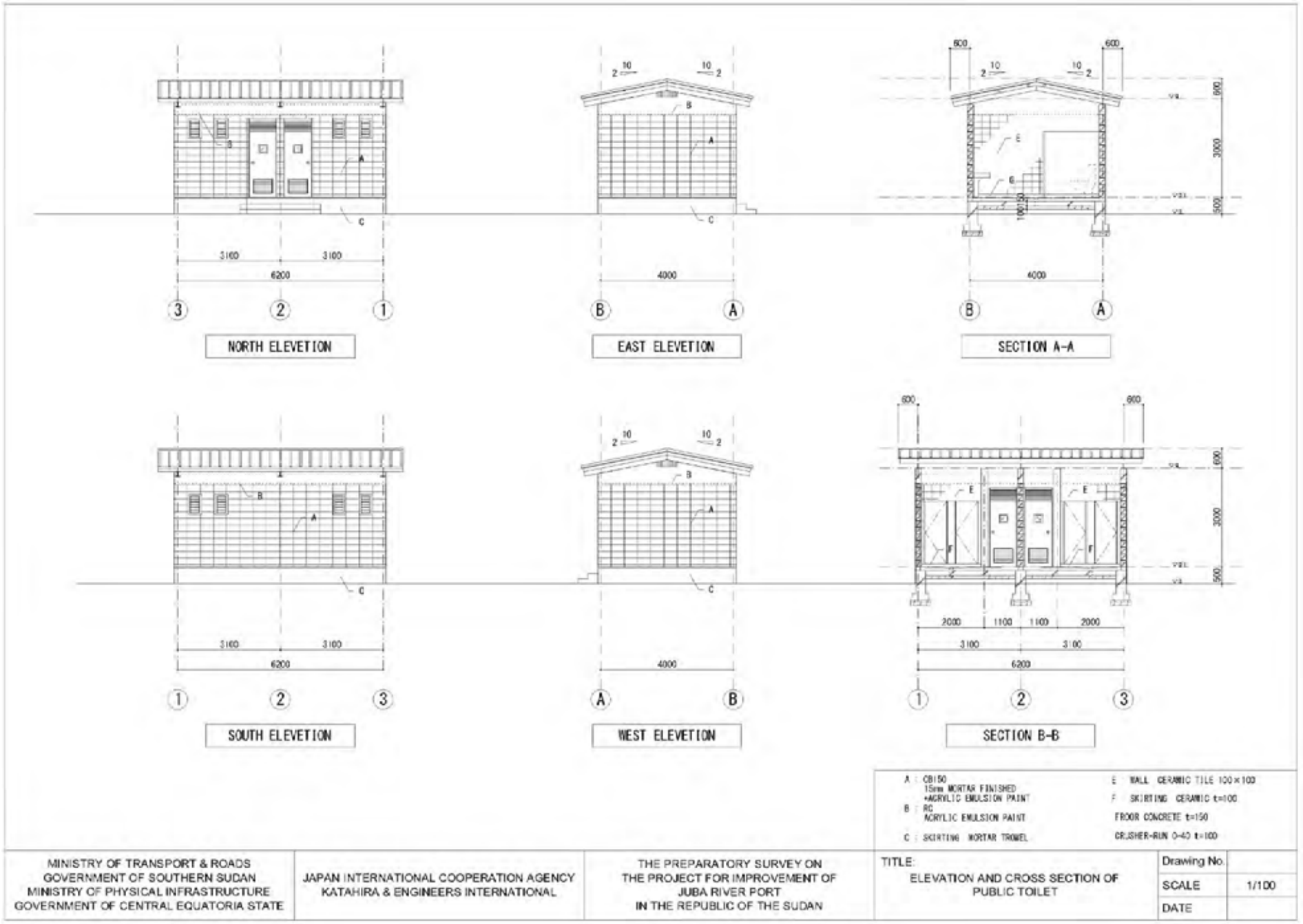
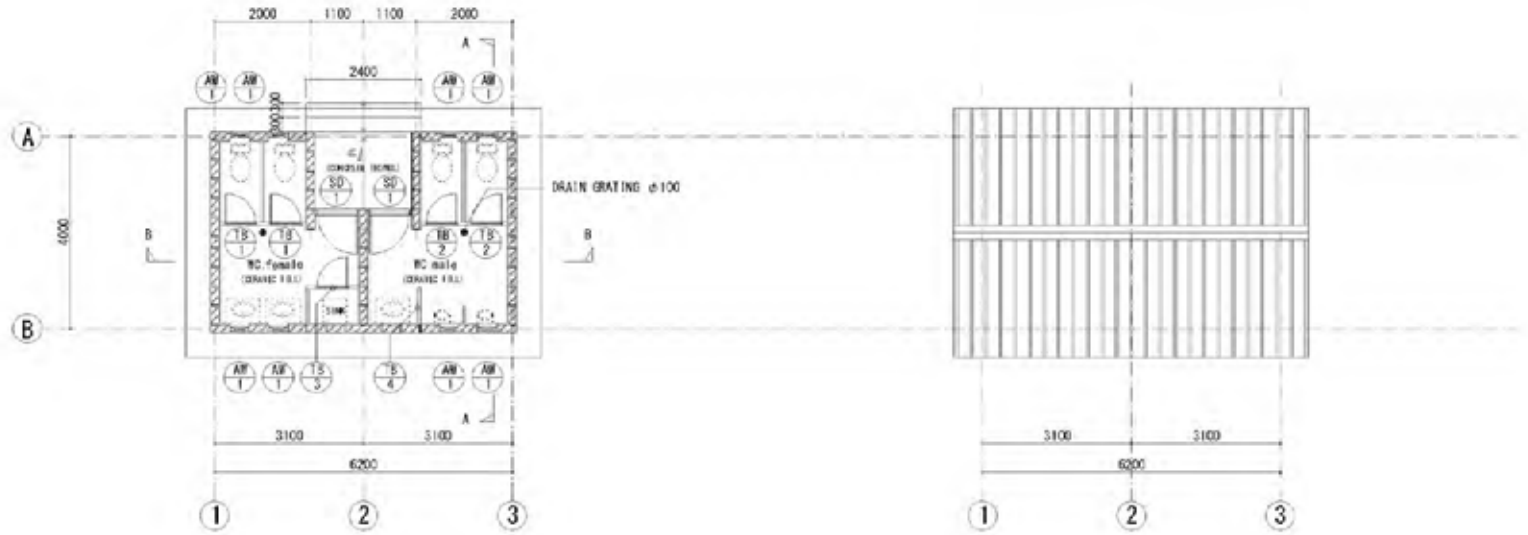


Figure 2-2-18 Elevation and Cross Section of Public Toilet



MINISTRY OF TRANSPORT & ROADS GOVERNMENT OF SOUTHERN SUDAN MINISTRY OF PHYSICAL INFRASTRUCTURE GOVERNMENT OF CENTRAL EQUATORIA STATE	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL	THE PREPARATORY SURVEY ON THE PROJECT FOR IMPROVEMENT OF JUBA RIVER PORT IN THE REPUBLIC OF THE SUDAN	TITLE: GROUND FLOOR AND ROOF PLAN OF PUBLIC TOILET	Drawing No.	
				SCALE	1/100
				DATE	

