

Ministry of Transport, Roads and Bridges  
Republic of South Sudan

PREPARATORY SURVEY  
ON  
THE PROJECT FOR CONSTRUCTION  
OF  
THE BRIDGES IN JUBA CITY  
IN THE REPUBLIC OF SOUTH SUDAN

TECHNICAL NOTES

OCTOBER 2015

JAPAN INTERNATIONAL COOPERATION AGENCY  
CTI ENGINEERING INTERNATIONAL CO., LTD.

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Preparatory Survey on the Project for Construction of the Bridges in Juba City  
in the Republic of South Sudan

Technical Notes

JICA Survey Team for the Preparatory Survey (the Survey Team) has confirmed the items described in the attached Technical Notes concluded by the representative of the Ministry of Transport, Roads and Bridges (MTRB) which is the responsible and implementing organization on the Project for Construction of the Bridges in Juba City in the Republic of South Sudan (the Project). Based on the Technical Notes, the Survey Team plans to conduct the basic design for the Project including the project cost estimate through analysis of the site survey findings after obtaining the approval from Japan International Cooperation Agency (JICA).

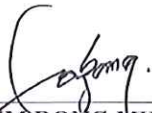
Juba City, Republic of South Sudan  
October, 2015

for 牙馬博之

YUZO, MIZOTA  
Chief Consultant  
JICA Survey Team



GABRIEL MAKUR  
Undersecretary  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan

  
OTIM BONG MIKE  
Acting Director General  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan  
(Witness)

## 1 . Priority of Bridges

The priority of six (6) bridges to be constructed is divided into following two (2) groups due to the traffic volume and city activity convenience :

Priority of Bridge Construction	Bridge Number	Remarks
First Priority	Bridge No.1, Bridge No.4, Bridge No.7, Bridge No.10	High traffic volume and convenience in the city center
Second Priority	Bridge No.18, Bridge No.19	Low traffic volume along/near outer ring road

First Priority Bridges are targeted to be constructed under the Project.

Second Priority Bridges are not included under the Project.

## 2 . Bridge Designs

### (1) Bridge Pavement

Bridge shall be designed with the concrete pavement and concrete pavement shall be incorporated in the deck slab of the bridge.

### (2) Joint

Expansion Joint type will be applied rubber type joint, because of excellence for durability, maintenance, and economic efficiency as actual experience.

## 3 . Undertakings by Republic of South Sudan

The major tasks to be undertaken by the Republic of South Sudan(RSS) has been confirmed in the technical note dated on 28, June 2013. The following issues to be undertaken by Republic of South Sudan were additionally confirmed in this technical note after conducting site survey from 16<sup>th</sup> of September 16 to 5<sup>th</sup> of October, 2015.

### (1) Pavement of Approach Roads to the Bridges

Pavement of Approach Roads to the Bridges is constructed by the RSS with his own finance, while the embankment will be constructed under the Project.

### (2) Secure of the Land and Relocation of the Utilities

The RSS sides shall secure the land and the relocation of the utilities required for the construction. **The Table 1 shows Requirements of the RSS for the Construction of the Bridges in Juba City** to be taken.

And the drawing of the locations for the obstructions are shown in **Annex-1**.

The fund, 1,500,000 SSP, for the **Requirements of the same** already has been allocated by MTRB.

**Table-1 Requirements of the RSS for the Construction of the Bridges in Juba City**

Bridge Name	Items	Obstruction(Land, Fence, Masonry Wall, e.t.c.)	Quantity of Obstruction
No.1	①	Removal of existing Bamboo Fence	26m
	②	Removal of existing Barbed Wire Fence	16m
	③	Removal of existing Scrapped Cars	6 cars
	④	Removal of existing Electric Wire and Pole	110m
	⑤	Removal of existing Bill Board 1.3mx2.4m	1 unit
	⑥	Removal of existing Bamboo Fence	21m
No.4	①	Removal of part of existing Restaurant	27m2
	②	Removal of existing Electric Wire and Pole	120m
	③	Removal of existing Bamboo Fence	30m
No.7	①	Removal of existing Corrugated Plate Galvanized Fence	72m
	②	Removal of existing Masonry Wall	12m
	③	Removal of existing Bamboo Fence	40m
	④	Removal of existing Corrugated Plate Galvanized Fence	32m
	⑤	Removal of existing Sign Board 3mx2m	1 unit
No.10	①	Removal of Brick and Masonry Wall	8m
	②	Demolition of existing Concrete Box (1.9mx4.8m)	9.2m2
	③	Removal of existing Bamboo Fence	16m
	④	Removal of existing Bamboo Fence	25m
No.18	①	Removal of existing Barbed Wire Fence	176m
	②	New Wire Mesh Fence Constructed	-
	③	Removal of New Cultivated Yard	1520m2
No.19	①	Removal of existing Barbed Wire Fence	217m
	②	Occupation of this Area	-

*u*

*(Signature)*

*(Signature)*



ANNEX-1

Drawings for Removal of the Obstructions

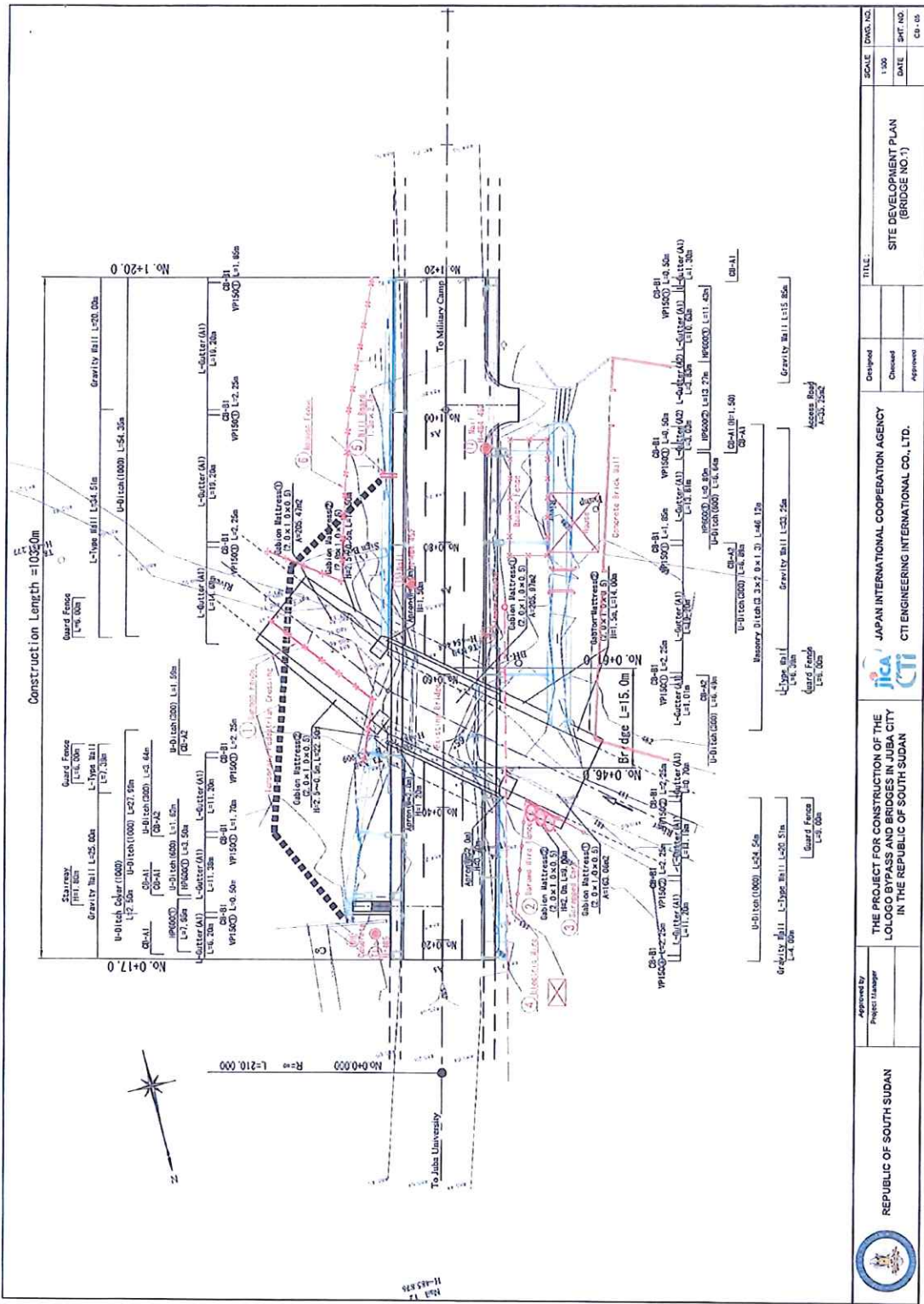
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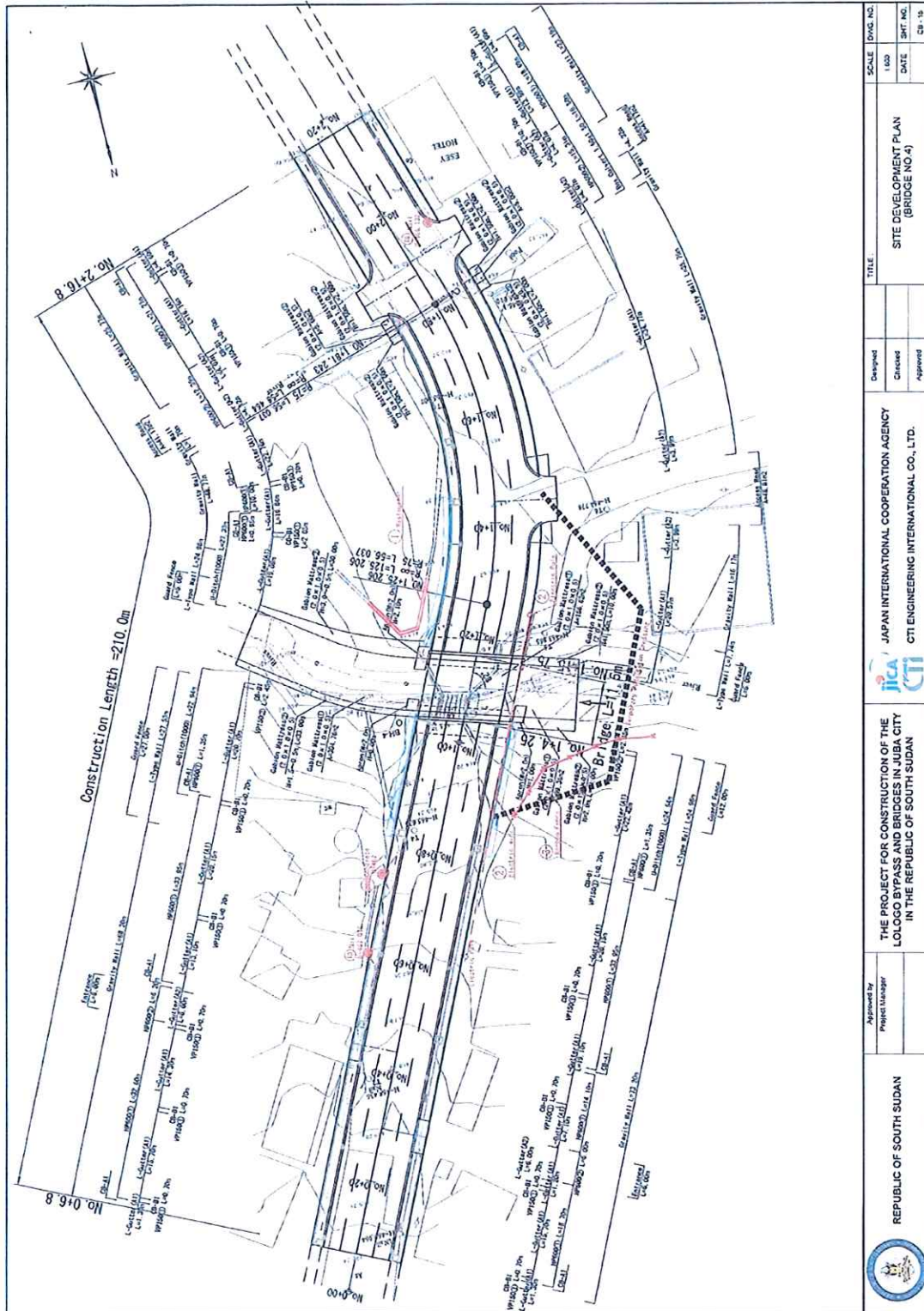
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	Approved by Project Manager			Original	TITLE: SITE DEVELOPMENT PLAN (BRIDGE NO. 7)	SCALE	Draw. No.
	Checked			Approved		1:500	DATE

