Republic of Tajikistan
Ministry of Transport

Republic of Tajikistan
The Project for Rehabilitation of Kurgan Tyube - Dusti Road (Phase II)
Implementing Review Study Report

July 2011

JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)
KATAHIRA & ENGINEERS INTERNATIONAL

FFP
CR(1)
11-008

Preface

Japan International Cooperation Agency (JICA) conducted the implementing review study on the Project for Rehabilitation of Kurgan Tyube - Dusti Road (Phase II) in the Republic of Tajikistan and delegated the study to KATAHIRA & ENGINEERS INTERNATIONAL.

The team held discussions with the officials concerned of the Government of Tajikistan from February, 2011 to July, 2011, and conducted a field study at the study area. After the team returned to Japan, further studies were made and this report has been completed.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Tajikistan for their close cooperation extended to the team.

July, 2011

Kazunori MIURA
Director General, Financing Facilitation and
Procurement Supervision Department
Japan International Cooperation Agency

Summary

(1) Background of the Project

The target road of the Project, which is a section of 17.9km from Kurgan Tyube to Dusti, is situated on the southern route of the primary road network in Tajikistan which runs north, south, east and west from the capital city of Dushanbe. The Government of Tajikistan gives priority on the development of the southern route as integral part of the International Trunk Road No.11, namely the Asian Highway No.7 (AH-7), connecting to the sea thru the neighboring country, Afghanistan. As for the improvement of the southern route, the road between Dushanbe and Kurgan Tyube was rehabilitated with the assistance of the Asian Development Bank in 2005 while a new bridge across the Pyandzh River along the border with Afghanistan was constructed with the assistance of the US Government in 2007. In addition, road improvement work between Dusti and Nizhniy Pyandzh was completed in 2010 under the Grant Aid of the Government of Japan.

The Basic Design and Detailed Design study for the 59.9 km road section between Kurgan Tyube and Dusti were conducted in 2007 and 2008. However, the bid tendering ended up in failure due to the prevailing increased costs of material and equipment and change of circumstances in construction procurement at the time.

The re-bidding was conducted and became finally successful for the total road section of 42.0 km being reduced by 17.9 km out of 59.9 km. This project (hereinafter referred to as Phase I project) is currently taking place aiming at the completion in 2011.

It is strongly required that the target road, the remaining part of 17.9 km from Kurgan Tyube will be rehabilitated as earlier as possible, realizing the completion of the rehabilitation for an entire stretch between Dushanbe and the border with Afghanistan on the International Trunk Road No.11, formerly the National Road No.384.

(2) Result of Survey and Contents of the Project

In order to conduct the reviewing of the cost estimate and preparing the reference drawings and related documents for the tender, according to the latest investigation on the material cost and the procurement environment in the construction industry, the Japan International Cooperation Agency (hereinafter referred to as JICA) dispatched the Preparatory Study Team to Tajikistan for the period from 12 February 2011 to 1 March 2011. The team had discussions with the Tajikistan side and carried out site investigation including condition survey of the existing bridges based on the study policy that the outline of the subject facilities described in the Basic Design Study Report 2008 remains unchanged while any changes or modifications, if required based on the survey, will be studied for its appropriateness and reflected in the design. The changes, modification and the obligations of the Government of Tajikistan were discussed and agreed through the discussion with Tajikistan and the Study Team. After the study in Tajikistan, the Study Team finalized the detail design, cost estimate and

reference drawings and documents for the tender based on results obtained from the study.

As for the rehabilitation of the target road, it was confirmed that any amendments or revisions to the design are not required upon reviewing the Basic Design Study Report 2008.

As for the shoulder of the road with 2.5 m width, asphalt pavement with thickness of 5 cm is applied instead of DBST pavement to keep the same durability as the carriageway based on the actual site situation of the Dusti-Nizhniy Pyandzh road and Phase I project.

As for the existing 5 bridges located on the target road, the following works are adopted based on the detailed analysis and discussion with MOT.

- For the Bridge No.2 located in the city area of Kurgan Tyube, replacement of a concrete box culvert originally planned with steel structures is aimed to minimize the relocations of utilities and to avoid large scale excavation.

- For the Bridge No.3, 4, 5, the rigid frame bridge structures are designed for entire structures to eliminate a restriction that the work for casting bottom slab is executed only during the low water season in winter because drying –up is required.

- For the Bridge No.1, repair works are designed because the slab concrete was in good condition and bridge size is relatively small.

Finalized outline of the project is presented as follows.

Item		Content of Plan
Target Road		17.9 km
Pavement Structure	Asphalt Pavement	Surface Course: 5 cm (Carriageway)
		Binder Course: 5 cm (Carriageway)
		Binder Course: 5 cm (Shoulder)
	Gravel Course	Base Course: t=20 cm (Mechanical Stabilized Gravel)
		Sub-base Corse: t=4-24 cm (Quality local material, Recycled gravel separately measured)
Road Width		Width of Carriageway: 7.0 m (2*3.5 m) Width of Shoulder: 2.5 m typical
Cross-road Drainage Structures (existing)		Elevation of wing wall: 6 places New installation of pipe culverts: 201 m
Rehabilitation of Bridge		Rehabilitation of 5 bridges: span 5.5 m-26.9m
		Rehabilitation by structures
		Replacement with Steel bridge
		Reinforced Concrete Rigid Frame Strictures: 3 bridges

	Partial Repair: 1 bridge
Auxiliary Facilities	Retaining wall, Guard fence, Road marking, Vehicle weighing facilities

(3) Implementation and Cost Estimate of the Project

To implement this project, the following periods are considered necessary for each stage of the project.

Detail Design stage including tender preparation and tender: 4.0 months
Construction stage: 17.0 months

The Project will be implemented in accordance with the procedures of Japan's Grant Aid Assistance and costs to be borne by the Government of Tajikistan are estimated to approx. 16 million Japanese Yen.

(4) Implementation of the Project and Administrative and Maintenance Organization

The Implementing organization of this project is MOT. As for the cost to be borne by Tajikistan for relocation of water pipes and securing the temporary yards, MOT is considered capable enough to bear the cost of Japanese Yen 16 million which shares only 3.0% of the total yearly budget of MOT.

On the other hand, the maintenance works for the target road after the completion of the project are assumed to be

① Daily maintenance works such as cleaning of the structures, patching works to the road surface, and repair works for the base course and shoulder

② Periodic maintenance works such as repair of the base course, overlay, repair of the structures at every 5 years.

As an average yearly expenses necessary for the above maintenance works is estimated to be only 1.1% of the total MOT budget, Mot is considered capable to bear the said expenses.

(5) Relevance of the Project

Expected effects by implementation of the project are described below.

Quantitative Effect

① By improving the travelling performance and smooth traffic on the target road, safety travelling speed will become 73 km /h to be increased from the previous speed of 30 km/h and

40 km to be increased from 20 km in the urban areas respectively.

Qualitative Effect

① Safety traffic on the target road will be improved by widening shoulders to divide the carriageway for vehicles and paths for pedestrians and motorbikes.

② Transportation cost for agricultural products in the areas will be reduced because of the travelling time shortened by the project.

③ The improvement of the road will contribute to expanding the transportation volume of cargos.

④ The road develops its function as a broad area trunk road connecting Tajikistan and Afghanistan and Pakistan and enhances the socio-economic development by promoting the exchange of the products and people

⑤ Improved convenience and reliability of the road by the project will contribute to development of the region, improvement of regional inequity, expanding of commercial markets and improvement of the access to medical and educational facilities

The purpose of the project is to rehabilitate only a section left unpaved on the International Trunk Road No.11, namely the Asian Highway No.7 (AH-7). The Government of Tajikistan puts premium on this highway connecting to the sea from the capital city of Kurgan Tyube thru the neighboring country, Afghanistan. Improving the conditions of the unpaved section to provide safe and smooth traffic on the highway by the implementation of the project will be expected to benefit 710 million people of Tajikistan upon completion. Linking up with the road between Dushanbe and Kurgan Tyube improved by ADB, a new bridge constructed by US government, the road improved between Dusti and Nizhniy Pyandzh and an ongoing Phase I project for 42.0 km from Dusti towards Kurgan Tyube both by the Government of Japan, more significant effects are expected as described above. Rehabilitation of the target road following the implementation of Phase 1 project will create its functions faster at maximum extent as a trunk road servicing in broader areas to contribute to higher standard of living for the people in the region. Therefore, it is considered that implementation of the project with the Grant Aid Assistance by the Government of Japan is appropriate.

Краткое описание проекта

(1) Предыстория, причины и описания заявки проекта

Проектный участок данного исследования находится на дороге Курган-Тюбе – Дусти, отрезок международной дороги №11 (или дорога №7 Азиатской Магистральной сети, АН-7), который обеспечивает выход на море через соседний Афганистан. РТ уделяет высокий приоритет этому маршруту как ключевой фактор развития. Данная дорога проходит по южному маршруту международных сетей магистральных дорог РТ, распостраняющеся от столицы Душанбе по всем направлениям юг-север-запад-восток. До настоящего момента по данному маршруту проводились ремонтные и строительские работы с помощью США по строительству нового моста через реку Пяндж, протекющий вдоль границы с соседним Афганистаном, и АБР по реконструкции дороги Душанбе – Курган-Тюбе. Также в 2010 году была завершена строительство дороги Дусти – Нижний-Пянж с помощью японского гранта.

