

APPENDICES

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APPENDIX 1 STUDY TEAM MEMBERS

(1) Field Survey

Table A-1 Study Team Members (Field Survey)

Assignment	Name	Affiliation
Team Leader	Ken Hasegawa	Field Officer, JICA Tajikistan Office
Project Coordinator	Hidetaka Sakabe	Transport and Electricity Team, Operation Group I, Grant Aid Management Department, JICA
Chief Consultant/Road Traffic Planner/ Operation and Maintenance Planner	Hideaki Morita	Construction Project Consultants Inc.
Road Designer I	Kazuharu Koishikawa	Construction Project Consultants Inc.
Road Designer II/Road Structures (Auxiliary Work)	Nobuharu Shimizu	Construction Project Consultants Inc.
Natural Conditions Survey (Topography and Geology)	Koji Koga	Construction Project Consultants Inc.
Construction Planner/Cost Estimator	Yasuhiro Okubo	Construction Project Consultants Inc.
Interpreter (Russian ↔ Japanese)	Mitsumu Asano	Construction Project Consultants Inc.
Road Maintenance and Equipment Planner/Training Planner	Kazuhiko Hasuike	Construction Project Consultants Inc.

(2) Explanation of the Draft Basic Design

Table A-2 Study Team Members (Explanation of the Draft Basic Design)

Assignment	Name	Affiliation
Team Leader	Ken Hasegawa	Field Officer, JICA Tajikistan Office
Project Coordinator	Hideaki Sakabe	Transport and Electricity Team, Operation Group I, Grant Aid Department, JICA
Chief Consultant/Road Traffic Planner/ Operation and Maintenance Planner	Hideaki Morita	Construction Project Consultants Inc.
Road Designer I	Kazuharu Koishikawa	Construction Project Consultants Inc.
Interpreter (Russian ↔ Japanese)	Mitsumu Asano	Construction Project Consultants Inc.

APPENDIX 2 STUDY SCHEDULES

(1) Field Survey: 12th June – 21st July, 2007

Table A-3 Field Survey Schedule (1/2)

Field Survey Schedule for the Basic Design Study for the Project for the Rehabilitation of Kurgan Tyube-Dusti Road in the Republic of Tajikistan (1/2)

Date (2007)	① Leader HASEGAWA		② Project Coordinator SAKABE		③ Chief Consultant / Road Traffic Planner / Operation and Maintenance MORITA		④ Road Designer I KOISIKAWA	
					Sche.	Hotel	Sche.	Hotel
1	Jun	12	Tue	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)
2		13	Wed	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900, Supper JICA rep./dep. Rep.	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900, Supper JICA rep./dep. Rep.	DSB1 (Tajik)	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900, Supper JICA rep./dep. Rep.	DSB1 (Tajik)
3		14	Thu	AM 8:40 hotel to JICA : Meeting w/ JICA Office PM: C/C on Embassy of Japan, Ministry of Transport	am : JICA, EOJ pm : MOTC	DSB2	am : JICA, EOJ pm : MOTC, Nego.	DSB2
4		15	Fri	AM: Meeting w/ Min. of Transport (Explanation of Inception Report) PM: C/C on ADB Resident Office	am : MOTC(Incep.) pm : ADB(Concept)	DSB3	am : MOTC (Nego) pm : ADB	DSB3
5		16	Sat	Site Survey	Site Survey	DSB4	Site Survey	DSB4
6		17	Sun	Internal Meeting & Document Arrangement	Internal Meeting	DSB5	Internal Meeting	DSB5
7		18	Mon	Discussion w/ MOT	am,pm : MOTC, Route fix, 22Jun, start invest.	DSB6	am,pm : MOTC, Route fix, 22Jun, start invest.	DSB6
8		19	Tue	Discussion w/ MOT	am,pm : MOTC, Route fix, 22Jun, start invest.	DSB7	am,pm : MOTC and other, Nego.	DSB7
9		20	Wed	Discussion w/ MOT on M/D	am : MOTC → M/D pm : MOTC → M/D	DSB8	am : MOTC → M/D pm : MOTC → M/D	DSB8
10		21	Thu	AM: Finalization and Signing of M/D PM: Report to EOJ, Meeting w/ JICA Tajikistan Office	am : MOTC M/D sign pm : EOJ, JICA	DSB9	am : MOTC M/D sign pm : EOJ, JICA	DSB9
11		22	Fri	DSBhanbe0600 → (Border0730) → Termez1030 Termez 1135 → Tashkent 1320 (HY1152) 1600: Report to JICA Uzbekistan Office Midnight: Tashkent 2230 → (OZ574) → Seoul 0850 (OZ574)	Site, Investigation	Kur1	am pm : MOTC	DSB10
12		23	Sat	→ Seoul 0850 (OZ574) Seoul 1000 → Tokyo 1210 (OZ102)	Site, Benkel 1	Kur2	am pm : MOTC	DSB11
13		24	Sun		Site, Benkel 2	Kur3	Site, Boring 2	DSB12
14		25	Mon		Site, Benkel 3	Kur4	Site, Boring 3	DSB13
15		26	Tue		Site, Benkel 4	Kur5	Site, Boring 4	DSB14
16		27	Wed		Site, Benkel 5	Kur6	Site, Boring 5	DSB15
17		28	Thu		Site, Benkel 6	Kur7	JICA15:00	DSB16
18		29	Fri		JICA11:00	Kur8	Site, Boring 7	Kur1
19		30	Sat		Site, Benkel 8	Kur9	Site, Boring 8	Kur2
20	Jul	1	Sun		Internal Meeting	Kur10	Internal Meeting	Kur3
21		2	Mon		am : ADB pm : ADB	Kur11	Site, Inventory	Kur4
22		3	Tue		am-pm : MOTC	Kur12	am-pm : MOTC	Kur5
23		4	Wed		JICA11:00	Kur13	am-pm : MOTC	Kur6
24		5	Thu		Site Survey	DSB10	Site, Inventory	Kur7
25		6	Fri		Site Survey	DSB11	Site, Inventory	Kur8
26		7	Sat		Site Survey	DSB12	Site, Inventory	Kur9
27		8	Sun		Internal Meeting	DSB13	Internal Meeting	Kur10
28		9	Mon		am-pm : MOTC	DSB14	Site, Inventory	Kur11
29		10	Tue		Collection of Information (MOTC)	DSB15	Collection of Information (MOTC)	DSB17
30		11	Wed		am-pm : MOTC	DSB16	am-pm : MOTC	DSB18
31		12	Thu		JICA10:00	DSB17	Estimate correction	DSB19
32		13	Fri		Dshanbe0600 → (Border0730) → Termez → Tashkent 1500, 1600: Report to JICA Uzbekistan Office, Midnight: Tashkent 2230 → (OZ574)		Estimate correction	DSB20
33		14	Sat		→ Seoul 0850 (OZ574), Seoul 1000 → Tokyo 1210 (OZ102)		Estimate correction	DSB21
34		15	Sun				Estimate correction	DSB22
35		16	Mon				Estimate correction	DSB23
36		17	Tue				Estimate correction	DSB24
37		18	Wed				Estimate correction	DSB25
38		19	Thu				JICA10:00	DSB26
39		20	Fri				Dshanbe0600 → (Border0730) → Termez → Tashkent 2000, Midnight: Tashkent 2230 → (OZ574)	
40		21	Sat				→ Seoul 0850 (OZ574), Seoul 1000 → Tokyo 1210 (OZ102)	

Abbreviations: DSB = Dushanbe; Kur = Kurgan Tyube; Dus = Dusti

Table A-4 Field Survey Schedule (2/2)

Field Survey Schedule for the Basic Design Study for the Project for the Rehabilitation of Kurgan Tyube-Dusti Road in the Republic of Tajikistan (2/2)

Date (2007)	⑤ Road Designer II SIMIZU		⑥ Natural Condition Survey (Topographic / Geographic) KOGA		⑦ Construction Planner / Cost Estimation OKUBO		⑧ Road Maintenance Planner / Equipment Allocation Planner / OTT Planner KAMACHI		⑨ Interpreter Mr. Asano	
	Sche.	Hotel	Sche.	Hotel	Sche.	Hotel	Sche.	Hotel	Sche.	Hotel
1 Jun 12 Tue			Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)					Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)
2 13 Wed			0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900, Supper JICA rep./dep. Rep.	DSB1 (Tajik)					0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900, Supper JICA rep./dep. Rep.	DSB1 (Tajik)
3 14 Thu			am : JICA, EOJ pm : MOTC, Nego.	DSB2					am : JICA, EOJ pm : MOTC, Nego.	DSB2
4 15 Fri			am : MOTC (Nego) pm : ADB	DSB3					am : MOTC pm : ADB, Nego	DSB3
5 16 Sat			Site Survey	DSB4					Site Survey	DSB4
6 17 Sun			Internal Meeting	DSB5					Internal Meeting	DSB5
7 18 Mon			am,pm : MOTC, Route fix, 22Jun, start invest.	DSB6					am : MOTC pm : MOTC	DSB6
8 19 Tue	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)	am,pm : MOTC and other, Nego.	DSB7	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)	Tokyo1330 → Seoul1555(OZ101) Seoul 1730 → Tashkent2110(OZ573)	UZU (Radi)	am : MOTC pm : MOTC	DSB7
9 20 Wed	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900	DSB1 (Tajik)	am/pm : Site, marking	DSB8	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900	DSB1 (Tajik)	0830 Visit to JICA Uzbekistan Office (for Tajikistan VISA) Tashkent1315 → Termez1515 (HY1153) Termez1530 → (Border 1730) → DSBhanbe1900	DSB1 (Tajik)	am : MOTC → M/D pm : MOTC → M/D	DSB8
10 21 Thu	am : MOTC M/D sign pm : EOJ, JICA	DSB2	Equip. Check	DSB9	am : MOTC M/D sign pm : EOJ, JICA	DSB2	am : MOTC M/D sign pm : JICA, MOTC	DSB2	am : MOTC M/D sign pm : EOJ, JICA	DSB9
11 22 Fri	am pm : MOTC	DSB3	Site, Water flow check	Kur1	am pm : MOTC	DSB3	Site(day return) check	DSB3	am pm : MOTC	DSB10
12 23 Sat	am pm : MOTC	DSB4	Site, Water flow check	Kur2	am pm : MOTC	DSB4	am pm : MOTC	DSB4	am pm : MOTC	DSB11
13 24 Sun	Site, Pit 2	Kur1	Site, Survey 2	Kur3	Site, Investigation	Kur1	Site(day return) check	DSB5	Site	Kur1
14 25 Mon	Site, Pit 3	Kur2	Site, Water flow check	Kur4	Site, Investigation	Kur2	MOTC/ADB/EBRD	DSB6	Site	Kur2
15 26 Tue	Site, Pit 4	Kur3	Site, Water flow check	Kur5	Request estimate	DSB5	Site(day return) check	DSB7	Site	Kur3
16 27 Wed	Site, Pit 5	Kur4	Site, Water flow check	Kur6	Request estimate	DSB6	Site(day return) check	DSB8	Site	Kur4
17 28 Thu	Site, Pit 6	Kur5	Stu. Invent., Survey1	Kur7	Request estimate	DSB7	JICA15:00	DSB9	JICA15:00	DSB12
18 29 Fri	Site, Pit 7	Kur6	Stu. Invent., Survey2	Kur8	Price Investigation	DSB8	Dshanbe0600 → (Border0730) → Termez → Tashkent 1500, Midnight: Tashkent 2230 → (OZ574)			
19 30 Sat	Site, Pit 8	Kur7	Stu. Invent., Survey3	Kur9	Site(day return) check	Kur3	→ Seoul 0850 (OZ574), Seoul 1000 → Tokyo 1210 (OZ102)			
20 Jul 1 Sun	Internal Meeting	Kur8	Internal Meeting	Kur10	Site 日帰り, check	Kur4				
21 2 Mon	Site, Inventory	Kur9	Stu. Invent., Survey4	Kur11	Price Investigation	Kur5				
22 3 Tue	Site, Inventory	Kur10	Stu. Invent., Survey5	Kur12	Price Investigation	Kur6				
23 4 Wed	Site, Inventory	Kur11	Stu. Invent., Survey6	Kur13	JICA11:00	DSB10				
24 5 Thu	Site, Inventory	Kur12	Stu. Invent., Survey7	Kur14	Dshanbe0700 → (Border0830) → Termez1130, Termez 1215 → Tashkent 1320 (HY), 1600: Report to JICA Uzbekistan Office, Tashkent 2230 → (HY)					
25 6 Fri	Site, Inventory	Kur13	Stu. Invent., Survey8	Kur15	→ Tokyo 0800 (HY)					
26 7 Sat	Site, Inventory	Kur14	Stu. Invent., Survey9	Kur16						
27 8 Sun	Internal Meeting	Kur15	Internal Meeting	Kur17						
28 9 Mon	Site, Inventory	Kur16	Stu. Invent., Survey10	Kur18						
29 10 Tue	Site, Inventory	Kur17	Stu. Invent., Survey11	Kur19						
30 11 Wed	Site, Inventory	Kur18	Stu. Invent., Survey12	Kur20						
31 12 Thu	Site, Inventory	Kur19	Stu. Invent., Survey13	Kur21						
32 13 Fri	Site, Inventory	Kur20	Stu. Invent., Survey14	Kur22						
33 14 Sat	Site, Inventory	Kur21	Stu. Invent., Survey15	Kur23						
34 15 Sun	Internal Meeting	Kur22	Internal Meeting	Kur24						
35 16 Mon	Site, Inventory	Kur23	Stu. Invent., Survey16	Kur25						
36 17 Tue	Data correction	DSB5	Stu. Invent., Survey17	Kur26						
37 18 Wed	Collection of Information (MOTC)	DSB6	Data correction	DSB10						
38 19 Thu	JICA10:00	DSB7	JICA10:00	DSB11						
39 20 Fri	Dshanbe0600 → (Border0730) → Termez1030 → Tashkent 2000, Midnight: Tashkent 2230 → (OZ574)									
21 Sat	→ Seoul 0850 (OZ574), Seoul 1000 → Tokyo 1210 (OZ102)									

