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CONSTRUCTION MONITORING & EVALUATION PROGRAM

**STRENGTHENING & IMPROVEMENT OF PESHAWAR – TORKHAM
ROAD (N-5), KHYBER AGENCY, FATA**

CONTRACT NO. SOL-391-12-000038

MONTHLY PROGRESS REPORT # 04



MARCH 2013

M&E Consultants



AL-KASIB GROUP OF ENGINEERING SERVICES

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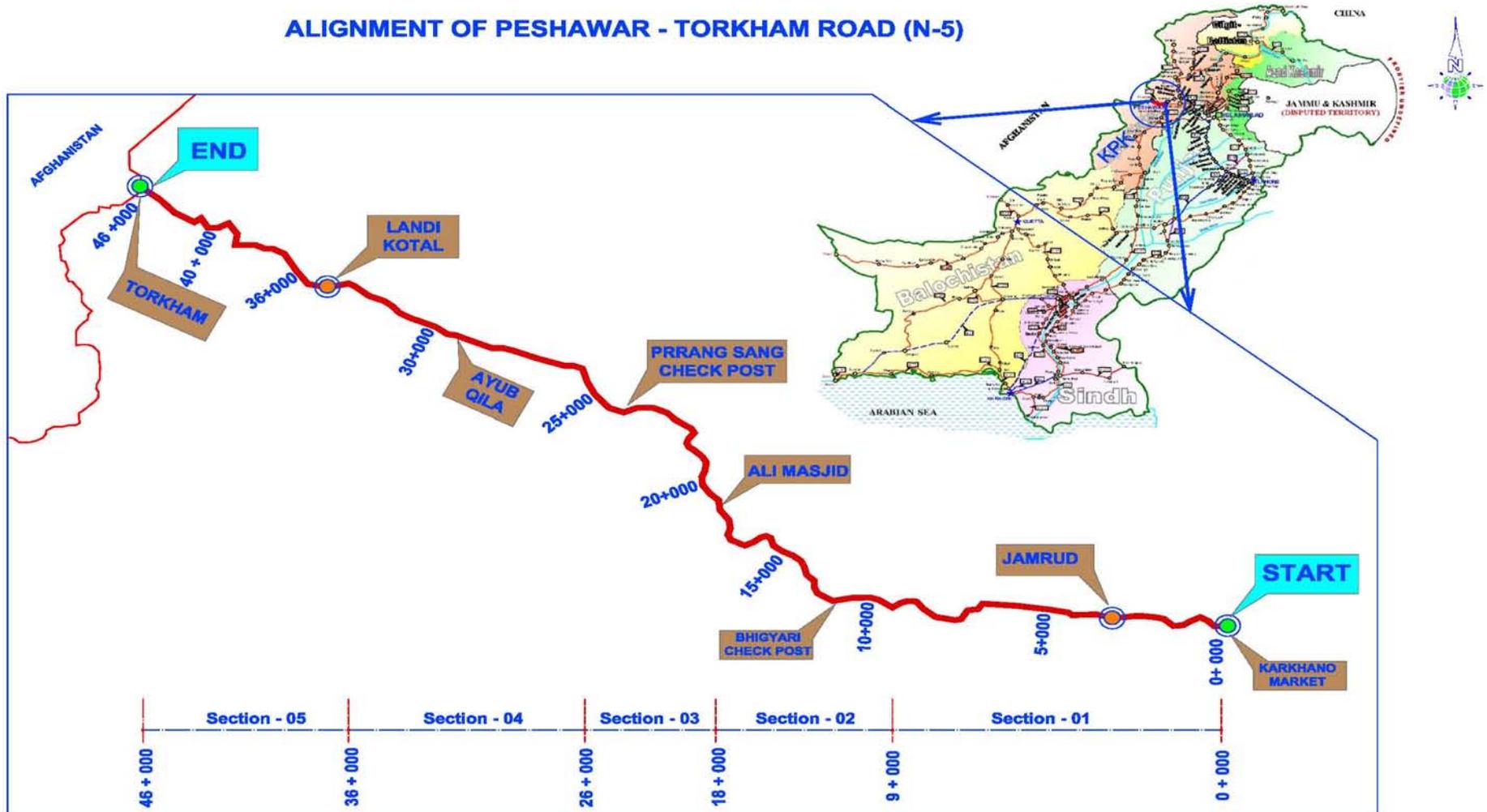
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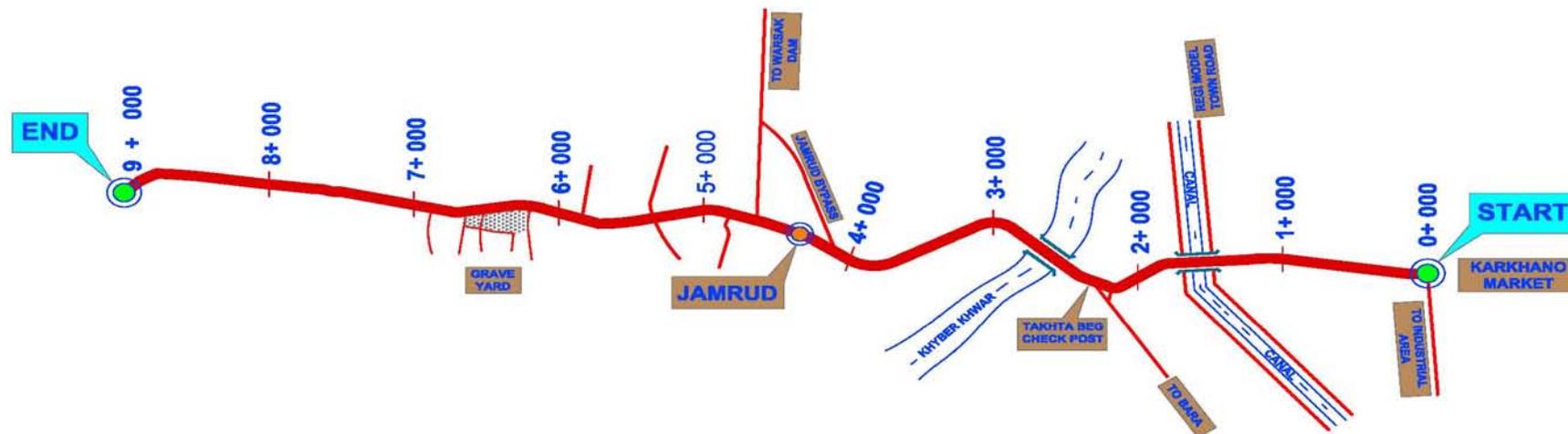
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LOCATION MAP

ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5)



ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5) (SECTION - I)



EXECUTIVE SUMMARY

Peshawar – Torkham road is part of the overall Contract that includes Construction Monitoring and Evaluation Services of 107 schools and 100-200 KM roads in Khyber Pakhtunkhwa Province. This road connects Pakistan with Afghanistan at Torkham border and serves an important role in the economic activities as well as in providing timely logistic support to the security agencies deployed in Khyber Agency. The project is funded with USAID grant and implemented by FATA Secretariat through FWO (Frontier Works Organization) as EPC (Engineer, Procure, and Construct) Contractor. FATA/FWO has retained the services of M/S NESPAK as the Project Consultants to design and supervise the construction work, while USAID has engaged M/S AGES as M&E Consultants to monitor and report on quality as well as progress of the project. The project is anticipated to be completed by December 31, 2014. For timely completion of the project, the 46 KM Peshawar – Torkham road has been divided in five sections, so that work on all sections is carried out simultaneously. However, until now the Contractor could hardly initiate work on section-II (KM 09 to KM 18) in addition to section - I (KM 00 to KM 09).

Construction activities at section - I (9 KM) of the project were initiated by FWO on October 15, 2012. Total progress of work by end of the last month (February, 2013) was 3.84 %. Despite several periods of heavy rainfall, the progress of work slightly increased during the reporting month that resulted in overall progress of 6.68 %. Similarly the contractor has started activities (Earth work and Diversion) in Section – II of the Project with effect from March 18, 2013, despite Non-submission of requisite documents including design drawing, PC-1 etc for review/approval.

Major activities and accomplishments by the end of March 2013 can be summarized as below:

- M&E Consultants mobilized their Material Testing Laboratory
- Quality Control tests were conducted both by FWO and M&E Consultants
- Earthwork: 186.65 % (exceeds PC-I quantity for earthwork)
- Sub Base: 33.93 %
- Culverts: 44.30 %
- Field staff of M&E Consultants regularly visited the site and documented their observations
- Senior Management, Environmental Compliance Officer and Security Officer of M&E Consultants visited the site and submitted their reports
- Cross sectional survey for redesigning of alignment in Section-II was carried out
- About 1.5 KM Traffic Diversion has been constructed in section-II.

PROJECT IMPEDIMENTS & RECOMMENDATIONS

For effective monitoring of work in progress, the M&E Consultants are still waiting for the baseline schedule from FWO/NESPAK side. Similarly, for quality control, FWO/NESPAK has been unable to submit their Quality Control (QC) Plan. In absence of the said two vital documents, control over progress as well as quality remains very challenging.

In order to complete the project expeditiously, the understanding was that FWO will plan and carry-out construction activities simultaneously along different sections of the Road. However, by end of the reporting month, FWO hardly initiated work on section-II in addition to section-I. It is also to mention that even for section-II the project documents (Design/drawings, PC-I, traffic diversion plan, etc.) are not finalized yet. It is recommended that FWO/NESPAK should review/revise their project management plan, enhance their resources, pay due diligence in selection & supervising of sub-contractors, and adopt multi tasking strategy in order to enhance their progress towards timely completion of the project. It is also suggested that FWO should immediately carryout assessment of Existing Bridges for their structural integrity, traffic capacity, approaches geometry, protection works, and submit design, drawings etc for existing as well as new bridges.

