

Minutes of the Meeting of the Joint Steering Committee
(Botswana, Zambia, Zimbabwe and Namibia)
for the Proposed Kazungula Bridge Project with Japan International Cooperation
Agency held in Livingstone, Zambia on 18-19 October, 2000

Zambian Delegation

No.	Name	Designation/Organisation	Tel/Fax
1.	G. P. Nyirenda	Permanent Secretary, Ministry of Works and Supply - Leader of Delegation, Chairperson	253447/254108
2.	B. Nonde	Permanent Secretary, Ministry of Communications and Transport	254158/253260
3.	Bupe Kaonga	Assistant Director, Ministry of Works and Supply	252321/253108
4.	J.K. Musanya	Legal Political Scientist, Ministry of Foreign Affairs	252127
5.	S. Malubila	Provincial Road Engineer	324097
6.	S. M. Matonka	Principal Immigration Officer, Immigration Department	251305
7.	M. Mukela	Customs Collector, Zambia Revenue Authority	
8.	David Zulu	Transport Economist, Ministry of Communications and Transport	2254063/253260
9.	G.K. Muchimba	Principal Economist, Ministry of Finance and Economic Development	250886
10.	J. Silupumbwe	Executive Engineer, Roads Department	252259/253404
11.	Chola Katanga	Officer-In-Charge, Livingstone Police	321655
12.	K. Msimuko	Senior Collector, Zambia Revenue Authority	320140

Botswana Delegation

No.	Name	Designation/Organisation	Tel/Fax
1.	K. Skelemani	Deputy Permanent Secretary, Ministry of Works Transport and Communications - Leader of Delegation, Vice-Chairperson	358505/313303
2.	L.A. Nkaro	Acting Director of Roads	313511/314278
3.	J.S. Nwako	Principal Roads Engineer	313511/314278
4.	P.G. Alpajora	Bridge Engineer	313511/314278
5.	J.T Willie	Planning Officer, Ministry of Works, Transport and Communications	358577/313303

Zimbabwean Delegation

No.	Name	Designation/Organisation	Tel/Fax
1.	D. Z. Guti	Permanent Secretary, Ministry of Transport and Communications – Leader of Delegation	793017
2.	D. Musana	Chief Engineer – Bridges, Ministry of Transport and Communications	708863/702421
3.	G. Odhong	Principal Architect, Ministry of Local Government, Public Works and National Housing	704561-9
4.	L. Masilela	Deputy Director of Customs and Excise	251782/790255
5.	S. Bazwi	Principal Immigration Officer, Victoria Falls	4237/4238
6.	D. Manatse	Assistant Director of Customs and Excise, Western Region	70261, 70669
7.	S. Ruswa	National Parks Provincial Officer	263-9-479
8.	A. Madubeko	Zimbabwe Republic Police, Victoria Falls	4401 / 5856
9.	T.G. Msusa	Director of Public Works, Ministry of Local Government, Public Works and National Housing	727539/742757
10.	F. Dangare	Acting Deputy Director Planning and Design Department of Roads	700807

JICA Zambia Delegation

No.	Name	Designation/Organisation	Tel/Fax
1.	Koji Ota	Deputy Resident Representative	291075
2.	M. Takeuchi	Transport Policy Advisor, Ministry of Communications and Transport	291075

JICA STUDY TEAM Delegation

No.	Name	Designation/Organisation	Tel/Fax
1.	Koji Enomoto	Team Leader	241766
2.	Masaaki Tatsumi	Bridge Engineer (Sub-structure)	241766
3.	Tetsu Nakagawa	Bridge Engineer(Super-structure)	241766
4.	Takao Inami	Highway Engineer	241766
5.	Minako Sato	Environmentalist	241766
6.	Atsushi Morioka	Border Facility Planner	241766
7.	Greg Hookey	Hydrology/Hydraulics	241766
8.	Katsuyoshi Matsuda	Economist	241766
9.	Shinichiro Watanabe	Cost Estimator	241766
10.	Mark Lenczner	Building Engineer, Border Facilities	241766
11.	Koichi Arakawa	Administrator	241766

