover	<ul style="list-style-type: none"> - Include review of proper implementation of all mitigation measures in EMMP in final inspection

3. DESIGN

Shejeh Salam will issue a sub-contract to the AEC to review, finalize and approve initial drawings and designs.

3.1 DESIGN AND DEVELOPMENT OF PLANS/DRAWINGS

The AEC will review the pre-designs provided by the Shejeh Salam Project Engineer and finalize a complete set of drawings that will include the following:

1. Cover Sheet
2. Typical Section Sheet
3. Project Plan
4. Building Elevations and Sections
5. Relevant Structural Drawings
6. Necessary Detail Drawings
7. Necessary Building Massing Views
8. Data used in designing the project, such as ADT, loads, standards, and samples of calculations
9. Photos and/or pictures and related notes.

Following approval, Shejeh Salam will work with the AEC to prepare the Scope of Work (SOW) to summarize the objective, outcomes, and construction tasks, period of performance, and special requirements for the construction activity. The SOW will follow the template provided in Annex I of this CIP.

At the same time, Shejeh Salam will task the AEC with preparing a detailed Technical Specifications document using the template provided in Annex 2 of this CIP. The Technical Specifications will provide detail on standards and requirements for permits and licenses, labor, materials, and conducting all aspects of the construction works following designs and guidance specified by the AEC.

Both the SOW and Technical Specifications will serve as the basis for preparing tender and contract documents during the Procurement Phase (see Section 4 below). Shop drawings and designs will be submitted to AEC for review and approval as required by the technical specifications for each applicable construction package.

3.2 DESIGN DEFECTS AND CORRECTIVE MEASURES

Any design defects must be the responsibility of the AEC at no additional cost to Shejeh Salam and are not an allowable cost under the contract. This will be included as a clause and point of agreement in the AEC subcontract.

3.3 BUILDING STANDARDS AND CODES

In the absence of other Standards being required by the Specifications and Contract Documents, all work and materials will meet the requirement of the International Building Code (IBC), and/or applicable American Society for Testing Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO) Specifications and the latest American Concrete Institute Manual of Concrete Practice and American Institute of Steel Construction (AISC) Manual relevant to the Works.

If the AEC or CC, at any time or for any specific reason, wishes to deviate from the above standards or desires to use materials or equipment other than those provided for by the above standards, then they will state the exact nature of the change giving the reasons for making the change and will submit a consent request with the complete specifications of the materials and descriptions of the equipment with a detailed explanation regarding the reason for the proposed change to Shejeh Salam. Shejeh Salam will seek recommendation from the AEC, and prepare a response regarding the request. CEP will seek authorization from USAID for before any consents are granted.

3.4 TECHNICAL SPECIFICATIONS

The AEC will prepare a Technical Specifications document for each construction activity that will serve as a guide for developing bid documents and also for informing the construction works. Following the template provided in Annex 2 of this CIP, the Technical Specifications will specify standards and codes, and be specific to the site location and based on site inspections and pre-design or design surveys.

4. PROCUREMENT

Shejeh Salam will competitively bid all construction activities as best value procurements and all will be on a firm fixed price basis. The Procurement Team, with support from the Infrastructure Manager will manage the preparation of requests for tender documents for the AEC and CC during this phase.

4.1 REQUESTS FOR PROPOSAL DOCUMENTS

Key elements in the preparation of Requests for Proposals include the following:

- Following identification of a construction activity by Shejeh Salam a cost estimate will be prepared by the Shejeh Salam Infrastructure Manager or AEC for COR review
- Following COR approval, the Procurement Team, with support from the Infrastructure Manager, will prepare the RFP for the A/E design activities to be competitively bid.
- Shejeh Salam will oversee the procurement process for the AEC and task the AEC with final design of activities.
- With final designs and estimate completed, Shejeh Salam will the finalize the RFP and conduct a procurement process to select a CC.
- Upon selection of a CC, Shejeh Salam will organize a kick-off meeting, as detailed in Section 4.3.1 below, to kickstart construction and clarify any coordination points, roles, and responsibilities.
- Upon completion of construction works by the CC and technical verification from the AEC, the finalized product will be handed over to the corresponding beneficiary along with any necessary O&M manuals and approved process (see Section 6 below).

4.1.1 INDEPENDENT ESTIMATES

Note: Contract Modification 02 states that Shejeh Salam is required to develop an independent estimate and submit it to the COR for approval before moving forward on any phase of the project. Depending on the nature of the construction task, these estimates will be prepared by the Shejeh Salam Infrastructure Manager and will be submitted to the COR as part of the activity yellow light approval process.

4.1.2 SURVEY OF SITE SPECIFIC CONDITIONS

Where feasible, the RFP will require that tenderers conduct a site visit and incorporate relevant site considerations into the technical and cost proposals of the tender package. This practice is expected to minimize the potential for cost over-runs or project delays due to site specific constraints.

4.1.3 ENVIRONMENTAL AND HEALTH, SAFETY AND SECURITY REQUIREMENTS

Requirements for ensuring environmental compliance, health and safety, and security will be incorporated into the Requests for Proposal package so that tenderers may plan for and price labor and logistics for implementing these measures according to USAID requirements. A construction contractor's proposed methods for implementing environmental, health, safety and security will be factored into proposal evaluation and determination of final contract awards.

4.1.4 BONDING AND LICENSING

All AECs must be licensed in the US. All construction work must include a minimum performance bond or guarantee of 10% of the construction subcontract price.

4.2 AWARD OF SUB-CONTRACTS AND SPECIAL REQUIREMENTS

The contract award will include, among other regular specifications, the requirements described below.