During the reporting month, a few issues related to quality of the construction material and workmanship of sub-contracted works were noticed and reported for appropriate measures. Such issues must be avoided in order to save time as well as resources. Also, poor quality of a critical activity/material could result in even more severe incidents. A recent (March 27, 2013) example is suspension of the class-A concrete laying in top slab of the culvert at KM: 4+480, during lunch time. This practice is totally unacceptable as it results in a cold joint, which is a weak plane in concrete and has potential to affect integrity of the structure. It is suggested that FWO should dismantle the above mentioned slab and rebuilt it according to the specifications. It is also suggested that FWO should adopt effective techniques for supervising/controlling the onsite construction activities, especially the sub-contracted works.

The Contractor's traffic management plan through the construction zone (section – I) and Detour needs drastic improvement. Presently, both the geometry as well as riding quality of the detour is miserable, which is causing great inconvenience and safety concern to the road users. This issue has been highlighted during in-person meetings as well as site inspection reports; however, compliance by FWO is next to none.

Lastly, FWO should review the road geometric design at Bab-e-Khyber, keeping in view the available vertical and horizontal clearance at the said monument.

THE PROJECT

1.1 BACKGROUND:

The Federally Administered Tribal Area (FATA) Secretariat of the Government of Pakistan (GoP) under the Quick Impact Projects (QIPs) in the Khyber Agency has inked an agreement with USAID for financial assistance in the form of a Grant for Strengthening and Improvement of 46 KM existing two-lane, two-way carriageway from Peshawar to Torkham (N – 5). The Project will support the GoP in improving accessibility to the remotely located areas of Khyber agency and enhance logistic support to law enforcing agencies, besides assisting trade between Pakistan and Afghanistan. The Sponsoring agency for the Peshawar Torkham Road Project is FATA secretariat, headed by Additional Chief Secretary FATA. The Executing agency is Frontier Works Organization (FWO).

Table: 1

Civil Works Package Features					
Feature	Section – I	Section – II	Section – III	Section – IV	Section – V
Physical Limits	Peshawar to Torkham				
Kilometers	0+00 to 9+00	9+00 to 18+00	18+00 to 26+00	26+00 to 36+00	36 to 46
Black Top	Total 12.3 meter - 7.3 meter carriageway and 2.5 meter shoulder on either side				
Donor Agency	USAID				
Completion Period	807 Days				
Contract Forms	Conditions of Contract for EPC (Engineer, Procure, Construct)/Turnkey Projects (FIDIC Conditions of Contract – 1999)				

1.2 DESCRIPTION:

The project involves widening, strengthening and improvement of the existing two lane carriageway, including construction of new cross drainage structures, bridges and earth retaining structures. At a first stage, the FATA Secretariat has undertaken to contract section – I of the project from KM: 0 +000 To KM: 9 + 000. The length of each package varies between 08 and 10 KM.

Being an EPC form of contract, FWO is fully responsible for design and construction of the project in conformity with the NHA's specifications and standard engineering practices. AGES Consultants has been awarded the Construction Monitoring and Evaluation Services including Quality Assurance and Environmental Monitoring of the project on behalf of the USAID Pakistan Mission.