Abbreviations: DSB = Dushanbe; Kur = Kurgan Tyube; Dus = Dusti

(2) Mission to Explain the Draft Basic Design: 2nd – 14th November, 2007

Table A-5 Schedule for the Mission to Explain the Draft Basic Design

Basic Design Study for the Project for the Rehabilitation of Kurgan Tyube-Dusti Road in the Republic of Tajikistan
(Explanation of the DBD)

Date	JICA		Consultant		
	Mr. Hasegawa Team Leader	Mr. Sakabe Project Coordinator	Mr. H. Morita Chief Consultant/Road Traffic Planner/Operation and Maintenance	Mr. K.Koshikawa Road Designer I	Mr.T. Asano Interpretator
11/2 (Fri)			Narita,OZ101(13:30) – (16:10)Soul,OZ573(17:30)–(21:10)Tashkent		
11/3 (Sat)			Reprot to JICA Uzbekistan		
			Tashkent,HY1153(13:15) –(15:15)Termiz –(By Taxi) –(19:00) Dushanbe		
11/4 (Sun)			Internal Meeting Data collecting, Preparation for the Site		
11/5 (Mon)			9:00 Courtesy call for JICA Tajikistan 11:30 Courtesy call for Embassy of Japan, 14:30 Courtesy call for MOTC (Discussion to DBD)		
11/6 (Tue)		Narita –Soul–Tashkent	Internal Meeting,		Narita –Soul–Tashkent
11/7 (Wed)		Tashkent–Termiz–Dushanbe	8:00 Discussion to DBD with MOTC		Tashkent–Termiz–Dushanbe
11/8 (Thu)	9:00 Internal Discussion JICA, 11:00 Discussion to DBD and M/D with MOTC				
11/9 (Fri)	am: Final confirmation of M/D with MOTC, 16:00 Signing ceremony of M/D with MOTC				
11/10 (Sat)	8:00 Field trip to the project site, 10:00 Courtesy call for Kurgan–tybe provincial government 11:30 Nyjino pyianji bridge, 16:30 Trip back to Dushanbe				
11/11 (Sun)		Internal Meeting (for document arrangement)			
11/12 (Mon)	am: JICA Internal Discussion, MOTC data correction (necessary case) 15:30 Information to EOJ				
11/13 (Tue)		6:00 Dushanbe–(by land)10:00 Arival Termiz, HY1152(11:35)–(13:20)Tashkent, Tashkent,OZ574(22:30)–(08:50)			
11/14 (Wed)		Soul,OZ102(10:00)–(12:10)Narita			

APPENDIX 3 LIST OF INTERVIEWEES

Table A-6 List of Interviewees in Tajikistan

Ministry of Transport and Communication (MOTC)	
Mr. Ashurov A.A.	Minister
Mr. Zukhurov J.Z.	First Deputy Minister
Mr. Anoyatshoev Alovuddin	Head of Construction Department of MOTC
Mr. Mirzoev T.D.	Head of General Department of Construction and Road Facilities
Ms. Yokubzoda F.	Acting Head of International Cooperation Department
Mr. Yatimov O.	Head of Investment Department
Mr. Firuz Makhmudov	Assistant Head of Department Commonwealth Independent States Relations
Mr. Nurulloev Bahrullo	Head of Transport Department in Khatlon Region
Mr. Kholikov M.	Deputy Head of Khatlon Transport Department
Mr. Arzikulov T.	Head of State Road Maintenance Office of Kolkhozobod District
Mr. Halimov I.K.	Head of State Road Maintenance Office of Kumsangir District
Design Laboratory (LOIKHAKASH)	
Mr. Fayzulloev K.	Director
Mr. Yuldashev Yu.A.	Chief Engineer
Mr. Nazrishoev S.T.	Head of Road-Design and Survey Division
Mr. Saifuddinov F.	Head of Geological Division
Ms. Fedorova T.I.	Chief Specialist of Geological Division
Mr. Koshkin A.S.	Chief Project Engineer
Mr. Kholdorov Olimjon	Bridge Engineer "Loikhakash"
Ministry of Land Reclamation and Water Resources State Agency: Tajikgiprovodkhoz	
Mr. Aliev Kodir	Head of Exploitation Department of Land Reclamation and Water Resource Ministry
Mr. Gulomov Habib	Head of the Exploitation Division of Kalinin Town of Land Reclamation and Water Resources Ministry
Mr. Gadoev Shamsiddin	Deputy Head of Khatlon Department of Water Resources of Land Reclamation and Water Resources Ministry
Mr. Narzulloev M.	Specialist of Khatlon Department of Water Resources of Land Reclamation and Water Resources Ministry
Mr. Nabiev Akbar	Director of State Agency "Tajikvodkhoz"
State Construction and Architecture Agency: GOSSTROY	
Mr. Rajaboev Davron	Chief Specialist of State Examination Department (in charge of Road Projects) of GOSSTROY
Mr. Aminov Manuchehr	Specialist of State Examination Department of GOSSTROY
Khatlon Region	
Mr. Afzalov G.	Chairman of Hukumat of Khatlon Region
Mr. Rustamov S.	First Deputy Chairman of Hukumat of Khatlon Region
Mr. Gulmatov M.G.	Deputy Chairman of Hukumat of Khatlon Region
Mr. Nurulloev Bahrullo	Head of Transport Department in Khatlon Region

Mr. Bobojonov Kh.	Head of Transport Division of Hukumat of Khatlon Region
ADB Tajikistan Office	
Mr. Sadykov R.	Infrastructure Officer
EBRD Tajikistan Office	
Mr. Faiziev B.	Senior Analyst
Embassy of Japan in Tajikistan	
Mr. Takahashi Hiroshi	Charge de Affaires
Mr. Kondo Shunsuke	Second Secretary
Mr. Ono Koji	Third Secretary
Mr. Suzuki Yuji	Third Secretary
Mr. Shimada Shizuo	Attache
JICA Tajikistan Office	
Mr. Hasegawa Ken	Resident Representative
Mr. Orita Tomonori	Project Formulation Advisor
Mr. Alexander Serikov	Program Officer
JICA Uzbekistan Office	
Mr. Nishimiya Noriaki	Resident Representative
Mr. Yamazaki Jun	Assistant Resident Representative
Ms. Sugiyama Etsuko	Project Formulation Advisor

APPENDIX 4 MINUTES OF DISCUSSIONS (M/D)

(1) Field Survey Stage

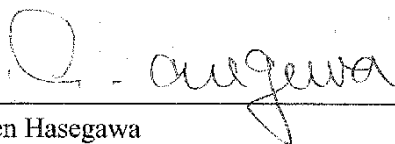
**Minutes of Discussions
on the Basic Design Study
on the Project for Rehabilitation of Kurgan Tyube - Dusti Road
in the Republic of Tajikistan**

Referring to the results of Preliminary Study conducted in October 2006, the Government of Japan decided to conduct a Basic Design Study on the Project for Rehabilitation of Kurgan Tyube - Dusti Road (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

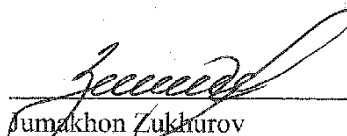
JICA sent to Tajikistan the Basic Design Study Team (hereinafter referred to as "the Team"), headed by Mr. Ken Hasegawa, Resident Representative, JICA Tajikistan Office, and is scheduled to stay in the country from June 13 to July 20, 2007.

The Team held discussions with the concerned officials of the Government of Tajikistan. In the course of the discussions, both sides have confirmed the main items of described in the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Dushanbe, June 21, 2007



Ken Hasegawa
Leader
Basic Design Study Team
Japan International Cooperation Agency



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

ATTACHMENT

1. Objective of the Project

The objective of the Project is to rehabilitate the road between Kurgan Tyube and Dusti to ensure safe and smooth traffic through International Trunk Road No.11 in Tajikistan (Asian Highway No.7).

2. Project Site

The site of the Project is shown in Annex-1.

3. Responsible and Implementing Organizations

The responsible and implementing Organization is Ministry of Transport and Communication (MOTC).

The organization chart of the responsible and implementing organization is shown in Annex-2.

4. Items Requested by the Government of Tajikistan

4-1. After discussions with the Team, the items described below were requested by the Tajik side.

Rehabilitation of the Existing Road between Kurgan Tyube and Dusti (Approximately 60km)

(1) Starting Point: Avtovokzal in Kurgan Tyube (Connecting point up to Dushanbe-Kurgan Tyube-Kulyab Road, International Trunk Road No.4), which is shown as figure-1 in Annex-3.

(2) Ending Point: Starting point of Dusti-Nizhniy Pyandzh Road (Connecting point up to new bypass for Dusuti town), which is shown as figure-2 in Annex-3.

(3) Contents of Rehabilitation

- 1) To rehabilitate the sub-grade and pavement at necessary sections
- 2) To reconstruct and/or rehabilitate the existing 14 bridges and culverts,
- 3) To rehabilitate the drainage facilities along the road at necessary sections,
- 4) To improve the existing intersection at necessary points for the traffic safety, and
- 5) To install the traffic safety facilities (road marking, traffic signs etc.)

4-2. Both sides reconfirmed that the specification of the road to be rehabilitated should be the "Category III" in Tajikistan Road Standard as described on the Minutes of Discussions signed by both sides on October 18, 2006. (hereinafter referred to as "the Signed Minutes")

4-3. Regarding the route in Kolkhozabad city, both sides confirmed that "the Eastern Route", which is shown as figure-3 in Annex-3, was selected for the Project.

4-4. JICA will assess the appropriateness of the request and will report its findings to the Government of Japan.



5. Japan's Grant Aid Scheme

The Tajik side reconfirmed the Japan's Grant Aid scheme and the necessary measures to be taken by the Tajik side as explained by the Basic Design Study Team and described in the Annex-2 and Annex-3 of the Signed Minutes.

6. Schedule of the study

- 6-1. The consultants will proceed to further study in Tajikistan until July 20, 2007.
- 6-2. JICA will prepare the draft report in Russian and dispatch a mission to Tajikistan in order to explain its contents at the beginning of November, 2007.
- 6-3. In case that the contents of the report is accepted in principle by the Government of Tajikistan, JICA will complete the final report in English and send it to the Government of Tajikistan by February 2008.