4.2.1 NOTICE TO PROCEED

When a subcontract has been full-executed, Shejeh Salam will issue a notice to proceed to both the CC and AEC so they know to proceed with the work.

4.2.2 SPECIAL PLANS

The contract will require that the CC provide the following plans to the AEC for review and approval within the designated calendar days from Contract Award:

File Naming and Record Keeping Plan - The CC must submit a File Naming and Record Keeping Plan to the AEC for review and approval within ten (10) calendar days from the Contract Award. At a minimum, the plans will contain a standardized project file naming convention, submission, and file organization section. The CC will update and maintain a tracking log with all outstanding issues, listed responsible parties, date activity is due, and date the item was submitted.

Quality Control Plan (QCP) – Using a template provided by Shejeh Salam, the CC must submit a QCP specific to the location and scope of the construction activity and submit it to the AEC for review and approval within fourteen (14) calendar days from the Contract Award. The template for the QCP is provided in Annex 3 of this CIP.

Health, Safety and Security Plan (HSSP) - Using a template provided by Shejeh Salam, the CC must prepare a HSSP specific to the location and scope of the construction activity and submit it to the AEC for review and approval within fourteen (14) calendar days from the Contract Award. The template for the Health, Safety and Security Plan is provided in Annex 4 of this CIP.

4.3 KICK-OFF MEETINGS

4.3.1 PRE-CONSTRUCTION CONFERENCE

Shejeh Salam will schedule and conduct a Pre-construction Conference, no later than 14 days after Contract Award. Conduct the conference to review responsibilities and personnel assignments. Attendees will include Shejeh Salam, the AEC, and CC Key Personnel. The CC's major subcontractors, suppliers, and/or other concerned parties will attend the conference as necessary. Participants at the conference will be familiar with contract activity and authorized to conclude matters relating to the Scope of Work.

At a minimum, the meeting agenda will include:

1. Tentative construction schedule
2. Phasing
3. Critical work sequencing and long-lead items
4. Designation of key personnel and their duties
5. Lines of communications
6. Procedures for processing field decisions and Change Orders
7. Procedures for RFIs

8. Procedures for testing and inspecting
9. Procedures for processing Applications for Payment
10. Distribution of Contract Documents
11. Submittal procedure
12. Preparation of record documents
13. Use of the premises, including work restrictions, working hours, owner's occupancy requirements. responsibility for temporary facilities and controls
14. Site management issues such as procedures for disruptions and shutdowns, construction waste management and recycling, parking, and staging of equipment and heavy machinery,
15. Environmental compliance and review of EMMP and Environmental Monitoring Checklists
16. Health, Safety and Security Plan.

Shejeh Salam will be responsible for preparing the meeting minutes to contain significant discussions and agreements achieved. Shejeh Salam will distribute the meeting minutes to the COR, AEC and relevant participants for a seven day comment and approval period within three days of the meeting. Shejeh Salam will submit a final approved version of the minutes no later than fourteen days after the meeting occurrence.

4.3.2 PRE-INSTALLATION CONFERENCE

For the installation of major equipment, Shejeh Salam will conduct a Pre-installation Conference at the project site before each construction activity that requires coordination with other construction entities, beneficiaries, or community. Attendees will include installers and/or representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, will attend the meeting. Shejeh Salam will advise the AEC and CC of the scheduled meeting date.

At a minimum, the meeting will include a discussion of:

1. Contract Documents
2. Related RFIs
3. Purchases
4. Deliveries
5. Submittals and review of mockups
6. Possible conflicts
7. Compatibility requirements
8. Time schedules and weather limitations
9. Manufacturer's written instructions
10. Compatibility of materials
11. Acceptability of substrates
12. Temporary facilities and controls
13. Space and access limitations
14. Regulations of authorities having jurisdiction
15. Testing and inspecting requirements
16. Installation procedures
17. Required testing and performance results
18. Protection of adjacent work
19. Relevant health and safety requirements in the HSSP
20. Relevant environmental requirements in the EMMP.

Shejeh Salam or designated AEC will be responsible preparing the meeting minutes to contain significant discussions and agreements achieved. Shejeh Salam will distribute the meeting minutes to the COR, AEC, CC and relevant participants for a seven day comment and approval period within three days of the meeting. Shejeh Salam will submit a final approved version of the minutes no later than fourteen days after the meeting occurrence.

4.4 CONSTRUCTION CHANGES AND CLAIMS

The CC must engage Shejeh Salam and receive approval prior to negotiating and settling any claims. Requests for changes or substitutions will be submitted immediately on discovery of need for change, but not later than 14 days prior to time required for preparation and review of related submittals. Shejeh Salam must submit all claims to the CO for approval. The AEC will consider the CC's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, AEC will return requests without action, except to record noncompliance with these requirements:

- Requested substitution is consistent with the Contract Documents and will produce indicated results.
- Substitution request is fully documented and properly submitted.
- Requested substitution will not adversely affect CC construction schedule.
- Requested substitution has received necessary approvals of authorities having jurisdiction.
- Requested substitution is compatible with other portions of the Work.
- Requested substitution has been coordinated with other portions of the Work.
- Requested substitution provides specified warranty.
- If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- If any claim represents a substantive change to scope, period of performance or budget –Shejeh Salam must submit the claim to the CO for approval prior to negotiation and settlement.