Agenda

18 October, 2000

1. Chairperson's Welcome and Opening Remarks
2. Remarks by Botswana
3. Remarks by Zimbabwe
4. Remarks by JICA
5. Adoption of the agenda
6. Presentation of the Interim Report:
 - Traffic Survey and Analysis
 - Future Socio-economic Framework
 - Border Control Facilities
 - Hydrological Survey and Analysis
 - Initial Environmental Evaluation (IEE)
 - Basic Policies and Planning Conditions
 - Formation of Design Criteria
 - Alternative Study of Road Alignment
 - Selection of Route and Bridge Type
 - Selection of Optimum Alternative
 - Others
7. Any other business

19 OCTOBER, 2000

1. Preparation of Minutes of Meeting
2. Date and Venue of Next Meeting
3. Signing of Agreed minutes
4. End of Meeting

1.0 Welcome Remarks by Chairperson

The Chairperson called the meeting to order at 10:10hrs. He welcomed all the delegates to the meeting. A special welcome was extended to the Permanent Secretary from Zimbabwe who was attending the meeting for the first time and the Deputy Permanent Secretary from Botswana, representing the Permanent Secretary who was unable to be present due to other official commitments. The Chairperson also acknowledged the presence and support of the Permanent Secretary Ministry of Communications and Transport, Zambia.

He made the observation that the report had been submitted late and given the size of the report, it was difficult to make constructive comments. He further suggested that if delegates were unable to make comments during the meeting, they were free to submit them to the JICA Study Team at a later stage.

Delegates were requested to introduce themselves.

2.0 Remarks by Botswana

The Botswana delegation leader proposed that in the interest of time, remarks by various leaders of delegations be left out. She, however, thanked Zambia for hosting the meeting.

3.0 Remarks by Zimbabwe

The leader of delegation concurred with Botswana's proposal and also extended thanks to Zambia for hosting the meeting.

4.0 Remarks by JICA Study Team

The JICA Study Team Leader supported the other leaders of delegations. He also thanked Zambia for hosting the meeting. The Team Leader appreciated this opportunity to present the Interim Report.

5.0 Adoption of the Agenda

The Agenda was adopted with the following addition:

- Matters arising from the minutes of the previous meeting

6.0 Matters arising from previous minutes, 30-31 August 2000 in Gaborone, Botswana

Page 5: Item 8.3

A question was asked as to whether Namibia had been invited to the meeting.

In response, Zambia indicated that an invitation had been extended to Namibia, and that Namibia indicated that the proposed dates were not convenient for them and had proposed a different date.

The Chairperson said that notifications and supporting documentation of future meetings should be circulated in good time to give delegates ample time to plan accordingly and make meaningful contributions.

Page 6: Item 8.8 Botswana and Zambia confirmed that names of counterpart personnel had been communicated to the JICA Study Team and that the personnel were already working with the Team.

Page 6: Item 8.10 The JICA Study Team leader indicated that no progress has been made since JICA has not received application forms from Botswana and Zambia of counterpart personnel with regard to training in Japan.

Page 8: Item 9. Matters arising from previous minutes, 17-18 February 2000

5.1 Maps- JICA confirmed that three countries (Botswana, Zambia and Zimbabwe) had submitted maps as per their request and were assured of further assistance where required.

5.4 Botswana was still pursuing the issue of informing SADC Secretariat to circulate information on the project amongst member countries.

6.2 Zimbabwe confirmed the security arrangements had been made for the JICA Study Team.

7.0 Submission of Interim Report-JICA Study Team

The JICA Study Team submitted fifty (50) copies of the Interim Report to the meeting in accordance with the Scope of Works for the Feasibility Study on the Proposed Kazungula Bridge, signed on 18th February 2000.