7. Other Relevant Issues

- 7-1. The Tajik side explained to the Team that the Construction permission for the Project (including the Environmental permission) could be obtained by the Tajik side within 2 months after the acceptance of the Basic Design drawings. Both sides confirmed that the Tajik side should submit the flow chart of the procedure for the Construction Permission to JICA Tajikistan Office by June 28, 2007.
- 7-2. The Tajik side confirmed that the following undertakings should be taken by the Tajik side at the Tajik expenses.
 - 1) Securing of the land for road construction area for the Project,
 - 2) Relocation of existing utilities (electricity power, telecommunication, water, sewage, gas, etc.),
 - 3) Relocation of the existing irrigation canal along the road,
 - 4) Necessary procedure for removal of existing properties (including building, trees, plants, etc.),
 - 5) Necessary arrangement of detours for public traffic at necessary sections during the construction of roads, e.g. securing of land, public announcement etc,
 - 6) Securing and clearance of the temporary yard,
 - 7) Securing site for borrow pit, quarry and disposal of waste (scarified asphalt concrete, excavated unsuitable soil, etc.),
 - 8) Necessary arrangement of public utilities for the temporary yard to be used for site facilities such as site offices, plant yards, dormitory, etc. and for temporary works
 - 9) Necessary arrangement and coordination with concerned Ministry and/or Agency,
 - 10) Necessary arrangement for timely issuance of the license and permission, e.g. Company License for Contractor, permission of quarrying, etc.
 - 11) Necessary arrangement for the tax exemption for the Project,
 - 12) Budget allocation for the commission for Authorization to Pay (A/P) and Payment,
 - 13) Budget allocation for the Examination Fee of Construction Permission for the Project, and
 - 14) Budget allocation and personnel recruitment (assignment of experts, coordinators, etc.) for the implementation control organization (Project Implementation Unit, PIU) for the

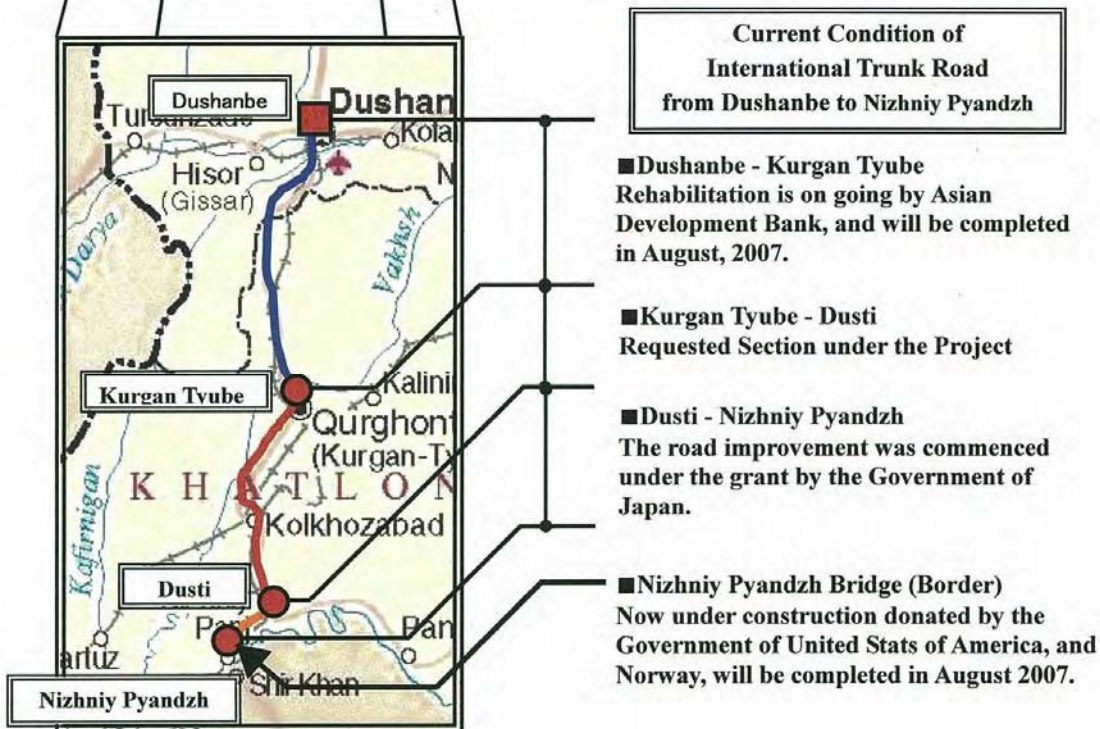
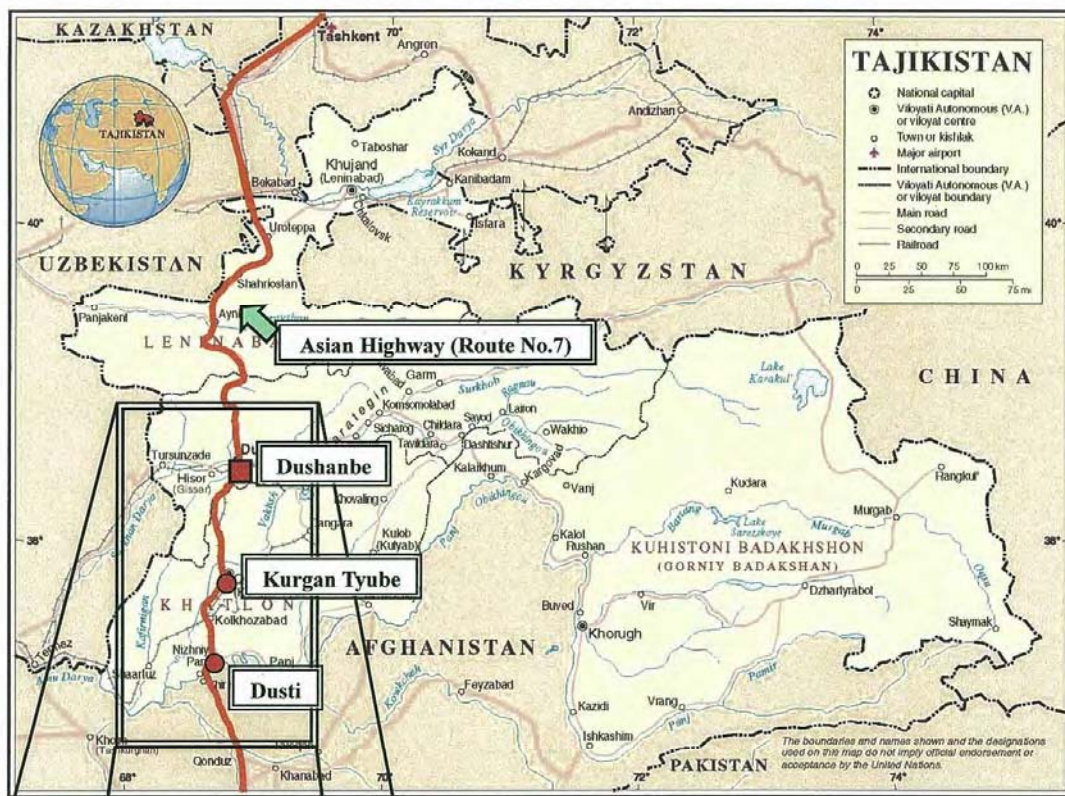


Project.

- 7-3. The Tajik side shall secure enough budget and personnel necessary for the operation and maintenance of the facilities implemented by the Project.
- 7-4. The Tajik side shall provide security for all concerned Japanese nationals working for the Project, if deemed necessary.
- 7-5. The Tajik side shall provide necessary numbers of counterpart personnel to the Team during the period of their studies in Tajikistan.
- 7-6. The Tajik side shall submit answers to the Questionnaire, which the Team handed to the Tajik side, by July 3, 2007
- 7-7. Both sides confirmed that the English text shall prevail when any doubt arises in interpretation of this Minutes of Discussions.

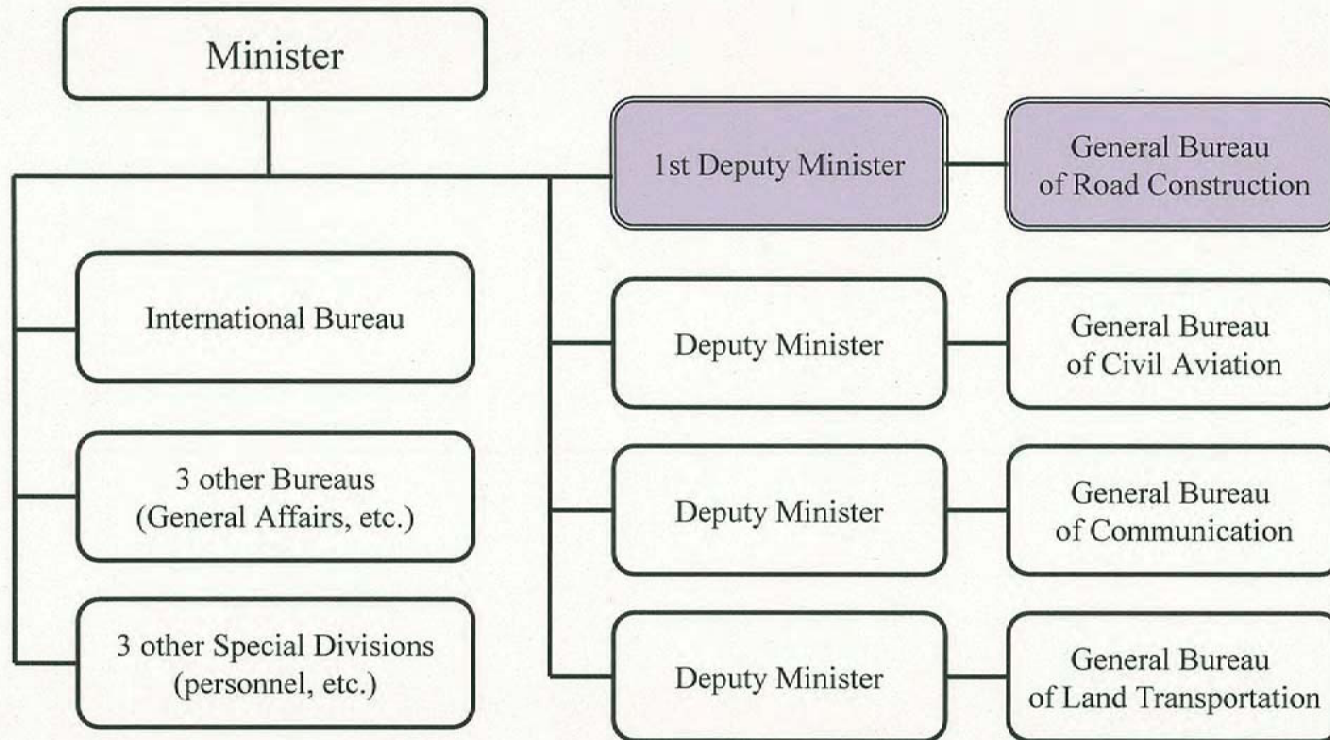



The Project Site



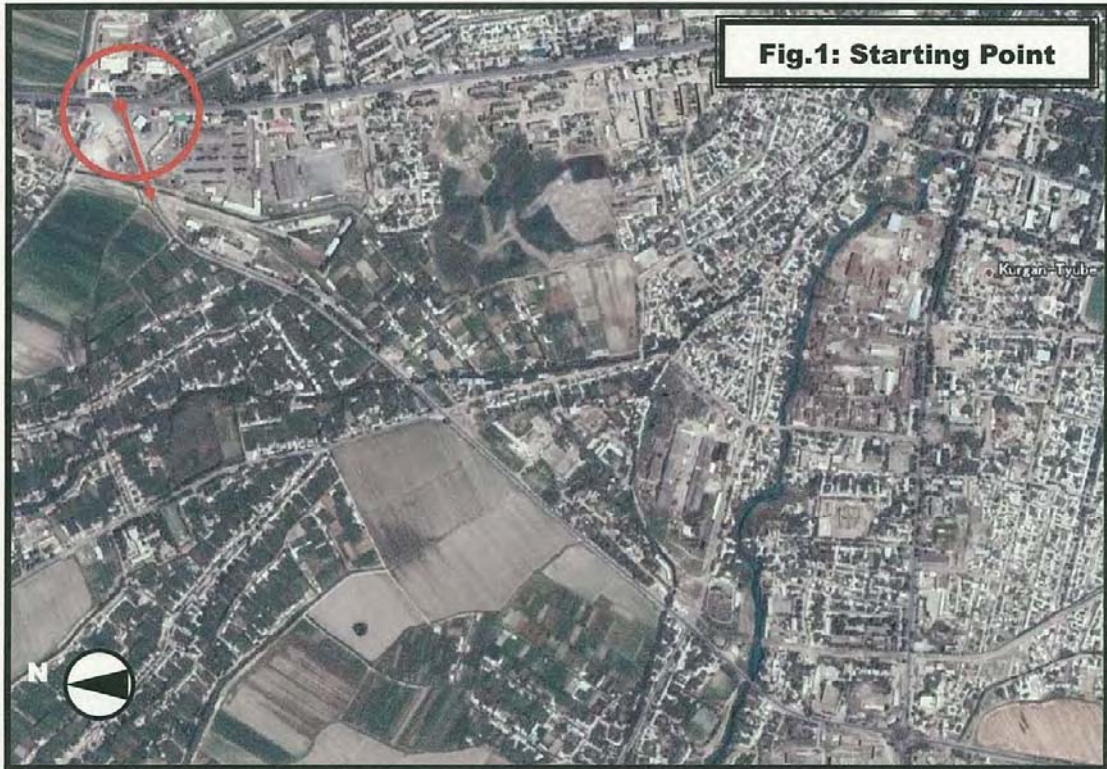
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Organization Chart of “the Ministry of Transport and Communication” (Annex-2)



 :Person & Organization in charge of the Project

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(2) Explanation of the DBD Stage

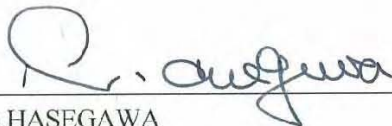
**Minutes of Discussions
on Basic Design Study
on the Project for Rehabilitation of Kurgan Tyube - Dusti Road
in the Republic of Tajikistan
(Explanation of Draft Report)**

In June 2007, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Rehabilitation of Kurgan Tyube - Dusti Road (hereinafter referred to as "the Project") to the Republic of Tajikistan (hereinafter referred to as "Tajikistan"), and through discussions, field survey and the results of technical examination in Japan, JICA prepared a draft report of the study.