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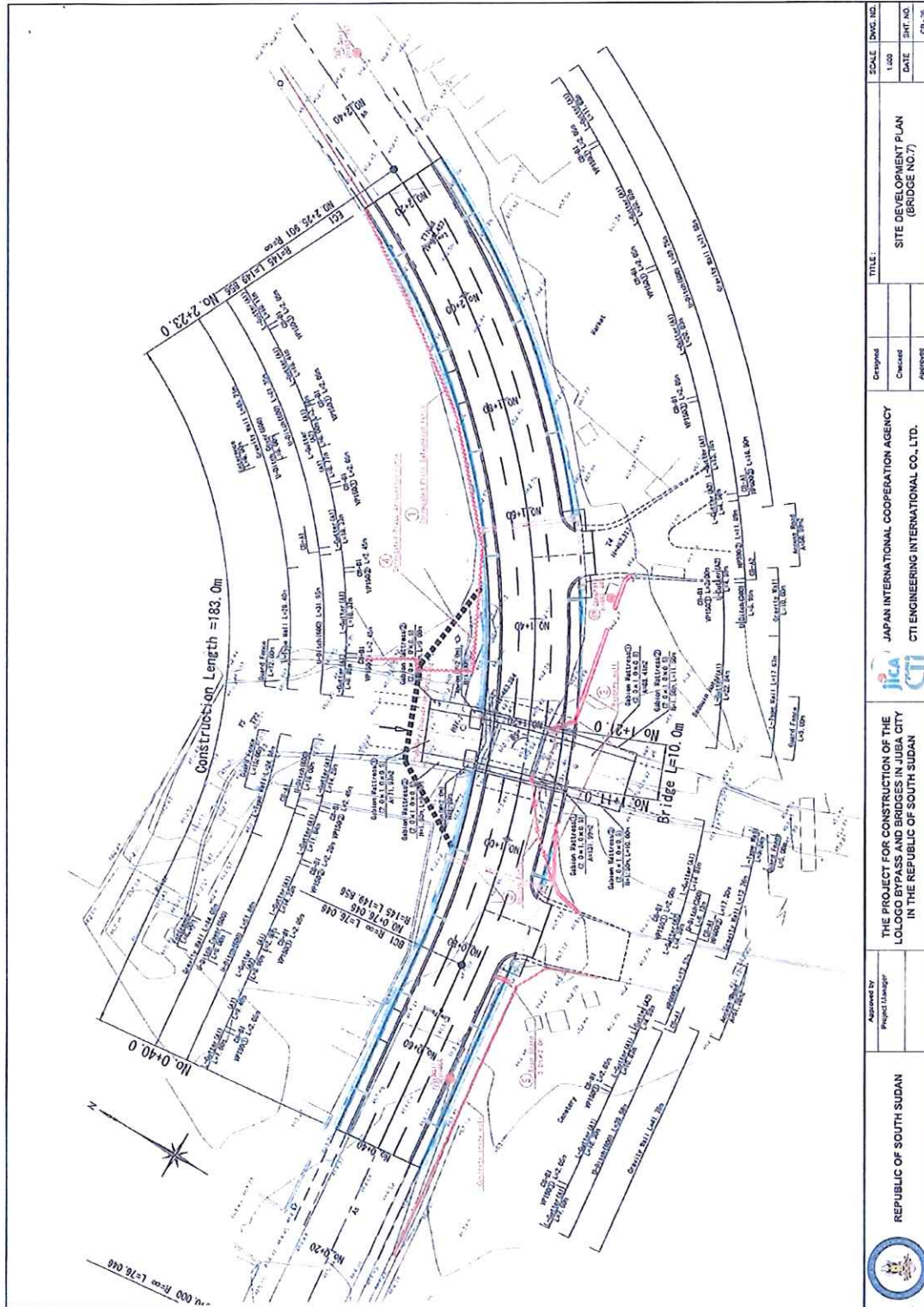


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 REPUBLIC OF SOUTH SUDAN	Approved by Project Manager	THE PROJECT FOR CONSTRUCTION OF THE LOLOGO BYPASS AND BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN	 JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.	Designed Checked Approved	TITLE SITE DEVELOPMENT PLAN (BRIDGE NO.4)	SCALE 1:500	DWG. NO. 1.000
						DATE 2011	SHEET NO. 01