1.3 M&E SERVICES:

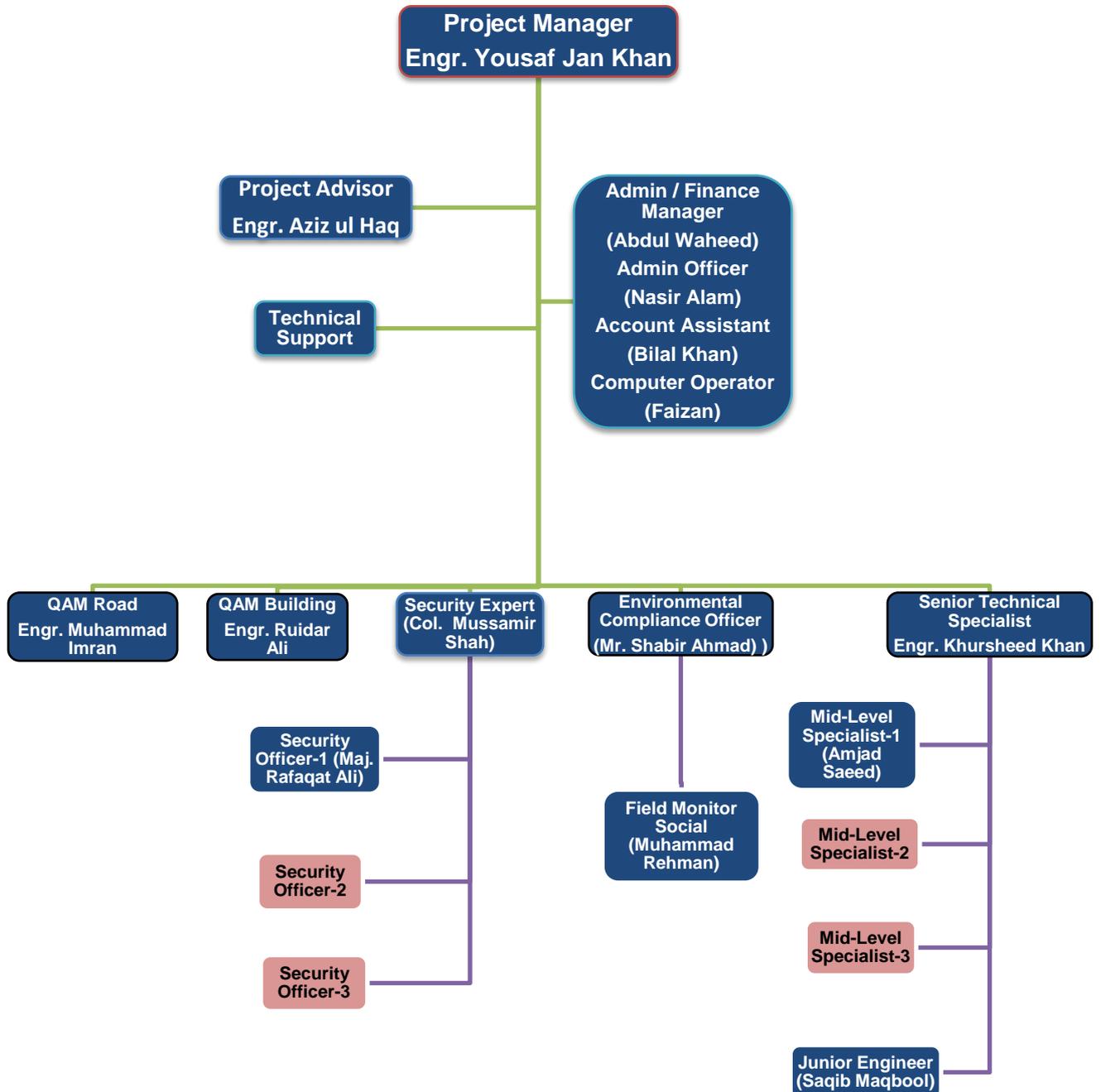
The Contract between USAID and AGES Consultants (called herein as M&E Consultants) for M&E services on the project was signed on September 30, 2012 following submission of proposal in response to RFP issued by USAID Contracting Officer. Mobilization of staff started on October 01, 2012.

1.4 M&E SERVICES OBJECTIVES:

M&E Services for the Peshawar – Torkham Road are meant to:

- Ensure compliance with designs, drawings, and technical specifications
- Establish a high standard quality assurance system
- Monitoring and reporting the progress of work, including identification of the project impediments hampering the baseline schedule and recommend solutions in order to keep the project on track.
- Certification of Milestones payments

1.5 ORGANIZATION CHART FOR CMEP OFFICE, PESHAWAR



LEGEND:

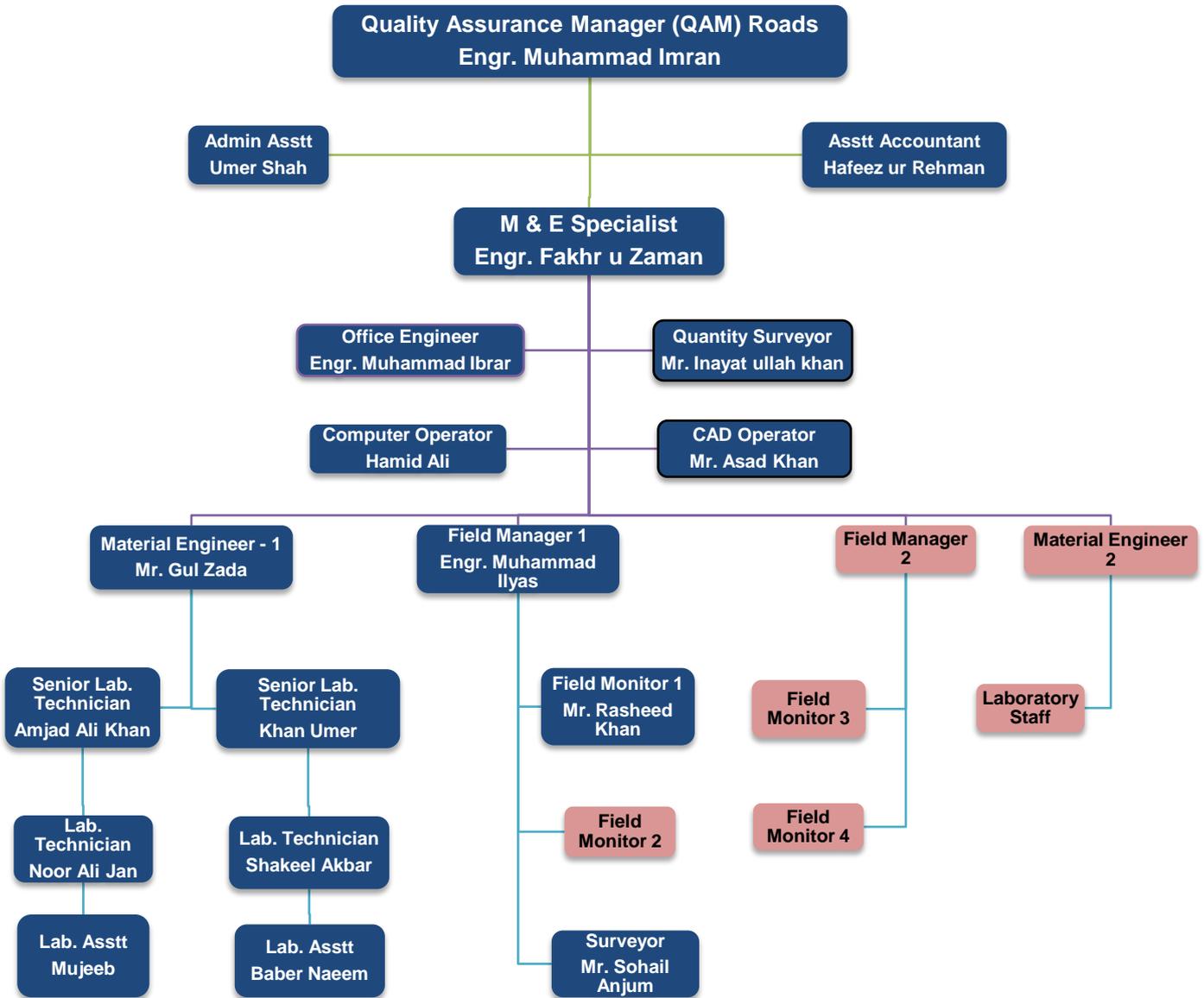


Mobilized



To be mobilized with expansion of work

1.6 ORGANIZATION CHART FOR ROAD COMPONENT OF CMEP PROJECT



LEGEND:



Mobilized



To be mobilized with expansion of work

ROAD SECTION - I

2.1 INTRODUCTION

Location

The project road (Section I) starts from karkhano market, an outskirts of Peshawar city & ends up just east of Begyarri Check Post. Majority of project road length traverses through densely populated, built-up area.

Road Inventory

The paved portion of the existing two lane road is 6.0 m to 7.0 m wide bituminous surface with 1.0 m to 2.0 m wide untreated shoulders on either side. The project road (Section – I) passes through plain terrain.

Existing Pavement Condition

The visual condition of existing pavement reveals signs of distress all along the whole stretch of the section – I; with less than 5% of road is in a fair condition. Defects like rutting, pavement disintegration, poor surface drainage and potholes supplemented by substandard geometry of the road can be observed commonly along the entire section.

Bridges

There is 01 No. newly constructed Major Bridge at CH: KM: 2 + 200 in section – I. Piles of this bridge are exposed due to continuous scouring and warrant detailed assessment followed by appropriate treatment along with minor repair works like Guard Rails, Flood Protection treatment, etc.

Culverts

The Existing cross drainage structures are either completely choked or have lost their hydraulic capacity significantly. As per PC-1, 14 Nos. of new Culverts will be constructed while 02 Nos. existing Culverts are to be rehabilitated appropriately. Similarly construction of 02 Nos. additional culverts has been included in the construction program as per site requirements. More over 06 No. of service ducts as a pipe culvert are also being constructed as per demand of local community.