In order to explain and to consult with the concerned officials of the Government of Tajikistan on the contents of the draft report, JICA sent to Tajikistan the Basic Design Explanation Team (hereinafter referred to as "the Team"), which is headed by Mr. Ken HASEGAWA, Resident Representative of JICA Tajikistan Office, from November 3 to November 13, 2007.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Dushanbe, November 12, 2007



Ken HASEGAWA
Leader
Basic Design Explanation Team
Japan International Cooperation Agency



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

ATTACHMENT

1. Components of the Draft Report

- 1-1. The Tajik side agreed and accepted in principle the contents of the draft report of Basic Design Study by the Team.
- 1-2. The Tajik side prepared a list of comments on the draft report except for the components and submit to the Team, and requested to reflect these comments to the final report.

2. Cost Estimation

Both sides agreed that the Project Cost Estimation as attached in Annex-1 should never be duplicated or released to any third parties before the signing of all the Contract(s) for the Project.

3. Japan's Grant Aid Scheme

The Tajik side reconfirmed the Japan's Grant Aid scheme and the necessary measures to be taken by the Tajik side as explained by the Preliminary Study Team and described in the Annex-3 and 4 of the Minutes of Discussions signed by both sides on October 17, 2006.

4. Schedule of the Study

JICA will complete the Final Report in English, in accordance with the confirmed items and send it to the Tajik side by the beginning of February, 2008.

5. Other Relevant Issues

- 5-1. Regarding the replacement of the existing bridges with box culverts, both sides confirmed that the Tajik side obtained the approval of Ministry of Land Reclamation and Water Resources as attached in Annex-2.
- 5-2. Through the Preliminary Study and Basic Design Study for the Project, both sides confirmed that the Project would have no significant environmental and social impact. Therefore the Tajik side explained to the Team that the procedures for environmental clearance, EIA etc., are not necessary for the Project in advance.
- 5-3. Both sides confirmed that the Tajik side should obtain the necessary official approval including Environment and Social Considerations for the Project based on the Draft Report of the Basic Design Study by the end of January, 2008.
- 5-4. The Tajik side confirmed that the following undertakings should be taken by the Tajik side at its own expenses.
 - 1) Securing of the land for road construction area for the Project,
 - 2) Relocation of existing utilities (electricity power, telecommunication, water, sewage, gas, etc.),
 - 3) Relocation of the existing irrigation canal along the road,
 - 4) Necessary procedure for removal of existing properties (including building, trees, plants, etc.),



- 5) Necessary arrangement of detours for public traffic at necessary sections during the construction of roads, e.g. securing of land, public announcement etc,
- 6) Securing and clearance of the temporary yard,
- 7) Securing site for borrow pit, quarry and disposal of waste (scarified asphalt concrete, excavated unsuitable soil, etc.),
- 8) Necessary arrangement of public utilities for the temporary yard to be used for site facilities such as site offices, plant yards, dormitory, etc. and for temporary works
- 9) Necessary arrangement and coordination with concerned Ministry and/or Agency,
- 10) Necessary arrangement for timely issuance of the license and permission, e.g. Company License for Contractor, permission of quarrying, etc.
- 11) Necessary arrangement for the tax exemption for the Project,
- 12) Budget allocation for the commission for Authorization to Pay (A/P) and Payment,
- 13) Budget allocation for the Examination Fee of Construction Permission for the Project, and
- 14) Budget allocation and personnel recruitment (assignment of experts, coordinators, etc.) for the implementation control organization (Project Implementation Unit, PIU) for the Project.

5-5. The Tajik side shall secure enough budget and personnel necessary for the operation and maintenance of the facilities improved by the Project, including the periodical maintenance work after the completion of the Project.

5-6. Both sides confirmed that it is necessary to control over-loaded vehicles in order to make road maintenance rationally, and accordingly the Tajik side should establish suitable measures for traffic safety and control especially over loading traffic, which are essential for appropriate operation and maintenance of the roads rehabilitated by the Project.

5-7. Both sides confirmed that the English text shall prevail when any doubt arises in interpretation of this Minutes of Discussions.



**This page is closed
due to the confidentiality.**

Annex-2.

ВАЗОРАТИ МЕЛИОРАТСИЯ
ВА ЗАХИРАҶОИ ОБИ
ҶУМҲУРИИ ТОҶИКИСТОН



МИНИСТЕРСТВО МЕЛИОРАЦИИ
И ВОДНЫХ РЕСУРСОВ
РЕСПУБЛИКИ ТАДЖИКИСТАН

734064, ш. Душанбе,
кӯчаи Шамси 5/1

тел: 235-35-54; 235-97-40
факс (+992-372) 235-35-66; (95) 132-90-01
E-mail: taj_water@mail.ru

734064, г. Душанбе
улица Шамси 5/1

Аз (от) «12» 11 соли 2007(года) №2ЭР-1731

Министерство транспорта
и коммуникаций
Республики Таджикистан

На Ваше письмо за №2 (13,2)-1957 от 08.11.2007 года Министерство мелиорации и водных ресурсов Республики Таджикистан сообщает, что предложение консультантов о замене существующих поврежденных мостов на монолитные прямоугольные водопропускные трубы большого размера считает целесообразным.

Первый Заместитель Министра

К. Нуралиев

5

APPENDIX 5

PRELIMINARY PLANNING OF THE PROJECT (BASIC DESIGN STAGE)

1. Project Title
Project for the Rehabilitation of Kurgan Tyube - Dusti Road in the Republic of Tajikistan
2. Background of the Request (Necessity for and Relevance of Cooperation)
<p>The road network in the Republic of Tajikistan (hereinafter referred to as “Tajikistan”) provides crucial axes for social and economic activities. Many of the existing trunk roads were originally constructed in the period of the former Soviet Union but the civil war following independence in 1991 and natural aging have damaged these roads, disrupting the transportation of the necessary goods to sustain national life and trading with neighbouring countries and constituting a factor obstructing the vitalisation of the economy. Under these circumstances, the Government of Tajikistan has formulated “a long-term transport development plan” every five years which gives priority to improvement of the trunk road network in order to systematically develop the transport infrastructure. However, the implementation of road network improvement work is largely dependent on foreign aid due to the chronic budgetary shortfall of the government.</p> <p>Kurgan Tyube - Dusti Road, the target road of the Basic Design Study (and the Project), forms part of the southern route from Dushanbe. This route is important as it leads to the sea via Afghanistan and its rehabilitation has been a priority for the Government of Tajikistan. Up to the present, a new bridge has been constructed over Pyandzh River at the border with Afghanistan with US assistance and Dushanbe – Kurgan Tyube Road has been rehabilitated with ADB assistance. Moreover, road improvement work is currently taking place between Dusti and Nizhniy Pyandzh with grant aid of the Government of Japan. However, there is no concrete rehabilitation plan for the section between Kurgan Tyube and Dusti despite the state of advanced deterioration along the entire route. It is believed that this section could become a bottleneck for International Trunk Road No. 11 (former National Road No. 384) when the rehabilitation of other sections has been completed, making the rehabilitation of this section an urgent necessity. Against this background, the Project aims at securing safe and smooth traffic flow on the target road by means of rehabilitating the target road, its auxiliary facilities and road bridges along the route.</p>
3. Outline of the Project
<p style="text-align: right;">*Those underlined are the outcomes, activities and inputs directly related to the planned grant aid.</p> <p>(1) Goal of the Project (Scope and Scale of Benefits) Securing of safe and smooth traffic flow on the Kurgan Tyube – Dusti section of International Trunk Road No. 11 (Asian Highway: AH7) Beneficiaries: 6.62 million people in Tajikistan</p> <p>(2) Outcomes of the Project <u>Rehabilitation of the 59.9 km section between Kurgan Tyube and Dusti</u></p> <p>(3) Main Activities of the Project <u>Rehabilitation of the pavement, road structures and auxiliary facilities of the target road</u></p> <p>(4) Inputs</p> <ol style="list-style-type: none"> 1) Japanese side: grant aid of ¥3,588 million 2) Tajikistan side <ol style="list-style-type: none"> ① Cost of relocating obstructive structures for road rehabilitation

- ② Cost of land acquisition necessitated at some sites due to improvement of the alignment and cost of borrowing land for the base camp, etc.
- ③ Maintenance cost following the completion of the construction work

(5) Implementation System

Responsible and Implementation Organization: Ministry of Transport and Communication

4. Contents of the Requested Grant Aid Project

(1) Site

Khatlon Region, Tajikistan

(2) Outline

Rehabilitation of the target road

(3) Undertakings of the Recipient Country

- 1) Securing of the required land
- 2) Relocation of obstructive structures
- 3) Clearance of the necessary procedure to proceed with the construction work

(4) Estimated Project Cost

Estimated project cost: ¥3,613 million (grant aid of ¥3,559 million and funding by the recipient country of ¥54 million)

(5) Schedule

Approximately 51 months, including the periods for the detailed design and tender (planned)

(6) Special Considerations Relating to Poverty, Gender, the Environment and Community

None

5. External Risks (Affecting the Achievement of the Project Goal)

The traffic volume will not substantially increase from the original assumption.

6. Use of Lessons from Similar Projects in the Past

None

7. Proposal for Ex-Post Evaluation of the Project

(1) Indicators for the Degree of Achievement of the Project Goal

Indicator	2007 (Before the Project)	2011 (After the Project)
Increase of safe travelling speed on the target road	30 km/hr	73 km/hr
Increase of sight distance	≥ 10 m	≥ 140 m

(2) Other Indicators of Achievements

None

(3) Timing of Evaluation

After the opening of the target section for rehabilitation (2012)

APPENDIX 6

LIST OF REFERENCE MATERIALS OBTAINED

No.	Title	Type	Original or Copy	Published by	Year of Publication
1	Highway Design Standards	Documents	Copy	Design Laboratory	1998
2	Asian Development Bank Board of Directors Proposed Loan and Asian Development Fund Grant D Border Road Rehabilitation Project (Phase II)	Document	Copy	JICA Tajikistan Office	2005
3	Tadzhikistans standerd road design Nature security laws	CD-R	Copy	Design Laboratory	Unknown
4	Public Invest Programme and Technicalment Assistar 2007-2009 Investment plan and Technical Support	Document	Copy	MOTC	2007
5	Foreign Aid Report-2006	Document	Copy	MOTC	2007
6	Location Map	Map	Copy	JICA Tajikistan Office	Unknown
7	Loikhakash pamphlet	Pamphlet	Copy	JICA Tajikistan Office	2006
8	Snip Contraction Road Highway Design Standards	Document	Copy	Design Laboratory	1997
9	List of Necessary documents for receiving permission Procedure of Construction License	Document	Copy	MOTC	2007
10	Ministry of Melioration and water resource	Document	Copy	MOTC	2007
11	State Program of Investment for Transport The budget according to sector	Document	Copy	MOTC	2007
12	Transportation Amount of transportation and Freight traveler	Document	Copy	MOTC	2007
13	Ministry of Transport and Communication of the Road	Document	Copy	MOTC	2007
14	Foreign Aid for Road Transport	Document	Copy	MOTC	2007
15	Answers to the JICA the Railways transport	Document	Copy	MOTC	2007
16	Ministry of Finance MOTC budget of MOF	Document	Copy	MOTC	2007

APPENDIX 7

OTHER REFERENCE MATERIALS/INFORMATION

- 7.1 Technical Memorandum

- 7.2 Results of the Natural Conditions Survey (Soil)

- 7.3 Results of the Natural Conditions Survey (Geology)

7.1 Technical Memorandum



CONSTRUCTION PROJECT CONSULTANTS, INC.