Figure 2-2-19 Ground Floor and Roof Plan of Public Toilet

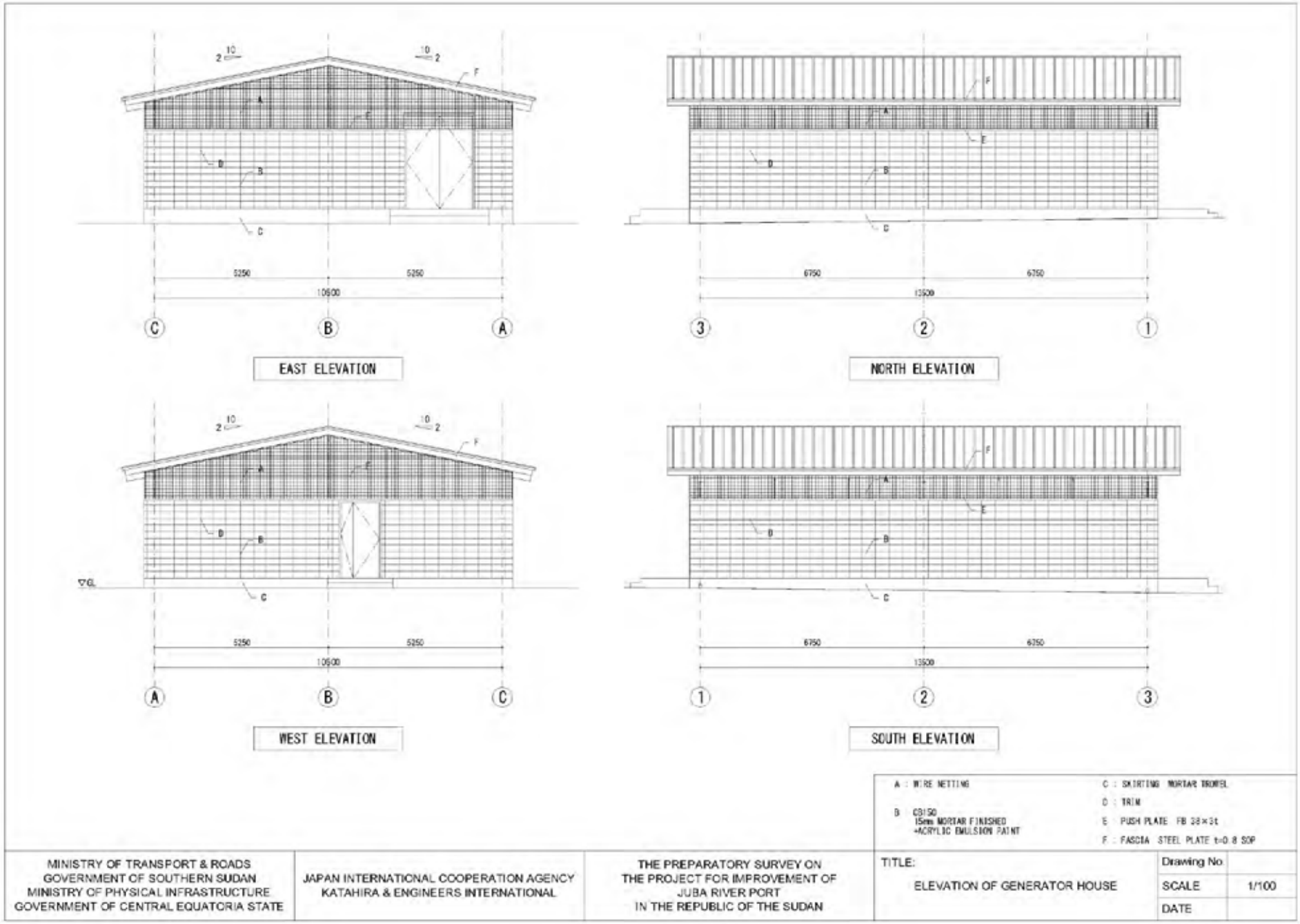


Figure 2-2-20 Elevation of Generator House

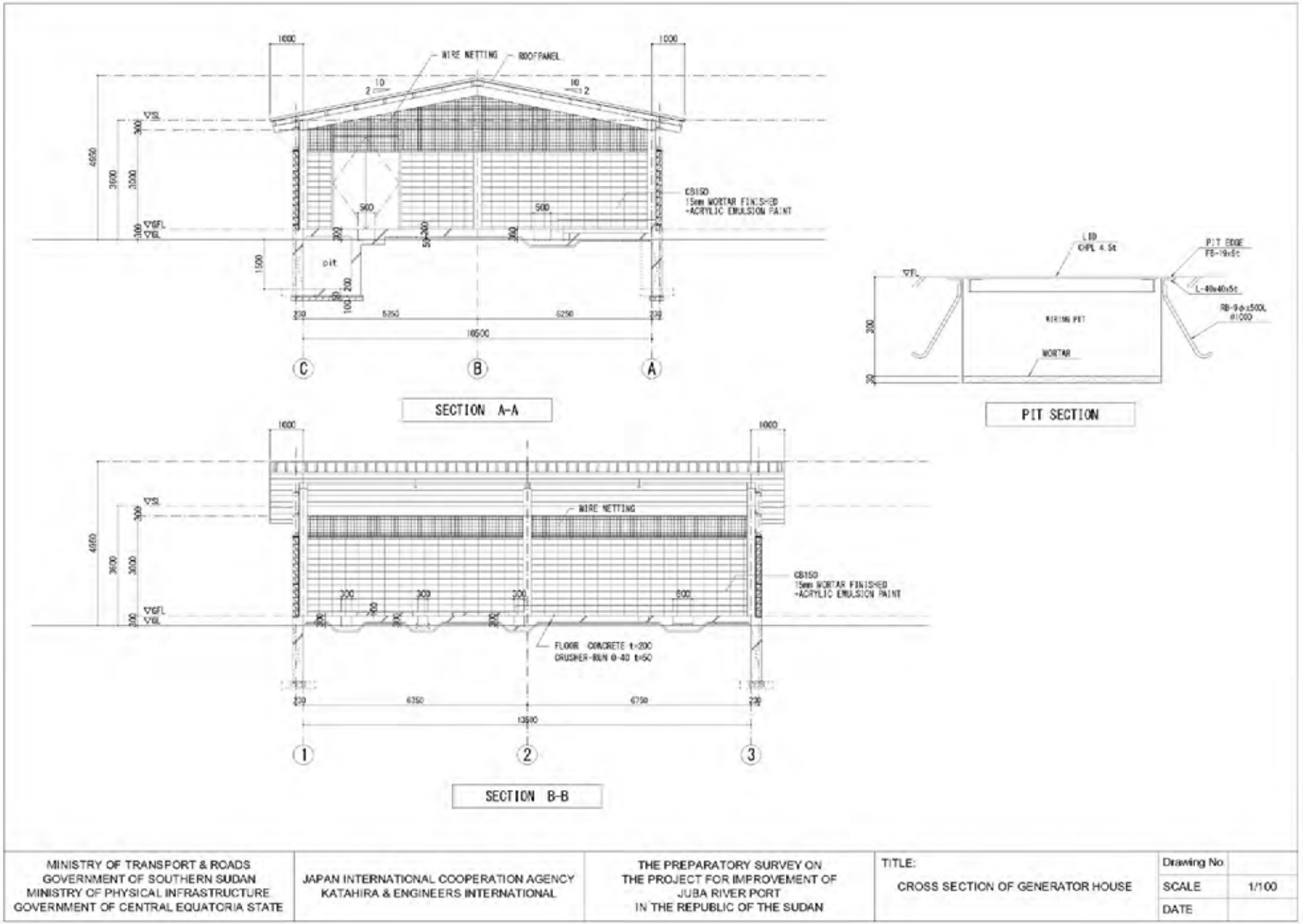


Figure 2-2-21 Cross Section of Generator House

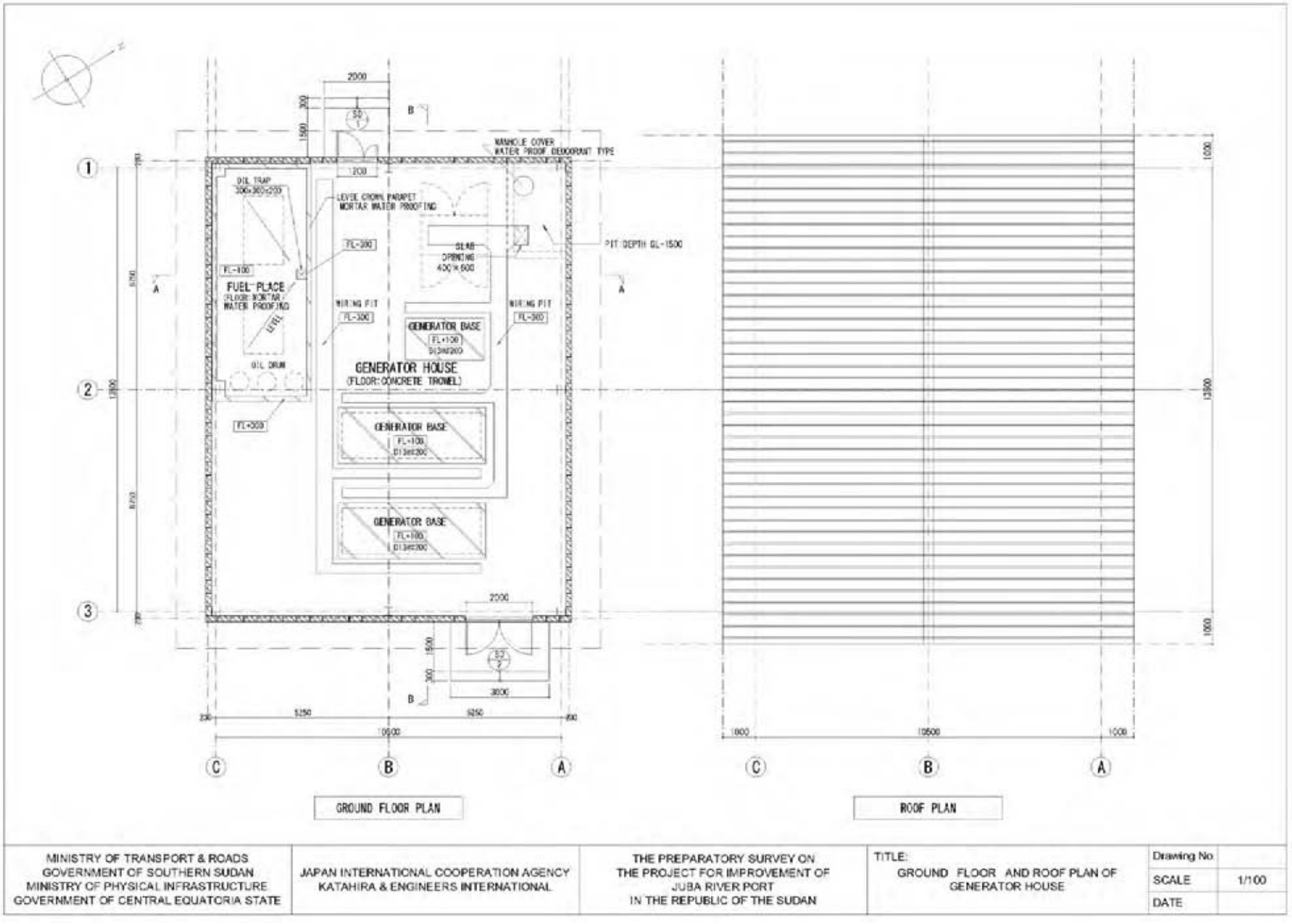


Figure 2-2-23 Ground Floor and Roof Plan of Generator House

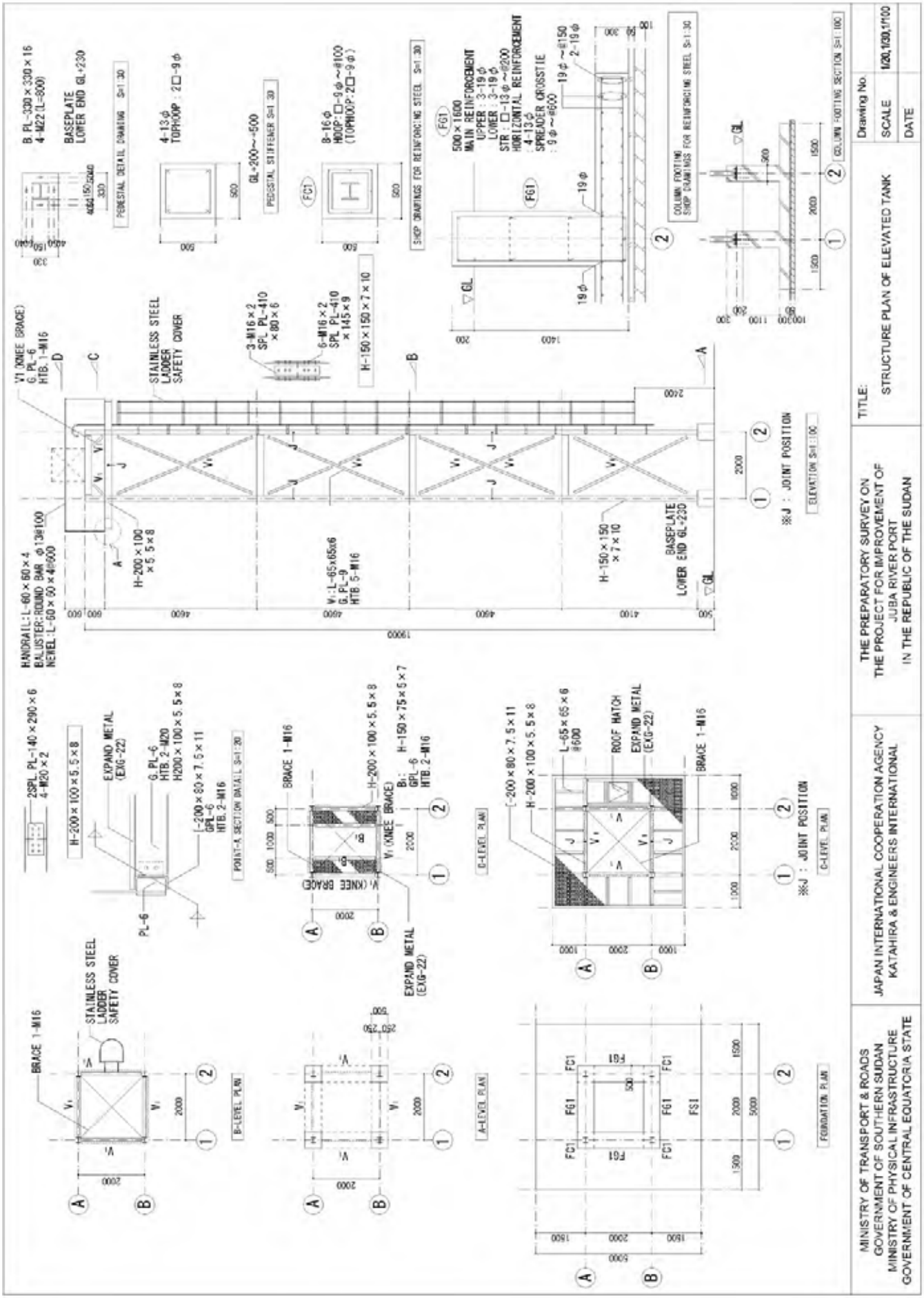


Figure 2-2-24 Structure Plan of Elevated Tank

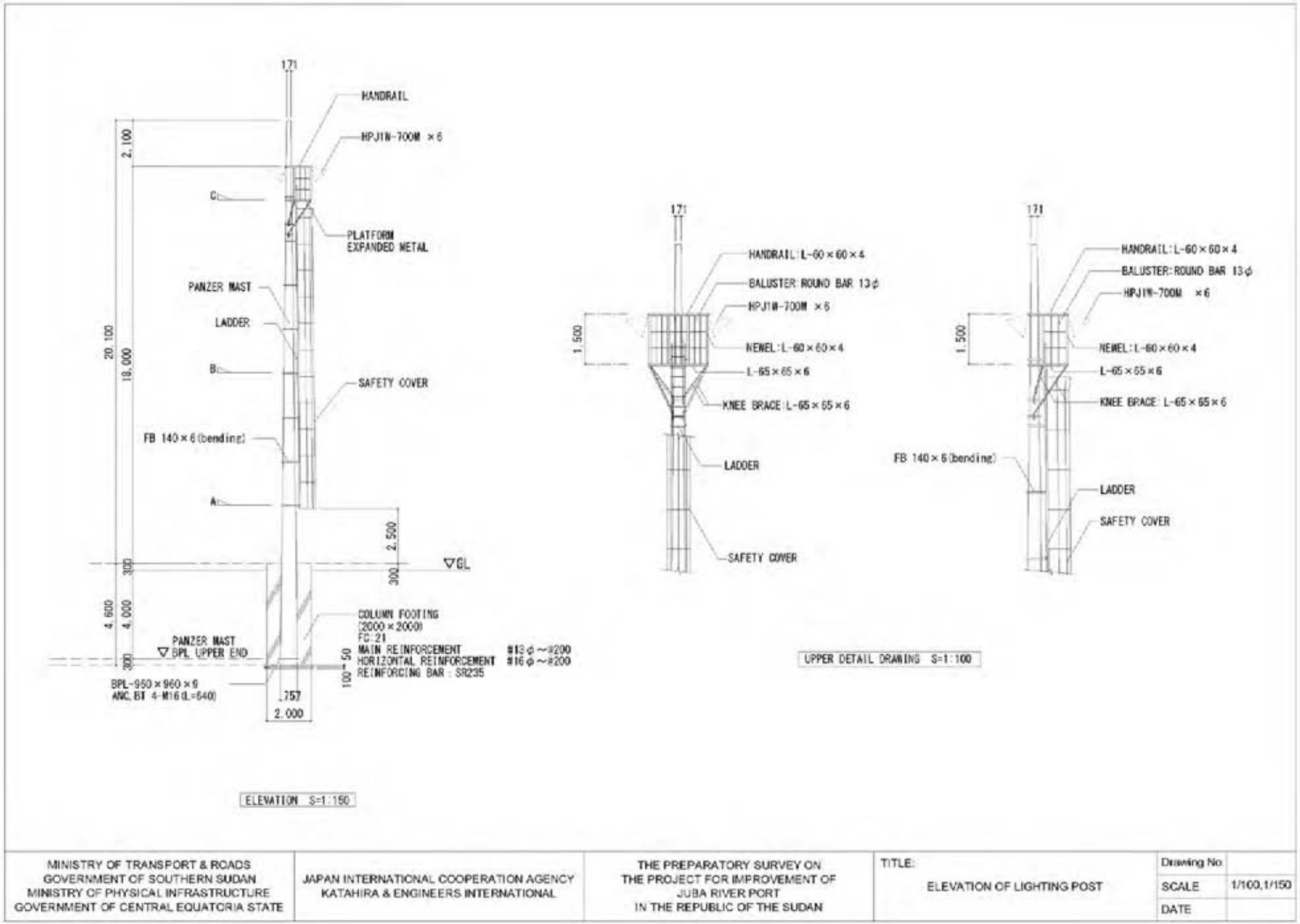


Figure 2-2-25 Elevation of Lightning Post

2-2-4 Implementation Plan / Procurement Plan

2-2-4-1 Implementation Policy / Procurement Policy

(1) Implementation Policy

The basic concepts for implementation of the Project are as follows;

- ✓ On reaching an agreement and signing the exchange of note by both GOJ and the Republic of the Sudan, the Project will be implemented in accordance with the guideline of Japan's Grad Aid.
- ✓ DRT / MOTR / GOSS is responsible organization and DTC / MOPI / CES is implementation organization of the Project.
- ✓ Assistance in tendering and construction supervision will be undertaken by a Japanese consulting firm in accordance with a contract between the MOTR / GOSS.
- ✓ Japanese pre-qualified tenderer who has been awarded the contract by the MOTR will undertake the implementation of the Project.

Main concepts for the implementation are as follows;

- ✓ Material and labour for the Project are procured in the Republic of Sudan as many as possible. If required qualities and capacities are not enough, materials and labour can be procured effectively from third countries and/or Japan.
- ✓ In the Project, the contractors will be in charge of marine and inland transport for construction materials and equipments necessary. However, the Sudan side will be required to make prior arrangements concerning tax exemptions so as to prevent any delay in schedule, and also make sure to establish a system enabling swift customs clearing procedure.
- ✓ Implementation method and schedule for the Project shall be planned on the basis of local meteorological, topographic and geological conditions as well as any natural conditions affected by the construction works.
- ✓ General and easy method without specific equipment and technology shall be planned.