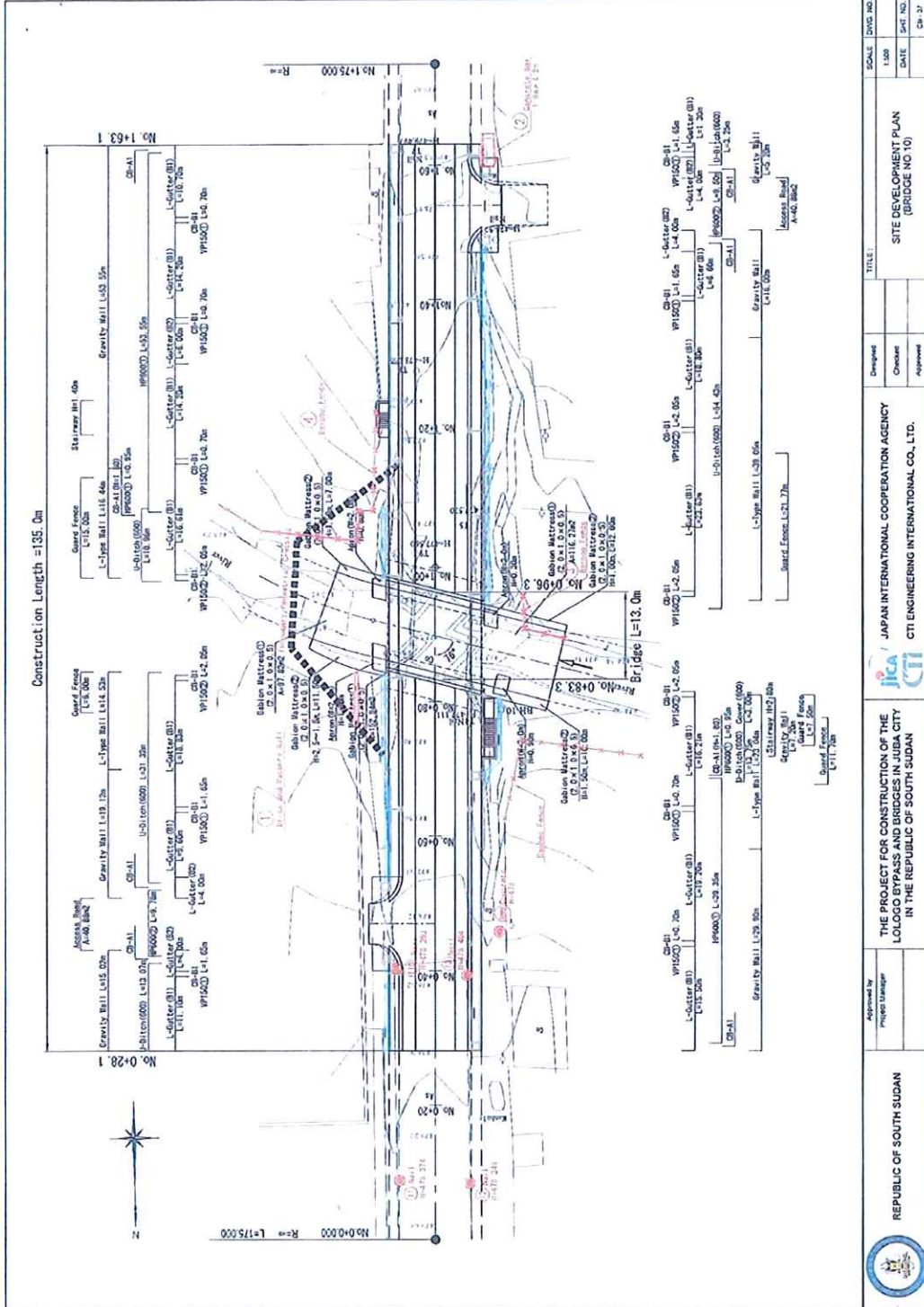




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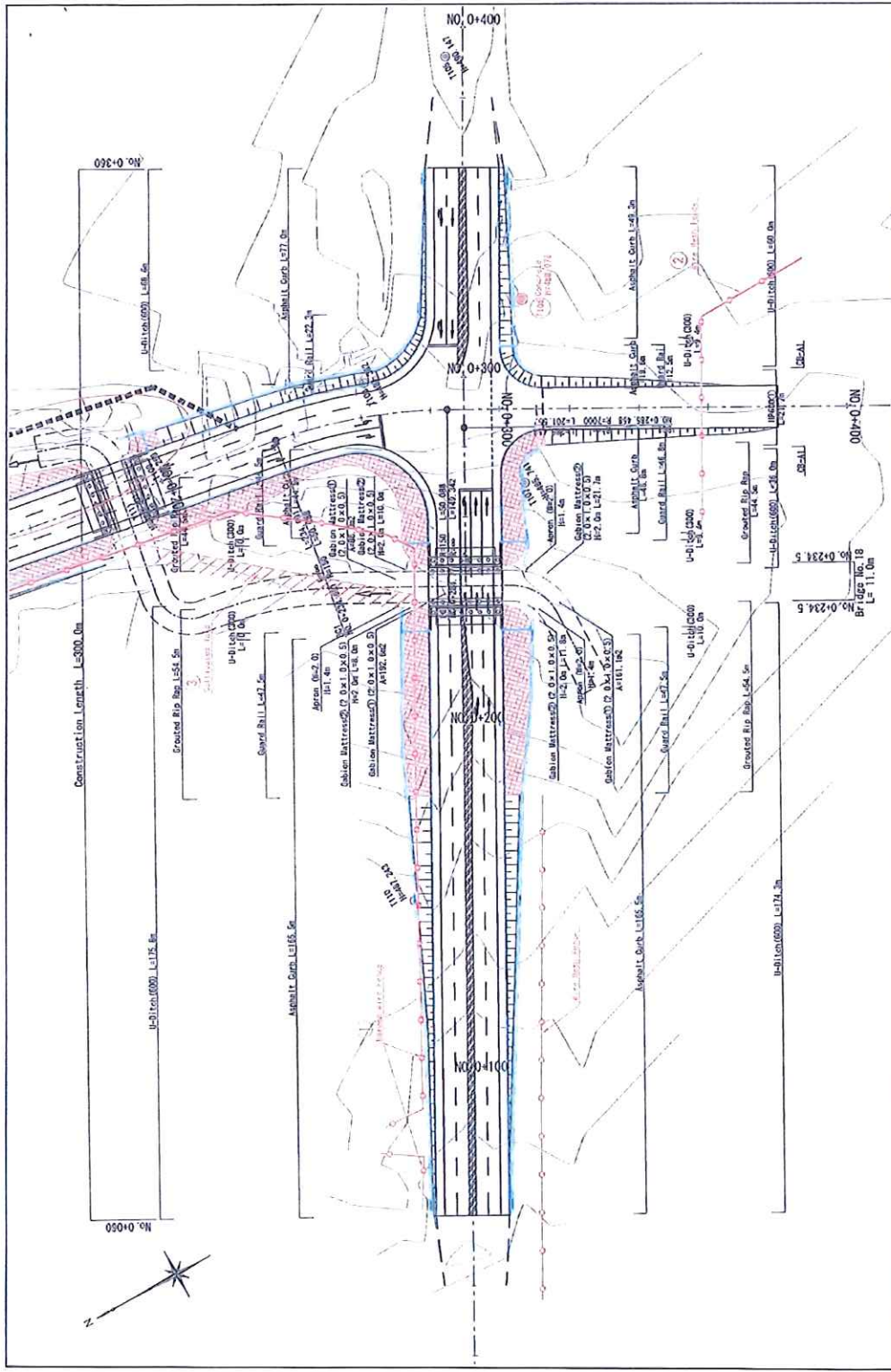
*[Handwritten signatures and initials]*

 REPUBLIC OF SOUTH SUDAN	Approved by Project Manager	THE PROJECT FOR CONSTRUCTION OF THE LOLOGO BYPASS AND BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN	 JAPAN INTERNATIONAL COOPERATION AGENCY CTE ENGINEERING INTERNATIONAL CO., LTD.	Checked	Approved	TITLE: SITE DEVELOPMENT PLAN (BRIDGE NO.7)	SCALE: DWG. NO. 1:500
	DATE			SHEET NO. 25	DATE	SHEET NO. 25	DATE



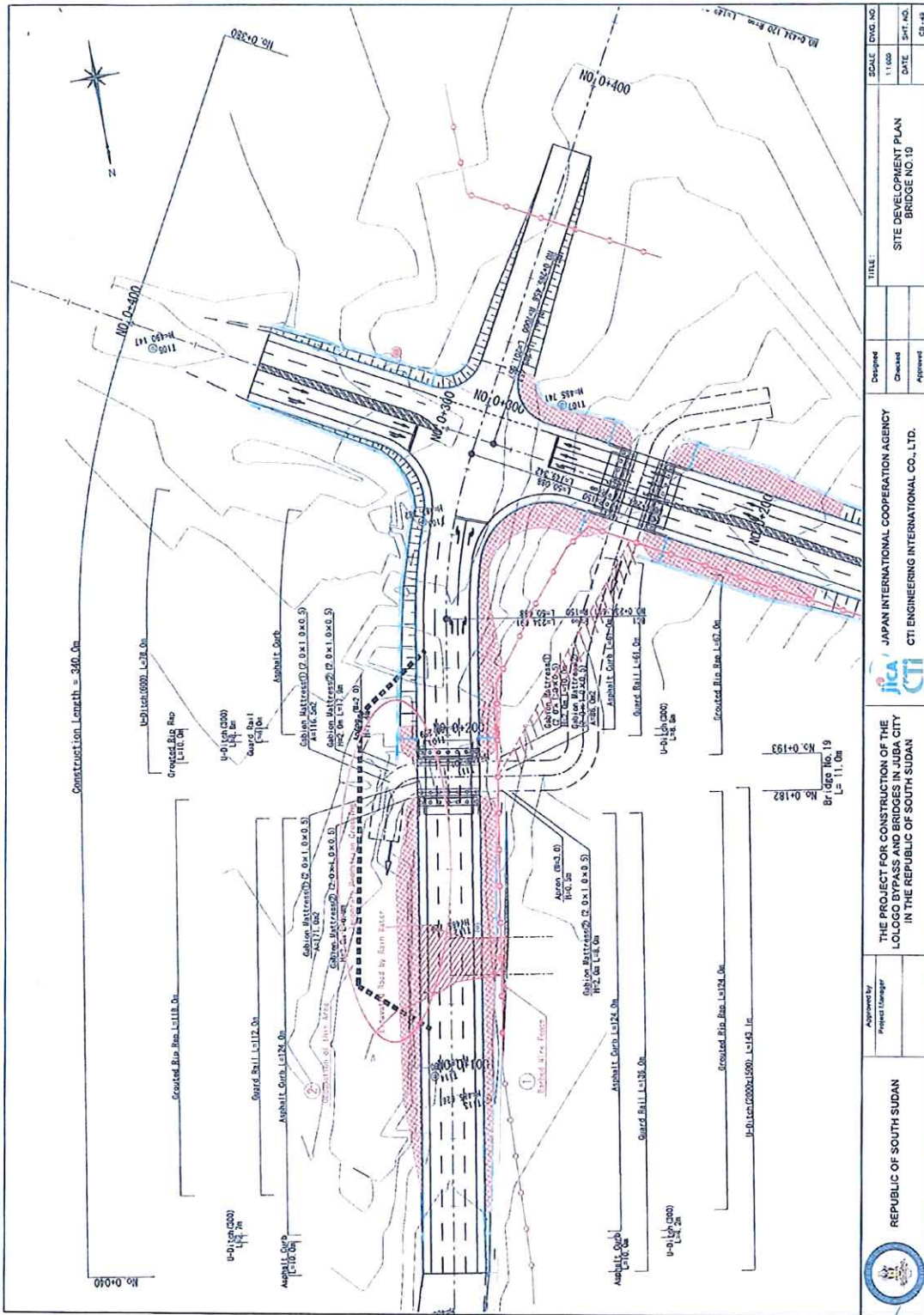
 REPUBLIC OF SUDAN	Approved by Project Manager	 JAPAN INTERNATIONAL COOPERATION AGENCY CITI ENGINEERING INTERNATIONAL CO., LTD.	Employed Checked Approved	TITLE SITE DEVELOPMENT PLAN (BRIDGE NO. 10)	SCALE 1:13.0	DWG. NO. DATE SHEET NO. 28 OF 27
	THE PROJECT FOR CONSTRUCTION OF THE LOLOGO BYPASS AND BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN					





 REPUBLIC OF SOUTH SUDAN	Approved by Project Manager	JICA JAPAN INTERNATIONAL COOPERATION AGENCY LOLOGO BYPASS AND BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN	Approved Checked Designed	TITLE SITE DEVELOPMENT PLAN BRIDGE NO 18	SCALE 1:500	DWG. NO. 11-500
					DATE 03-14-18	SHEET NO. 03-14

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Construction Length = 340.0m

 REPUBLIC OF SOUTH SUDAN	Approved by Project Manager	TITLE: SITE DEVELOPMENT PLAN BRIDGE NO. 19		SCALE: 1:1000 DATE:	DWG. NO. SHEET NO. CB-19
	APPROVED BY: _____ PROJECT MANAGER: _____	DESIGNED: _____ CHECKED: _____ APPROVED: _____	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.		THE PROJECT FOR CONSTRUCTION OF THE LOLOGO BYPASS AND BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN

Ministry of Transport, Roads and Bridges  
Republic of South Sudan

Ministry of Physical Infrastructure, Central Equatoria  
Republic of South Sudan

PREPARATORY SURVEY  
ON  
THE PROJECT FOR CONSTRUCTION  
OF  
THE BRIDGES IN JUBA CITY  
IN THE REPUBLIC OF SOUTH SUDAN

TECHNICAL NOTES

NOVEMBER 2015

JAPAN INTERNATIONAL COOPERATION AGENCY  
CTI ENGINEERING INTERNATIONAL CO., LTD.



Preparatory Survey on the Project for Construction of the Bridges in Juba City  
in the Republic of South Sudan

Technical Notes

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Juba City, Republic of South Sudan  
November, 2015

for 平馬博之

YUZO, MIZOTA  
Chief Consultant  
JICA Survey Team



JOHN BULLEN  
Director General  
Ministry of Physical Infrastructure  
Central Equatoria State



GABRIEL MAKUR  
Undersecretary  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan

OTIM BONG MIKE  
Acting Director General  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan  
(Witness)



## 1. Priority of Bridges

The priority of six (6) bridges to be constructed is divided into following two (2) groups due to the traffic volume and city activity convenience :

Priority of Bridge Construction	Bridge Number	Remarks
First Priority	Bridge No.1, Bridge No.4, Bridge No.7, Bridge No.10	High traffic volume and convenience in the city center
Second Priority	Bridge No.18, Bridge No.19	Low traffic volume along/near outer ring road

First Priority Bridges are targeted to be constructed under the Project.

Second Priority Bridges are not included under the Project.