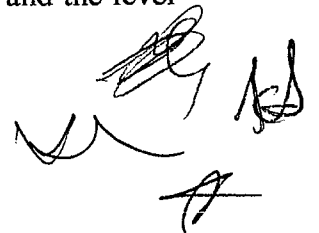
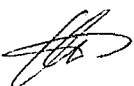
8.0 Presentation of Interim Report-JICA Study Team

8.1 Traffic Survey and Analysis

It was confirmed that even after the opening of Kazungula Bridge, short-trip traffic at Victoria Falls Bridge might not change. However, some of the long distance traffic would divert to Kazungula Bridge, even though the exact percentage could not be ascertained.

It was confirmed that long trip traffic, such as Lusaka-Walvis Bay, would have an option to use either Kazungula Bridge or Katima Mulilo Bridge.

It was confirmed that some traffic would use toll bridge and others would avoid but time value would be taken into consideration. This matter was possible to be analyzed applying diversion formula, which includes the relation between time value of drivers and the level of toll rate.



In case we toll the Kazungula bridge while the Victoria Falls and Chirundu bridges are not tolled, this will lead to those travelers who value time more to use the Kazungula bridge. While others will continue to use other alternative routes.

8.2 Border Control Facility:

It was confirmed that the planning conditions of Border Control Facilities should be based on one-stop system with separate type border system.

It was agreed that the relevant countries should consider how revenue collection, organization, legislation matters will be affected.

8.3 Hydrological Analysis and Hydraulic Survey

Hydrological analysis and a hydraulic survey were undertaken to provide input into engineering design. The design flood level based on the 100-year return period (plus allowance for wave run up and freeboard) has been adopted to determine design bridge level with 20 year return period for navigation clearance. Hydraulic analyses were applied to evaluate river flow velocities and likely scour estimates. Maximum flow velocities of the order of 2.7 m/s are likely for the Q100 flood and river levels are expected to rise some 5m above existing low flow level (observed around October annually).

8.4 Environmental Evaluation:

The JICA Study Team briefly explained the possible impacts of the Kazungula Bridge on both natural and social environment.

It was agreed that the JICA Study Team would prepare a separate Environmental Impact Assessment (EIA) report, which contains mitigation measures. However, all the necessary application procedures would be arranged by executing agencies in each country.

8.5 Basic Policies and Planning Conditions:

The following conditions were presented by the JICA Study Team and noted by the participants. JICA Study Team can proceed to the preliminary design based on these criteria:

- The design speed for the Kazungula Bridge is 80 km/hr.
- The geometrical conditions were as per attached table.
- Typical transverse cross sections of bridge (total width 11.0m) and approach roads (12.0m) were as per attached figures.
- The navigational clearance shall be based on the condition of safari boat height above the water level of 20 years return period flood and the height of the existing ferry boat during the construction above the water level of 5 years return period flood, whichever is higher shall be considered.

- The horizontal alignment, which would encroach into the military barracks in order to sustain the natural and wildlife, as proposed by the JICA Study Team.
- The British Standards (BS5400) for the bridge design and design live load of HB 37.5 unit shall be considered.
- The design seismic coefficient of 0.10 shall be considered.

8.6 Selection of Route and Bridge Type

Route C was recommended by the JICA Study Team and noted by the participants. The JICA Study Team can proceed the preliminary design based on the Route C alignment as per attached figure.

The JICA Study Team explained the selection procedures of bridge types, and the three alternative bridge types from PC-Box Girder and PC Extra-dosed type were considered mainly for economic reasons.

The JICA Study Team will continue with the study from the technical and economic viewpoints to determine the most suitable bridge type among the three alternative types.

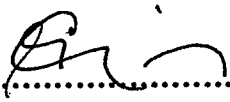
9.0 International Boundary

Coordinate data defining the international boundary between Botswana and Zimbabwe have been received from Botswana. This data should be confirmed by Zimbabwe before the JICA Study Team could use it.