- ✓ Appropriate standards and specifications for construction shall be proposed, and site organizations of both the contractor and consultant shall be arranged to comply above mentioned standards and specifications.
- ✓ Safety of the construction staff and the public shall be secured during the construction.
- ✓ Protection and provision for water pollution and soil runoff shall be implemented. Also construction waste shall be treated and/or dumped in a proper site specified by the Government of the Republic of Sudan.

(2) Procurement Policy

The basic concepts for implementation of the Project are as follows;

- ✓ On reaching an agreement and signing the exchange of note by both GOJ and the Republic of the Sudan, the Project will be implemented in accordance with the guideline of Japan's Grad Aid.
- ✓ DRT / MOTR / GOSS is responsible organization and DTC / MOPI / CES is implementation organization of the Project.
- ✓ Assistance in tendering, procurement supervision, start-up operation, technical assistance will be undertaken by a Japanese consulting firm in accordance with a contract between the MOTR / GOSS.
- ✓ Japanese pre-qualified tenderer who has been awarded the contract by the MOTR /GOSS will undertake the implementation of the Project.

2-2-4-2 Implementation Conditions / Procurement Conditions

(1) Implementation Conditions

Construction plan and method shall be prepared in order to secure the safety of the construction staff and the third parties first of all, and they shall be selected to consider preservation of environment for the port users and the road side residents.

Present Port Conditions

Since there is no alternative port which can deal with the current Juba River Port activities during construction period, the construction work has to be done while the port activities continue. Therefore the construction plan must be planned by taking safety of port users and port activities into account.

Present Road Network Conditions