YSK Bldg., 3-23-1 Takadanobaba, Shinjuku-ku,

Tokyo 169-0075, JAPAN

Phone:+81-3-5337-4062

Facsimile:+81-3-5337-4092

13 July, 2007

The 1st Deputy Minister
Ministry of Transport and Communication (MOTC)
The Republic of Tajikistan

Subject: Submission of Technical Note for the Basic Design Study of Rehabilitation of Kurgan Tyube - Dusti Road on the Japanese Grant Aid Project

Dear Sir,

We are pleased to submit the Technical Note which indicates the key design value to be used for the Basic Design Study for the captioned project by the Japan International Cooperation Agency (JICA) as Japanese Grant Aid Project.

The values on the Technical Note are following the result of discussion by the Study Team and MOTC technical representative. Thus the concepts of basic design on Technical Note which was carried out and agreed by both parties at the conference room of MOTC head quarter on 12nd July, 2007.

Please kindly confirm the attached Technical Note and references.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'R. Morita', is written over a horizontal line.

Hideaki Morita

Project Manager

Construction Project Consultants, Inc. Japan (CPC)

Ref. 1. The stated Technical Note

2. Inter-section design concept (6 places)

3. Table-1 Existing bridge condition and initial evaluation of measure

12-July-2007

Memorandum

Subject: Technical note of Design Value to be used for the Basic Design Study on the Project

The JICA Study Team will propose the following principal standard for the design of .captioned project.

Description		Units	Value		
			Flat Section	Rolling	Mountainous
Road Category		-	III		
Design Speed		Km/hr	100 (80)	80 (60)	50 (30)
No. of Lanes		No.	2		
Right of Way Width		m	50		
Carriageway Width		m	7.0		
Shoulder width		m	2.5(included 0.5m width as hard shoulder)		
Cross Fall on Carriageway		%	2.0		
Cross Fall on Shoulder		%	4.0		
Minimum Radius of Horizontal Curve *1		m	380	230	125
Maximum Gradient		%	3 (8)	5 (8)	8 (8)
Maximum Superelevation		%	6	6	6
Minimum Sight Distance		m	205 (157)	140 (113)	85 (74)
Fill Slope	Granular soil	Angle	1:1.5~2.0 (depend on soil type)		
	Hard Rock	Angle	1:0.5		
	Decomposed Rock	Angle	1:0.75		
	Other than Rock	Angle	1:1.0~1.5 (depend on soil type)		
Pavement Type		-	Carriageway=AC, Shoulder=BST		
Structure Live Load		-	Class B Load of Japan Road Association (This is more than HA, HB load on the British Standard which applied as Tanzania Standard)		
Seismic		Kh			

Remarks : () = Minimum value. AC=Asphaltic Concrete, BST=Bituminous Surface Treatment

Note : Exceptional minimum radius will be applied in the township area (R=30m expected).


Mr. Jumakhon ZUKHUROV
First Deputy Minister

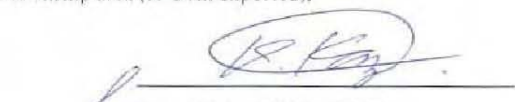

Mr. Hideaki MORITA
Chief Consultant of JICA Study Team

Table -1 Existing Bridge Condition and Initial Evaluation of Measure (KulganTube~Dusti)

No.	Km	Existing Bridge Condition					Evaluation						
		Total Width(m)	Side walk width(m)	Span length(m)		Type of the structure (Super/Sub-structure)	General Condition	Existing Utilities	Width	Durability	Evaluation	Estimated Type of Structure	
1	1+000	13.40	None	5.5 (Skew)	1 span	RC Slab Bridge with H shaped girder at both outside	RC	1960s Build, Re-bar exposed, Partly lack	Crossing water supply pipe (4pcs.) Gas pipe(L), Sanitary pipe(R)	0	x	Replacement	Box Culvert (B5.0m x H2.4m, Skew)
2	2+250	8.95	2 @ 0.9m	26.95 (5.30+16.35+5.3)	3 spans	Main plate girder with H shaped girders on outer span	Pile Bent Abuts and piers (Steel pile D=350mm)	Before 1960s Build, Re-bar exposed, Partly lack, Critical Rust	Crossing water supply pipe, Gas pipe(L), 2 @ Sanitary pipe(L), 2 @ WSP('R)	x	x	Replacement	Box Culvert (B7.0m x H6.3m + 2@ (B5.0m x H6.3m), 3 cells)
3	11+400	12.50	2 @ 0.7m	17.41 (5.63+6.00+5.76)	3 spans	RC Slab	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build, Re-bar exposed, Partly lack	Crossing water supply pipe, Irrigation Pipe(L)	0	x	Replacement	Box Culvert (B9.0m x H3.5m)
4	13+600	12.00	2 @ 0.4m	11.1 (5.55+5.55)	2 spans	RC Slab	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build, Re-bar exposed, Partly lack	Crossing water supply pipe, WSP(L), Sanitary pipe('R)	0	x	Replacement	Box Culvert (B6.0m x H5.2m)
5	14+800	11.00	2 @ 0.7m	12.1 (2.5+7.10+2.5 (Left side W=4m 1 span)	3 spans	RC Slab	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build, Re-bar exposed, Partly lack	Crossing water supply pipe, Irrigation water gate(L)	x	x	Replacement	Box Culvert (B9.0m x H2.2m)
6	27+400	12.40	2 @ 0.35m	3.3 (Skew)	1 span	RC Slab	RC	1960s Build, Partly lack, Critical scored	WSP(L), ('R)	0	x	Replacement	Box Culvert (B3.0m x H4.5m, Skew)
7	28+050	10.30	2 @ 1.40m	42	1 span	Plate girder	Un shown	1993s Build, Partly lack on the Expansion joint	Crossing water supply pipe, WSP(L), E/L & T/L ('R)	-	0	Repair of the Expansion joint	-
8	30+100	10.17	2 @ 1.0m	15.6 (Skew)	1 span	RC T girder	Pile Bent Abuts (RC pile 300mmx 350mm)	1960s Build	Crossing water supply pipe, WSP(R), E/L & T/L (R)	x	0	Replacement	Box Culvert (B7.0m x H4.3m, Skew)
9	30+700	10.00	2 @ 1.0m	28.1 (5.90+16.50+5.70)	3 spans	RC T girder with Slab bridge on the outer spans	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build	Irrigation way bridge w=1.2m(R), WSP D=800mm(L)	x	0	Replacement	Box Culvert (B8.0m x H5.7m)
10	30+900	7.55	None	22.3 (8.05+6.95+7.30)	3 spans	H shaped girder	Pile Bent Abuts and piers (Steel pile D=350mm)	1960s Build	Crossing water supply pipe, WSP(L, R), E/L & T/L (R)	x	x	Replacement	Box Culvert (B12.0m x H5.7m + 2@ (B6.0m x H5.7m, 3 cells)
11	36+200	11.75	2 @ 1.45m	29.4 (6.50+16.40+6.50)	3 spans	RC T girder with Slab bridge on the outer spans	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1985s Build	Previous Old bridge (L), Crossing water supply pipe, Gas pipe (L), WSP(L, R), T/L (L)	-	0	Repair of the Expansion joint	-
12	46+800	10.00(Skew)	2 @ 0.45m	12.3 (6.15+6.15)	2 spans	RC Slab	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build	Pedestrian bridge W=1.0m (L), WSP(L)	x	0	Replacement	Box Culvert (B7.0m x H2.7m, Skew)
13	46+830	8.30	-	12.85	3 spans (continuous)	H shaped girder	RC wall type	1960s Build, Critical rust.	Pedestrian bridge W=1.0m (L), Previous Old bridge (R), Crossing water supply pipe(D=900mm), WSP(L, R)	x	x	Demolish	Embankment
14	52+200	10.85	None	18.45 (4.85+4.40+4.60+4.60)	4 spans	RC Slab	Pile Bent Abuts and piers (RC pile 300mmx 350mm)	1960s Build, Re-bar exposed, Partly lack, Collapsed?	Pedestrian bridge W=0.6m (L), WSP(L, R)	x	x	Replacement	Box Culvert (B10.0m x H3.0m)

* NO 7 and NO 11 Design Report will be provided by MoTC to analyze current durability.

** It will be arranged joint site inspection b/t 16-17 July '07 for NO 7 and NO 11 existing bridge to confirm current condition.

Inter-Section ①
Around B.P.





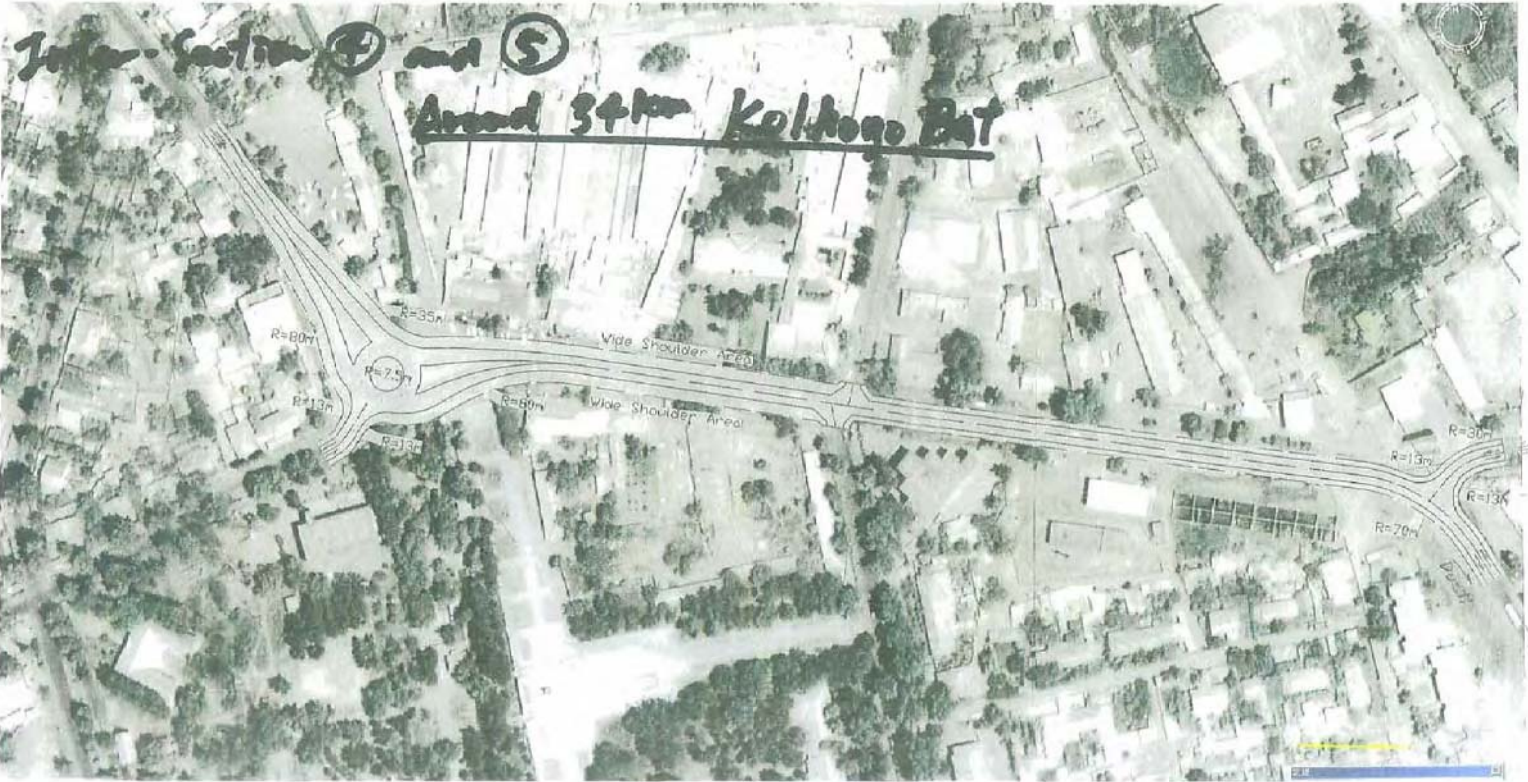
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* It will be considered road marking instead of road island.