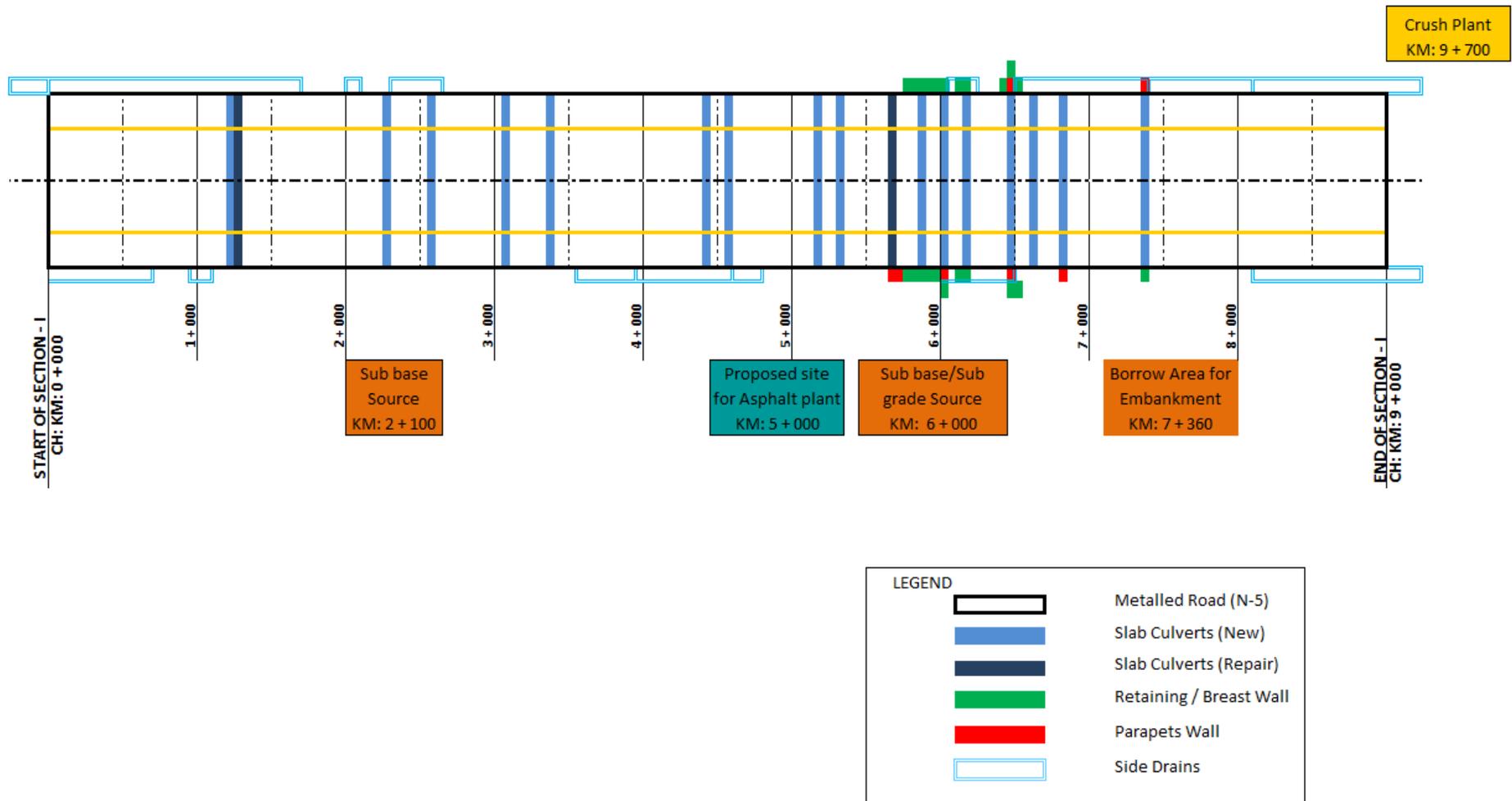
2.2 PROJECT DETAILS

1.	Name of Project	Strengthening and Improvement of Peshawar Torkham Road (N-5) Khyber Agency FATA.
2.	Name of Package	Section – I (CH: KM: 0+000 To CH: KM: 9+000)
3.	Sponsoring Agency	FATA Secretariat, Peshawar
4.	Sponsoring Agency Representative	Mr. Roshan Mahsud, Project Director, PMU FATA
5.	Donor Agency	USAID PAKISTAN
6.	Donor's Agency Representative	Engr. Farhat Banori, USAID/COR
7.	Executing Agency	Frontier Works Organization
8.	Executing Agency Representative	Lt. Colonel Khurram
9.	M&E Consultants	AGES Consultants (Pvt) Ltd.
10.	M&E Consultants Representative	Engr. Yousaf Jan Khan, Project Manager
11.	Project Cost (Section – I)	Rs. 937.939 Million
12.	Time for Completion	807 Days
13.	Mode of Construction Contract	EPC (Engineer, Procure and Construct) Contract
14.	Chronology	
	Signing of MoU (USAID–FATA–NHA)	Sep 18, 2012
	Signing of Contract (USAID – AGES)	Sep 30, 2012
	M&E Consultants Mobilization	Oct 01, 2012
	Approval of PC – 1	Nov 20, 2012
	Project Date of Commencement	Oct 15, 2012
	Project Date of Completion	Dec 31, 2014