4.5 OTHER SUB-CONTRACT CONDITIONS

4.5.1 SUSPENSION OF WORK

If for some reason of force majeure or other unforeseen circumstances, the works are suspended for a period of more than 15 calendar days and the Supervising Engineer and/or DT Global Engineer estimate that there will be an extension of this situation, DT Global may order suspension of the works by notifying the AEC/CC in writing via letter or email. The suspension order will remain in place until DT Global Contracts Director notifies the AEC/CC in writing via letter or email to resume works. From the date of the suspension order and until to the resumption of the works, DT Global will not accept or process any payments against invoices submitted by the AEC/CC, except for works completed prior to the suspension and will only pay for works completed and verified by the Supervising Engineer and DT Global Infrastructure Manager.

4.5.2 EXTENSION OF TIME

This subcontract may be extended and/or modified only by written instrument signed by both parties. The parties' rights to modify or amend this subcontract may be subject to approval by USAID.

4.5.3 LATE DELIVERY / LIQUIDATED DAMAGES

If the AEC/CC shall fail to complete the works within the time for completion prescribed in this subcontract, or any extended time for completion in accordance with this subcontract, then the subcontractor shall pay to DT Global the sum specified in this AEC/CC as liquidated damages, for the delay between the time prescribed in the subcontract or the extended time for completion, as the case may be at a rate X.X% (rate will vary depending on the subcontract) of the price of the subcontract for each calendar day of delay until the work is completed or accepted. The said sum shall be payable by the sole fact of the delay without the need for any previous notice or any legal proceedings, or proof of damage, which shall in all cases be considered as ascertained. The employer may, without prejudice to any other method of recovery, deduct the amount of such liquidated damages from any monies in its hands due or which may become due to the AEC/CC. The payment or deduction of such damages shall not relieve the subcontractor from his obligation to complete the works or from any other of his obligations and liabilities under the subcontract.

If DT Global orders alterations or additions in the Works in accordance with Article 4 hereof, or if circumstances constituting force majeure as defined in the subcontract have occurred, the AEC/CC shall be entitled to apply for an extension of the time for completion of the works specified in the subcontract. DT Global shall, upon such application, determine the period of any such extension of time; provided that in the case of alteration or additions in the works, the application such an extension must be made before the alterations or additions in the works are undertaken by the subcontractor.

4.5.4 TERMINATION OF CONTRACT

DT Global shall have the right to terminate this sub-contract upon the occurrence of any of the following:

- Termination of the Prime Contract between DT Global and USAID for any reason whatsoever.
- Termination of funding for the project for any reason whatsoever.
- If the contractor fails to commence the Works or shows insufficient progress to the extent which in the opinion of the Infrastructure Manager will not enable him to meet the target completion date of the works.
- If the Construction Contractor suspends the progress of the works without due cause for fifteen (15) days after the signing of the subcontract.
- If the AEC/CC fails to comply with any of the subcontract conditions or fails to fulfill his obligations and does not remedy the cause of his failure within Ten (10) days after being notified to do so in writing.
- If the AEC/CC is not executing the work in accordance with standards of workmanship specified in the Subcontract.
- If the AEC/CC gives or promises to give a present or loan or reward to any employee of DT Global.
- Subcontractor shall be liable for all extra costs incurred resulting from AEC/CC 's default.
- In the event that either party is prevented by force majeure for a continual period of more than 30 days from fulfilling its obligation under this Subcontract, the other party may terminate this Subcontract upon fifteen (15) days written notice; DT Global agrees to reimburse the AEC/CC

for the invoice value of all approved materials on site in the case of civil disorder or violence that prevents the successful completion of this Subcontract.

4.5.5 USE OF CHILD LABOR, GENDER EQUITY, ANTIQUITIES

The AEC/CC shall refrain from engaging in any abusive or destructive practices in South Sudan inclusive of but not limited to:

- Use of child labor
- Mistreatment based on gender
- Human trafficking
- Destruction of antiquities (ancient artifacts found at construction sites).

5. EXECUTION

5.1 PERMITS

The CC must obtain all required permits and licenses before any construction begins; DT Global will ensure all relevant permits and licenses are obtained and assist the CC if the need arises. However, the CC will be responsible for obtaining any necessary licenses and permits, and for complying with any government laws, codes, and regulations applicable to the performance of the work. The CC may request the AEC in writing if any reasonable assistance is needed in the permit clearance process. However, a request for assistance will not relieve the CC of any responsibility or obligation for these tasks, nor will the AEC/CC hold USAID liable for any delays, damages, or inability to assist.

5.2 SCHEDULES

The CC will develop and update a schedule inclusive of all procurement and construction activities and provide a narrative for the execution of the contract, in accordance with this section.

5.2.1 DETAILED BASELINE PROJECT SCHEDULE

The CC's preliminary schedule will be fully developed and contain enough detail for the COR, Shejeh Salam and AEC to accurately determine any potential delays, added costs, and determine work complete for payment. The CC will prepare and submit a Detailed Project Schedule within thirty (30) calendar days from the approval of the preliminary project schedule. The Detailed Schedule will be appropriately cost, and resource loaded. The COR will reserve the right to determine the appropriate level of detail to be provided in the schedule.

Cost loading will indicate costs for each task, which will be equal the total Contract value and will not exceed CLIN values as listed in Section B of the contract. Resource loading will be used to compare required resources (equipment, material, and personnel) for each task against the total resources available to the CC. The resource loaded schedule will indicate areas of resource constraints and may cause the schedule to be modified in light of such constraints. The COR will have the final right to determine the level of detail required in the Project Schedule.