С 2007 по 2008 годах была проведена базовое проектирование 59,9 км дороги Курган-Тюбе – Дусти. Далее в 2008 году были проведены детальное проектирование и тендер на реконструкцию дорог. Но по причине резкого увелечения цен строительных материалов в РТ и изменчивых условий поставок, тендер не состоялся. Длина проектной дороги была укорочена до 42 км, после чего повторный тендер был успешно проведен. В настоящее время идет реконструкция этой дороги (далее Первая фаза проекта), и в 2011 году планируется сдача объекта на эксплуатацию. Если реконструкция оставшийся 17,9 км дороги будет завершен, международная дорога №11 (бывшая государственная дорога №384) связывающяя столицу Душанбе до границы Афганистана будет полностью реконструирован. Поэтому необходимо начать работы по реконструкции дороги в скроейшем времени.

(2) Результаты исследования и содержание проекта

Японское агентство международного сотрудничества (JICA) провела исследования последних расценок на строительные материалы и подрядные работы. В целях повторного расчета проектных расходов и составления тендерной документации, с 12 февраля по 1 марта 2011 года в Таджикистан была направлена исследовательская группа по формированию проекта. Принципиальное направление работы исследовательской группы установлена как: «Концепция проектных объектов, принятая в базовым проектировании, в основном будет сохранен не изменно. Но исходя из последних условий на местах могут быть рассмотрены определенные изменения, учитывая их целесообразность». Основываясь на этот принцип, исследовательской группой были проведены обсуждения с таджикской стороной, осмотр настоящих условий существующих

мостов и окружающей среды участков, повторная исследование последних расценок на сроительные материалы и подрядные работы. С таджикской стороной были рассмотрены и согласованы изминения вводимые в базовый проект и объязательства сторон. По возвращению в Японию, основываясь на результаты исследования был разработан проект, составлена смета расходов и справочные материалы для подготовки тендерной документации.

Было установлено что по части ремонта дорог, изменений в базовом проекте не требуется. По части обочин (ширина w = 2,5 м), исходя из опыта реконсрукции дороги Дусти – Нижний-пянж и первой фазы строительства проектной дороги, двойная обработка битумом (метод DBST) был заменен на асфальтобетонное покрытие (толщина t= 5 см) для продления срока службы обочин до срока службы самой дороги.

По результатам детального обследования существующих 5 мостов на проектном участке, а также обсуждения с МТ, было принято заменить и отремонтировать эти мосты следующим образом:

- Мост №2 находится в городе Курган-тюбе. В первоначальном проекте было запланировано строительство бетонного трубопровода на этом участке. Но во избежания крупномасштабных работ по переносу придорожной инфраструктуры и объемных раскопок, строительство бетонного трубопровода заменен на строительство нового железного моста.
- По причине ограничений периодов строительства, исходящего из необходимости бетонирования дна рек мостов №3, №4 и №5 в период низкого уровня воды (только в зимний период), было решено проведение строительство балочных мостов (метод Portal Rahmen) на этих участках. Первоначально на этих участках тоже было запланирование строительство бетонных трубопроводов. Метод Portal Rahmen, так же как в бетонных трубопроводов, не требует больших затрат по содержанию в дальнейшей эксплуатации объекта.
- Масштаб моста №1 маленький, и состояние бетонных плит были оценены как удовлетворительные. Обсудив состояния мотса на месте с МТ, были решено ограничится ремонтом моста.

Ниже краткое окончательное описание проекта:

Пункты проекта		Содержание проекта
Проектный участок		17,9 км
Структура покрытия	Слой износа	Асфальтобетонный слой износа, 5 см (проезжая часть)
		Несущий асфальтобетонный слой, 5 см (проезжая часть)
		Несущий асфальтобетонный слой, 5 см (обочины)

Пункты проекта		Содержание проекта
	Гравийно-песчаная подготовка	Верхний подстилающий слой 20 см (щебень с контролем разимера)
		Нижний подстилающий слой 4-24 см (качественное местное сырьё, отдельный расчет толщины использования имеющегося покрытия данной дороги)
Ширина дороги		Ширина проезжей части: 7,0 м (2 полосы х 3,5 м)
		Ширина обочин: стандартная 2,5 м
Реконструкция поперечных дренажных сооружений		Балочные водоотводы: 6 участков устройство кюветов: 201 м
Реконструкция мостов		Ремонты и реконструкция 5 мостов (длина пролетов от 5,5 м до 26,9 м) Содержание проводимых работ: －Замена 1 моста на новый железный мост －Замена 3 мостов на новые портально съемные конструкции (метод Portal Rahmen) －Ремонт 1 моста
Прочие искуственные объекты		Подпорные стенки, защитные ограждения, разметка разделительных линий, монтаж весов транпортных средств и др.

(3) Проектные сроки и расходы реализации проекта

Также, необходимый период реализации проекта, включая процесс тендера, составит 21 месяцев (разработка рабочих проектов 4 месяца и период строительства 17 месяцев). Проект будет осуществлен в соответсвии с процедуриальной схеме Японской Безвозмездной Помощи. Расходы правительства Таджикистана оцениваеются примерно 16 миллионов японских йенов.

(4) Реализация проекта и организация работ по эксплуатации и содержании дорог

Исполнитель данного проекта – Министерство транспорта РТ. Обязанности таджикской стороны, это перенос водопроводных труб, выделения временных строительных площядок и т.д. Для покрытия этих расходов, необходымые средства составляют 3% годового бюджета МТ, что показывает самодостаточную финансовую способность покрытия расходов.

С другой стороны, после окончания строительных работ данного проекта, требуются

последующие работы по содержанию дорог: 1. уборка и чистка сооружений, поверхностная обработка, восстановления дорожного основания и обочин, и другие работы текучего содержания; 2. периодический ремонт дорожного основания, повторное покрытие, ремонт исскуственных сооружений (каждые 5 лет) и т.д. Среднегодовой расход для осуществления этих работ по содержанию составляют 1,1% бюджета МТ. Можно предполагать что есть возможность выделения достаточного бюджета для этих работ.

(5) Анализ целесообразности проекта

Ниже описаны результаты осуществления данного проекта.

1) Количественный результат

В результате повышения пропускной способнсти, обеспечивается безприпятсвенное транспортное движение. Если в настоящее время, безопасная средняя скорость движения по проектному участку состовляет 30 км/час (вне черты города), то после выполнения проекта безопасная скорость повысится до 73 км/час. В городских дорогах этот показатель повысится с 20 км/час до 40 км/час.

2) Качественный результат

① Разделения полосы движения и покрытия обочины, используемый как пешеходный тратуар и дорожка для велосипедов, обеспечит повышенный уровень безопасности на дорогах

② Сокращение времени передвижения уменьшит транпортные расходы сельскохозяйственных продуктов

③ Повышение межрегионального транпортного потока в результате улучшения дрожных условий

④ Инициирования экономического и социального развития посредством продвижения товарооборота и пассажирского транпорта, в результате функцианирования проектной дороги как часть сети международных магистральных дорог связывающих Таджикистан с Афганистаном и Пакистаном

⑤ Удобство в пользовании и доверия к дорогам инициирует развитие региона, сокращение разрыва в развитии регионов, расширение рынка деятельности, улучшение доступа к медицинским и образовательным учреждениям.

Проектный участок данного исследования это единственный не реконструированный отрезок международной дороги №11 (или дорога №7 Азиатской Магистральной сети, АН-7), который связывает столицу Душанбе с выходом к морю через соседний Афганистан. Совместно с проектами США по строительству нового моста через реку Пяндж, протекющий вдоль границы с соседним Афганистаном, и АБР по реконструкции

дороги Душанбе – Курган-Тюбе, завершенной дороги Дусти – Нижний-Пянж и действующей первой фазы проектной дороги с помощью японского гранта, результативный эффект данного проекта ожидается быть комплексным и крупномасштабным. Поектный участок, как продолжение первой фазы реконструкции дороги, в скорейшем времени может функцианировать как часть сети магистральных дорог. В результате уровень быта населения повысится. Поэтому предоставления грантовой помощи нашей страной считается целесообразным.