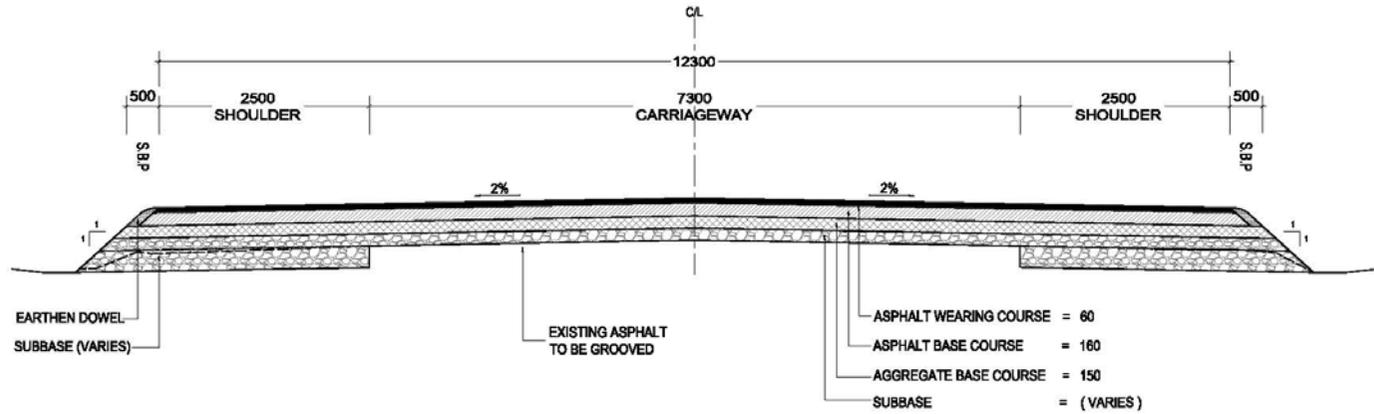
2.3 ENVIRONMENTAL COMPLIANCE

The environmental compliance officer of M&E consultants made two visits to the site during the month of March 2013, and compiled his observations in the form of Environmental Monitoring Reports. The two environmental monitoring reports (dated Mar 18 & 26, 2013) are attached with this document as reference.