## 2. Road Design

### (1) Pavement Design

Concrete pavement is adopted for the pavement of bridges and approach roads in the view of economic aspects because of no availability to utilize the asphalt plant under the Project without Lologo Bypass.

### (2) Road Drainage Design (Refer to Annex-1)

The design of road drainage facilities of No.1 Bridge (Right side from 0+60m to 1+00m) shall be changed its location and configuration of ditch due to new house constructed and its location is out of Right of Way.

And its configuration shall be changed from Masonry ditch (3300x2000x1300) to U-1000 ditch and shall be located along the outside of the retaining wall and gravity wall similar to other ditch.

Masonry ditch length remains only 5m length near the River.

## 3. Bridge Designs

### (1) Bridge Pavement

Bridge shall be designed with the concrete pavement and concrete pavement shall be incorporated in the deck slab of the bridge.

### (2) Joint

Expansion Joint type will be applied rubber type joint, because of excellence for durability, maintenance, and economic efficiency as actual experience.

### (3) Bridge accessories

In future plan, there will be no bridge accessories such as water pipe lines.

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#### 4. Undertakings by Republic of South Sudan

The major tasks to be undertaken by the Republic of South Sudan (RSS) has been confirmed in the technical notes dated on 28, June 2013. The following issues to be undertaken by Republic of South Sudan were additionally confirmed in this technical notes after conducting site survey from 17<sup>th</sup> of September, 2015 to 10<sup>th</sup> of November, 2015.

(1) Pavement of Approach Roads to the Bridges

Pavement of Approach Roads to the Bridges is basically constructed by the RSS.

(2) Secure of the Land and Relocation required

The RSS sides shall secure the land and the relocation of the utilities required for the bridge construction under the Project.

- ① The Table-1 shows Requirements of the RSS for the Construction of the Bridges in Juba City to be taken. And the drawing of the locations for the obstructions are shown in Annex-2.
- ② The fund, 1,500,000 SSP, for the Requirements of the RSS already has been allocated by MTRB.
- ③ The problem of the occupation by Anseba Hotel at the No.7 Bridge Right of Way area was solved among MTRB, MOPI and Anseba Hotel with the agreement shown in Annex-3.
- ④ The RSS should reserve the Right of Way for Bridges Construction as shown in Annex-4.

Table-1 Requirements of the RSS for the Construction of the Bridges in Juba City

Bridge Name	Items	Removal of Obstruction (Land, Fence, Masonry Wall, e.t.c.)	Quantity of Obstruction
No.1	①	Removal of existing Bamboo Fence	26m
	②	Removal of existing Barbed Wire Fence	16m
	③	Removal of existing Scrapped Cars	6 cars
	④	Removal of existing Electric Wire and Pole	110m
	⑤	Removal of existing Bill Board 1.3mx2.4m	1 unit
	⑥	Removal of existing Bamboo Fence	15m

No.4	①	Removal of part of existing Restaurant *	5m2
	②	Removal of existing Electric Wire and Pole	120m
No.7	①	Removal of Anseba Hotel Area from Right-of-Way	done
	②	Removal of existing Masonry Wall	16m
	③	Removal of existing Bamboo Fence	40m
	④	Removal of existing Sign Board 3mx2m	1 unit
No.10	①	Removal of Brick and Masonry Wall	7m
	②	Demolition of existing Concrete Box (1.9mx4.8m)	9.2m2
	③	Removal of existing Bamboo Fence	16m

\*This item should be removed under construction period due to the future bridge structure design change.

### (3)Size and Location of Construction Yard

The construction requires the temporary construction yard of 2ha (200mx100m).

The possible construction yard location is shown in Annex-5.

### (4)Borrow Pit, Quarry Sites and Disposal Sites

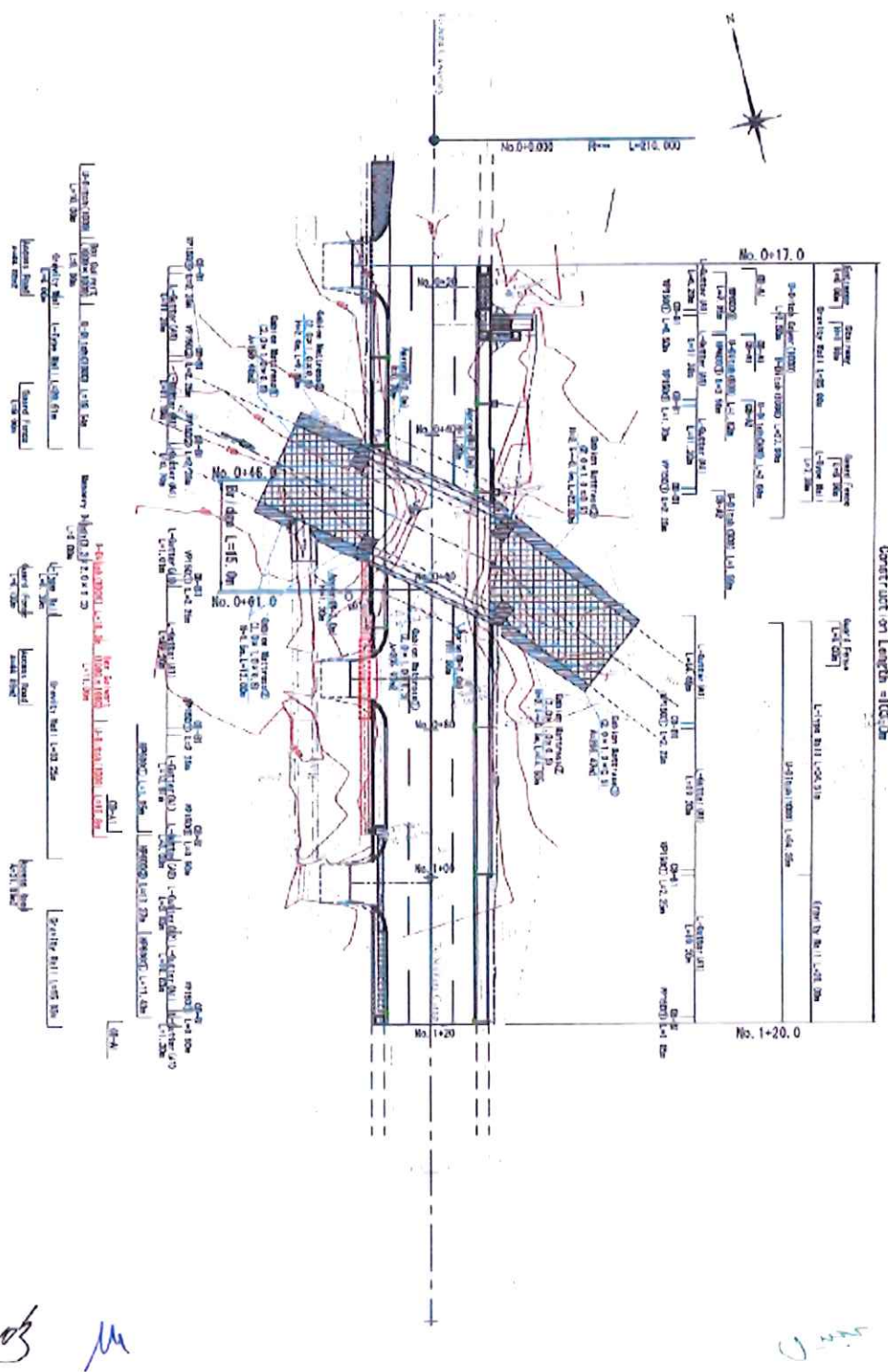
The possible location of borrow pit and disposal sites are shown in Annex-5.

# ANNEX-1

## Road Drainage Design Change

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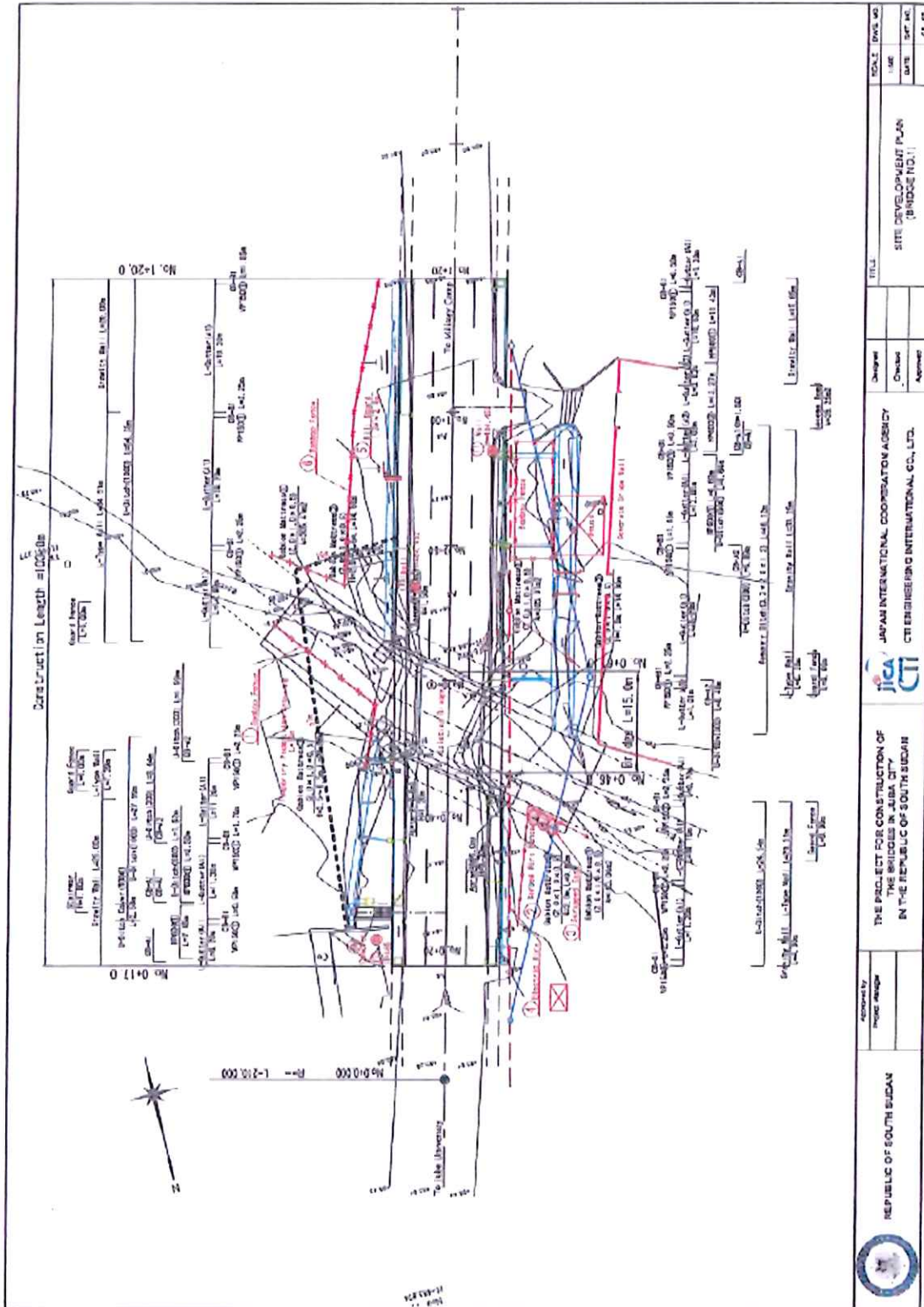
ANNEX- 2