Конец документа

CONTENTS

Preface
Summary
Contents
Location Map/Completion View
List of Figures & Tables
Abbreviations

Page

CHAPTER 1 BACKGROUND OF THE PROJECT 1-1
1-1 Background, History and Outline of the Request for Grant Aid Assistance 1-1
1-2 Natural Conditions 1-1
1-3 Social and Environmental Considerations 1-2

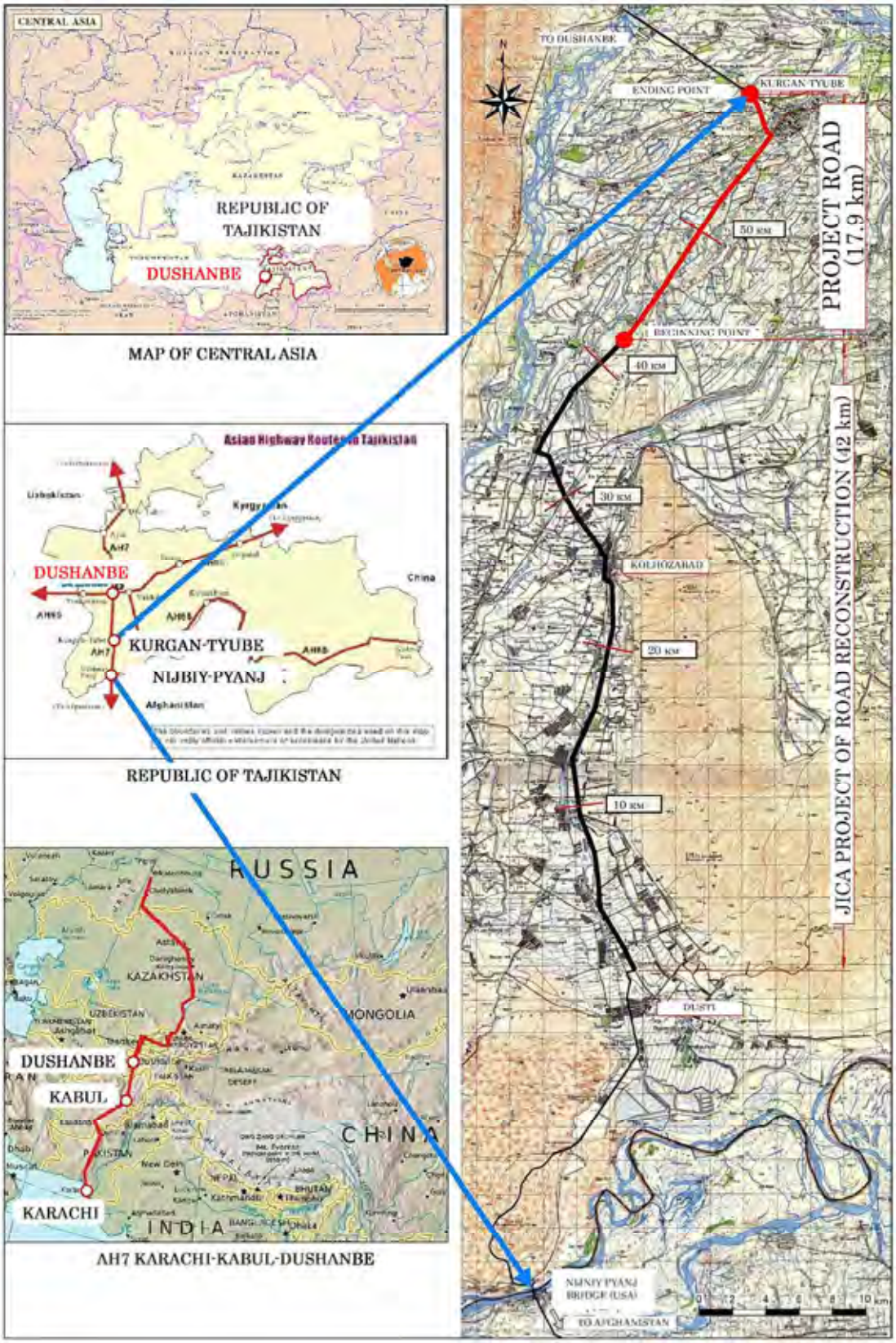
CHAPTER 2 CONTENTS OF THE PROJECT 2-1
2-1 Basic Concept of the Project 2-1
2-2 Outline Design of the Japanese Assistance 2-1
2-2-1 Design Policies 2-1
2-2-2 Basic Plan 2-3
2-2-3 Outline Design Drawing 2-8
2-2-4 Implementation Plan 2-8
2-3 Obligation of Recipient Country 2-13
2-3-1 General Issues relating to the Grant Aid Assistance Scheme of the Government of Japan 2-13
2-3-2 Specific Issues for the Project 2-13
2-4 Project Operation Plan 2-13
2-5 Project Cost Estimation 2-13
2-5-1 Initial Cost Estimation 2-13
2-5-2 Operation and Maintenance Cost 2-14

CHAPTER 3 PROJECT EVALUATION 3-1
3-1 Preconditions for implementing the Project 3-1
3-2 Necessary Inputs by Recipient Country 3-1

3-3 Important Assumptions 3-1
3-4 Project Evaluation 3-2
3-4-1 Relevance 3-2
3-4-2 Effectiveness 3-2

Appendices

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in the Recipient Country
4. Minutes of Discussions (M/D) and Technical Notes (T/N)
5. List of Documents and information collected
6. Drawings



Location Map (Project Site)

Completion View

List of Figures & Tables

Page

Figure 2-1 Sectional Profile of Steel Bridge (the Steel bridge No.2) 2-6
Figure 2-2 Sectional Profile of Reinforced Concrete Rigid Frame Bridge 2-7

Table 2-1 Outline of Basic Plan..... 2-3
Table 2-2 Bridge Type and Dimension..... 2-5
Table 2-3 Procurement sources for major materials and construction equipment.... 2-10
Table 2-4 Draft of Implementation Schedule..... 2-12
Table 3-1 Preconditions for implementing the Project..... 3-1
Table 3-2 Quantitative Effect..... 3-2

Abbreviations

AASHTO	:	American Association of State Highway and Transport Officials
ADB	:	Asian Development Bank
AH	:	Asian Highway
CIS	:	Commonwealth of Independent State
DBST	:	Double Bituminous Surface Treatment
DCP	:	Dynamic Cone Penetration
EBRD	:	European Bank for Reconstruction and Development
EIA	:	Environmental Impact Assessment
EU	:	European Union
GNI	:	Gross National Income
GDP	:	Gross Domestic Product
IBRD	:	International Bank for Reconstruction and Development
IEE	:	Initial Environmental Examination
IMF	:	International Monetary Fund
IsDB	:	Islamic Development Bank
JICA	:	Japan International Cooperation Agency
M/D	:	Minutes of Discussion
MOT	:	Ministry of Transport
MOTC	:	Ministry of Transport and Communication
NGO	:	Non Government Organization
PCU	:	Passenger Car Unit
RC	:	Reinforced Concrete
ROW	:	Right of Way
SCEP	:	State Committee on Environmental Protection and Forest Industry
SCLM	:	State Committee for Land Management
TJS	:	Tajikistan Somoni
TRACECA	:	Transport Corridor Europe Caucasus Asia
UN		United Nation

CHAPTER 1
BACKGROUND OF THE PROJECT

1-1 Background, History and Outline of the Request for Grant Aid Assistance

The target road of the Project, , which is a section of 17.9km from Kurgan Tyube to Dusti, is situated on the southern route of the primary road network in Tajikistan which runs north, south, east and west from the capital city of Dushanbe. The Government of Tajikistan puts premium on the development of the southern route as integral part of the International Trunk Road No.11, namely the Asian Highway No.7 (AH-7), connecting to the sea thru the neighboring country, Afghanistan. As for the improvement of the southern route, the road between Dushanbe and Kurgan Tyube was rehabilitated with the assistance of the Asian Development Bank in 2005 while a new bridge across the Pyandzh River along the border with Afghanistan was constructed with the assistance of the US Government in 2007. In addition, road improvement work between Dusti and Nizhniy Pyandzh was completed in 2010 with the grant aid assistance of the Government of Japan.

The Basic Design and Detailed Design study for the 59.9 km road section between Kurgan Tyube and Dusti were conducted in 2007 and 2008. However, the bid tendering ended up in failure due to the prevailing increased costs of material and equipment and change of circumstances in construction procurement at the time.

The re-bidding was conducted and became finally successful for the total road section of 42.0 km being reduced by 17.9 km out of 59.9 km. This project (hereinafter referred to as the Phase 1 project) is currently taking place aiming at the completion in 2011.

It is strongly required that the target road, the remaining part of 17.9 km from Kurgan Tyube will be rehabilitated as earlier as possible, realizing the completion of the rehabilitation for an entire stretch between Dushanbe and the border with Afghanistan on the International Trunk Road No.11, formerly the National Road No.384.

Having such circumstances as described above, the Japan International Cooperation Agency (JICA) conducted the Preparatory Survey in 2011 for the purpose of reviewing on the appropriate content of the work and cost estimate of the target road based on the latest construction cost and the procurement environment to be obtained through the study.

1-2 Natural Condition

The meteorological condition and management state of the irrigation channels on the areas of the target road are confirmed as described in Chapter 1 of the Basic Design Study Report 2008.

It is particularly noted that Tajikistan and the Central Asia Region experienced the extraordinarily lowest temperature with snowfall in last 40 years during January and February 2008 when the Report has been drawn up.