The diagrams show two versions of a road intersection. The left diagram shows a roundabout with a central island and a road entering from the left. The right diagram shows a similar roundabout but with a different road layout, possibly indicating a change in road marking or island design.

Inter-Section 3
Around 26 Km



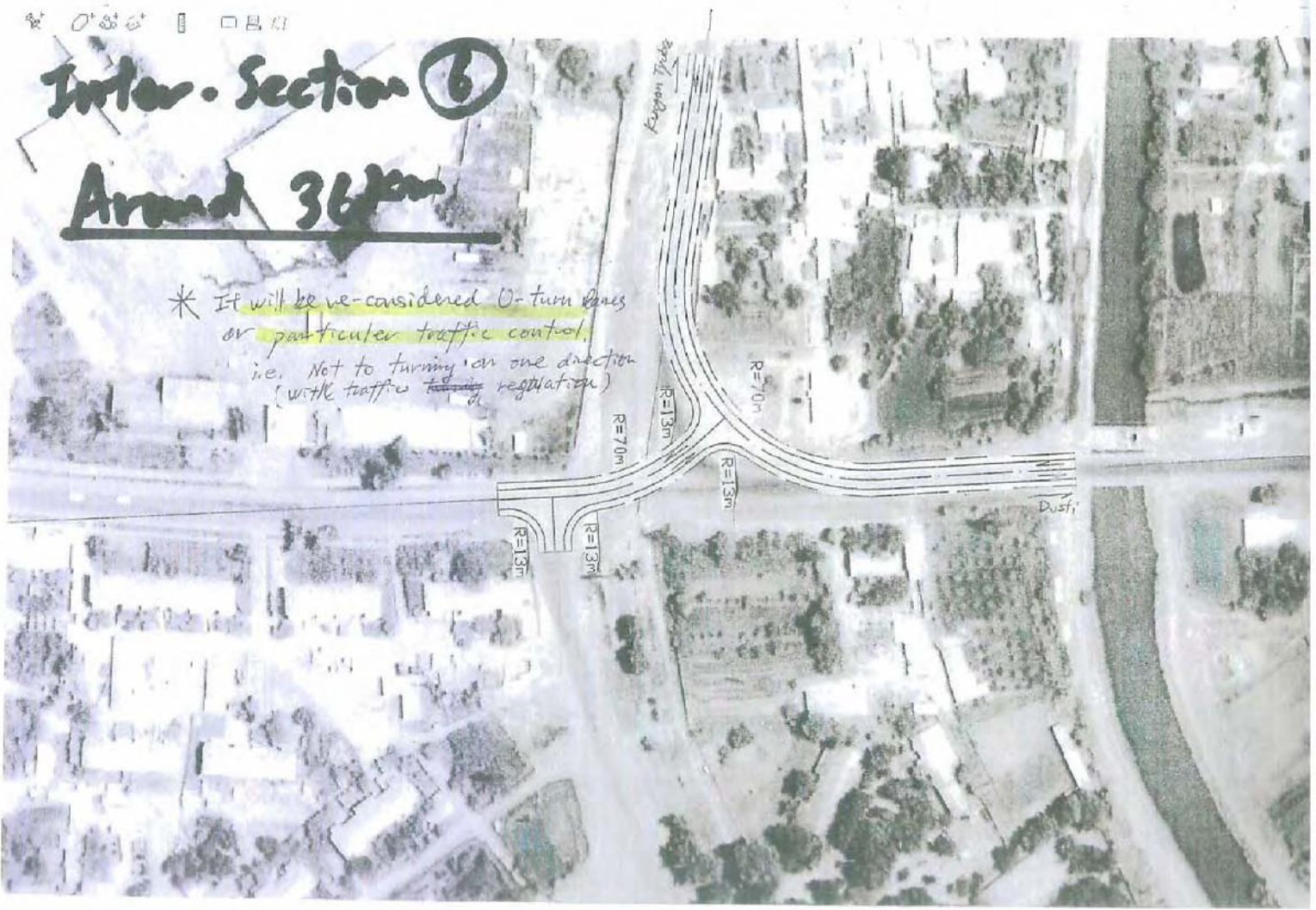


0 30 60 90 120 150 180 210 240 270 300 330 360

Inter-Section ⑥

Around 36km

* It will be re-considered U-turn lanes
or particular traffic control,
ie. Not to turning in one direction
(with traffic ~~regulation~~ regulation)



7.2 Results of the Natural Conditions Survey (Soil)

Soil Test Results (Samples from the Test Pits)

Study Title : Basic Design Study on the Project for Rehabilitation of Kurgan Thube - Dusti Road in Tajik

Sample Number		TP km0.5R	TP km4.5L	TP km9.0R	TP km11.5R	TP km13.5L	TP km18.0R	
(Depth)	m	0.45	0.55	0.47	0.65	0.22	0.51	
	m	1.00	1.00	1.00	1.00	1.00	1.00	
General	Wet Density	ρ_t (g/cm ³)						
	Dry Density	ρ_d (g/cm ³)						
	Soil Grain Density	ρ_s (g/cm ³)	2.711	2.697	2.717	2.750	2.722	2.724
	Natural Water Content	W _n %						
	Void Ratio	e						
	Degree of Saturation	S _r %						
Grain Size	Stone Content (≥ 75 mm) %							
	Gravel Content* ($\geq 2 \sim 75$ mm)%							
	Sand Content* ($\geq 0.075 \sim 2$ mm)%							
	Silt Content* ($\geq 0.005 \sim 0.075$ mm)%							
	Clay Content* (< 0.005 mm)%							
	Maximum Particle Size	mm						
Consistency	Uniformity Coefficient	U _c						
	Liquid Limit	WL %	23.7	25.6	26.0	26.6	23.6	25.1
	Plastic Limit	W _p %	21.2	19.4	20.9	21.3	19.4	20.2
	Plastic Index	IP %	2.5	6.2	5.1	5.3	4.2	4.9
Classification	Es %							
	Classification Name of Ground Material							
Classification	Classification Symbol							
	Test Method							
Compaction	Maximum Dry Density	ρ_{dmax} (g/cm ³)	1.888	1.882	1.886	1.848	1.885	1.828
	Optimum Moisture Content	W _{opt} %	11.6	11.7	12.3	11.6	12.9	13.2
C B R	Test Method							
	Expansion Ratio	%	1.0	0.76	0.47	0.35	0.33	0.68
	Water Content after Penetration Test	%	13.0	12.5	12.7	13.0	12.5	13.2
	Mean CBR	%	13	12	11	14	21	12
	90% Modified CBR	%						
Cone Index	95% Modified CBR	%						
	Number of Compactions							
Cone Index	Cone Index	qc kN/m ²						
Other			Subgrade	Subgrade	Subgrade	Subgrade	Subgrade	

Special Notes:

c.f. 1 : * Percentage to soil materials of less than 75mm, excluding stones

c.f. 2 (1kN/m²=0.102kgf/cm²)

Soil Test Results (Samples from the Test Pits)

Study Title : Basic Design Study on the Project for Rehabilitation of Kurgan Thube - Dusti Road in Tajiki

Sample Number		TP km22.51	TP km27.0	TP km31.5	TP km35.5	TP km37.0L	
	m	0.15	0.45	0.45	0.61	0.55)
	(Depth)))))))
	m	1.00	1.00	1.00	1.00	1.00	
General	Wet Density	pt (g/cm ³)					
	Dry Density	pd (g/cm ³)					
	Soil Grain Density	ps (g/cm ³)	2.727	2.718	2.714	2.722	
	Natural Water Content	Wn %					
	Void Ratio	e					
	Degree of Saturation	Sr %					
Grain Size	Stone Content (≥75mm) %						
	Gravel Content* (≥2~75mm)%	64.1			76.2		
	Sand Content* (≥0.075~2mm)%	30.9			9.6		
	Silt Content* (≥0.005~0.075mm)%	5.0			14.2		
	Clay Content* (<0.005mm)%						
	Maximum Particle Size	mm	37.5			37.5	
	Uniformity Coefficient	Uc					
Consistency	Liquid Limit	WL %		25.0	22.7		21.9
	Plastic Limit	Wp %		20.3	19.8		17.9
	Plastic Index	IP %		4.7	2.9		4.0
	Es %						
Classification	Classification Name of Ground Material						
	Classification Symbol						
Compaction	Test Method						
	Maximum Dry Density	ρdmax (g/cm ³)	2.083	1.812	1.904	2.131	1.872
	Optimum Moisture Content	Wopt %	6.9	13.0	12.0	5.9	11.7
CBR	Test Method						
	Expansion Ratio	%	0.16	0.63	0.01	0.13	0.25
	Water Content after Penetration Test	%	7.2	13.2	12.3	5.1	12.3
	Mean CBR	%	30	10	13	32	17
	90% Modified CBR	%					
95% Modified CBR	%						
Cone Index	Number of Compactions						
	Cone Index	qc kN/m ²					
Other			Base	Subgrade	Subgrade	Base	Subgrade

Special Notes :

c.f. 1 : * Percentage to soil materials of less than 75mm, excluding

c.f. 2 (1kN/m²=0.102kgf/cm²)

Soil Test Results (Samples from the Test Pits)

Study Title : Basic Design Study on the Project for Rehabilitation of Kurgan Thube - Dusti Road in Tajikistan

Sample Number		TP km40.5R	TP km45.0R	TP km49.5L	TP km54.0R	TP km54.0R
(Depth)	m	0.40	0.32	0.80	0.10	0.40
	m	1.00	1.00	1.00	0.30	1.00
General	Wet Density	pt (g/cm ³)				
	Dry Density	pt (g/cm ³)				
	Soil Grain Density	pt (g/cm ³)	2.728	2.676	2.698	2.727
	Natural Water Content	W _n %				
	Void Ratio	e				
	Degree of Saturation	S _r %				
Grain Size	Stone Content (≥75mm) %					
	Gravel Content * (≥2~75mm)%				51.6	
	Sand Content* (≥0.075~2mm)%				37.4	
	Silt Content* (≥0.005~0.075mm)%				11.0	
	Clay Content* (<0.005mm)%					
	Maximum Particle Size	mm				37.5
Consistency	Liquid Limit	WL %		23.3	24.2	
	Plastic Limit	W _p %		20.1	20.2	
	Plastic Index	IP %		3.2	4.0	
	Es %					
Classification	Classification Name of Ground Material					
	Classification Symbol					
Compaction	Test Method					
	Maximum Dry Density	ρ _{dmax} (g/cm ³)	2.134	1.888	1.858	2.083
	Optimum Moisture Content	W _{opt} %	5.8	11.9	10.6	6.9
CBR	Test Method					
	Expansion Ratio	%	0.08	0.64	0.59	0.16
	Water Content after Penetration Test	%	6.4	12.3	8.6	7.2
	Mean CBR	%	30	7	10	29
	90% Modified CBR	%				10
Cone Index	Number of Compactions					
	Cone Index	qc kN/m ²				
Other			Base	Subgrade	Subgrade	Base
						Subgrade

Special Notes :

c.f. 1 : * Percentage to soil materials of less than 75mm excluding
c.f. 2 (1kN/m²=0.102kgf/cm)

Soil Test Results (Samples from the Test Pits)

Study Title : Basic Design Study on the Project for Rehabilitation of Kurgan Thube - Dusti Road in Tajikistan

Sample Number		TP km58.5L	TP km59.2L					
(Depth)		0.25	0.38	}	}	}	}	
		1.00	1.00					
General	Wet Density	pt (g/cm ³)						
	Dry Density	pt (g/cm ³)						
	Soil Grain Density	pt (g/cm ³)	2.742					
	Natural Water Content	Wn %						
	Void Ratio	e						
	Degree of Saturation	Sr %						
Grain Size	Stone Content (≥75mm) %							
	Gravel Content * (≥2~75mm)%							
	Sand Content* (≥0.075~2mm)%							
	Silt Content* (≥0.005~0.075mm)%							
	Clay Content* (<0.005mm)%							
	Maximum Particle Size	mm						
	Uniformity Coefficient	Uc						
Consistency	Liquid Limit	WL %						
	Plastic Limit	Wp %						
	Plastic Index	IP %						
		Es %						
Classification	Classification Name of Ground Material							
	Classification Symbol							
Compaction	Test Method							
	Maximum Dry Density	ρ _{dmax} (g/cm ³)	1.909	1.887				
	Optimum Moisture Content	W _{opt} %	11.7	11.6				
CBR	Test Method							
	Expansion Ratio	%	0.71	0.94				
	Water Content after Penetration Test		%	12.5	11.5			
	Mean CBR	%	10	8				
	90% Modified CBR		%					
	95% Modified CBR		%					
Cone Index	Number of Compactions							
	Cone Index	qc kN/m ²						
Other			Subgrade	Subgrade	Subgrade	Base	Subgrade	