Drawings for Removal of the Obstructions

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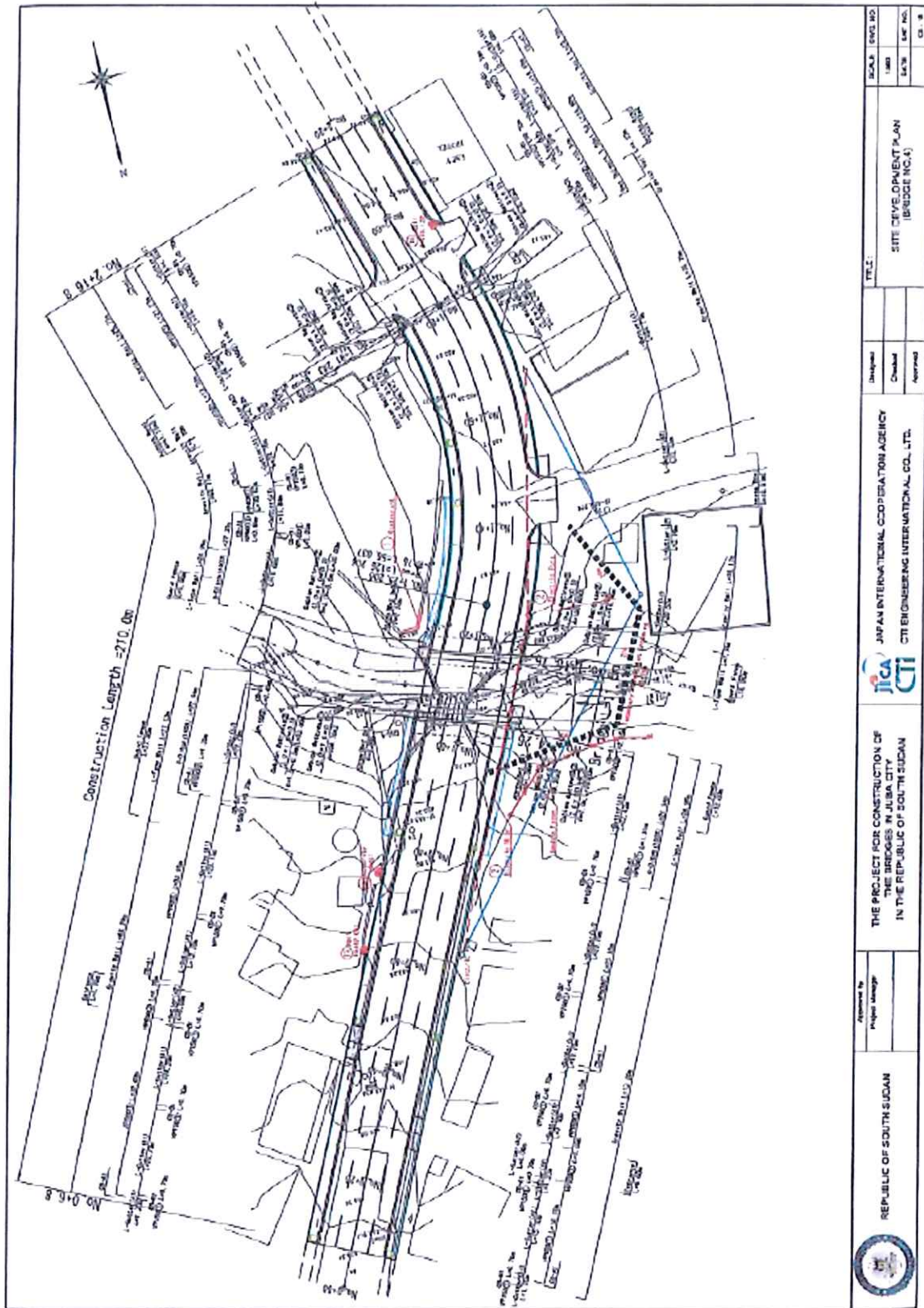
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 REPUBLIC OF SOUTH SUDAN	APPROVED BY PROJECT MANAGER	THE PROJECT FOR CONSTRUCTION OF THE BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN	 JAPAN INTERNATIONAL COOPERATION AGENCY CTE ENGINEERING INTERNATIONAL CO., LTD.	Designer Checker Approver	TITLE SITE DEVELOPMENT PLAN (BRIDGE NO.1)	SCALE 1:20,000	DWG. NO. DATE SHEET NO. OF