1-3 Social and Environmental Considerations

It is described in the Basic Design Study Report 2008 and confirmed that as part of the Preliminary Study conducted in 2006, a site survey and IEE (initial environmental evaluation) were conducted in collaboration with counterpart engineers of the implementing agency in Tajikistan.
In order to conduct monitoring works during the construction periods for some environmental impacts listed in the Preliminary Survey such as pollution on dust, noise and water quality, the monitoring schedules were presented in the M/D signed between the JICA office and MOT in Tajikistan. Accordingly, the contractor is clearly required in the contract to conduct the monitoring during the implementation of the project.

The construction permit necessary for the commencement, which has been issued by the National Construction Commission in June 2008 at the time of commencement for the Phase 1 project is still valid and effective. It is also agreed and clearly mentioned in the M/D of this study in February 2011 that MOT deals with further procedure necessary by the time of the commencement of the Project, including an application for the design modification of 5 bridges.

CHAPTER 2
CONTENTS OF THE PROJECT

2-1 Basic Concept of the Project

(1) Higher Goal and Project Goal

The Higher Goal and Project Goal are confirmed as described in 2.1 (1), Chapter 2 of the Basic Design Study Report 2008.

(2) Outline of the Project

The target road of 17.9 km from Kurgan Tyube is to be rehabilitated in order to fulfill the above goals.

2-2 Outline Design of the Japanese Assistance

2-2-1 Design Policies

(1) Basic Policies

The Basic Policies are confirmed as described in 2.2.1 (2), Chapter 2 of the Basic Design Study Report 2008 except Structure Plan which additional explanation is presented bellow.

Structure Plan

The design review of the existing five (5) bridges located on the target road was conducted based on the site investigation in this survey.

For Bridge No.2 located in Kurgan Tyube city, installation of steel structures is designed instead of a previously planned box culvert to avoid a large amount of relocation of utilities and extensive excavation required in the construction of box culvert

For Bridges No.3, No.4 and No.5 as same as Bridge No.2, the rigid frame bridge structures are designed to eliminate a restriction that the slab concrete construction for the previously planned box culvert is to be carried out in the low water season in winter.[1] In terms of the maintenance, rigid frame bridges minimize the cost of maintenance as less as that of box culverts.

For No.1 Bridge that is relatively small in size with good conditions of the slab concrete, repair works to defect areas are adopted through the discussion with MOT.

[1] *By eliminating the restriction, work schedules could be established regardless of the low water seasons or any other seasonal conditions.*

(2) Policies regarding the Natural Conditions
(3) Policies regarding the Socioeconomic Conditions
(4) Policies regarding the Local Construction Industry and Procurement Conditions
(5) Policies regarding the Use of Local Construction Companies
(6) Policies regarding the Operation and Maintenance of the New Facilities
(7) Policies regarding the Scale and Content of the Subject Facilities for Assistance

The above policies are confirmed as described 2.2.1, Chapter 2 of the Basic Design Study Report 2008.

Starting and Ending Points of the Project

A total distance of the target road is 17.9 km from the staring point at 42 km+000, the ending point of the Phase 1 project, to the ending point at 59 km +000, the junction of the Dushanbe-Kurgan Tyube road rehabilitated by ADB and the Kurgan Tyube-Dusti road.

Geometric Structure of the Target Road
Existing ROW
Existing Bridges and Culverts

The above items are confirmed as described 2.2.1 (7), Chapter 2 of the Basic Design Study Report 2008.

(8) Policies regarding the Construction Method and Schedule

A construction schedule for the project is examined and set out in view of its urgency of implementation under the one-fiscal year budget scheme. To minimize possible risks in the construction schedule for a long stretch of 17.9 km of the target road, the following important points are taken into consideration.

<Important Points>

a) As much of the main equipment and machinery are procured in Japan, the lengthy time of transportation over a long distance from Japan is taken into consideration.
b) Methods for the replacement of the bridges in which the replacement works are carried out during the flooding season of irrigation channels are considered.
c) The concrete pouring work and asphalt paving work are carried out in mid-winter, from December to January, with proper measures of temperature control.

d) The relocation works of public utilities such as electricity, water, gas, telephone and sewage are carried out at the expense of the Tajikistan side. New designs of the structures are adopted in consideration of minimizing the relocation works as less as possible.
e) Although the detours are provided during the construction period to avoid the disruption of the public traffic, a one-way traffic is introduced at sections where the detours can not be provided. Careful attentions are taken to maintain the safety of public traffic at these sites.
f) During the bridge works for Bridge No.1 and No.2, a detour is provided to divert the public traffic to Kurgan Tyube city area. Accordingly, the period of the providing detour is planed to be minimized as short as possible in the design and construction method.

2-2-2 Basic Plan

(1) General

Scope and Scale of the Planned Facilities

The request for the project aims at the rehabilitation of the target road. A total length of the target road is 17.9 km from Kurgan Tyube, being reduced from a total length of 59.9 km as described in the Basic Design Study Report 2008 by 17.9 km that is presently undertaken for rehabilitation. The analysis and assessment results for the 5 existing bridges show that entire replacement of 4 bridges and partial rehabilitation of 1 bridge are necessary. For the entire replacement of 4 bridges, the steel structure and rigid frame structure bridges are designed in consideration of eliminating a restriction that the box culvert bridges are only constructed during the low water level of irrigation channels in mid-winter, learned from the Phase 1 project.

Outline of the Basic Plan

The examination results of the basic design policies and standards for the basis of the various facilities are presented in the following Table 2-1.

Table 2-1 Outline of Basic Plan

Item		Content of Plan
Target Road		17.9 km
Pavement Structure	Asphalt Pavement	Surface Course: 5 cm (Carriageway)
		Binder Course: 5 cm (Carriageway)
		Binder Course: 5 cm (Shoulder)
	Gravel Course	Base Course: t=20 cm (Mechanical Stabilized Gravel)

		Sub-base Corse: t=4-24 cm (Quality local material, Recycled gravel separately measured)
Road Width		Width of Carriageway: 7.0 m (2*3.5 m) Width of Shoulder: 2.5 m typical
Cross-road Drainage Structures (existing)		Elevation of wing wall: 6 places New installation of pipe culverts: 201 m
Rehabilitation of Bridge		Rehabilitation of 5 bridges: span 5.5 m-26.9m
		Rehabilitation by structures
Rehabilitation of Bridge		Replacement with Steel bridge
		Reinforced Concrete Rigid Frame Strictures: 3 bridges
		Partial Repair: 1 bridge
Auxiliary Facilities		Retaining wall, Guard fence, Road marking, Vehicle Weighing Facilities

The design policies and standards in the above table are confirmed as descried in the Table 2-8, Reference Standards for the Project Design, in the Basic Design Study Report 2008.

(2) Facilities Plan

Road Plan

a) Subject Section for Design

The subject section for the project design is the 17.9 km road section between Kurgan Tyube and Dusti as requested. The standards for Category III road were adopted for the examination of the details of the works.

b) Design Conditions

c) Cross Section of the Road

d) Pavement Design

e) Earthwork Plan

f) Intersection Plan

The above plans and studies are confirmed as described in 2.2.2 (2), Chapter 2 of the Basic Design Study Report 2008.

g) Bridge Replacement Plan

* Existing Channels at Bridge Sections

The above plans and studies are confirmed as described in 2.2.2 (2), Chapter 2 of the Basic Design Study Report 2008.

* Examination of the Structure to replace the Existing Bridges

In consideration of the situation of the existing irrigation channels as described above, several types of structures to replace the existing bridges were examined. In view of setting out of the schedule based on the one-fiscal year budget scheme, the bridge structures were designed because of the following reasons after the site investigation and confirmation conducted for this study.

- Large scale of the box culvert structure to replace the No.2 Bridge located in the city area of Kurgan Tyube causes adverse effects to the surrounding houses.
- Relatively narrower width of the bridge structure than the box culvert minimizes the relocation of utilities such as water pipes to be conducted by the Tajikistan side.
- As the bridge structure does not require the slab concrete, the replacement of the existing bridges is not restricted to the execution only during the low water season in winter but cofferdam is required for the work.
- Specific equipments are not required for foundation piles and cofferdams. Due to recent availability of the advanced vibration hummer called "Resonance Free Vibration Hummer", an ordinary hydraulic truck mounted crane can be employed for the execution of the work.
- Reinforced concrete rigid frame bridge structures, as same as box culverts, require neither joint nor shoe systems and reduce the cost of maintenance.
- According to the contractor for the Phase 2 project, it became recognized that the large-scaled construction works of box culvert, especially of its slab concrete during the low water season in winter involve a significant expense and period corresponding to the complexity and difficulty of the work.

h) Bridge Structure

* Structures and Design Dimension

Type of structures and dimensions for the rehabilitation of each bridge are presented in the following Table 2-2.