The Juba River Port is a transit point for daily commodities from the Northern Sudan to not only Juba City, CES but also East / West Equatoria State because the Juba River Port is the final port where large-sized barges can berth and carry out cargo handling along the River Nile. Furthermore the Juba River Port takes a roll as the transit port as well in order to supply the daily commodities from countries of East Africa Community to each state along the River Nile. However as there is no facility to store cargos in the Juba River Port area, the cargo has to be stayed on the barges or transported to markets and warehouses immediately.

For the reason above, it was observed at the north-west gate that as much as 550 vehicles including bike, 220 freight vehicles including 3-wheel motorcycle and 3,300 people went in and out the Juba

River Port during daytime 12 hours weekday. Then it is assumed that the volume of average daily coming cargo volume is 290 ton meanwhile, that of average daily going cargo volume is 460 ton.

Moreover when the Project starts, as construction vehicles and people will be added into above traffic, it is speculated easily that the road around the Juba River Port will be congestion. Therefore the concerned authorities have to publicize the construction method to road users and citizen along the roads beforehand.

Basically the civil and building works will be implemented during daytime in order to avoid traffic peak time.

Climate and Natural Conditions

Based on article 2-2-5(1), the implementation schedule shall be fixed. The pavement work especially the improvement of subbase course work is carried out during dry season. Also, it is dangerous that the quay work is implemented after July because the water level of the River Nile reaches a peak. Accordingly in order to avoid collision accident around the site, the quay work should be finished by July.

(2) Procurement Conditions

Since the equipments and machinery are planned to be Japanese-made or third-country-made products, they are transported by marine transport and/or inland transport.

Marine Transport

Although unloading port of marine transport is expected to be Mombasa Port in neighboring country, Kenya, the sea off the coast of Somalia on the marine transport route has been threaten by pirates. Therefore the procurement firm is required to consider countermeasures in advance and take necessary measures in order to minimize the risk.