Special Notes :

c.f. 1 : * Percentage to soil materials
of less than 75mm,
excluding stones

c.f. 2 (1kN/m²=0.102kgf/cm²)

Soil Test Results (Quarry/Borrow Pit)

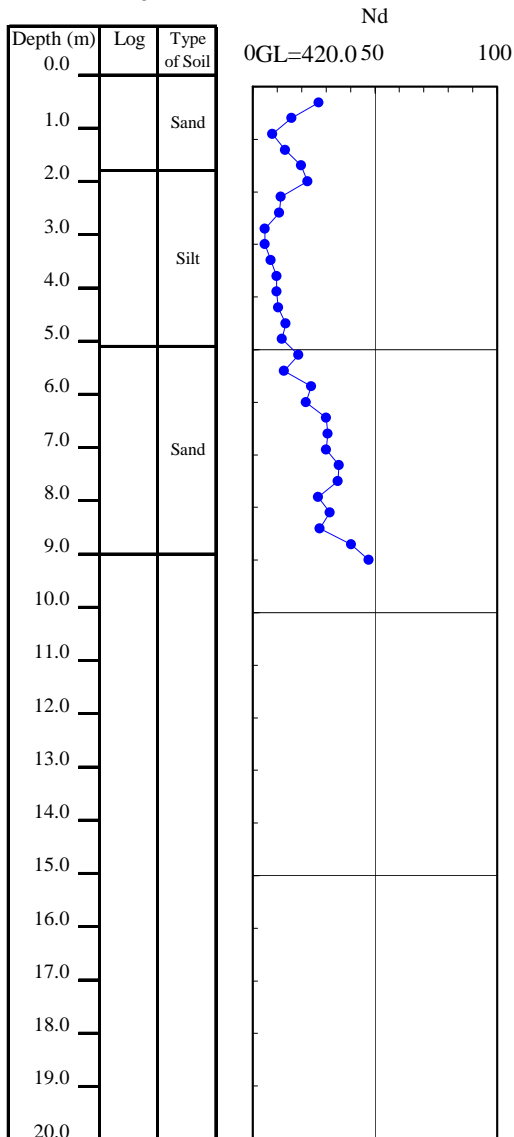
Study Title		Basic Design Study on the Project for Rehabilitation of Kurgan Thube- Dusti Road in Tajikistan					
Sample Number		Q1	Q2	Q3			
(Depth)		2.00					
m))))))
m			Sarband	Dzhilikol			
General	Wet Density	ρt (g/cm ³)					
	Dry Density	ρt (g/cm ³)					
	Soil Grain Density	ρt (g/cm ³)	2.679	2.048	2.715		
	Natural Water Content	Wn %					
	Void Ratio	e					
	Degree of Saturation	Sr %					
Grain Size	Stone Content (≥75mm) %		14.5	35.6			
	Gravel Content * (≥2~75mm)%		71.2	64.4	73.3		
	Sand Content* (≥0.075~2mm)%		13.1		22.1		
	Silt Content* (≥0.005~0.075mm)%		1.2		4.6		
	Clay Content* (<0.005mm)%						
	Maximum Particle Size	mm	75	75	50		
	Uniformity Coefficient	Uc					
Consistency	Liquid Limit	WL %					
	Plastic Limit	Wp %					
	Plastic Index	IP %					
		Es %					
Classification	Classification Name of Ground Material						
	Classification Symbol						
Compaction	Test Method						
	Maximum Dry Density	ρdmax (g/cm ³)	2.11		2.19		
	Optimum Moisture Content	Wopt %	7.9		6.9		
CBR	Test Method						
	Expansion Ratio	%	0.48		0.69		
	Water Content after Penetration Test	%	7.0		6.5		
	Mean CBR	%	33		38		
	90% Modified CBR	%					
	95% Modified CBR	%					
Polishing Action	37.5/9.5mm	(%)	17.8	9.6	13.7		
	12.5/9.5mm	(%)	16.6	15.8	17.5		
	6.0/4.75mm	(%)	17.2	22.9	16		
	2.36mm	(%)	22.1		23.3		
Other	Stability		2.16				
	Water Absorption Ratio	37.5/19.0	0.56		0.49		
		19.0/12.5	1.2E+00		1.21		
		12.5/4.75	0.98		0.98		
	Alkaline/Silica Reaction		(%)	0.0455	0.0396		

Special Notes :

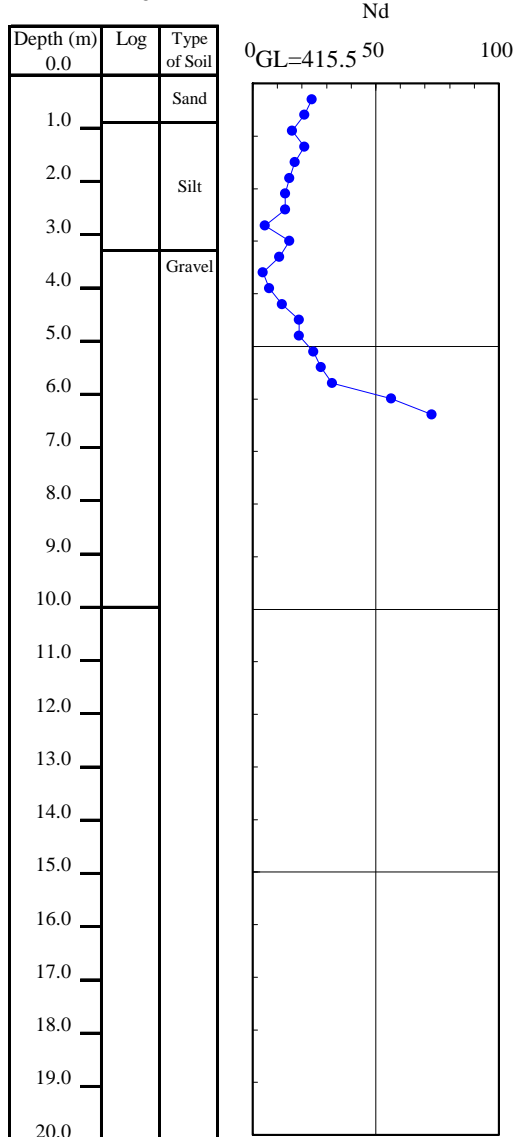
c.f. 1 : * Percentage to soil materials of less than 75mm, excluding stones
c.f. 2 (1kN/m²=0.102kgf/cm²)

7.3 Results of the Natural Conditions Survey (Geology)

Date 18th July 2007
Location Bridge No.1

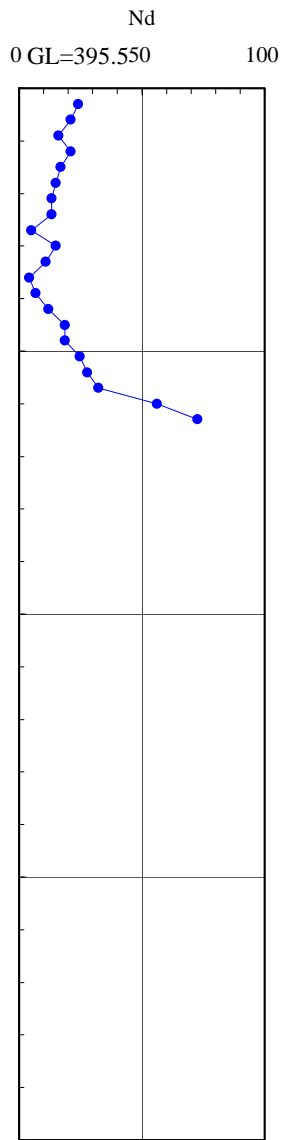


Date 19th July 2007
Location Bridge No.2



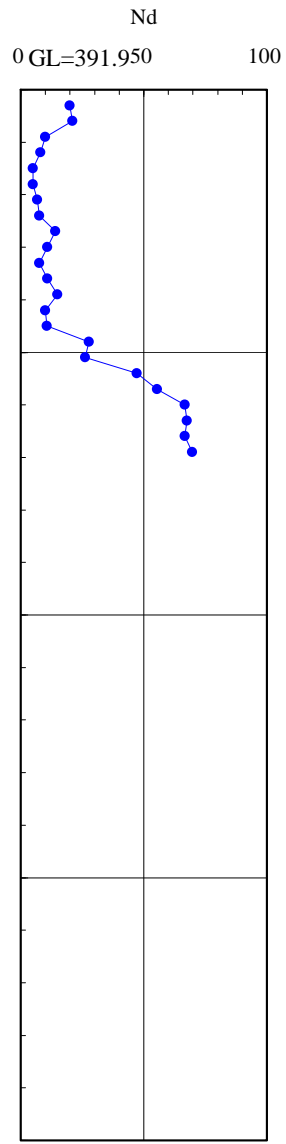
Date 17th July 2007
 Location Bridge No.3

Depth (m)	Log	Type of Soil
0.0		
1.0		Sand
2.0		Sand
3.0		Sand
4.0		Silt
5.0		Compacted Sand
6.0		Compacted Sand
7.0		Compacted Sand
8.0		Compacted Sand
9.0		Compacted Sand
10.0		Compacted Sand
11.0		Compacted Sand
12.0		Compacted Sand
13.0		Compacted Sand
14.0		Compacted Sand
15.0		Compacted Sand
16.0		Compacted Sand
17.0		Compacted Sand
18.0		Compacted Sand
19.0		Compacted Sand
20.0		Compacted Sand



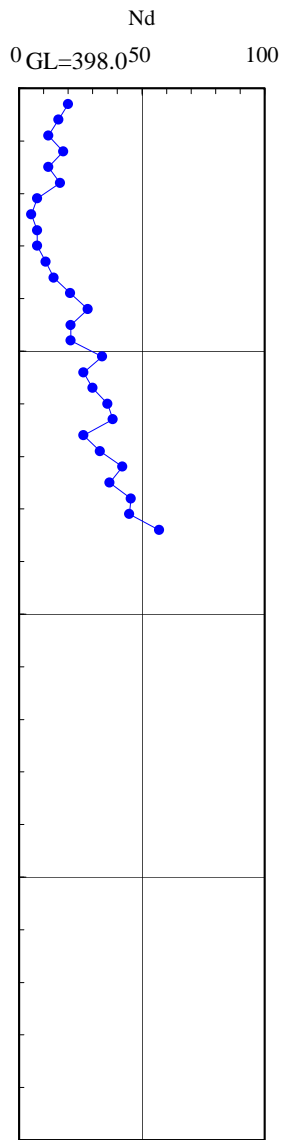
Date 14th July 2007
 Location Bridge No.4

Depth (m)	Log	Type of Soil
0.0		Sand
1.0		Sand
2.0		Sand
3.0		Sand
4.0		Sand
5.0		Compacted Sand
6.0		Compacted Sand
7.0		Compacted Sand
8.0		Compacted Sand
9.0		Compacted Sand
10.0		Compacted Sand
11.0		Compacted Sand
12.0		Compacted Sand
13.0		Compacted Sand
14.0		Compacted Sand
15.0		Compacted Sand
16.0		Compacted Sand
17.0		Compacted Sand
18.0		Compacted Sand
19.0		Compacted Sand
20.0		Compacted Sand



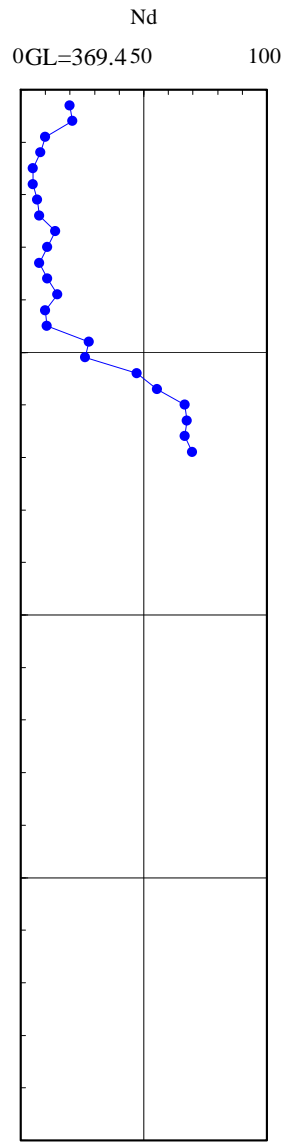
Date 14th July 2007
 Location Bridge No.5