Table 2-2 Bridge Type and Dimension

Bridge No.	Existing Bridge		Rehabilitation or Re-installation	
	Bridge Length(m)	Span	Span	Type
No.1	5.5	1	1	Slab (rehabilitation)
No.2	26.95	3	1	13m(w)×26.5m(l) Steel
No.3	17.41	3	1	6.0m(w)×3.7m(h)×13.0m(l) RC, Rigid Frame
No.4	11.1	2	1	4.0m(w)×3.5m(h)×16.0m(l) RC, Rigid Frame
No.5	12.1	3	1	5.5m(w)×2.4m(h)×13.0m(l) RC, Rigid Frame

* Water Level at time of Construction Works and Detour of the Public Traffic

As the bridge structures, which do not require the construction of concrete slabs, are designed instead of the box culverts, diverting of irrigation channels are not required as described in the preceding paragraphs. By installing cofferdams in the irrigation channel even with certain amount of water, construction works of abutments can still proceed. In consideration of the existing irrigation channel, the assemble-type temporally steel bridges are adopted instead of the earth filling-type for the type of detour.

* Geological Condition at Bridge Construction Site

As described in 2.2.2 (2) ⑧, Chapter 2 of the Basic Design Study Report 2008 that the soil in the project area mainly consist of sandy soil and silt. The converted N value based on the dynamic penetration test is around 10-20 up to a depth of some 5 meter from the ground surface. Below this lies relatively compacted sandy with the partial distribution of a gravel layer, the geological survey results confirm that spread foundations can be used to support the box culverts for the replacement of the existing bridges. Therefore, steel pipe piles with length of 5.0-6.0 m are designed for the foundations.

i) Design of Bridge

* Width of Bridge

Width of the bridge is decided to be 13.0 m in accordance with the Tajikistan standards conformed to SNiP (Construction Norms and Regulations). The details are described bellow and a sectional profile is presented in the following Figure 2.1.

Carriageway: (Vehicle lane 3.5 m + Shoulder 1.5 m) ×2=10.0 m

Other section: (Concrete barrier 0.25 m+ Side walk 1.0 m+ Bridge railing 0.25 m) ×2=3.0 m

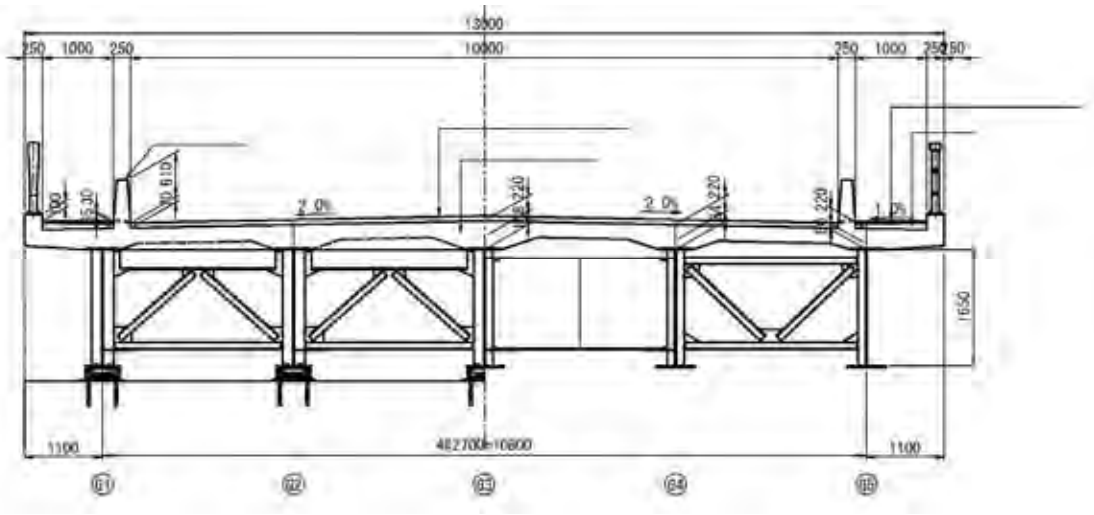


Figure 2.1 Sectional Profile of Steel Bridge (the Steel bridge No.2)

For the road section profile on the reinforced concrete rigid frame bridges, the total width of 13.0 m is designed to be the same as that of the steel bridges. Details are described bellow and a sectional profile is presented in the following Figure 2.2.

Carriageway: (Vehicle lane 3.5 m + Shoulder 2.5 m) ×2=12.0 m

Other section: (Wing wall with guard rails 0.5 m) ×2=1.0 m

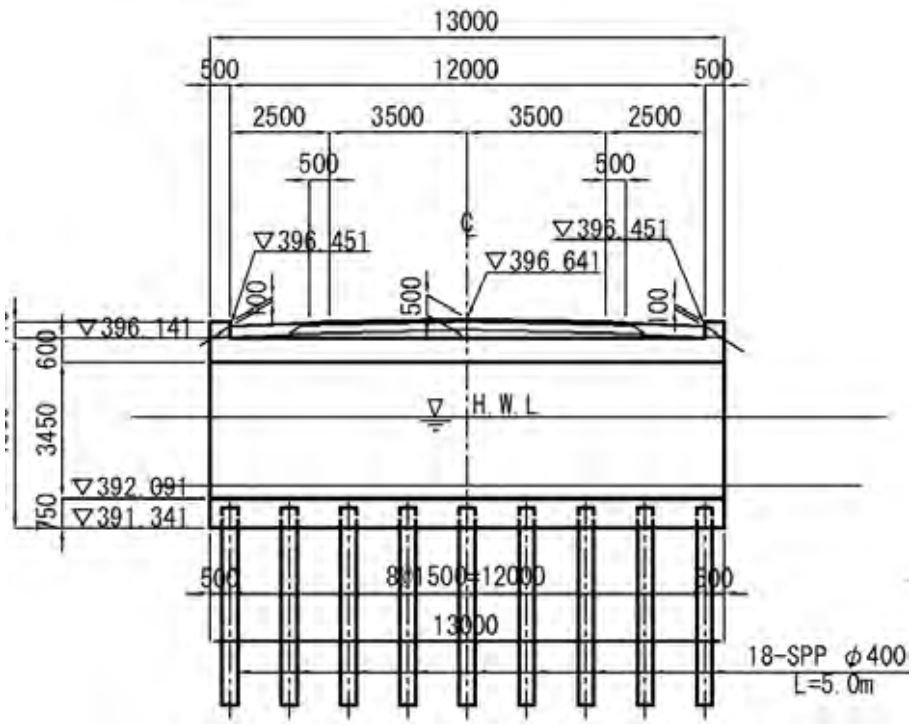


Figure 2.2 Sectional Profile of Reinforced Concrete Rigid Frame Bridge

* Design Conditions

Design conditions for the bridges comply with the same conditions as described in the Basic Design Study Report 2008. Precisely as described in the Technical Notes, the design load conforms to the Category B Live Load in the MLIT standards of Japan.

The seismic load is in accordance with the seismic coefficient method and the horizontal intensity of 0.05 (K_h=0.05) is considered.

j) Auxiliary Road Facilities

Examinations on various auxiliary facilities such as gabions, cross-road drainage facilities, guide post, maintenance post for cross-road drainage structure, kilo post, retaining wall and road marking are confirmed as described in 2.2.2 (2) ⑩, Chapter 2 of the Basic Design Study Report 2008.

k) Branch Roads and Others

Minor road linked to the target road are classified into roads with AC pavement and roads with simple pavement or earth road. It is planned to apply AC pavements to the necessary sections which currently have AC pavements and other branch roads. As the entrances to petro stations along the route will be subject to a heavy load by large vehicles, a base course layer and AC pavement are planed for the necessary areas. The access roads to the houses along the route will be sloped and paved with AC pavement.

2-2-3 Outline Design Drawing

Design drawings were prepared for in this survey, as the reference documents of the bid tendering, based on the basic concept of the project as described in the preceding paragraphs. Some drawings having additions or modifications to the drawings in the Basic Design Study Report 2008 are attached in the Attachment-6. The distance in kilometers used in the drawings of the Basic Design Study Report is applied in the drawings of this survey.

2-2-4 Implementation Plan

(1) Implementation Policy

Implementation policies of this project are confirmed as described in 2.2.4.1, Chapter 2 of the Basic Design Study Report 2008. Although there are not any significant changes in the implementation policies, only some points studied in this survey need to be considered in the implementation plan as described as follows.

- Consideration of the importation of major equipments required in crucial works that may significantly affect the construction schedules.

- Consideration of the assignment of expatriates i.e. civil, mechanical engineers from third countries for crucial works.

(2) Implementation Conditions

Implementation conditions are confirmed as described in 2.2.4.2, Chapter 2 of the Basic Design Study Report 2008.

(3) Scope of Works

Scope of the works is confirmed as described in 2.2.4.3, Chapter 2 of the Basic Design Study Report 2008. There is not any change at present except the total length of the target road is 17.9 km instead of 59.9 km.