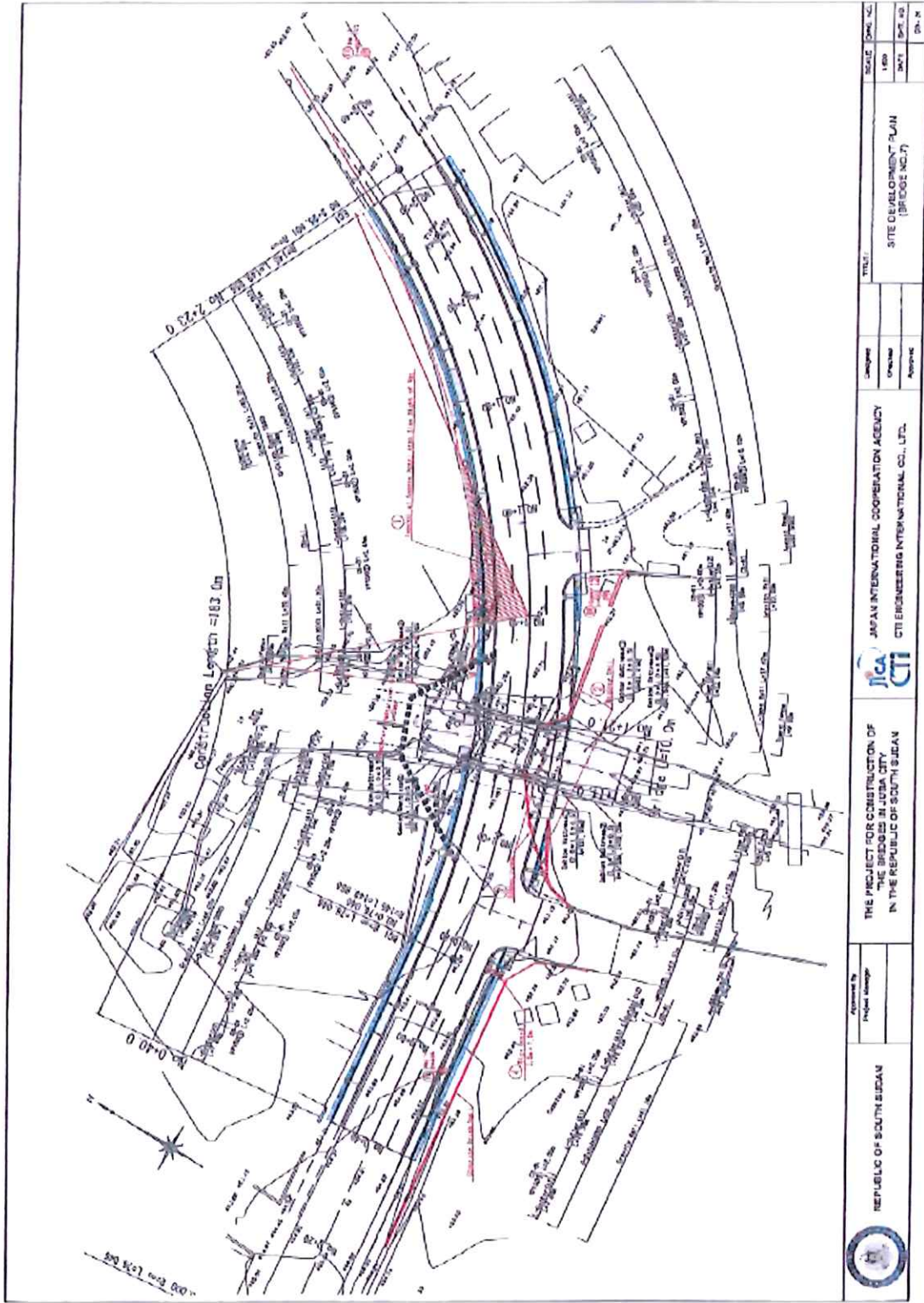


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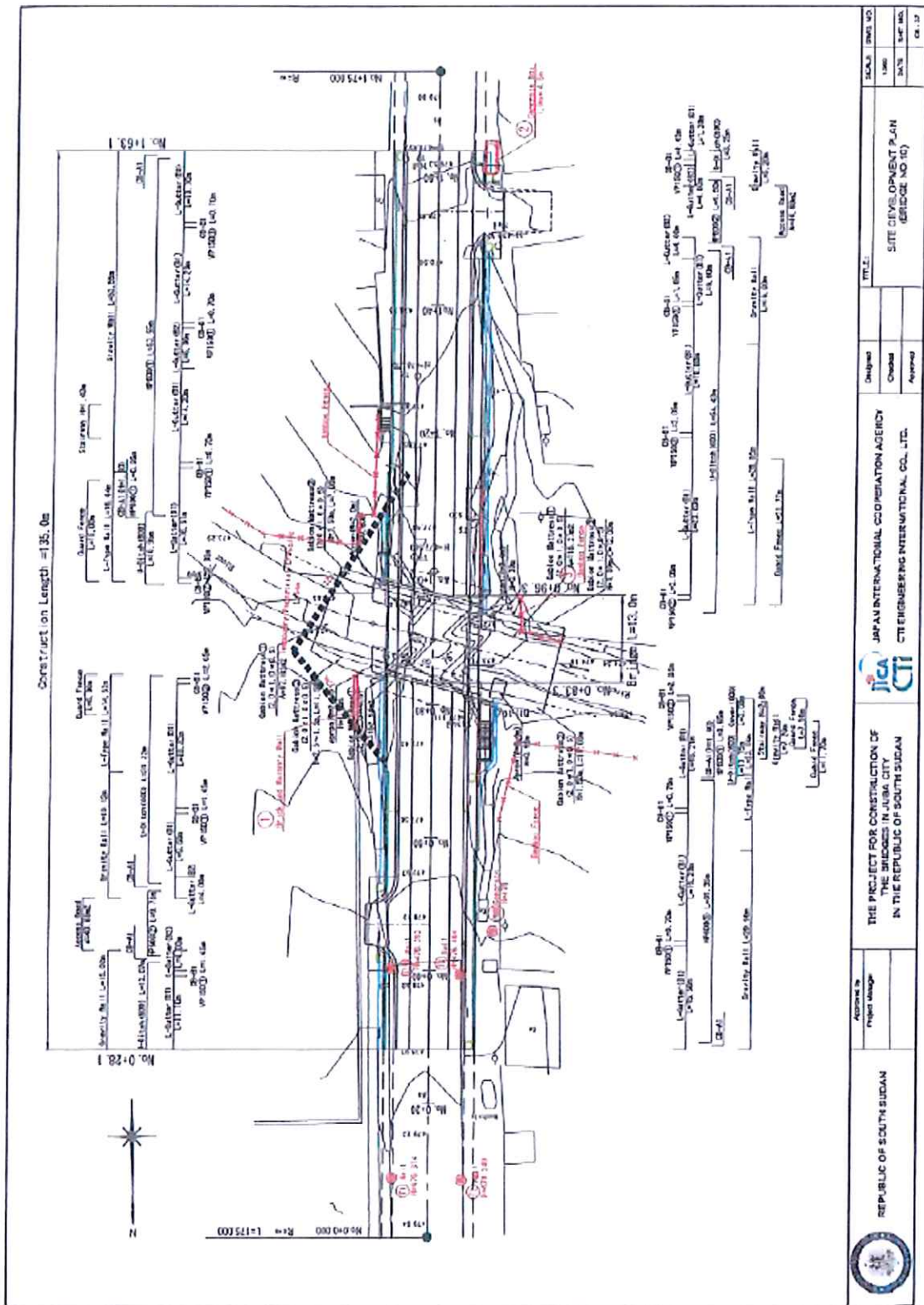
 REPUBLIC OF SOUTH SUDAN	Approved by Project Manager	THE PROJECT FOR CONSTRUCTION OF THE BRIDGES IN JUBA CITY IN THE REPUBLIC OF SOUTH SUDAN		 JICA / JAPAN INTERNATIONAL COOPERATION AGENCY CTE ENGINEERING INTERNATIONAL CO., LTD.	Developed <input type="checkbox"/>	Checked <input type="checkbox"/>	Approved <input type="checkbox"/>	TITLE: SITE DEVELOPMENT PLAN (BRIDGE NO.4)	SCALE: 1/500 SHEET NO. 14/78	DATE: 11/11/11 DRAWN BY: [Name] CHECKED BY: [Name]





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## ANNEX- 3

### Construction Condition of Anseba Hotel

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**Minutes of Meeting**

Reference : The Project for Construction of Bridges in Juba City in the Republic of South Sudan

Subject : Construction Condition of Anseba Hotel Near to Salakana Bridge (Bridge No.7) Approach Road

Based on the previous field investigation and discussions held among parties such as Ministry of Transport, Roads, and Bridges (MTRB) of Republic of South Sudan, Ministry of Physical Infrastructure (MOPI) of Central Equatoria State Government and Hotel representative of Anseba Company LTD, the Parties have agreed that the land and facilities of Anseba Company Ltd fall within the Right-of-Way of the approach road to Salakana Bridge (Bridge No. 7), therefore, Anseba Company Ltd should relocate them outside of the Right-of-Way of Salakana Bridge (Bridge No.7) as shown in the enclosed layout drawings of Salakana Bridge (Bridge No.7) and its approach road. The attached documents include the following information:

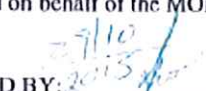
- a. Approach road layout plan of Salakana bridge (Attachment-1)
- b. Survey coordinates of Right-of-Way for approach road of Salakana bridge (Attachment-1)
- c. Possible hotel land area near to Salakana bridge and approach road (Attachment-1)
- d. Salakana bridge layout plan (Attachment-1)
- e. Location of Salakana bridge in Juba City (Attachment-2)

For and on behalf of the MTRB  
SIGNED BY:   
Eng. Olim Bang Mike  
Acting Director for Roads and Bridges  
Ministry of Transport, Roads and Bridges  
Republic of South Sudan

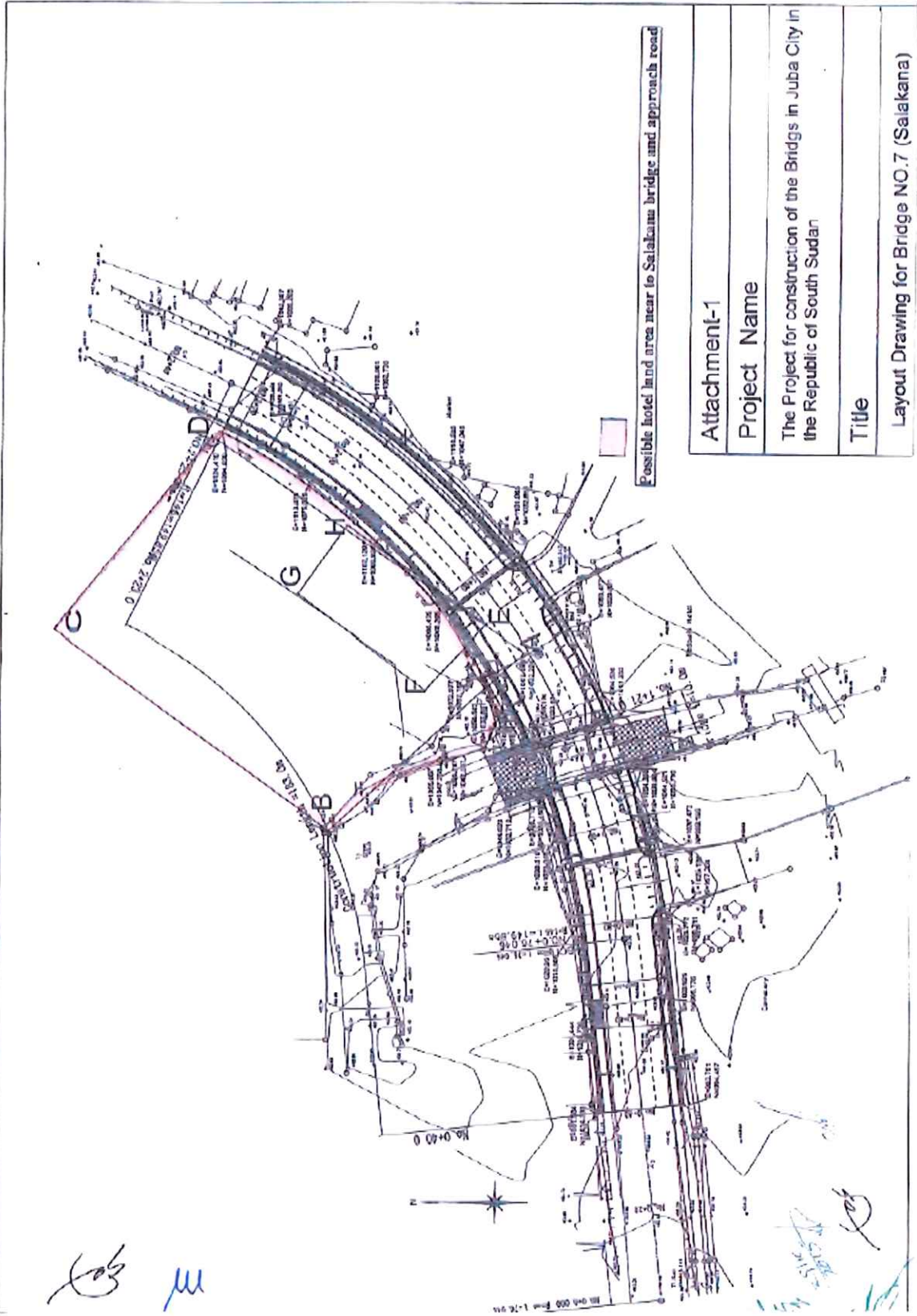
For and on behalf of the Anseba Hotel

SIGNED BY:   
Mr. Merhawi Mesfun  
Managing Director  
Anseba Company Limited

For and on behalf of the MOPI:

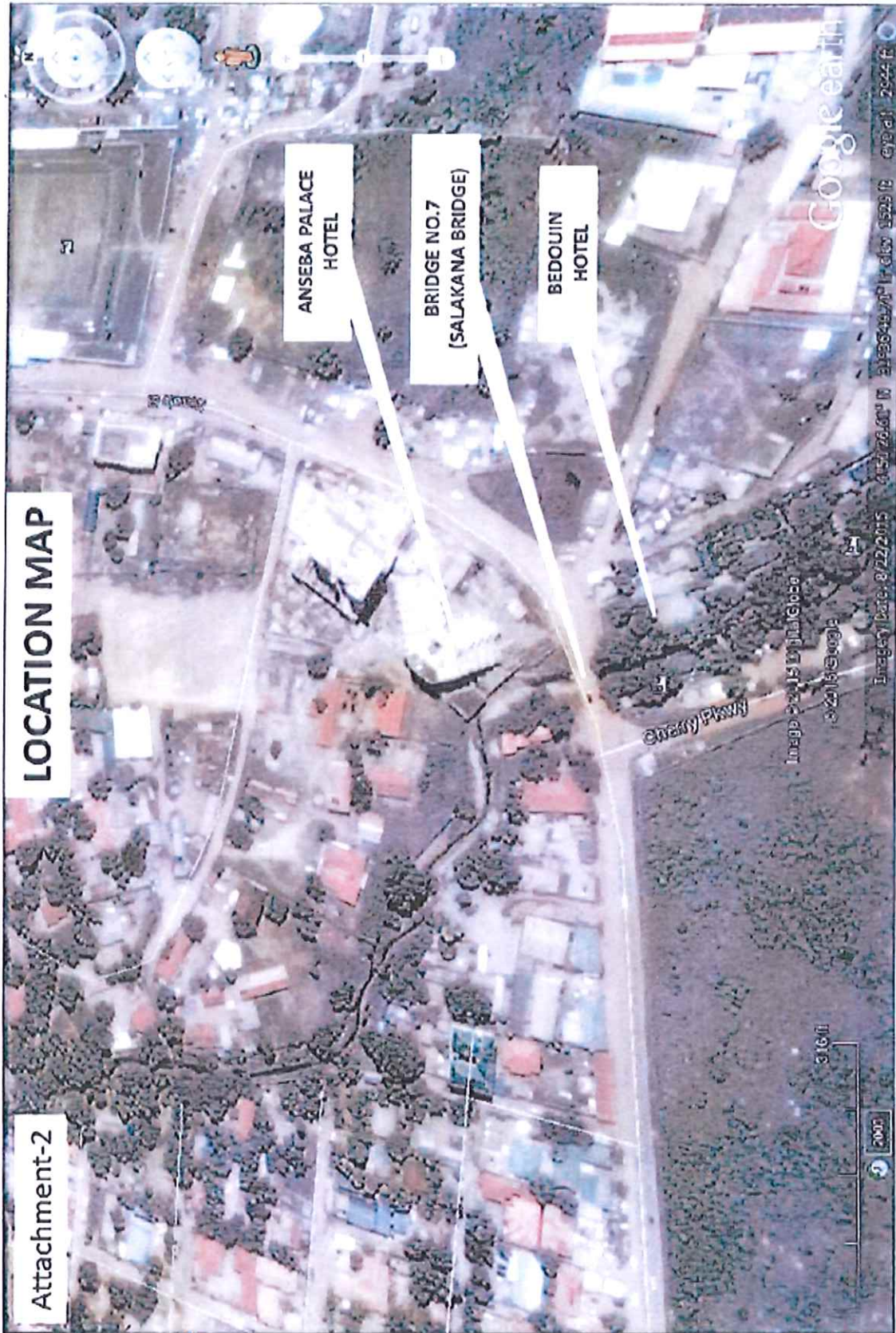
SIGNED BY:   
Mr. Roman Marghani  
Acting Director General, Roads and Bridges  
Ministry of Physical Infrastructure  
Central Equatoria State Government  
Republic of South Sudan