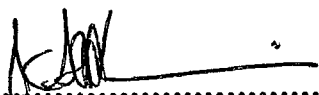
10. Venue of the Next Meeting

The next Joint Steering Committee Meeting to discuss the Draft Final Report will be held in Botswana and the date will be advised by Botswana in consultation with JICA.

SIGNED



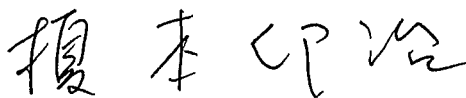
.....
Mr. Gerald P. Nyirenda,
Permanent Secretary, Ministry of Works and Supply
Zambia



.....
Mrs. K. Skelemani,
Deputy Permanent Secretary, Ministry of Works, Transport and Communications
Botswana



.....
Ms. Dinah. Z. Gutu
Acting Permanent Secretary
Ministry of Transport and Communications
Zimbabwe



.....
Mr. Koji. Enomoto
Team Leader, JICA Study Team



.....
Mr. Koji Ota,
Deputy Resident Representative, JICA –Zambia Office

Dated: This *19th* day of *October* 2000

At LIVINGSTONE, ZAMBIA.

ANNEXES



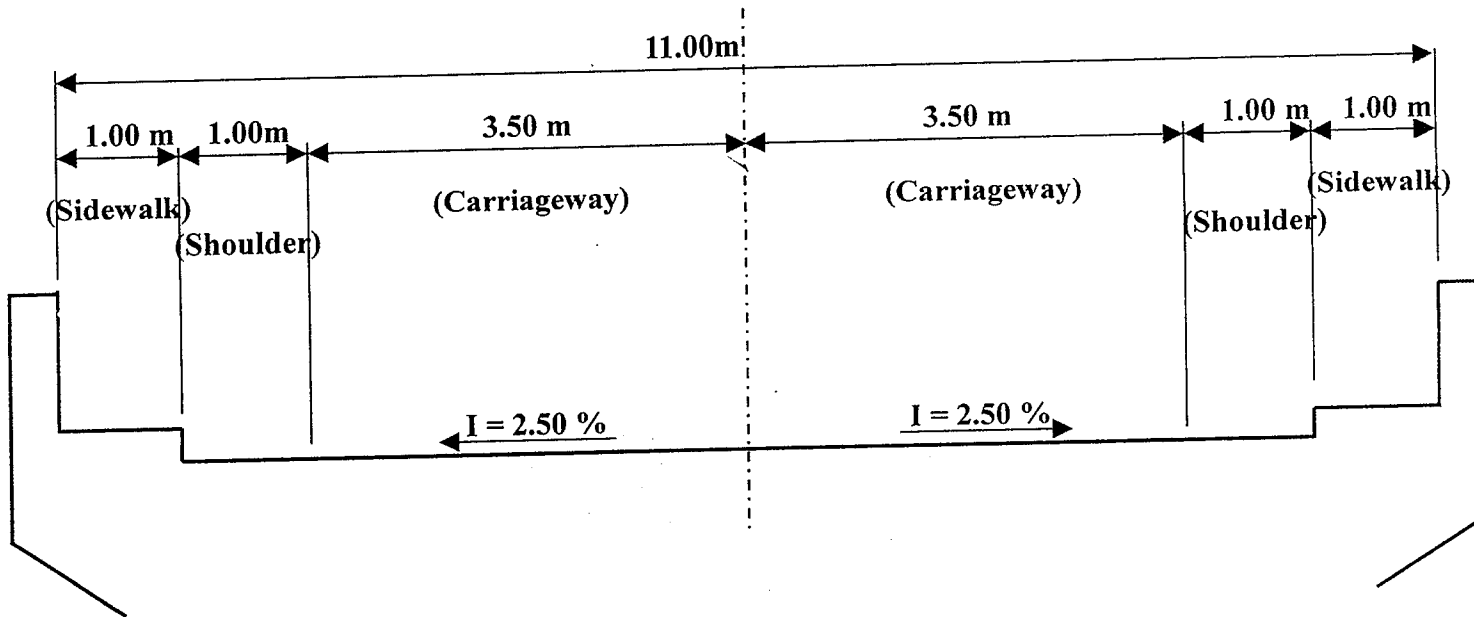
ROAD DESIGN CRITERIA

Design Speed : 80km/hr

Items	Description	Unit	SATCC	Botswana	Zambia	Proposal
Road class			-	3A	1C	-