(4) Consultant Supervision

Implementation Schedule for Consultancy Work

A precondition of the implementation of the project is the signing of the Exchange of Notes (E/N) and the Grant Agreement by the Government of Japan and the Government of Tajikistan regarding the Japanese Grant Aid for the Project. Following the signing of the E/N, the consultant will conclude a consultancy agreement with the MOT which is the implementation organization for the project on the Tajikistan side, in accordance with the scope and procedure of the grant aid scheme of the Government of Japan based on the letter of recommendation issued by the JICA. After signing of the agreement, the detailed design, assistance for the tender and work supervision stages will follow. The main work included in the consultancy agreement is described bellow.

a) Detailed Design and Tender Document Preparation Stage

Based on the reference drawings and documents for the tender prepared in the Preparatory Survey, the consultant will prepare the tender drawings and documents for approval of the MOT.

b) Tender Stage

Assisted by the consultant, the MOT will select a Japanese contractor through open tender. The representatives of the Government of Tajikistan for attending this tender process must have the authority to approve the contract with the contractor and must be capable of making competent judgments on technical issues. The assistance of the consultant required at the tender stage is listed bellow.

① Pre-qualification ② Announcement of tender ③ Tender and evaluation of the bids
④ Signing of the contract

c) Work Supervision Stage (On-site Supervision by the Consultant)

Following the signing of the contract with a contractor, the consultant issues an instruction to commence the work to the contractor and starts its own work supervision. This work supervision includes the direct reporting of the progress by the consultant of the project to the MOT and other related institutions on the Tajikistan side while instructing on improvement plans as well as making recommendations in regards to progress, quality, safety and other aspects of the work and

also payment for the work. The consultant also reports regularly to the JICA office and Embassy of Japan in Tajikistan.

(5) Quality Control Plan

Quality control plan is confirmed as described in 2.2.4.5, Chapter 2 of the Basic Design Study Report 2008.

(6) Procurement Plan

Procurement sources for major materials and construction equipments for the project are presented in the following Table 2-3.

Table 2-3 Procurement sources for major materials and construction equipments

Description	specification	Procurement Source			Remarks
		Tajikistan	Japan	Third country	
［Materials］					
Cement		○			・Only a maker is available in Tajikistan
Wood/Plywood/Square Timber		○			・Sufficient supply is available
Aggregate		○			・Two companies at Dushanbe suburbs can supply sufficient quantity & quality of aggregate. ・The other company is supposed to has no capacity.
Re-bar		○			・No production in Tajikistan. ・Russian & Chinese Re-bar is available.
Fuel		○			・Sufficient Quantity of fuel is to be kept for machinery. ・Available in Kurgan Tyube and Dusti.
Bituminous Material		○			・No production in Tajikistan ・Russian & Chinese Bitu-minous Material is available.
［Construction Machinery］					
Bulldozer	21t	○			
Backhoe	Bucket:0.6m3	○			
Wheel Loader	2.1m3	○			
Dump Truck	Loading:10t	○	○		・Dump Trucks procured in Japan are for Asphalt material transportation.
Truck with Crane	Loading:4t		○		

Description	specification	Procurement Source			Remarks
		Tajikistan	Japan	Third country	
	Lifting:2.9t				
Crawler Crane	Lifting:50～55t		○		・For Steel Pipe Pile/Sheet Pile/Steel Girder Construction
Truck Crane	Lifting:20t	○			
Truck Crane	Lifting:4.8～4.9t	○			
Vibration Hammer	60kW、electric		○		・Resonance free start up and stop down ・Steel Pipe Pile／Sheet Pile Construction
Giant Breaker	Hydraulic:600～800kg		○		
Folk Lift	2t		○		・For moving drum cans of straight asphalt to Asphalt Kettle
Motor Grader	Blade width:3.1m		○		
Road Roller	10t-12t	○	○		・Road Roller procured in Japan are for Asphalt Compaction.
Tire Roller	8t-20t	○	○		・Tire Roller procured in Japan are for Asphalt Compaction.
Vibration Roller	0.8-1.1t		○		
Asphalt Plant	50t/h		○		
Asphalt Finisher	Wheel Type 2.4～6.0m		○		
Asphalt Kettle	3,000Ltr		○		
Line Marker	Melt, Hand guide		○		
Concrete Mixer	0.5m3, Tilt-able		○		
Diesel Generator	10kVA～270kVA		○		
(%)		88.5%	11.5%	0.0%	

Procurement plan for construction equipment and materials is confirmed as described in 2.2.4.6, Chapter 2 of the Basic Design Study Report 2008..

Bituminous material i.e. asphalt will be delivered in drums as practiced on site in the road improvement work between Dusti and Nizhniy Pyandzh (Phase 2) and the Phase 1 project between Kurgan Tyube and Dusti..

(7) Soft Component Plan

As described in 2.2.4.7, Chapter 2 of the Basic Design Study Report 2008 that the road, maintenance is systematically conducted by the MOT, a soft component is not required for the project.

(8) Implementation Schedule

A draft of the project implementation schedule prepared based on the procedures of Japan's grant aid assistance scheme is presented in the following Table 2-3. As the project is implemented under the one-fiscal year budget scheme, the following points are taken into considerations to avoid undesirable time extension in the project schedules.

- To select possible methods allowing executing the replacement works of the existing bridges through the year rather than the low water level season in winter.
- To minimize in the design the relocation of utilities to be conducted by the Government of Tajikistan.
- To provide a detour for diverting the public traffic to the Kurgan Tyube city at the time of rehabilitation and replacement works of the Bridge No.1 and No.2,

Table 2-4 Draft of Implementation Schedule

Detailed Design: Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Final Confirmation of the Scope of the Works																	
Checking Detailed Design																	
Preparation of Tender Documents and Drawings																	
Tender Notice																	
Issue of Tender Documents and Drawings																	
Tender																	
Evaluation of Tender																	
Construction Contract and its verification by JICA																	
Construction: Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Preparatory Work and Mobilization																	
Earth Works																	
Pavement Works, Road Base																	
Pavement Works, Asphalt Paving works																	
Structurral Works, Bridges etc.																	
Drainage Works and Roudabout Works																	
Ancillary Works including Road Marking																	
Demorbilization																	

2-3 Obligation of Recipient Country

2-3-1 General Issues relating to the Grant Aid Assistance Scheme of the Government of Japan

General issues relating to the Grant Aid Assistance Scheme of the Government of Japan is confirmed as described in 2.3.1, Chapter 2 of the Basic Design Study Report 2008. There is not any change to review at present

2-3-2 Specific Issues for the Project

Specific issues for the project are confirmed as described in 2.3.2, Chapter 2 of the Basic Design Study Report 2008. There is not any change to review except that the temporary yard is necessary for use for 2 years.

2-4 Project Operation Plan

Project operation plan is confirmed as described in 2.4, Chapter 2 of the Basic Design Study Report 2008. There is not any change to review at present.

2-5 Project Cost Estimation

2-5-1 Initial Cost Estimation

(1) Cost to be borne by the Government of Japan

The total amount will not be disclosed until the contract between the MOT and the contractor is concluded.

(2) Cost to be borne by the Government of Tajikistan

According to the Clause 2-3, Obligation of Recipient Country, in Chapter 2 of the Basic Design Study Report 2008, an amount of 1.5 million somoni (approximately ¥54 million) was estimated to be born by the Government of Tajikistan for the target road of 59.9 km. For the target road of 17.9 km of this study, it is therefore, estimated that the Tajikistan side needs to provide some of 0.45 million somoni (approximately ¥16 million) to cover the cost for relocating of utilities and securing the necessary lands.

(3) Estimation Conditions

① Time of Estimation : March 2011

② Exchange Rate : 1US$=JPY 83.93 (Average rate for the period from September

2010-Feburuary 2011)

③ Period of Procurement : Period required for the Detail Design, Tender Support and Construction with the one-fiscal year budget scheme is estimated 22 months.

④ Others : Project cost is estimated in accordance with the procedures of the Japan's Grant Aid Assistance by the Government of Japan.

2-5-2 Operation and Maintenance Cost

Operation cost is confirmed as described in 2.5.2, Chapter 2 of the Basic Design Study Report 2008. Providing that expected lifetime of painting and expansion joint systems for steel bridge structures is 30 years, the maintenance cost is supposed to be practically free. And a total maintenance cost is not changed.

CHAPTER 3
PROJECT EVALUATION

3-1 Preconditions for implementing the Project

Securing of lands, construction work permit, environmental social considerations and obligation of recipient country are confirmed as described in the Basic Design Study Report 2008. The details of these preconditions are presented in the following Table 3-1.

Table 3-1 Preconditions for implementing the Project

Items	Applicable clauses in the Basic Design Report	Remarks
Land Acquisition	Clause 2-2-1(7), 3) ROW for existing Road	Because the Project is rehabilitation of the existing road, construction can be carried out within existing ROW.
Construction Permit	Clause 1-3 Environmental and Social Consideration Clause 2-2-1(3) 2) Environmental and Social Consideration	Construction Permit dated June 2008 is still effective. MOT to carry out the necessary procedures.
Obligations of the Recipient Country	Clause 2-3 Outline of Obligations of the Recipient Country	Items were confirmed in M/D etc.