5.2.2 CRITICAL PATH METHOD

The Project Schedule will employ the Critical Path Method (CPM) format and, at a minimum, include durations, succinct descriptions, early and late start and finish dates, float, and dependencies for each activity. No activities will commence prior to the Contract Award date and continue after the Contract End Date.

The level of detail and number of activities incorporated in the construction schedule will be sufficient to identify constraints, delays and effects by dependent activities and resources. All activities will be organized in a logical work breakdown structure, indicating work stages and phases, and will clearly indicate critical path(s) of each CLIN and/or segment of the Works, and the overall critical path for the project. All activity descriptions will be unique, describing discrete elements of work. All activities will have an activity identification number related to the work breakdown structure. The schedule will be expressed in calendar days. At a minimum, the schedule will include:

- AEC/CC's mobilization and demobilization.

- All site investigation activities.
- All surveying and layout activities.
- Major construction activities and milestones.
- Quality control inspection and testing.
- Material and equipment procurement submittals.
- Shop drawing preparation and submittals.
- Submittal review by the AEC and/or COR
- Activities associated with the procurement, purchase, fabrication and shipment of materials and equipment
- Activities associated with the procurement and shipment of all Construction Contractor's Equipment, necessary for the performance of the contract
- Testing and commissioning
- Activities (including required testing) associated with the approval of materials and equipment required for the performance of this contract
- United States Federal and local holidays adhered by the US Embassy in South Sudan
- Anticipated weather delays using historical data published monthly averages
- Activities that may require monitoring.

5.3 REPORTING AND SITE SUPERVISION

The CC's Construction Manager will complete and submit to the AEC three daily reports as described below.

1. The Construction Management Daily Report will include:
 - **Conditions** – weather, moisture, soil conditions, etc. (Note when and how adverse condition hampered or shut down a CC's operation)
 - **Activities** – work status, including locations (include description of each activity and the inspection phase, i.e., Preparatory, Initial, Follow-up).
 - **Controversial matters** – disputes, questionable items, noting if they were settled and, if so, how they were settled).
 - **Deficiencies and violations** – description, location, and corrective action.
 - **Instructions given and received** – identify recipient and source.
 - **Progress information** – report all delays, action taken or action contemplated.
 - **Equipment** – report arrival and departure of each major item of equipment by manufacturer, model, serial number, and capacity: report equipment in use and idle equipment.
 - **Other reports** – document that environmental and quality assurance reports are identified, dated, and signed.
2. The CC will also complete a separate Daily Quality Control Report as described below in Section 5. It is not necessary to repeat, in the Daily Construction Management Reports, items that have already been listed on the QCP daily reports.

The Environmental Monitoring Checklist will be completed daily as described in Section 3 above.

These three daily reports (Construction Management Daily Report, Quality Control Daily Report, and Environmental Monitoring Checklist) will be reviewed by the AEC each day for accuracy and to assure that instructions received are noted.

5.4 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

Construction quality throughout construction will be ensured through an integrated system of the CC's Quality Control Plan (QCP) and Quality Assurance services provided by the AEC. The CC will be responsible for constructing the work in accordance with approved plans and specifications. The CC is responsible for establishing procedures, checks and controls during the construction process which will assure that construction quality (as required by contract documents) is maintained. These procedures checks and balances will be described in a Construction Quality Control Plan to be prepared by the CC and submitted to the AEC for review and approval no more than 14 days after Contract Award. The QCP will follow the template provided in Annex 3 of this CIP and will include considerations specific to the site location and scope of work.

Before start of construction, the Shejeh Salam and/or the designated AEC will conduct a mutual understanding meeting with the construction contractor and discuss the CC's Quality Control Plan. Construction will not commence until the mutual understanding meeting and submittal/acceptance of at least the Interim QCP. The AEC will assure that the CC Quality Control plan are sufficient to obtain quality of construction designed in the contract plans and specifications.

The CC Quality Control Manager will implement the Quality Control Plan, following three phases of control, submittal review and approval, testing, completion inspections, and QC certifications and documentation necessary to provide, materials, equipment, workmanship, fabrication, construction, and operations which comply with the requirements of this Contract. The QC program will cover on-site and off-site work. No testing may be performed unless the QC Manager is on the work site.

This Quality Control Plan will comprise the following 3 phases of monitoring and inspection:

- **Preparatory phase meetings:** Quality Control meeting will be held before each definable feature of work to ensure that the documentation is complete, materials are on hand, and the people who are to perform the work understand what they need to know about the feature of work. Both the actual contract specifications and those referenced in the contract specifications will be in the contractor's library and available for QC inspections.
- **Initial Inspections:** QC inspections will be conducted in a timely manner at the beginning of a definable feature of work.
- **Follow-up Inspections:** follow-up inspections. Also conducted by Shejeh Salam and/or AEC, occur daily when work is in progress and are for the purpose of assuring that the controls established in the earlier phases of inspection continue to provide work which conforms to the contract requirements. Most of the comments in both the CC Quality control and Quality control daily reports will result from these inspections.

The CC Quality Control Engineer will closely monitor to assure that the 3-phase control system is being correctly performed and that the CC is effectively controlling all operations. In the event that CC Quality Control personnel are not capable and/or are not inspecting properly, the AEC will notify the

CC immediately and will correct performance by using one or more of the enforcement tools provided for in the construction contract. Records and reports will document all facts.

- Shejeh Salam Project Engineer together with the AEC will monitor activity to:
- Watch for omissions from approved designs;
- Watch for discrepancies between constructed works and approved plans and specifications;
- Compare elevations, grades and details shown on plans as existing, with those at the actual site; and
- Document and report all errors, omissions, discrepancies, and deficiencies.