Depth (m)	Log	Type of Soil
0.0		
1.0		Sand with Gravel
2.0		
3.0		
4.0		Silt
5.0		
6.0		
7.0		Compacted Sand
8.0		
9.0		
10.0		
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		



Date 11th July 2007
 Location Bridge No.6

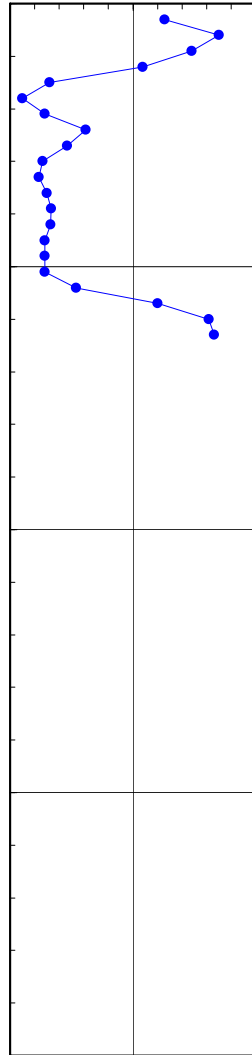
Depth (m)	Log	Type of Soil
0.0		
1.0		Sand
2.0		
3.0		
4.0		Silt
5.0		
6.0		
7.0		Gravel
8.0		
9.0		
10.0		
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		



Date 10th July 2007
 Location Bridge No.8

Depth (m)	Log	Type of Soil
0.0		
1.0		
2.0		Sand
3.0		
4.0		Silt
5.0		
6.0		Gravel
7.0		
8.0		
9.0		
10.0		
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		

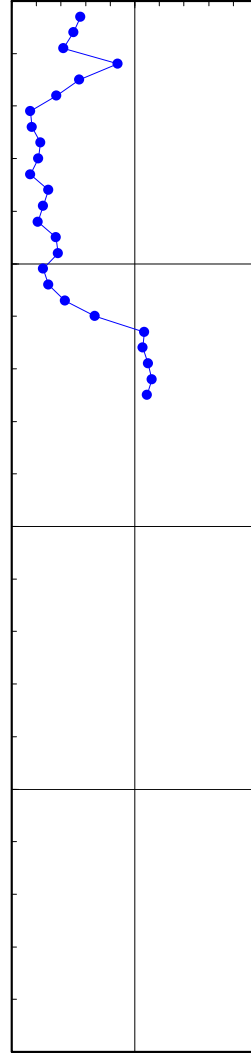
Nd
 0GL=368.5 50 100



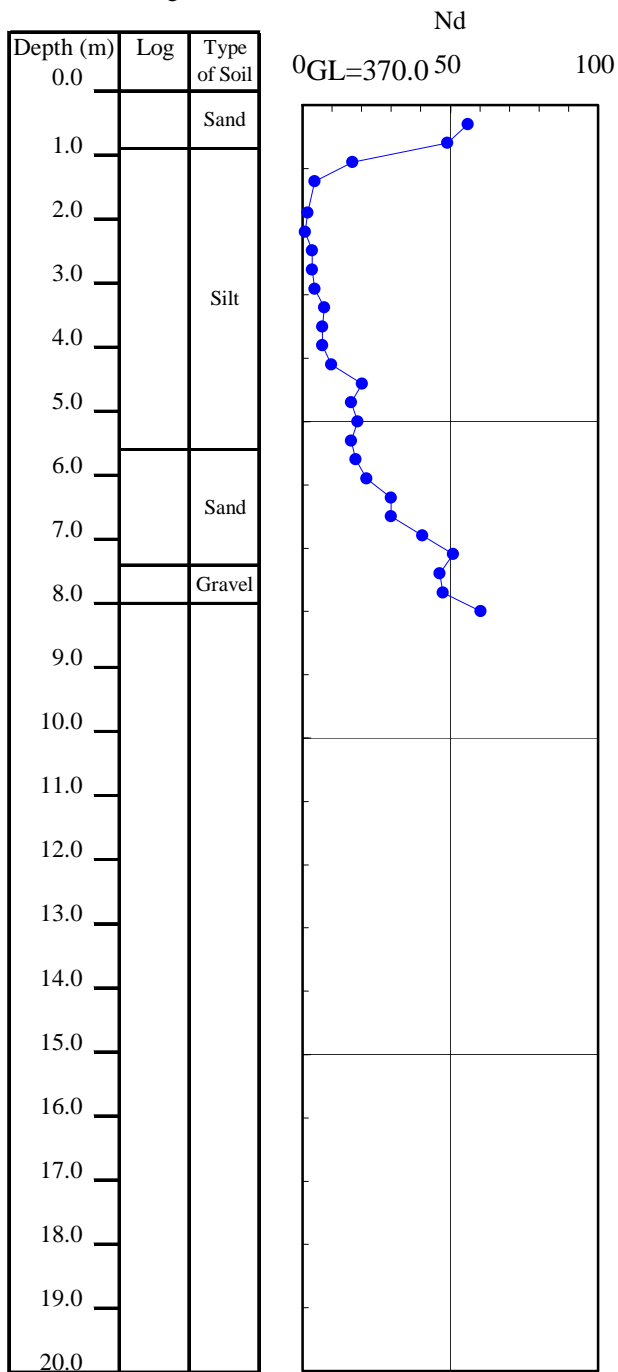
Date 10th July 2007
 Location Bridge No.9

Depth (m)	Log	Type of Soil
0.0		
1.0		Sand
2.0		
3.0		
4.0		Silt
5.0		
6.0		
7.0		Gravel
8.0		
9.0		
10.0		
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		

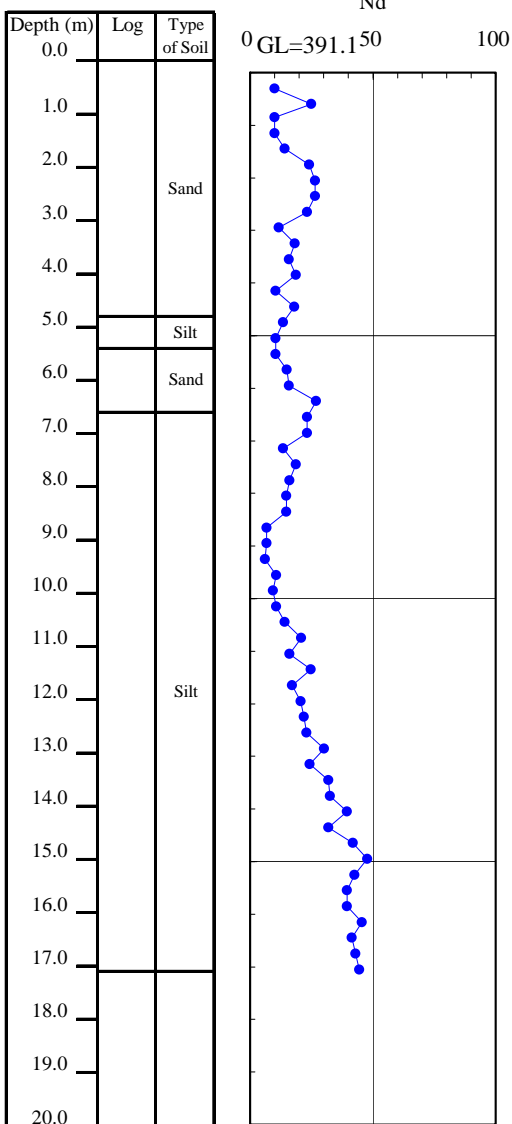
Nd
 0GL=370.0 50 100



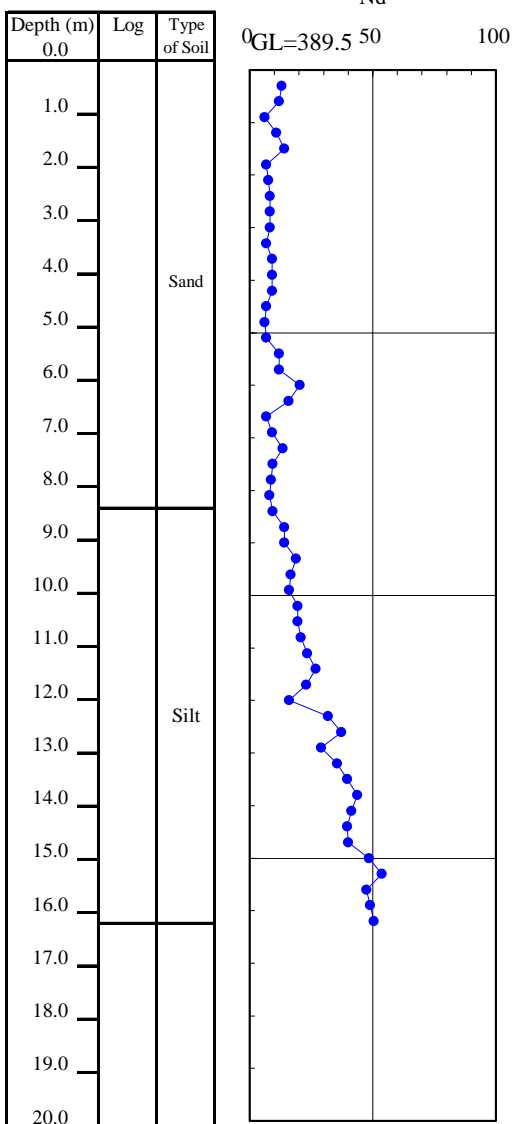
Date 4th July 2007
 Location Bridge No.10



Date 2nd July 2007
 Location Bridge No.11-1 (End point Side)

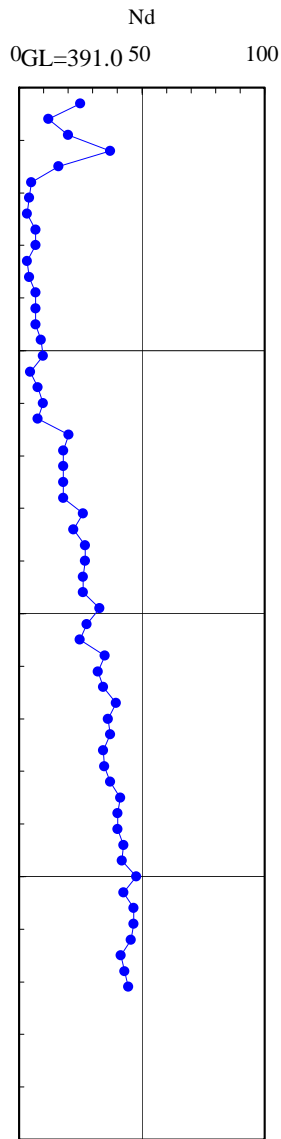


Date 3rd July 2007
 Location Bridge No.11-2 (Start point Side)



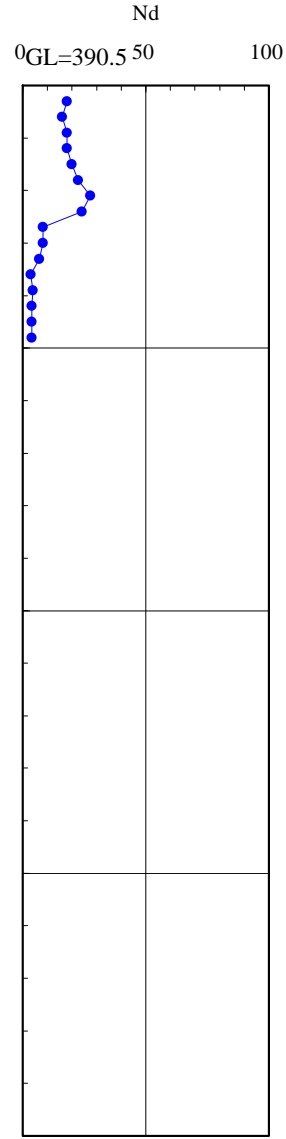
Date 6th July 2007
 Location Bridge No.12

Depth (m)	Log	Type of Soil
0.0		
1.0		Fill
2.0		
3.0		Sand
4.0		
5.0		
6.0		
7.0		
8.0		
9.0		
10.0		Silt
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		



Date 6th July 2007
 Location Bridge No.13

Depth (m)	Log	Type of Soil
0.0		
1.0		
2.0		
3.0		Silt
4.0		
5.0		
6.0		
7.0		
8.0		
9.0		
10.0		
11.0		
12.0		
13.0		
14.0		
15.0		
16.0		
17.0		
18.0		
19.0		
20.0		



Date 3th July 2007
 Location Bridge No.14