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25/10/2015 (16/10/2015)

## ANNEX- 4

# Guarantee Area for New Bridge Construction

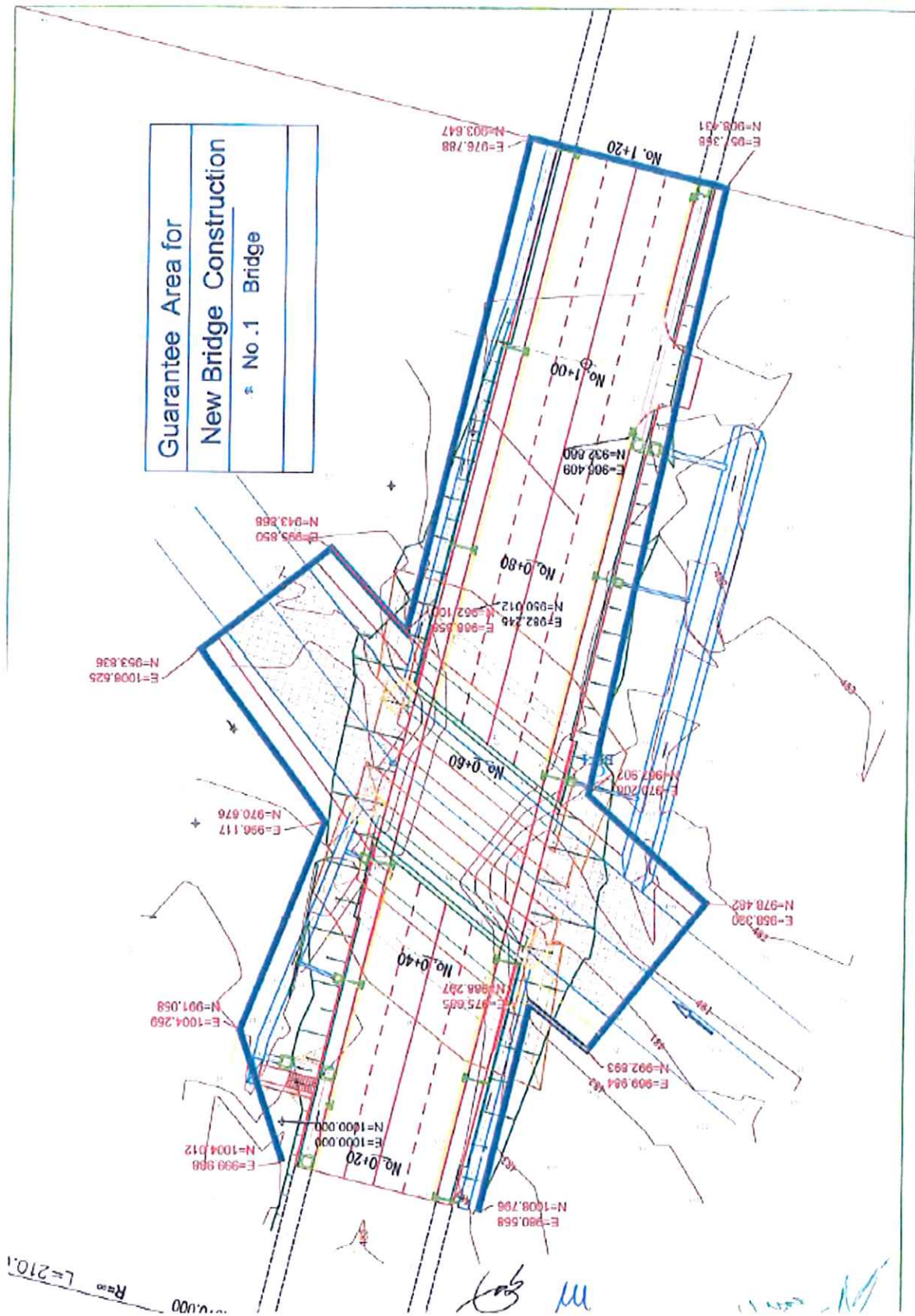
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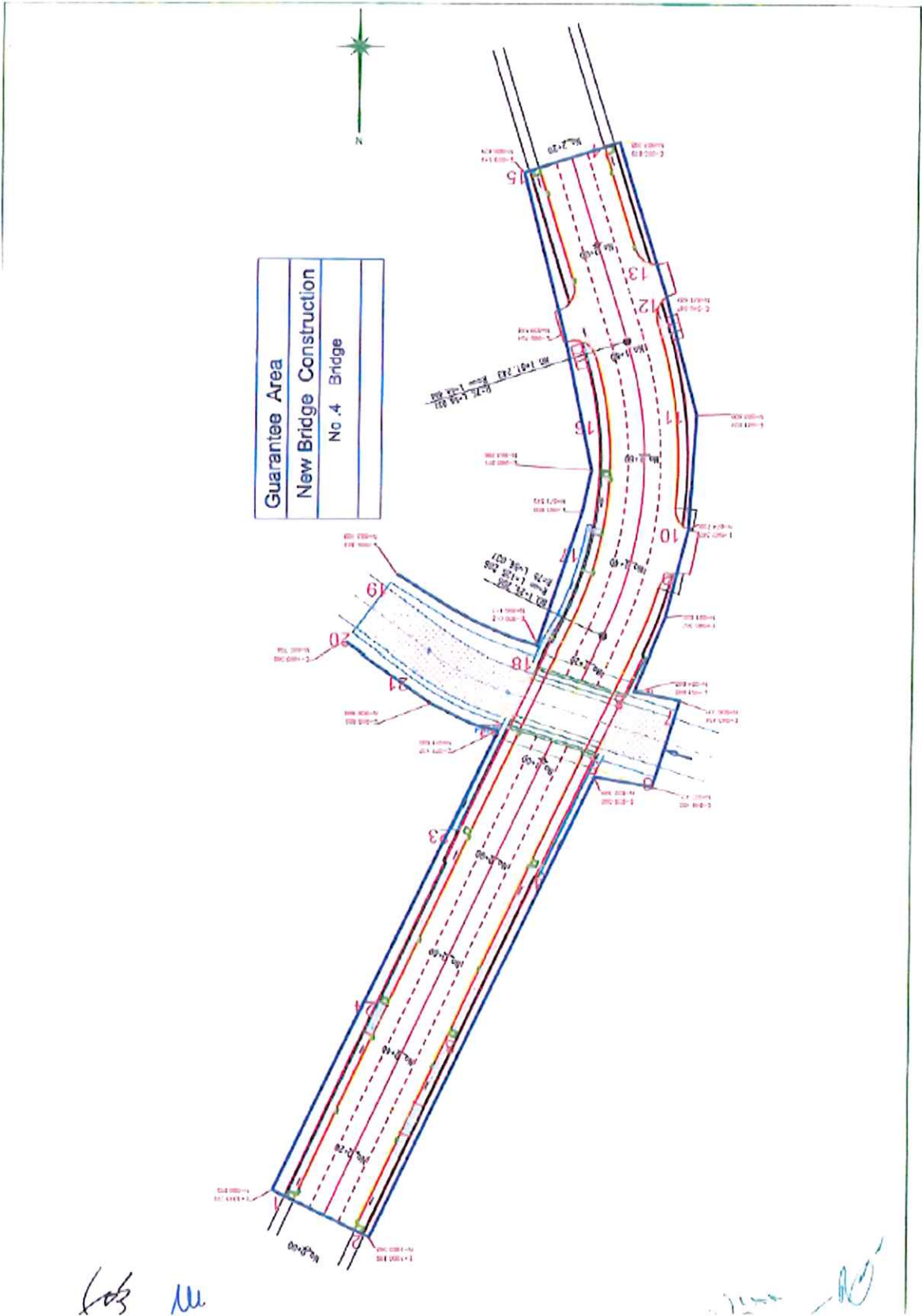
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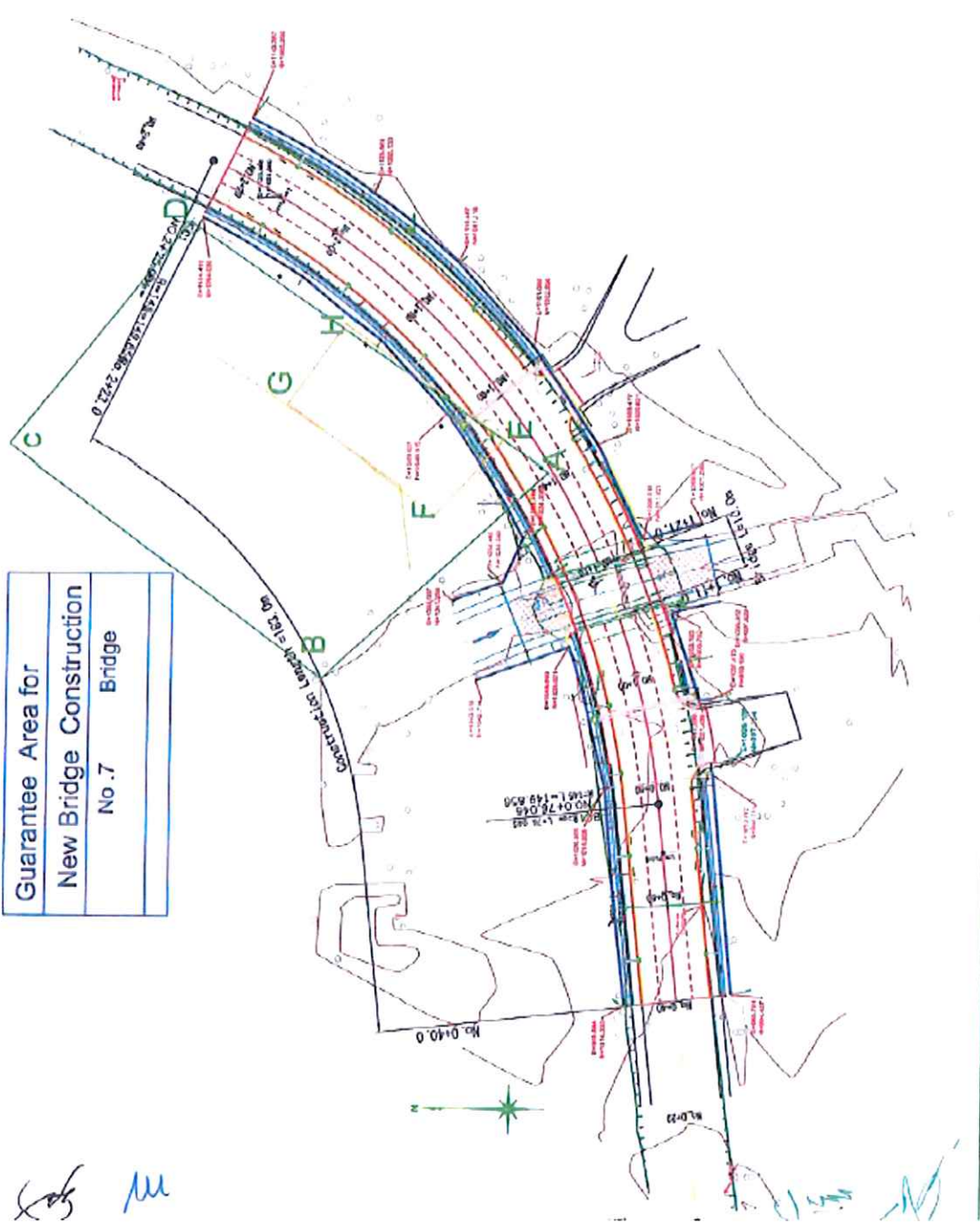