5.4.1 ROLES AND RESPONSIBILITIES OF CC'S QUALITY CONTROL MANAGER

The CC's Quality Control Manager will have the following responsibilities:

- Participate in the Post Award Conference, Pre-construction and/or Pre-Installation Conferences, Coordination Meetings, and Mutual Understanding Meetings.
- Implement the "Three Phases of Control" plan for each DFOW and notify the AEC at least three (3) business days in advance of each Preparatory and Initial Phase meeting. Finalize respective checklists the following business day.
- Inspect all work and rework, using International Conference of Building Officials certified QC specialists as applicable, to ensure its compliance with contract requirements. Maintain a Rework Log.
- Immediately stop any segment of work, which does not comply with the contract requirements and direct the removal and replacement of any defective work. Remove any individual from the site who fails to perform their work in a skillful, safe, and workmanlike manner or whose work does not comply with the contract plans and specifications.
- Prepare daily QC Reports.
- Provide photographic documentation to support the work, including the implementation of required environmental mitigation measures.
- Photograph construction related to existing work to be covered by contract modifications and required rework as follows;
 - View of as-is conditions prior to modification/ rework.
 - View of as-is conditions with existing exterior enclosure and interior finishes removed before modification/ new work begins.
 - View of new/ modified construction prior to being covered by exterior enclosure and interior finishes.
 - View of completed new/ modified construction.
- Ensure that Contractor Production Reports are prepared daily.
- Hold bi-weekly QC meetings with the Superintendent and AEC; participation will be suitable for the phase of work. Distribute minutes of these meetings.
- Ensure that construction submittals are reviewed and approved, as required by the contract, prior to allowing material on site and work to proceed with these items. Maintain a submittal register.
- Update As-built drawings daily, maintaining up-to-date set on site.
- Maintain a testing plan and log. Ensure that all testing is performed in accordance with the contract. Review all test reports and notify the AEC of all deficiencies, along with a proposal for corrective action.

- Maintain an environmental monitoring log and required Environmental Monitoring Checklists, following the requirements specified in the EMMP, noting dates deficiencies are identified, and date corrected on the Checklists.
- Maintain rework log on site, noting dates deficiency identified, and date corrected.
- Certify and sign statement on each invoice that all work to be paid under the invoice has been completed in accordance with contract requirements.
- Perform Punch-out and participate in Pre-final and Final Acceptance Inspections. Submit list of deficiencies to the AEC for each inspection. Correct all deficiencies prior to the Final inspection. Notify DT Global, who will notify the COR, prior to final inspection to establish an acceptable date.
- Ensure that all required keys, operation and maintenance manuals, warranty certificates, and the As-built drawings are correct and complete, in accordance with the contract, and submitted to the AEC.
- Assure that all applicable tests, special inspections, and observations required by the contract are performed.
- Coordinate all factory and on-site testing, Testing Laboratory personnel, QC Specialists, and any other inspection and testing personnel required by this Contract.
- Notify the AEC and DT Global of any proposed changes to the QC plan. DT Global will request formal approval to CO via the COR. All changes will be submitted to the COR for review and approval prior to implementation.
- Retain a copy of approved submittals at project site, including CC's copy of approved samples.
- Coordinate training of maintenance personnel with the Preparer to assure training materials and training classes are accurate and provide instruction and documentation on critical elements of the products, materials, and systems in the constructed facility.

5.4.2 QC VERIFICATION BY THE AEC

The AEC verifies Quality Control record accuracy and maintains copies of all quality-related documentation. This includes, but may not be limited to:

1. Daily construction Quality Control logs and records
2. Inspection checklists and reports
3. Surveillance reports
4. Non-conformance reports
5. Material receiving reports
6. Monitoring and test data.

These records will be stored in files maintained in the project document control files. The AEC has primary responsibility for the centralized document control files for the project and construction documentation. The CC/AEC will maintain a fire-resistant storage facility at the construction site or other designated secure location. The facility will contain all inspection reports, test records, contract documents, project, and daily field reports. All records will be available for inspection and audit, at any time, by Shejeh Salam or USAID.

5.5 CONSTRUCTION MANAGEMENT TRAINING FOR SITE SUPERVISORS

The CC will provide training for all site supervisors.

5.6 INSPECTION AND ACCEPTANCE OF KEY CONSTRUCTION PHASES

Construction acceptance criteria for materials qualifications, inspection, and testing are established by technical specifications as illustrated in the example Quality Control tables provided in the QCP Template in Annex 3. Criteria for materials and equipment will be submitted to Shejeh Salam in accordance with the applicable codes and standards, and by manufacturers' recommendations. Construction Contractor submittals are to document conformance with acceptance criteria as detailed in their Quality Control Plan (control, verification, and acceptance testing plan).

Report forms will be completed for inspections and tests conducted. The forms vary depending on inspection or test type. Representative forms for several types of inspection and testing reports are included in the QCP template. These forms will include:

1. Description or title of the inspection activity
2. Location of the inspection activity or location from which the sample was obtained
3. Recorded observation or test data
4. Results of the inspection activity
5. Personnel involved in the inspection activity
6. Signature of the inspector.

Construction deliverables to monitor and track quality and progress during each Phase are summarized in Table 6 below.