Inland Transport

After unloading at Mombasa Port, long-distance inland transport is required. As there are weight-and-width-limited bridges on the way to the Juba River Port, it is necessary that heavy and/or large-sized cargoes are divided within the limit.

Tax Exemption

The Government of Sudan shall take Tax Exemption procedures, and organize framework for swift custom clearance beforehand so as to forward the Tax Exemption procedures without any delay.

2-2-4-3 Scope of Works

(1) Construction

Undertaking concerning construction of both Governments of Japan and the Republic of the Sudan are listed in Table 2-2-4.

Table 2-2-4 Undertaking concerning Construction of Both Governments

Item	Content	Undertaken by		Remarks
		Japan	Sudan	
Procurement of Material and Equipment	Procurement	√		
	Marine & Inland Transport	√		
	Custom Clearance & Tax Exemption	√	√	
	Development of Transport Route to the Site		√	
Preparation	Land Acquisition & Installation of Fence & Gate		√	
	Relocation of PAPs		√	
	Provision of Borrow Pit & Quarry Site		√	
	Acquisition of Disposable Place		√	
	Other Preparation Work	√		
Removal of Obstructions	Removal of Obstruction		√	Wasted Vehicle, Scrap etc.
Main Work	Development of the Juba River Port	√		

(2) Procurement and Installation

Undertaking concerning procurement and installation of both Governments of Japan and the Republic of Sudan are listed in Table 2-2-5.

Table 2-2-5 Undertaking concerning Procurement and Installation of Both Government

Item	Content	Undertaken by		Remarks
		Japan	Sudan	
Procurement of Equipment	Procurement	√		Japan
	Marine Transport	√		Yokohama ~ Mombasa
	Custom Clearance	√		Mombasa
	Inland Transport	√		Mombasa ~ Malaba
	Custom Clearance	√		Malaba / Tororo
	Inland Transport	√		Tororo ~ Bibia
	Custom Clearance	√	√	Bibia / Nimule
	Inland Transport	√		Nimule ~ Juba
	Handover		√	Juba River Port
	Installation*	√		
Operation Training	Operation Guidance	√		
	Check Work Guidance	√		
Maintenance Work	Acquisition of Storage Place		√	
	Maintenance of Equipments		√	
	Maintenance of Port Facility		√	

* No construction work for installation is necessary.

2-2-4-4 Consultant Supervision

(1) Consultant Supervision Plan

A Japanese consultant will carry out detailed design, assistance in tendering and construction supervision in accordance with the consultant contract agreed by both Government of the Republic of Sudan and the consultant.

Detailed Design

- ✓ To conduct discussions with the Republic of Sudan side and detailed site survey.
- ✓ To conduct detailed design and preparation of detailed drawings.
- ✓ To detailed construction planning and cost estimate.

Tender Services

The following services in the period from tender notice to construction contract are as follows:

- ✓ Preparation of Tender Documents
- ✓ Tender Notice
- ✓ Prequalification
- ✓ Tendering
- ✓ Tender Evaluation
- ✓ Contract Facilitation

Construction Supervision

The consultant will carry out supervision of the construction to be executed by a contractor according to the contract and implementation plan. Major work items are as follows:

- ✓ Inspections and Approvals of Site Surveys
- ✓ Inspections and Approvals of Construction Plans
- ✓ Quality Control
- ✓ Progress Control
- ✓ Measurement of the Work
- ✓ Inspection of Safety Aspects
- ✓ Final Inspection and Hand-over

One Consultant will assign one stationed supervising engineer for each civil and building work. In addition, in order to support the supervision one more supervising engineer for each work will be assigned. During construction, the Consultants will collaborate with work safety management staff of the Contractor to prevent accidents at the site.

(2) Procurement Supervision Plan

A Japanese consultant will carry out detailed design, assistance in tendering and procurement supervision in accordance with the consultant contract agreed by both Government of the Republic of Sudan and the consultant.

Detailed Design

- ✓ To conduct discussions with the Republic of Sudan side and detailed site survey.
- ✓ To conduct detailed design and preparation of detailed drawings.
- ✓ To detailed procurement planning and cost estimate.

Tender Services

The following services in the period from tender notice to construction contract are as follows:

- ✓ Preparation of Tender Documents
- ✓ Tender Notice
- ✓ Prequalification
- ✓ Tendering
- ✓ Tender Evaluation
- ✓ Contract Facilitation

Procurement Supervision

The consultant will carry out supervision of the procurement to be executed by a procurement firm according to the contract and implementation plan. Major work items are as follows:

- ✓ Confirmation of Equipments Drawings
- ✓ Factory Inspection and Pre-shipping Inspection
- ✓ Pre-shipping Inspection
- ✓ Delivery and Supervision of Set-up Operation

The Consultant will assign a stationed supervising engineer in order to install the equipments and carried set-up operation supervision.

2-2-4-5 Quality Control Plan

(1) Construction Supervision

The major quality control plan is shown in Table 2-2-6.

Table 2-2-6 Quality Control Plan

Work	Test Item		Test Method (Specification)	Frequency of Tests
Embankment	Bearing Capacity of Soil		JIS	Pavement Works : Once in 500 m^3 Building Work : 2 Places / Building
	Bedding Accuracy		-	As needed
	Foundation Work Height		-	As needed
	Thickness of Replaced Soil		-	Once in 500m^2
Concrete Work	Cement	Physical Property Test	JIS/AASHTO	Once before trail mix; thence once in 500m^3 of concrete. Once if material source is changed.
	Fine / Course Aggregate	Physical Property Test	JIS/AASHTO	Once before trail mix; thence once in 500m^3 of concrete. Once if material source is changed.
		Sieve analysis	JIS/AASHTO	Once a month
	Water	Quality Test	JIS/AASHTO	Once before trail mix
	Concrete	Slump Test	JIS/AASHTO	Twice a day
		Air Content Test	JIS/AASHTO	Twice a day
		Compressive Strength Test	JIS/AASHTO	3 specimens in each concreting. In case of large amount in each concreting, 3 specimens every 150 m^3
		Temperature	-	Twice a day
		Salinity Test	-	Twice a day
Pavement Work	Base Course	Field Density	JIS/AASHTO	Once in 1,000 m^3
		Compaction	JIS/AASHTO	Once in 1,000 m^3
	Surface Course	Compressive Strength Test	JIS/AASHTO	Once in 500 m^3
Reinforcement Bar Work	Tensile Test		JIS	Once in 300ton with given diameter. (if inspection sheet is available, the test may be omitted.)
	Processing Accuracy		JIS	As needed
	Reinforcement Cover Thickness		Specifications	As needed
Plastering Work Paint Work Waterproof Work Fitting Work	Material, Storage Methods, Work Methods, Mixing, Coating, Curing, Work Accuracy		Specifications	As needed
Water Supply / Discharge Works	Water Supply Pipes Drainage Pipes		JIS/BS	Upon completion of pipe laying for each system
Electric Work	Cable		JIS/BS	Upon completion of pipe laying for each system

(2) Procurement Supervision

In order to verify if the machinery to be procured is meeting the quality standards and specifications set forth in the contract, the following inspections shall be conducted at each stage of

the procurement work;

- ✓ Confirmation of contents of machinery order sheets issued by the supplier
- ✓ Factory inspection and inspection before delivery in the manufacturing plant
- ✓ Pre-shipping inspections (crosschecking with packing lists) by a third-party inspecting organization
- ✓ Inspection at handover of machinery (checking of storage of quantities, abnormality of appearance, contents of accessories, operation check, etc)

2-2-4-6 Procurement Plan

(1) Construction Material

The procurement plan of major materials is shown in Table 2-2-7.