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Guarantee Area for
New Bridge Construction
No. 7 Bridge

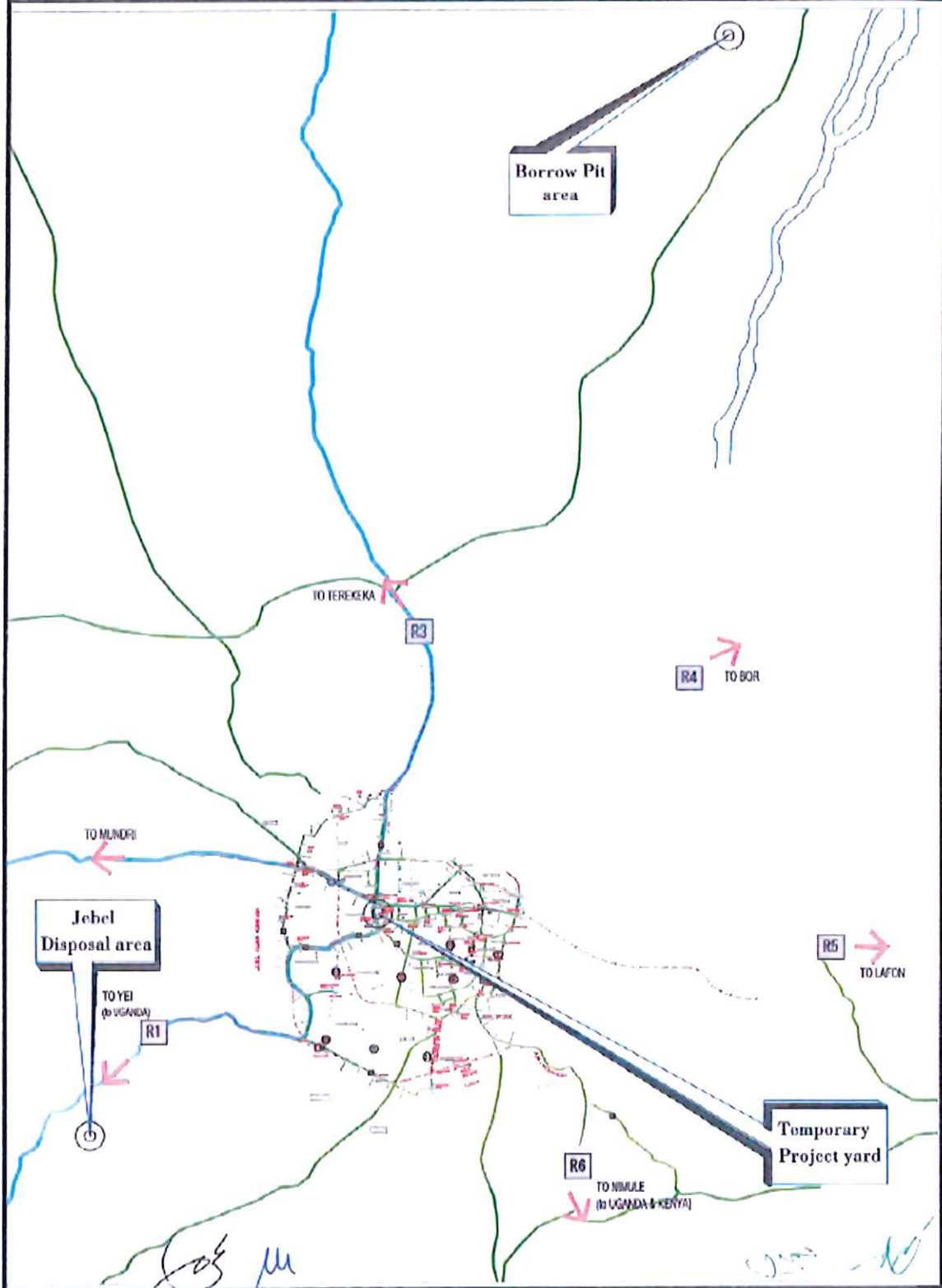




## Annex-5

Construction Yard, Borrow Pit Area  
and Jebel Disposal Area

Annex-5 Construction Yard, Borrow Pit Area and Jebel Disposal Area





資料—2 TECHNICAL NOTES

Ministry of Transport, Roads and Bridges  
Republic of South Sudan

Ministry of Physical Infrastructure, Central Equatoria  
Republic of South Sudan

PREPARATORY SURVEY  
ON  
THE PROJECT FOR CONSTRUCTION  
OF  
THE BRIDGES IN JUBA CITY  
IN THE REPUBLIC OF SOUTH SUDAN

TECHNICAL NOTES

MARCH 2016

JAPAN INTERNATIONAL COOPERATION AGENCY  
CTI ENGINEERING INTERNATIONAL CO., LTD.

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Preparatory Survey on the Project for Construction of the Bridges in Juba City  
in the Republic of South Sudan

Technical Notes

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Juba City, Republic of South Sudan  
March, 2016

  
YUZO, MIZOTA  
Chief Consultant  
JICA Survey Team

  
DOMINIC PITIA  
Acting Director General  
Ministry of Physical Infrastructure  
Central Equatoria State

  
GABRIEL MAKUR  
Undersecretary  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan

  
OTIMRONG MIKE  
Acting Director General  
Ministry of Transport,  
Roads and Bridges  
Republic of South Sudan  
(Witness)

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## Footpath Design

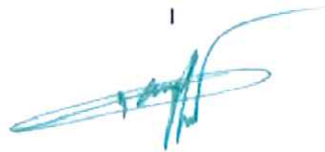
### (1) Pavement Design

Concrete pavement is adopted for the footpath pavement in the view of high durability and commonly-used footpath pavement type in Juba.

### (2) Ramp Type Footpath

The design of step for No.1 Bridge (Left side at 0+25m) shall be changed to ramp type foot path at maximum slope of 8% considering universal design.

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Ministry of Roads and Bridges  
Republic of South Sudan

Ministry of Roads and Bridges, Central Equatoria State  
Republic of South Sudan

**IMPLEMENTATION REVIEW STUDY  
ON  
THE PROJECT FOR CONSTRUCTION  
OF  
THE BRIDGES IN JUBA CITY  
IN THE REPUBLIC OF SOUTH SUDAN**

**TECHNICAL NOTES**

**NOVEMBER 2021**

**JAPAN INTERNATIONAL COOPERATION AGENCY**

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**CTI ENGINEERING INTERNATIONAL CO., LTD.**




Implementation Review Study on the Project for Construction of the Bridges in Juba  
City  
in the Republic of South Sudan

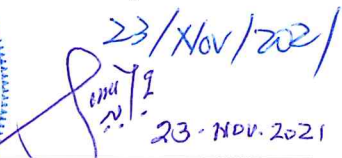
Technical Notes


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Juba City, Republic of South Sudan  
November, 2021



  
Yoshihisa NODA  
Chief Consultant  
JICA Survey Team

  
23/Nov/2021  
23-NOV-2021  
Samuel Taban Laki  
Director General  
Ministry of Roads and Bridges  
Central Equatoria State

  
Peter Kuot Jel  
Undersecretary  
Ministry of Roads and Bridges  
Republic of South Sudan

  
George Agrey Duku  
Director of Bridges and Structures  
(Project Manager)  
Ministry of Roads and Bridges  
Republic of South Sudan



## 1. Priority of Bridges

The priority of four (4) bridges in the approved budget to be constructed is as follows. In case the approved budget is not enough for the construction of all the bridges, priority 4 which is Bridge No.7 will be dropped from the target bridges during detailed design stage.

Priority	Bridge No.
1	No. 1
2	No. 4
3	No. 10
4	No. 7

## 2. Construction Plan

### 2.1. Construction Yard

We understand that the temporary construction yard which was agreed in the minutes of meeting in August 2021 will not be availed for the construction stage due to the conflict with the occupiers. Therefore, we request that your government should find the alternative location of the temporary stock yard whose area is minimum 1.2 ha around the target bridges by the end of the February, 2022 before the commencement of the detailed design. The attached is our proposed target locations of the temporary stock yard. However, the location in Lologo area will definitely cause the increase of the construction cost.











Alternative Location Map for Temporary Stockyard (2)

Alternative Temporary Stockyard area (120m\*100m)

Bridge No.10 (Kokora Bridge)

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*[Handwritten signatures]*