3-2 Necessary Inputs by Recipient Country

Organizations of the Tajikistan side responsible for the maintenance of the facilities are confirmed as described in 2.1, the Basic Design Study Report 2008.

3-3 Important Assumptions

External conditions necessary for enhancement and sustainability of the desirable effects, as described in the Basic Design Study Report 2008, is that the traffic demand on the target road does not largely exceed the previously assumed traffic demand. More specifically, the travelling speed to be improved by the rehabilitation of the project will be balanced out by the increased traffic.

3-4 Project Evaluation

3-4-1 Relevance

The purpose of the project is to rehabilitate only a section left unpaved on the International Trunk Road No.11, namely the Asian Highway No.7 (AH-7). The Government of Tajikistan puts premium on this highway connecting to the sea from the capital city of Kurgan Tyube thru the neighboring country, Afghanistan. Improving the conditions of the unpaved section to provide safe and smooth traffic on the highway by the implementation of the project will be expected to benefit 710 million people of Tajikistan upon completion. Linking up with the road between Dushanbe and Kurgan Tyube improved by ADB, a new bridge constructed by US government, the road improved between Dusti and Nizhniy Pyandzh and an ongoing Phase I project for 42.0 km from Dusti towards Kurgan Tyube both by the Government of Japan, more significant effects are expected as described above. Rehabilitation of the target road following the implementation of Phase I project will create its functions faster at maximum extent as a trunk road servicing in broader areas to contribute to higher standard of living for the people in the region. Therefore, it is considered that implementation of the project with the Grant Aid Assistance by the Government of Japan is appropriate.

3-4-2 Effectiveness

(1) Quantitative Effect

Quantitative effects by the project are confirmed as described in 3.1 and other attachment, the Basic Design Study Report 2008 and presented in Table 3-2 bellow.

Table 3-2 Quantitative Effect

Description	Base value (Year 2011)	Target value (Year 2015)
Increase in safe vehicle speed for passing through the section rehabilitated	30km/hour	73km/hour

(2) Qualitative Effect

Qualitative effects by the project are confirmed as described in 3.1, the Basic Design Study Report 2008 such as,

① Safety traffic on the target road will be improved by widening shoulders to divide the carriageway for vehicles and paths for pedestrians and motorbikes.

② Transportation cost for agricultural products in the areas will be reduced because of the travelling time shortened by the project.

③ The road develops its function as a broad area trunk road connecting Tajikistan and Afghanistan and Pakistan and enhances the socio-economic development by promoting the exchange of the products and people

④ Improved convenience and reliability of the road by the project will contribute to development of the region, improvement of regional inequity, expanding of commercial markets and improvement of the access to medical and educational facilities

Appendix

1. Member list of the Study Team

2. Study Schedule

3. List of Parties Concerned in the Recipient Country

4. Minutes of Discussions (M/D) and Technical Notes (T/N)

5. List of Documents and information collected

6. Drawings

Appendix 1－Member list of the Study Team

Name	Job Title	Firms
KAIHO Seiji IIDA Jiro (from May 2011)	Team Leader	Resident Representative of JICA Tajikistan Office
MIYATA Mayumi	Project Planning	Grant Aid Project Management Division 1, Financing Facilitation and Procurement Supervision Department, JICA
MITANI Katsuaki	Chief Consultant /Road Design I	Katahira & Engineers International
HIRAOKA Kazuyuki	Construction Planning /Cost Estimation I	
SAITO Masaki	Road Design II/ Cost Estimation II	
RASUL Abdukadirov	Translator (Russian)	Katahira & Engineers International (seconded by Translation Center Pioneer)

Appendix 2－Study Schedule

Number of days		Date			Team Leader	Programme Management	Chief Consultant /Road Design I	Construction Planning /Cost Estimation I	Road Design II/ Cost Estimation II
					KAIHO Seiji	MIYATA Mayumi	MITANI Katsuaki	HIRAOKA Kazuyuki	SAITO Masaki
	1		12	Sa			NRT14:25 - IST20:05 (TK051)		
	2		13	Su			Flight postponed to next morning due to bad weather in Dushanbe		
	3		14	Mo			IST07:00 - DYU15:40 (TK254)		
	4		15	Tu			9:30 Meeting with MOTC for explanation of Inception Report PM: Hearing from Mr. Koizumi, Ingerosec (at D-N JV※ Office)		
	5		16	We			AM: Hearing from Mr. Nonogaki, Project Manager of D-N JV PM: Site Survey (Road & Bridges)		Request for Quotations to suppliers, contractors etc.
	6		17	Th			9:00 Meeting with JICA Tajikistan office 14:30 Collection of information in MOTC		
	7		18	Fr			Site Survey for existing Bridges (No. 3～No.5 & No.7)		
1	8		19	Sa		NRT14:25 - IST20:05 (TK051)	Site Survey for existing Bridges (No. 1 & No.2)		
2	9		20	Su		IST19:55 - DYU03:40(+1) (TK254)	Internal Meeting and Organizing Documents collected		
3	10	Feb	21	Mo	AM: Internal Meeting 14:00 Meeting with JICA Tajikistan Office				Collecting quotations
4	11		22	Tu		AM: Site Survey (Road & Bridges) PM:Joint Site Survey with MOTC(No.2 Bridge & Roundabouts)			
5	12		23	We		07:00 Joint Site Survey for Kurgan Tyube-Dusti-Nizhniy Pyandzh Road site Ms. Miyata,Mutrakami(JICA)/Mitani, Hiraoka, Saito, Rasul(KEI)/Mr. Koizumi (Ingerosec) Revision of M/D draft			
6	13		24	Th	AM: Discussion about the contents of M/D with MOTC PM: Finalization of M/D with Rasul (Mitani & Hiraoka: drafting Technical Notes)				Collecting quotations
7	14		25	Fr	10:00: Signing of M/D, 11:00: Report to JICA Tajikistan 13:00 Discussion with MOTC about the contents of Technical Notes 14:30: Report to Embassy of JAPAN			Survey of the Road	Accompany with MITANI
8	15		26	Sa		Organizing Documents collected and Report writing	Organizing Documents collected and Report writing	8:00Bridges Site Survey with MOTC/RDSI※	Organizing Documents collected and Report writing
							Finalization of Technical Notes for signature and handed to Mr. Olin		
9	16		27	Su			Organizing Documents collected and Report writing	Site Survey for Quarry and pipes under the road	
10	17		28	Mo		DYU05:30 - IST08:00 (TK255)IST17:50 - NRT 12:25(+1) (TK050)			
12	18		1	Tu		NRT12:25			

Note) D-N JV　Dai Nippon Construction－NIPPO JV

RDSI　State Unitary Enterprise "Research, Design and Survey Institute", "Loikhakash"in Tajik, previously called as "Giprotransstroy" in Russian, under supervision of MOTC

Appendix 3－List of Parties Concerned in the Recipient Country

Ministry of Transport and Communication※	
Zuhurov Dzhumakhon Zuhurobich	The first deputy minister
Yatimov Olim	Head of International Relation Division
Mirzoev Timur Dodojanovich	Director of Research, Design and Survey Institute
Nazrishoev Solim	Chief Engineer of Research, Design and Survey Institute
Anorshoev Allovuddin	Officer in charge of ADB
Nosirov Holiq	Head of Hatlon Provincial Road Department
Holiqov Muzaffar	Chief engineer, Hatlon Provincial Road Department
Holiqov Muzaffar	Chief engineer, Hatlon Provincial Road Department
Fayzullayev Nasrullo	Head of Bohtar Region Road Maintenance Department
Embassy of japan in Tajikistan	
NAKAYAMA Yoshihiro	Charge d'Affaires
TAMAI Takuya	Third Secretary
JICA Tajikistan Office	
KAIHO Seiji	Resident Representative
MURAKAMI Masayo	Project Formulation Advisor
Ingerosec Corporation	Phase I- Construction Supervision
KOIZUMI Joji	Resident Engineer
Dai Nippon-NIPPO JV	Phase I- Contractor
NONOGAKI Masahiro	Project Manager of JV (Dai Nippon Construction)
HAZAMA Toshimitsu	Chief engineer(NIPPO)

※MOTC became Ministry of Transport, MOT on 1 April 2011 by re-organization of Tajikistan Government.

MINUTES OF DISCUSSIONS
IMPLEMENTING REVIEW STUDY ON
"THE PROJECT FOR REHABILITATION OF KURGAN TYUBE – DUSTI ROAD (PHASE II)"
IN THE REPUBLIC OF TAJIKISTAN

In response to a request from the Government of the Republic of Tajikistan (hereinafter referred to as "Tajikistan"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") in consultation with the Government of Japan, decided to conduct an Implementing Review Study (hereinafter referred to as "the Study") on the Project for Rehabilitation of Kurgan Tyube – Dusti Road (Phase II) (hereinafter referred to as "the Project").