Table 2-2-7 Procurement Plan of Major Material

Item	Procured from			Remarks
	Sudan	Japan	Third Country	
Materials for Structure				
Crushed Stone	√			
Cement			√	
Sand (for Concrete)	√			
Sub-base material	√			
Ready Mix Concrete	√			
Re-bar : D6~D28, φ6~φ25		√		
Shape Steel		√	√	
Rubble for Wet Masonry	√			
RC Pipe : D=600~1200		√	√	
Traffic Sign Board			√	
Steel Beam		√		
Material for Finishing (Building Work)				
Galvalume Sheet Roofing		√		
Corrugated Galvalume Sheet Roofing Siding		√		
Aluminum Sash. Door		√		
Steel Door			√	
Wooden Door,			√	
Window Frame			√	
Glass			√	
Tile			√	
Plaster Board			√	
Rock Wool Acoustic Board			√	

Item	Procured from			Remarks
	Sudan	Japan	Third Country	
Wire Mesh			√	
Material for Utilities (Building Work)				
Hand Wash, Sink for Cleaning			√	
Kitchen Cabinet			√	
Toilet Bowl, Urinal			√	
Septic Tank			√	
Water Supply Tank			√	
PVC Pipe : D=150~200			√	
Lighting Facility			√	
Distribution Board			√	
Generator			√	
FRP Pipe : D=50/100/150/200		√		
Material for Temporary Work				
Plywood for Form (Waterproof)			√	
Plywood for Form (w/o Waterproof)			√	
Support Timber, Log for Scaffold			√	
Electric Welding Rod			√	
Fuel, Lubricant	√			
Oxygen, Acetylene			√	
Gas Cutter			√	
Ratio (%)	15 %	20 %	65 %	

(2) Construction Equipment

The procurement of major construction equipments is shown in Table 2-2-8.

Table 2-2-8 Procurement Plan of Major Construction Equipments

Equipment	Specification	Lease/ Procurement	Procured from			Delivery Route
			Sudan	Japan	Third Country	
Concrete Mixing Plant	Full Automatic	Lease		√		Mombasa ~ Juba
Agitator Truck	-	Lease		√		
Concrete Pump	-	Lease		√		
Rotating Pile Driver	1.5m	Lease		√		
Vibration Hummer	-	Lease		√		
Generator	250kVA	Lease		√		
Rough Terrain Crane	50~55t	Lease		√		
Stabilizer	-	Lease		√		
Block Production Machine	-	Lease			√	
Track Crane	20t	Lease			√	Nairobi

Equipment	Specification	Lease/ Procurement	Procured from			Delivery Route
			Sudan	Japan	Third Country	
Backhoe	0.80m3	Lease			√	~
Wheel Loader	2.4 m3	Lease			√	Juba
Dump Truck	10t	Lease			√	
Dump Truck	4t	Lease			√	
Flat Body Track	10t	Lease			√	
Bulldozer	15t	Lease			√	
Generator	20kVA	Lease			√	
Generator	75kVA	Lease			√	
Vibration Roller	11t	Lease			√	
Motor Grader	3.7m	Lease			√	
Road Roller	10-12t	Lease			√	
Tire Roller	8-20t	Lease			√	
Line Maker	-	Lease			√	

(3) Procurement Plan

Country of Origin

Equipments and machinery shall be procured from the third country and Japan for the reason that most of the industrial products are not produced in Southern Sudan.

Europe-made products are in widespread use in the Republic of the Sudan and there are a lot of agents in operation who have provided maintenance and repair service. On the other hand, there are few these agents in Southern Sudan. Therefore the maintenance and repair service in Southern Sudan shall be provided by agents based in Kenya or Uganda on a business trip basis.

Almost all small-sized and special kind vehicles which are utilized by United Nation Agencies, Donors, NGOs, GOSS, CES and private sectors are Japanese-made products. However Japanese-made products except the vehicles have not prevailed in Southern Sudan in general. The maintenance and repair service of the vehicles has been provided by agents based in Kenya or Uganda on a business trip basis.

Delivery Route

The equipments and machinery procured from Japan or the third countries will be delivered through southern route, Kenya and Uganda based on reasons above;

- ✓ There is possibility that Southern Sudan will get independent from the Republic of the Sudan in referendum in January 2011.
- ✓ Mombasa Port has regular line among major ports across the world.

- ✓ There are some inland transport companies and a lot of record of the transport to Juba.
- ✓ Inland transport companies have branches or resident offices along inland transport routes, therefore it is easy to track and follow up the transport status.
- ✓ Inland transport route is subject to be paved by aid of USAID by the time of commencement of the Project.

Figure 2-2-22 Marine Transport Route

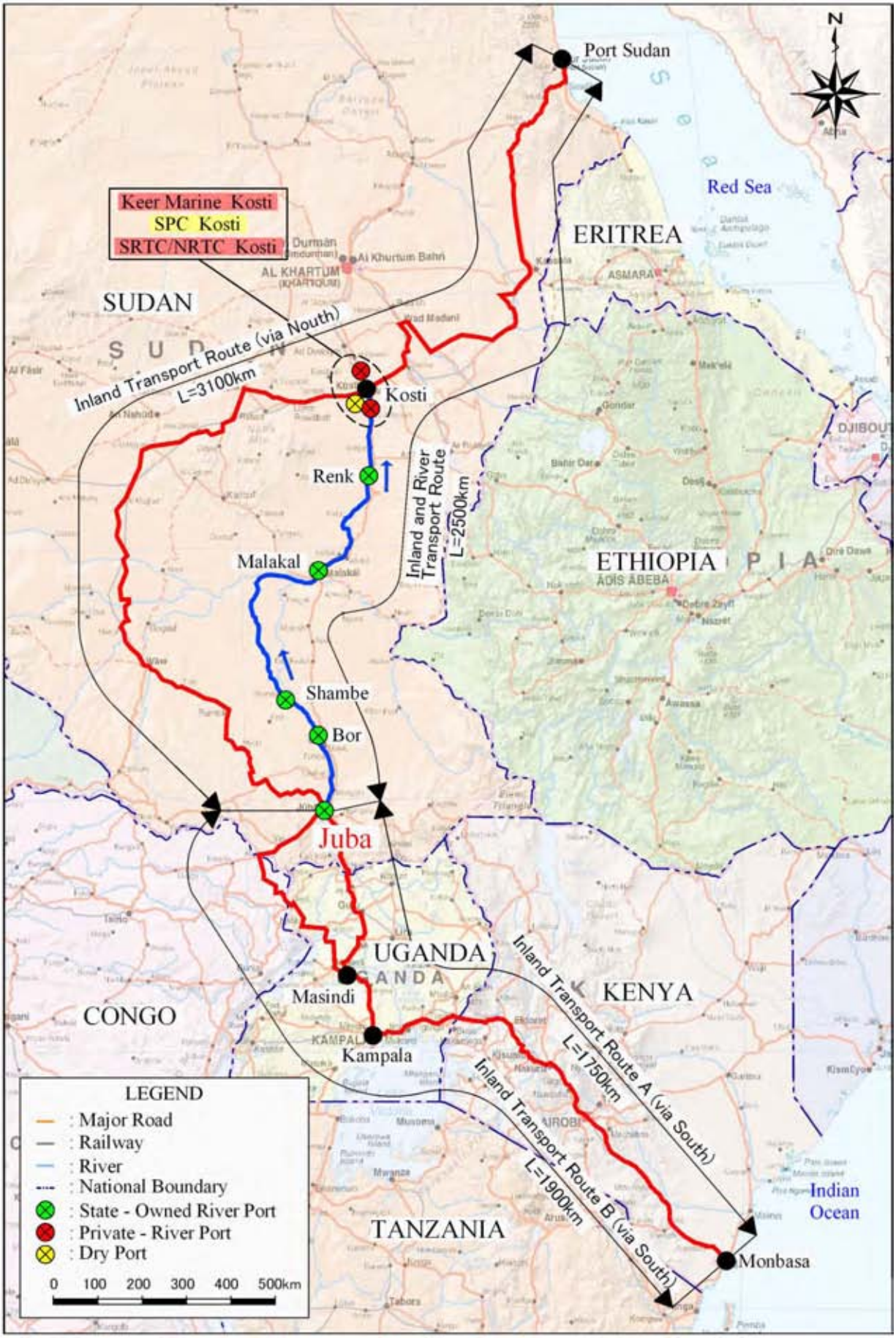


Figure 2-2-23 Inland Transport Route

2-2-4-7 Technical Assistance Plan

In time for delivery of machinery, technical instructors dispatched from the procurement firms will conduct trial operations and adjustment of the equipments in order to confirm whether the equipments work properly or not and give instructions to the department in charge of JRPA.