Table 6: Summary of Deliverables by Phase

PHASING OF Shejeh Salam CONSTRUCTION RELATED ACTIVITIES		
DELIVERABLES	PREPARED BY	DUE DATE
Pre-design Phase		
Activity and site-specific Environmental Review Report (ERR) with EMMP and Environmental Monitoring Checklists - following template provided in the Shejeh Salam Environmental Manual (EM)	Shejeh Salam Engineer (Reviewed by DCOP and HO Environmental Specialist for quality control) (see Section 2.2)	Prior to construction
Memorandum of Understanding with beneficiary or owner on operations and maintenance	Shejeh Salam (see Sections 2.1 and 6.1)	Prior to procurement
Design Phase		
Drawings and Designs	AEC or Shejeh Salam (see Section 3.1)	Prior to Procurement
Scope of Work (SOW)	AEC or Shejeh Salam (see Section 3.4)	Prior to procurement
Technical Specifications	AEC or Shejeh Salam (see Section 3.4)	Prior to procurement
Procurement Phase		
Request for Proposals (RFP)	AEC or Shejeh Salam (see Section 4.1)	Not applicable
A/E Supervision or Construction Contract	Shejeh Salam (see Section 4.1)	Not applicable
File Naming and Record Keeping Plan	CC (see Section 4.2)	10 days after Contract Award
Minutes of Pre-installation Conference	Shejeh Salam (see Section 4.3)	Five days after the conference – when applicable

**PHASING OF Shejeh Salam CONSTRUCTION
RELATED ACTIVITIES**

DELIVERABLES	PREPARED BY	DUE DATE
Minutes of Pre-construction Conference	Shejeh Salam (see Section 4.3)	Five days after the conference – when applicable
Execution Phase		
Completed Environmental Monitoring Checklists - following forms in ERR provided by Shejeh Salam (see illustrative checklist in the Shejeh Salam EM)	CC (see Section 2.2)	Daily, Weekly and Monthly, as specified for each mitigation measure in EMMP
Permits	CC (see Section 5.1)	Prior to start of construction
Construction Work Plan	CC	10 days after Contract Award
Ad Hoc Special Reports, Justifications, Prices of Construction Materials and Human Resources in Work Site, Agreements, and Certificates of CC's subcontractors, etc.	CC	Prior to start of construction
Machinery and Equipment List with documents proving they are available for the duration of project	CC	Prior to start of construction
Preliminary Project Schedule	CC (see Section 5.2)	Prior to start of construction
Detailed Project Schedule	CC (see Section 5.2)	30 days following approval of Preliminary Project Schedule
Daily Quality Control Report	CC (see Section 5.3)	Daily
CC Quality Control Plan (QCP) - following template in Annex 3 of this CIP	CC (see Section 5.4)	14 days after Contract Award and prior to start of construction
Proposal for changes, revisions, time extension, etc.	CC (see Section 5.5)	Prior to start of construction
Non-conformance Reports (following example provided in QCP Template in Annex 3)	AEC or Shejeh Salam (see Section 5.7)	As needed, during oversight
Certificates for imported construction materials (cement, steel, pipes, paints, etc.)	CC (see Section 5.8)	Prior to start of construction
Quality Test Results for Materials, as specified in Quality Control Plan (see examples provided in QCP Template in Annex 3)	CC (see Section 5.8)	As needed, prior to use of materials and materials used only after approved by AEC
As-built Drawings	CC (see Section 5.9)	As needed, as work is completed
CC Health, Safety and Security Plan (HSSP) - following Template in Annex 4 of this CIP	CC (see Section 5.10)	14 days after Contract Award and prior to start of construction
Weekly and Monthly Progress Reports including photos with embedded date and time	CC	Weekly and Monthly
Invoices conforming to DT GLOBAL Shejeh Salam requirements	CC	Monthly
Final Work Completion Report	CC	After construction is completed
Handover Phase		
Request for final check of Punch List	CC (see Section 6.1)	After construction is completed

**PHASING OF Shejeh Salam CONSTRUCTION
RELATED ACTIVITIES**

DELIVERABLES	PREPARED BY	DUE DATE
Final Punch List	CC (see Section 6.1)	After request for final check of Punch List is received by AEC
Manual(s) for Operations, Maintenance, and Emergency Procedures	CC (see Section 6.5)	Draft received no less than 30 days before training, and final documents revised no more than 15 days after comments received by AEC
Training and related Materials for Operations, Maintenance and Emergency Procedures	CC (see Section 6.5)	No less than 10 days prior to the training
Warranty	CC (see Section 6.5)	Effective from receipt of Notice of Final Acceptance for a duration of one year
Final invoice	CC (see Section 6.2)	After final punch list is completed

5.7 NON-CONFORMANCE AND CORRECTION OF DEFECTIVE WORK

Identification of Non-conformance or Defective Work. When material, performed work, or installation is found deficient, the CC, under close supervision of the AEC, will ensure that the non-conforming material, work, or installation is identified and controlled to prevent unintended use or delivery. The AEC will notify the CC and DT Global of non-compliance with any of the foregoing requirements. The CC will, after receipt of such notice, immediately take corrective action.

Minor deficiencies noted during test or inspection are be verbally reported to the CC’s Construction Manager and noted on the Daily Construction Report. Minor deficiencies are items that do not require significant rework or repair work to correct, and will not result in significant deviations from required quality standard if corrected immediately. Control and disposition of such deficiencies will be by the originator of the Daily Construction Report and the CC responsible for the work and do not require formal action by AEC. Ideally, such minor deficiencies can be corrected on the spot by agreement with the CC’s supervisor.

Non-conformances are major deviations from the contract requirement and/or accepted standard of quality, which will be formally documented for corrective action by CC field staff or the third party testing group. Failure by the CC to correct a minor deficiency after having been put on notice will also result in a non-conformance if it is not corrected within 5 days of notification.