Minimum radius of curve	With Superelvation	M	250 (6%) 230 (8%) 210 (10%)	240 (Abs.) 310 (Des.)	250 (7%)	250
	Without Superelvation	M	-	2600	3000	3000
Minimum length of horizontal curve		M	150 - 300	150 (Abe.) 300 (Des.)	-	150
Maximum Superelevation		%	-	Max.7%	Max. 7%	7%
Maximum gradient	Flat	%	5	4	4	4
	Rolling	%	6	-	5	5
	Mountainous	%	7	-	6	6
Minimum radius of vertical curve	Sag	M	2500	2500	3000	3000
	Crest	M	2800	2800	5000	5000
Minimum length of vertical curve		M	140	60	-	140
Vertical clearance		M	4.1 - 5.1	5.1	-	5.1
Sight distance	Stopping Distance	M	115 (0 %)	115 (0 %)	126 (0%)	126
	Passing Distance	M	540	560	420	560
Cross section	No. of lanes	each	-	2	2	2
	Carriageway	M	3.10 - 3.70	3.35	3.25	3.50
	Shoulder	M	1.0 - 3.0	2.0	2.0	2.0 (Br. 1.0)
	Sidewalk	M	-	-	-	- (Br. 1.0)
	Cross fall	%	2.0 - 3.0	2.5	2.5	2.5
Slope gradient	Fill : Soil		1:1.5 - 1:4	1:2 - 1:4	1:4(h<1m) 1:2(h>1m)	1:2
	Cut : Soil		1:1.0	1:1.5-1:1.2	1:2(h<1m) 1:1.5(h>1m)	-
	Rock		1:0.25	1:0.25	1:0.33-1:0.1	-