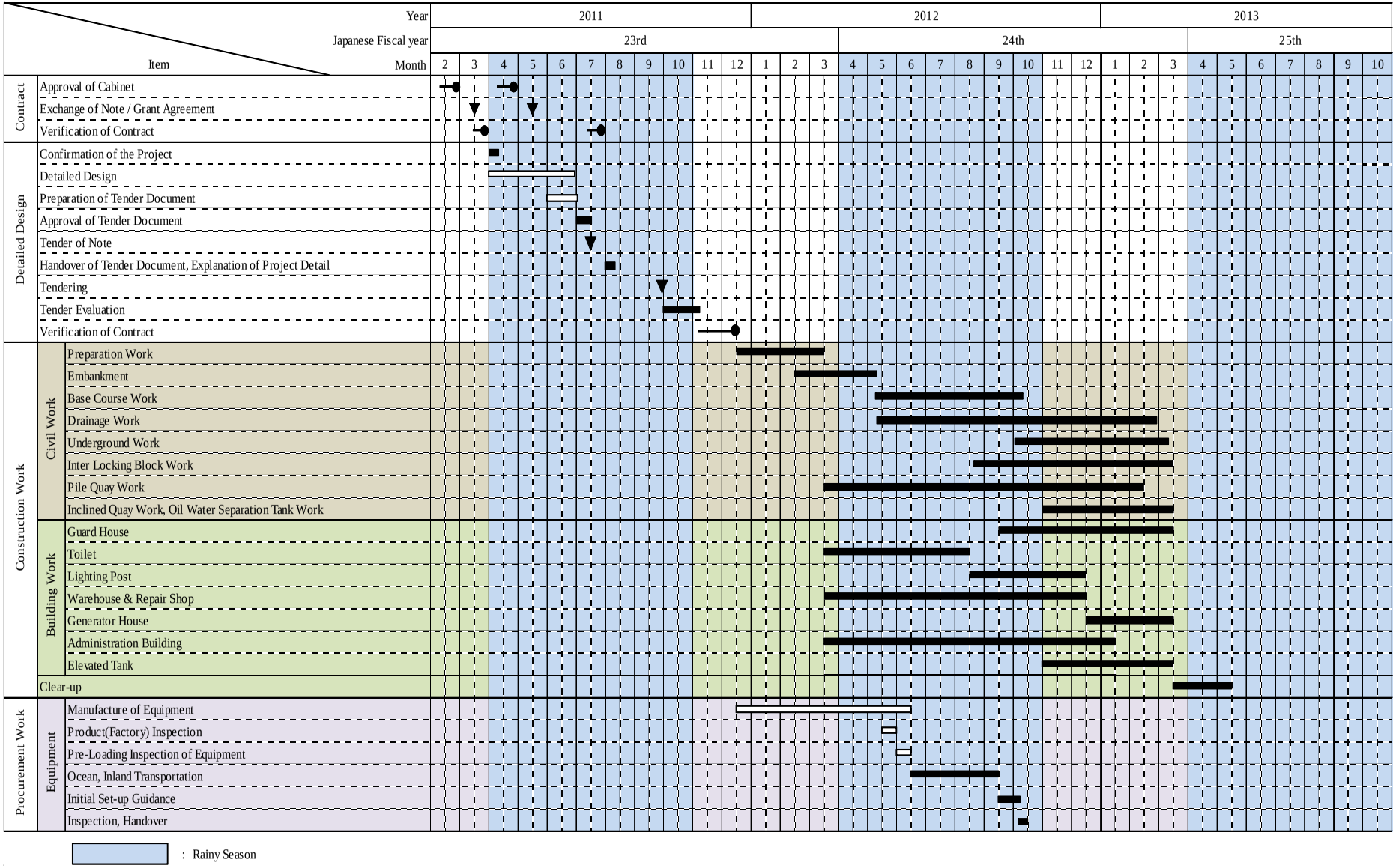
2-2-4-8 Soft Component Plan

Since the technical instruction implemented by the procurement firms is limited to initial operation and guidance, further training is required. However the training is not planned to be implemented by the Grant Aid because the training is scheduled to be carried out by a capacity building project.

2-2-4-9 Project Operation Plan

Implementation schedule is shown in Table 2-2-9.

Table 2-2-9 Implementation Schedule



2-3 Obligation of the Government of Sudan

The Government of Sudan shall undertake the following measures on condition that the Grant Aid by the Government of Japan is extended to the Project.

- ✓ To provide data and information necessary for the Project.
- ✓ To renew the Environmental Certificate issued by MOE / GOSS. (Expire Date: End of December, 2011)
- ✓ To relocate PAPs in operation in the port area properly and provide the expense for the relocation.
- ✓ To secure the land necessary for the execution of the Project, such as the land for temporally offices, construction works, storage yards and others.
- ✓ To secure the passageway for construction materials and equipments.
- ✓ To bear commissions to the bank in Japan for its banking service in connection with the Project.
- ✓ To ensure prompt tax exemption, custom clearance and effective inland transportation of materials and equipments.
- ✓ To exempt Japanese nationals engaged in the Project from any customs duties for the supply for products and services necessary for the Project.
- ✓ To accord Japanese nationals necessary legal rights for their entry and stay in the Republic of Sudan.
- ✓ To provide all necessary permissions, licenses and certificates, such as construction permission, river construction permission and traffic control permission etc.)
- ✓ To remove all obstructions such as scrap cars and waste material in the port area
- ✓ To arrange proper use and effective maintenance of the port facilities after the completion of the Project.
- ✓ To coordinate and solve any issues related to the Project that may be raised from inhabitants or third parties.
- ✓ To bear all the expenses, other than covered by the Japanese Grant Aid, agreed and necessary for the Project.
- ✓ To secure safety of the construction site.

All above mentioned articles were confirmed by the Government of Sudan at the time of discussions and field surveys, and committed to be implemented.

2-4 Project Operation and Maintenance Plan

(1) Organization for Operation and Maintenance

JRPA has managed, maintained and operated the Juba River Port since its establishment. And there

is a port committee in charge of environment, operation and safety organized by shipping companies, loaders union, drivers union etc under JRPA. However, JRPA was established with the assistance of JICA through Follow-up Cooperation 2009, it has just short history. Therefore the organization structure is established, staff member dispatched from GOSS have be in control of administrative power. Meanwhile, staff member dispatched from CES has carried out just field work such as crane operation and facility maintenance. The issue will be adjusted by the capacity building project which supports the improvement of legal systems and reorganization of JRPA organization structure by the end of the Project.

(2) Maintenance Plan

Necessary maintenance is as follows;

- ✓ Daily Maintenance : Routine inspection, Cleaning roads and side ditches, Maintenance of procurement equipments and toilet
- ✓ Repair for Damaged Parts : Minor ILB repair work, Repainting of steels and road markings

Since the facilities developed by the Project have high durability and weather ability, large-scale repair work is not necessary for a time. Therefore current JRPA is able to maintain and operate the facilities. The large-scaled repair work will be implemented by some local construction companies.

(3) Manpower Planning

There are three departments, maintenance department, operation department and accounting department, under the port manager. Currently JRPA consists of 31 members dispatched from DRT / MOTR / GOSS and DTC / MOPI / CES.

Table 2-4-1 Number of Staff and Assigned Department

Department	DRT / MOTR / GOSS	DTC / MOP I /CES	Total
Port Manager	1	0	1
Deputy Port Manager	1	1	2
Auditor	1	0	1
Maintenance Department	6	12	18
Operation Department	3	3	6
Accounting Department	2	1	3
Total	14	17	31

2-5 Project Cost Estimation

2-5-1 Initial Project Cost

(1) Cost borne by the Government of Japan

The Project will be implemented in accordance with the Japan's Grant Aid scheme and the cost will be determined before concluding the Exchange of Note for the Project.