Non-conformance Reporting. The AEC will maintain a log for all Non-conformance reports. The Non-conformance report will be distributed to the CC, AEC, and Shejeh Salam. The CC’s Quality Control Engineer will follow up on the Non-conformance report as required to verify that corrective action Report has been completed. Shejeh Salam will verify and accept the corrected work by actual inspection.

When material, performed work or installation is found to be deficient and/or does not meet the project specifications, the CC, under close supervision of the AEC, will ensure that the non-conforming material, work, or installation is identified and controlled to prevent unintended use or delivery. The non-conforming material or item will be tagged and segregated by the CC, when practical, from

conforming material or items to preclude their inadvertent use. If segregation is impractical or impossible because of the physical characteristics of the item or other reasons, the non-conformance tag will be displayed prominently to preclude inadvertent use.

The AEC is responsible for documenting erroneous practices and the use of defective products in a Non-conformance Report. Upon receipt of a Non-conformance Report, the CC will implement corrective actions to remedy work that is not in accordance with the drawings and specifications. The corrective actions will include removal and replacement of deficient work using methods approved by the AEC. Removal will be done in a manner that does not disturb work that already meets Quality Control criteria; otherwise, the disturbed material will also be removed and replaced. Replacement will be done in accordance with the corresponding technical specifications. Replacement will be subjected to the same scope of Quality Control inspection and testing as the original work. If the replacement work is not in accordance with the drawings and specifications, the replacement work will be removed, replaced, re inspected, and re-tested.

Preventive Actions. Preventive actions are to be taken to eliminate the cause of a potential non-conformity. For example, defects that appear on the surface of concrete during construction or within a relatively short time after completion are usually caused by poor quality materials, improper mix design, lack of proper placing and curing procedures, or poor workmanship. The CC will take preventive actions as necessary to eliminate the causes of potential deficiencies so as to prevent their occurrence.

The CC's QCP will include quality improvement practices to continually improve construction practices and address quality problems at their source. The AEC will monitor, inspect, and audit processes used to prevent the use of erroneous information or construction products. As such, the AEC has the authority to implement, verify and review the effectiveness of preventive and corrective actions taken by the CC in order to minimize the occurrence of potential non-conformities.

5.8 CUSTODY AND CONTROL OF MATERIAL

Custody and control of material will include the Manufacturer's Certificate of Compliance, inspection, and quality control testing of construction materials. The AEC will inspect the activities to ensure technical compliance in identification, handling, storage, packaging, preservation, and delivery of materials, parts, assemblies, and end products. Related quality records and documents will be maintained and controlled in accordance with the procedures provided in the Quality Control Plan.

5.8.1 MATERIAL IDENTIFICATION AND TRACEABILITY

Shejeh Salam field staff will monitor the construction contractor to ensure that identification and traceability requirements are met. Products and materials will be traced from receipt through all project stages to installation. Documentation such as project control checklists, material receipts, material tracking forms, procedures, sample and test documentation, and reports will ensure that the applicable material item traceability is maintained. Project specifications and/or procedures define product identification and traceability requirements, which generally include the following:

- Materials or equipment intended for use in construction are identified and segregated until inspection confirms that they conform to technical and quality requirements
- Materials are traceable to documents attesting to their conformance with technical requirements that are stated in specifications or drawings

- Testing of materials will also be conducted as necessary to verify conformance with material specifications.

5.8.2 MATERIALS TESTING

As required by the contract specifications, the CC will establish a test program to ensure that all required testing is properly identified, planned, documented, and performed under controlled and suitable environmental conditions, including cleanliness. Testing will be performed in accordance with written test procedures in the Quality Control Plan (QCP), following the QCP Template provided in Annex 4). Such test procedures will incorporate or reference the requirements as contained in the contract technical specifications, codes, and industry standards. Per the QCP, the CC will submit the test procedures to the AEC for review and acceptance prior to their implementation.

The CC will propose a materials testing laboratory as part of the work plan. AEC approval of the proposed laboratory will be based on the following criteria:

- Qualification of key personnel and laboratory technicians
- Calibration documentation for all testing equipment for required tests
- Availability, condition, and capacity of facilities and testing equipment.

The contractor will be responsible for establishing a system of daily test reports that will record all Quality Control test results. Test forms for documenting results are included in the QCP Template (Annex 4). Test results from each day's work period will be submitted to the AEC prior to the start of the next day's work period. When required by the technical specifications, the CC will maintain statistical Quality Control charts. The CC's responsible technician will sign the daily test reports. The AEC will review test results on a daily basis and identify any non-conforming test results for discussion with the CC regarding potential corrective action.

5.9 DEVELOPMENT, SUBMISSION, AND REVIEW OF "AS-BUILTS"

5.9.1 PREPARATION OF AS-BUILT DRAWINGS

The CC will be responsible for red-lining construction drawings in the field as preparation for as-built drawings. The as-built drawings will record approved actual field conditions upon completion of the work. The original design drawings will be marked up by the CC as the project progresses to indicate as-built conditions. Where a change was made to a specified material, dimension, location, or other feature, the as-built drawing will indicate the actual work performed. The CC will be responsible for assuring that red-line record drawings are maintained daily throughout the construction process.

5.9.2 REVIEW OF AS BUILT DRAWINGS

Upon the completion of the As-Built red-line drawings, the CC will submit the red-line mark-up drawings to the AEC for review. Final as-built drawings will be provided to Shejeh Salam.