JICA sent to Tajikistan the Implementing Review Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Seiji KAIHO, Resident Representative, JICA Tajikistan Office, and is scheduled to stay in the country from February 14 to 28, 2011.

The Team has held discussions with the officials concerned of the Government of Tajikistan and conducted a field survey at the study area.

In the course of discussions and field survey, both sides confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Implementing Review Study Report.

Dushanbe, February 25, 2011

Seiji KAIHO
Team Leader
Implementing Review Study Team
Japan International Cooperation Agency

Jumakhon ZUKHUROV
First Deputy Minister
Ministry of Transport and Communication
The Republic of Tajikistan

ATTACHMENT

1. Purpose of the Study:

The purpose of the Study is mainly to review the Project cost estimation, earlier prepared on the basis of the Basic Design Study and the subsequent Detailed Design for "the Project for Rehabilitation of Kurgan Tyube – Dusti Road" conducted in 2007 (hereinafter referred to as "the B/D Study"), with consideration of current socio-economic situation of Tajikistan. The previous design specifications will also be reviewed as may be necessary

2. Scope of the Project:

2-1. The Tajikistan side and the Team (hereinafter referred to as "Both sides") confirmed that objective of the Project and the Project site are same as confirmed in the B/D Study.

2-2. The scope of the Project is described as below:

Rehabilitation of the remaining road section which was excluded from the scope of the B/D Study between Kurgan Tyube and Dusti (Approximately 17.9km)

(1) Starting point: Avtovokzal in Kurgan Tyube (Connecting point up to Dushanbe-Kurgan Tyube-Kulyab Road, International Trunk Road No.4).
(2) Ending point: Starting point of on-going project under the B/D Study
(3) Contents of Rehabilitation: Same as the on-going project under the B/D Study

2-3. Both sides agreed that the basic and detail design specified in the B/D Study will be followed in principle, unless there is a need for change.

2-4. Both sides also confirmed that there is and will be no duplication to the Project by other Donors, Organizations and Agencies.

3. Responsible and Implementing Organization:

The responsible and implementing organization is Ministry of Transport and Communication (hereinafter referred to as "MOTC"). The organization chart of MOTC is the same as the B/D Study.

4. Japan's Grant Aid Scheme:

4-1. The Tajikistan side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-1.

4-2. The Tajikistan side will take the necessary measures and allocate necessary budget properly, as described in Annex-1, for smooth implementation of the Project, as a condition for the Japanese Grant Aid to be implemented.

4-3. The Tajikistan side assured to implement the Project properly following to "The Japanese Grant Aid Scheme" if the Project is approved by the Japanese Cabinet.

5. Schedule of the Study:

5-1. JICA will prepare the final report in English with a summary in Russian around August 2011.

5-2. The Tajikistan side understood that the implementation of the Study did not commit the implementation of the Project.

6. Reconfirmation on the Undertakings of the Recipient Country

The Tajikistan side confirmed that the following undertakings should be carried out by the Tajikistan side at its own cost.

6-1. Securing and clearance of the land for road, bridge and box culvert construction area for the Project.
6-2. Relocation of existing facilities (electricity power, telecommunication, water, sewage, gas, etc.) required for implementation of the Project,
6-3. Removal of existing properties (including building, trees, plants, etc.) required for implementation of the Project,
6-4. Necessary arrangement of detours for public traffic at necessary sections during the construction of roads, e.g. securing of land, public announcement etc.
6-5. Necessary arrangement of traffic diversion to the road connecting to the Kurgan-Tyube regional center as shown in Annex-2 during the road construction of diverted section,
6-6. Securing and clearance of land for a temporary site office, warehouse, and stock yard near the Project site during the implementation period,
6-7. Securing site and providing support for obtaining relevant permission and rights for borrow pit, quarry and disposal of waste (scarified asphalt concrete, excavated unsuitable soil, etc.),
6-8. Necessary arrangement for public utilities for the temporary yard to be used for site facilities such as site offices, plant yards, dormitory, etc. and for temporary works,
6-9. Necessary arrangement and coordination with concerned Ministry and/or Agency,
6-10. Exemption of Value Added Tax, custom duties and any other taxes and fiscal levies imposed in the Tajikistan arisen from the Project activities.
6-11. Budget allocation for the commission for Authorization to Pay (A/P) and Payment,
6-12. Securing enough budget and personnel necessary for the operation and maintenance of the facilities implemented by the Project,
6-13. Provide security for all concerned Japanese nationals working for the project, if deemed necessary,

7. Other Relevant Issues:

7-1. Inception Report:

The contents of Inception Report, which the Team explained to the Tajikistan side, was understood and accepted in principle by the Tajikistan side.

7-2. Construction permission and Environmental Impact Assessment (EIA):

Both sides confirmed that EIA obtained for the on-going project under the B/D Study is valid for the Phase II. The Tajik side assured that the construction permission for the Project be obtained by the Tajik side at the earliest possible after the acceptance of the drawings.

7-3. Fair Implementation of the Project:

The Team explained that some information of the relevant Report should be dealt with carefully until the Tender is implemented, since the information will affect the fair implementation of Tender process. The Tajikistan side understood and reaffirmed to do so.

7-4. Use of Language

Both side confirmed that the English text shall prevail when any doubt arises in interpretation of this Minutes of Discussions.

Annex 1 : The Japan's Grant Aid Scheme
Annex 2 : Detour route for the center of Kurgan-Tyube

End

JAPAN'S GRANT AID

The Government of Japan (hereinafter referred to as "the GOJ") is implementing the organizational reforms to improve the quality of ODA operations, and as a part of this realignment, a new JICA law was entered into effect on October 1, 2008. Based on this law and the decision of the GOJ, JICA has become the executing agency of the Grant Aid for General Projects, for Fisheries and for Cultural Cooperation, etc.

The Grant Aid is non-reimbursable fund provided to a recipient country to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

The Japanese Grant Aid is supplied through following procedures :

- ·Preparatory Survey
  - The Survey conducted by JICA
- ·Appraisal &Approval
  - -Appraisal by the GOJ and JICA, and Approval by the Japanese Cabinet
- ·Authority for Determining Implementation
  - -The Notes exchanged between the GOJ and a recipient country
- ·Grant Agreement (hereinafter referred to as "the G/A")
  - -Agreement concluded between JICA and a recipient country
- ·Implementation
  - -Implementation of the Project on the basis of the G/A

2. Preparatory Survey

(1) Contents of the Survey

The aim of the preparatory Survey is to provide a basic document necessary for the appraisal of the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of relevant agencies of the recipient country necessary for the implementation of the Project.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project.
- Estimation of costs of the Project.

The contents of the original request by the recipient country are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed based on the guidelines of the Japan's Grant Aid scheme.

JICA requests the Government of the recipient country to take whatever measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization of the recipient country which actually implements the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA employs (a) registered consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the Report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the appropriateness of the Project.

3. Japan's Grant Aid Scheme

(1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes(hereinafter referred to as "the E/N") will be singed between the GOJ and the Government of the recipient country to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Government of the recipient country to define the necessary articles to implement the Project, such as payment conditions, responsibilities of the Government of the recipient country, and procurement conditions.

(2) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the recipient country to continue to work on the Project's implementation after the E/N and G/A.

(3) Eligible source country

Under the Japanese Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased. When JICA and the Government of the recipient country or its designated authority deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm are limited to "Japanese nationals".

(4) Necessity of "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by JICA.

This "Verification" is deemed necessary to fulfill accountability to Japanese taxpayers.

(5) Major undertakings to be taken by the Government of the Recipient Country

In the implementation of the Grant Aid Project, the recipient country is required to undertake such necessary measures as Annex.

(6) "Proper Use"

The Government of the recipient country is required to maintain and use properly and effectively the facilities constructed and the equipment purchased under the Grant Aid, to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Grant Aid.

(7) "Export and Re-export"

The products purchased under the Grant Aid should not be exported or re-exported from the recipient country.

(8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account under the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). JICA will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to JICA under an Authorization to Pay (A/P) issued by the Government of the recipient country or its designated authority.

(9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and payment commissions paid to the Bank.

(10) Social and Environmental Considerations

A recipient country must carefully consider social and environmental impacts by the Project and must comply with the environmental regulations of the recipient country and JICA socio-environmental guidelines.

(End)

Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	to secure lots of land necessary for the implementation of the Project and to clear the sites;		●
2	To ensure prompt customs clearance of the products and to assist internal transportation of the products in the recipient country		
	1) Marine (Air) transportation of the Products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the Products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
3	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the products and the services be exempted		●
4	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
5	To ensure that the Facilities be maintained and used properly and effectively for the implementation of the Project		●
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project		●
7	To bear the following commissions paid to the Japanese bank for banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
8	To give due environmental and social consideration in the implementation of the Project.		●

(B/A : Banking Arrangement, A/P : Authorization to pay)

Annex-2

Proposed Detour (Traffic Diversion) route for through traffic via the center of Kurgan-Tyube