(2) Cost borne by the Government of Republic of Sudan

Table 2-5-1 Cost Borne by the Government of Sudan

(Unit : thousand USD)

Obligation Item	Amount
Social Cost for Relocation of Shops	82.6 (Approx. 7.6 M. Yen)
Social Cost for Relocation of Person	9.5 (Approx. 0.9 M. Yen)
Supervision Cost for Relocation	11.0 (Approx. 1.0 M. Yen)
Environmental Assessment Cost	40.0 (Approx. 3.7 M. Yen)
Bank Commission	13.0 (Approx. 1.2 M. Yen)
Total	156.1 (Approx. 14.4 M. Yen)

(3) Conditions in Cost Estimate

1. Time of Cost Estimate : June 2010
2. Exchange Rate : 1 US Dollar = 92.12 Yen,
   1 Kenyan Shilling = 1.175 Yen
3. Construction and Procurement Period : As shown in Section 2-2-4-9
4. Cost estimate is implemented in accordance with the guideline Japan's Grant Aid.

2-5-2 Operation and Maintenance Cost

Estimation of operation and maintenance Cost of Juba River Port is shown in Table 2-5-2. The expected maintenance cost of developed facilities is approximately 1 million SDG per year, meanwhile the expected revenue after introducing the large-sized equipments is approximately 750 thousand SDG per year.

Since DRT / MOTR / GOSS is going to introduce modern port maintenance and operation system for the first time, established accounting systems do not exist at the moment[2]. Now therefore it is assumed that for the time being it is the revenue goes into the national coffers first and after that the budget for maintenance will be allocated. Since necessary budget has been allocated by MOTR /

[2] The capacity building project targeting improvement of legal system and accounting system is scheduled to start.

GOSS in the past, problem will not happen in the foreseeable future. Furthermore through the capacity building project, the accounting and maintenance system of JRPA will be improved.

Expected yearly maintenance cost after the completion of the development is approximately 1 million SDG, on the other hand expected yearly revenue is approximately 750 hundred SDG. For the time being the deficit balance will continue, however financial problems will not happen by improvement of the balance through enhancement of cargo handling and increase of cargo handling.

Table 2-5-2 Estimation of Operation and Maintenance Cost

(Unit : SDG per Year)

Revenue						
Item \ Year		2011	2012	2013	2014	2015
1	Registration Fee of Vessel & Tug Boat	800,000	40,000	40,000	40,000	40,000
2	Shipping License	400,000	420,000	440,000	460,000	480,000
3	Entrance Fee of Lorry & Truck	47,000	52,000	59,000	67,000	76,000
4	Docking Fee of Tug Boat & Vessel	47,600	52,600	60,000	67,600	75,000
5	Docking Fee of Motor Boat	1,200	1,200	1,200	1,200	1,200
6	Demurrage Fee	11,900	13,150	15,000	16,900	18,750
7	Land Lease (Union, Shipping Company, Buffet)	25,000	25,000	25,000	25,000	25,000
8	Crane Lease (Container, Bulk, Equipment)	-	-	11,770	13,370	15,190
9	ID Card (N.A)	-	-	-	-	-
Revenue Sub Total		1,332,700	603,950	651,970	691,070	731,140
Expenditure						
Item \ Year		2011	2012	2013	2014	2015
1	Employment Cost[3]	19,200	19,200	19,200	19,200	19,200
2	Equipment Purchases	40,000	-	20,000	-	20,000
3	Consumables	9,600	9,600	9,600	9,600	9,600
4	Facility Maintenance	26,860	32,860	32,860	32,860	32,860
	1) Fuel for Generator	75,600	75,600	243,310	585,650	585,650
	2) Night Soil Deposit Cost	2,640	2,640	4,040	6,000	6,000
	3) Repairing Cost and Equipment Maintenance	3,000	3,000	3,000	3,000	3,000
	4) Communication Cost	5,760	5,760	5,760	5,760	5,760
5	Training Cost	100,000	100,000	100,000	100,000	100,000
6	River Port Maintenance	200,000	200,000	200,000	200,000	200,000
Expenditure Sub Total		482,660	448,660	637,770	962,070	982,070

[3] Since the staff of JRPA is dispatched from DRT / MOTR / GOSS and DTC / MOPI CES respectively, the salary of them is paid by each Ministry. Therefore only salary for cleaning staff etc. shall be paid by JRPA.

2-6 Other Relevant Issues

When the Project is implemented by Japanese Grant Aid, it is necessary that the Sudan side reliably execute its obligations according to the aforementioned list of obligations, especially relocation of PAPs. Since DRT / MOTR/ GOSS allocates the budget to develop sanitation facilities for PAPs, it is necessary to monitor whether the budget shall be spent properly.

CHAPTER 3 PROJECT EVALUATION

3-1 Recommendations

3-1-1 Precondition for Implementation

The Precondition for the project implementation is as follows;

- ✓ To clear the obligations of the Republic of Sudan as shown Chapter 2-3
- ✓ To secure security of the Japanese involved in the Project and the site, regardless of independence of Southern Sudan from the Republic of the Sudan.

3-1-2 Recommendation

To fully secure and sustain the Project effects, GOSS side shall execute the following issues.

- ✓ To carry out the proper maintenance, in particular cleaning of drainage facilities in order to prevent the earlier deterioration of the port and road facilities.
- ✓ To carry out the proper maintenance, on particular daily and regular maintenance in order to extend machinery and equipments life.
- ✓ To formulate the maintenance plan for the machinery and equipments, and develop human resources necessary for the maintenance, and collect utility charge of the machinery and equipments.

Also, a Capacity Building Project will start for the purpose of the capacity building of port operation and maintenance in relation to the Project. It is cited that the facilities, machinery and equipments are maintained properly as a part of the achievement of the Capacity Building Project.

3-2 Project Evaluation

3-2-1 Validity

There is a high need in terms of the economic activity of postwar years of recovery and the strengthening of the mutual cooperation ties between the North and South Sudan. In addition, the Project is alignment with the strategy of GOSS and JICA's aid policy. Furthermore the validity of the Grant Aid is high based on the reasons as follows;

- ✓ Japanese ports have been operated and maintained well by overcoming the server natural conditions and complex topography of Japan.
- ✓ There are a lot of cooperation experiences abroad in port field, moreover there are suitable and superior port technology.

3-2-2 Project Effect

Quantitative Effect

i. To reduce the cargo loading & unloading time by introduction of safe and efficient docking facilities and large-sized cargo handling crane, and to facilitate the collection of docking fee, crane charge etc.

ii. To prevent the accident during special works such as ship handling, and to improve general work conditions.

iii. To improve the safety of the port area and detention cargo by the development of the guard houses, lightings, fences etc.

iv. To improve the sanitary condition of port facilities by the development of the water supply and sanitation conditions.

The effects brought by the Project are shown as Table 3-2-1.

Table 3-2-1 The Effects of the Project

		Current Situation	Target Year
Year		2010	2016
Index		1.00	1.89
Daily Cargo Handling Volume	(ton/day)	300	600
	(barge/day)	1.0	2
	(fleet/day)	0.25	0.50
Weekly Cargo Handing Volume	(ton/day)	1,800	3,600
	(barge/day)	6.0	12.0
	(fleet/week)	1.5	3.0
Monthly Cargo Handling Volume	(ton/month)	7,200	14,400
	(barge/month)	24	48
	(fleet/month)	6.0	12.0
Yearly Cargo Handling Volume	(ton/year)	86,400	172,800
	(barge/year)	288	576
	(fleet/year)	72.0	144.0

Qualitative Effect

i. To promote the peace between the Northern and Southern Sudan by strengthening the mutual and economic cooperation

ii. To activate the local economy by providing the efficient logistics means

iii. To curb inflation, and to promote the economic activity and attract investments