5.10 HEALTH, SAFETY, AND SECURITY PLAN

Following the template provided in Annex 4, the CC will prepare a HSSP specific to the site location and scope of construction activities within 14 days of Contract Award. The HSSP will be reviewed and approved by the AEC prior to the start of construction. At a minimum, all health and safety plans must

require all workers to wear protective footwear, safety vests, head and face protection, and appropriate clothing, and must have a reporting and tracking system of accidents that are reported to the COR and CO.

6. HANDOVER

6.1 FINAL INSPECTION

The CC, AEC and Shejeh Salam will perform a final inspection of the work upon completion and:

- Develop a “punch list” of items that do not conform to the approved plans and specifications
- Include the punch list in the construction Quality Control documentation
- Include the estimated date by which the deficiencies will be corrected.
- Perform a second completion inspection after punch list items have been completed and the Engineer has been notified by the CC.

The daily inspection reports will identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective action taken or proposed. Shejeh Salam will review daily inspection reports on a regular basis as specified in the AEC supervision services contract.

Additional Quality Control inspections may include inspection of third-party lab testing facilities, fabrication facilities, and suppliers. Other inspections outside of the four-phase program described above will be ordered or performed by Shejeh Salam to verify compliance with building code and standards. These inspections will be performed and conducted at various points of construction that would typically require code compliance inspections.

When deficiencies are discovered during the four-phase or other inspection processes, focused inspection will be considered by the AEC. When material, performed work, or installation is found on the basis of focused inspections to be deficient and/or does not meet the project specifications, the CC will assure deficiency correction is implemented, as discussed previously.

A final Work Completion Report will include:

- Record (as-built) drawings
- Operation and maintenance manuals; and
- Results of the Start-up and Testing Plan and the Commissioning Plan implemented for each major piece of equipment or system before system turnover, in accordance with Technical Specification Requirements.

6.2 PAYMENTS

Both AEC and CC shall be paid on the basis of jointly approved field reports, prepared by DT Global field staff, which validate and confirm successful achievement of milestones agreed upon within the subcontract and which is then formally certified by the DT Global Infrastructure Manager and approved by the Chief of Party.

6.3 DISPUTES AND CLAIMS

In the unlikely event of failure to reach agreement between DT Global and any AEC/CC may submit the dispute to a mutually agreed upon board of arbitrations. Notwithstanding any such dispute, both parties shall proceed with the performance of the subcontract. DT Global will continue to reimburse the

subcontractor for its allowable costs in its performance, except for those costs related to the dispute. All claims must be approved by the CO prior to changes in the contract / payments.

6.4 HANDOVER TO BENEFICIARIES

Once the construction is complete and the Final Notice of Acceptance has been drafted and approved and any necessary improvements made, but pre-completion of warranty period, the CMC will be informed that the works are done, and a meeting will be called to officially handover the completed structure(s). The warranty period and process will be explained, so the CMC can monitor for any defects. A larger community handover will be organized when applicable, to explain the use of the structure(s), who is responsible for the upkeep and maintenance, and any other applicable subjects, like user fees, so that the community is fully aware.

6.5 WARRANTIES OF WORK

All work must be warranted for one year after acceptance. The warranty period will commence upon formal written “Notice of Final Acceptance.” The CC will guarantee all work performed and all the materials furnished under the contract against any defects in materials and workmanship for a period of one year. The CC will, within a reasonable time - but no longer than fourteen (14) days after receipt of a written notice thereof, repair and/or replace any defects in materials or workmanship which may develop during the warranty period, and any damages resulting from repairing and/or replacing of such defects at its sole expense. In the event the CC fails to remedy any such defects within the specified time, the Owner will reserve the right to remedy the defects at the CC’s sole expense; and the CC will be responsible for all costs and charges accrued from such remedy. Shejeh Salam will hold a 10% retention of the total subcontract value for up to one year, contingent on successful completion of the contracted works.

6.6 OPERATIONS AND MAINTENANCE

6.6.1 BENEFICIARY MANAGEMENT AGREEMENTS

Prior to any project, Shejeh Salam will obtain written agreement for operation and maintenance of construction by the existing community management committees at the village level.

6.6.2 O&M MANUALS AND TRAINING

The CC will prepare and submit to the AEC manuals on operations, maintenance and emergency procedures with content as specified in the Technical Specifications document of the contract. Emergency guidance must be organized into separate sections for fires, floods, gas leaks, water leaks, power failures, water outages, system or equipment failure, and chemical releases or spills. The CC will also include a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items, their identification, and location to facilitate ready access to desired information.

The AEC will review and approval the contents of the manual. A draft copy of the manual must be submitted at least 30 days before commencing demonstration and training. AEC will comment on whether general scope and content of manual are acceptable. The CC must correct or revise each

manual to comply with AEC comments and resubmit copies of each corrected manual within 15 days of receipt of AEC's comments and prior to commencing demonstration and training.

The CC will engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Implementation of relevant health and safety and environmental mitigation measures in the EMMP will also be included. The AEC will be present for training to monitor the breadth and adequacy of instruction and ensure that CMC and users are fully equipped with the necessary capacity to operate and maintain the facility under normal day-to-day as well as emergency situations. The CMC will furnish Contractor with names and positions of participants. Training will be conducted on-site in the completed and fully operational facility using the actual equipment in-place, using final operation and maintenance data submittals. At conclusion of each training module, the CC/AEC will assess and document each participant's mastery of module by use of a written performance-based test.

Where possible, the CC will engage a videographer to record demonstration and training video recordings. Each training module will be recorded separately. Classroom instructions and demonstrations, board diagrams, and other visual aids will be provided as applicable.

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