TYPICAL CROSS SECTION

BRIDGE SECTION

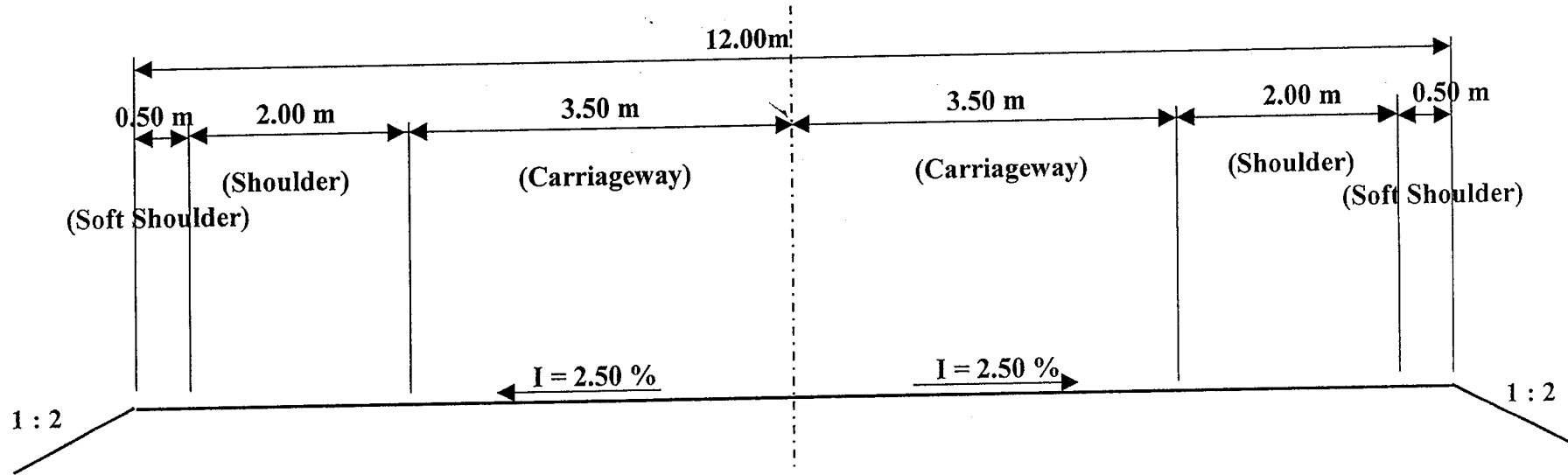


4
[Handwritten signature]

[Handwritten signature]
[Handwritten signature]
[Handwritten signature]

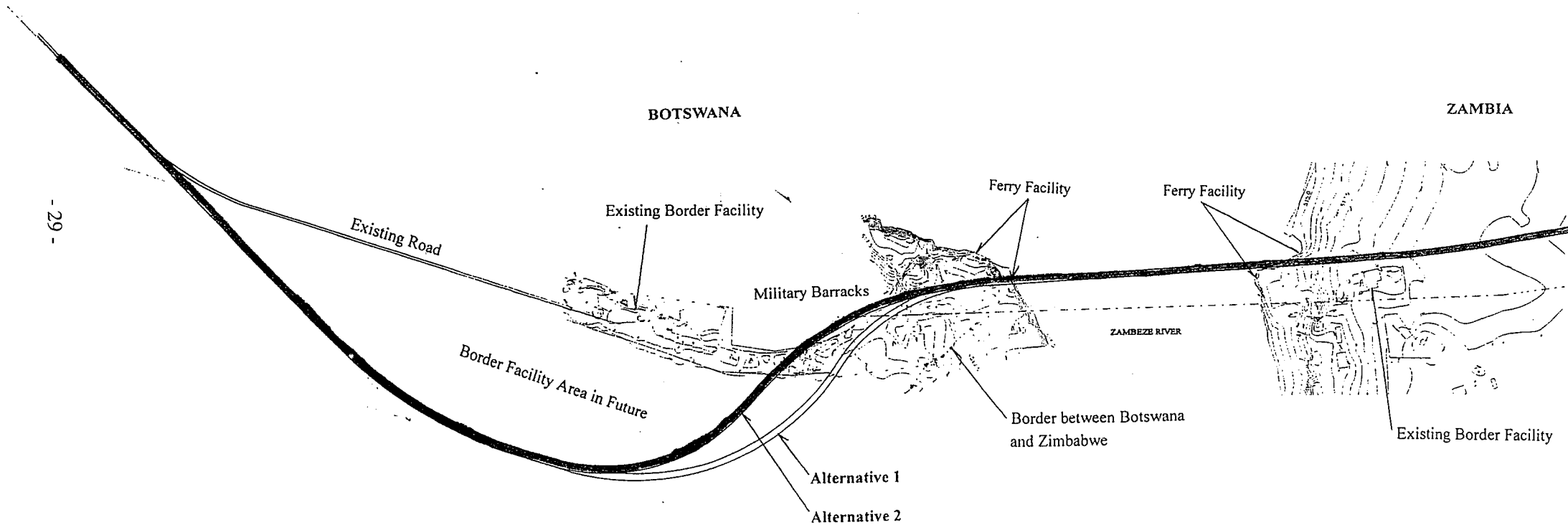
TYPICAL CROSS SECTION

EARTHWORK SECTION



Handwritten signatures and initials are present at the bottom left of the page.

7
[Handwritten signature]



- 29 -

[Handwritten signatures and initials]

Horizontal Alignment