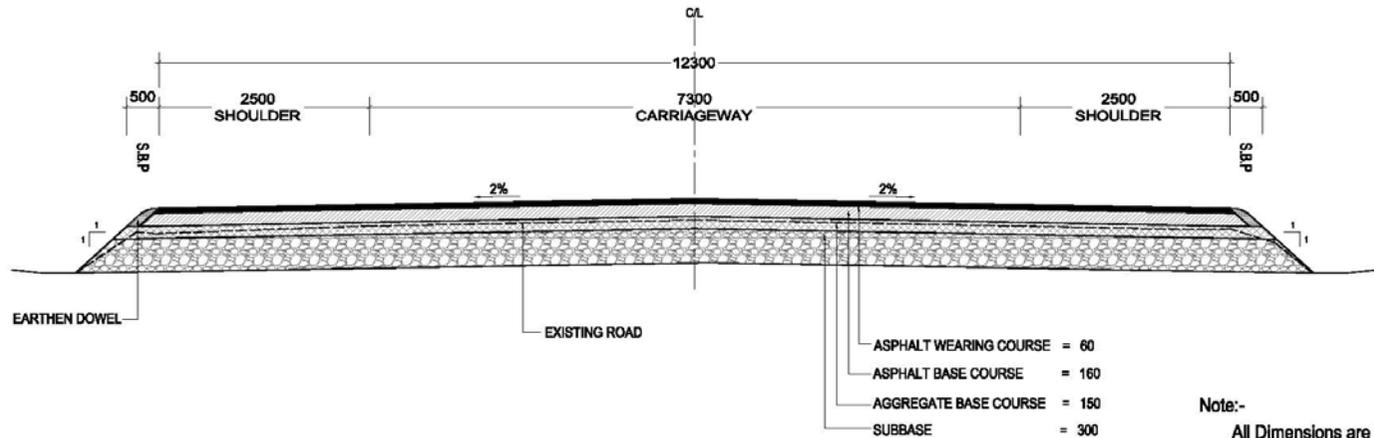
2.4 LINE SKETCH OF ALIGNMENT



2.5 TYPICAL CROSS SECTION OF ROAD



TYPICAL CROSS SECTION IN FILL

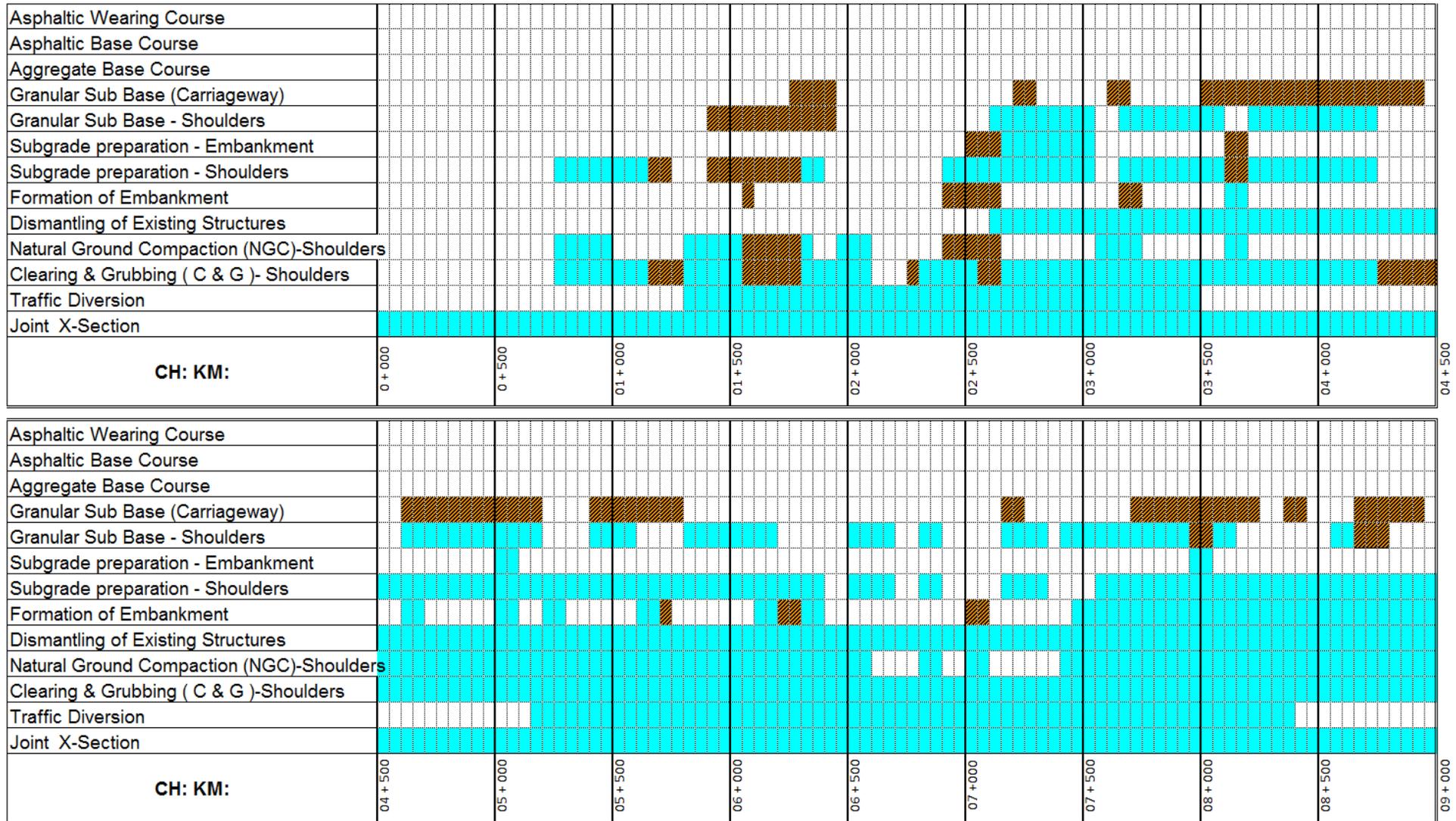


Note:-
 All Dimensions are in mm

TYPICAL CROSS SECTION IN CUT

WORK IN PROGRESS

3.1 PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS AS ON MARCH 31, 2013



LEGEND:



WORKS COMPLETED IN MAR: 2013
WORKS COMPLETED BEFORE MAR: 2013

3.2 CULVERTS PHYSICAL PROGRESS STATUS AS ON MARCH 31, 2013

S. NO	CHAINAGE AS PER DRAWG: (KM)	CHAINAGE AS PER SITE (KM)	NO. OF SPAN	SIZE (M x M)	LENGTH AS PER DRAWG: (M)	LENGTH AS PER SITE (M)	DEMOLISHED	SLAB CULVERTS						WING WALLS				Revised Size (M x M)
								Strl: Excavation	Lean Cont	Abt: Wall	Floor	Top. Slab	Rip Rap	Lean Cont:	Wall	Floor	Back Fill	
1	1+230		1	2 x 1.5														
2	2+290		1	2 x 1.5														
2.a	-	2+611	1	2 x 1.5		15.00 - 20°(Skew)	-	◆	◆	△								
2.b	-	3+081	1	2 x 1.5		15.00 - 20°(Skew)	-	◆	◆	◆							△	
3	3+400		1	2 x 1.5														
3.a	-	3+900	1	450 mm dia		-		◆	◆			◆						Pipe Culvert
3.b	-	4+180	1	450 mm dia		-		◆	◆									Pipe Culvert
3.c	-	4+230	1	450 mm dia		-		◆	◆									Pipe Culvert
3.d	-	4+612	1	450 mm dia		-		◆	◆									Pipe Culvert
4	4+460	4+480	1	3 x 1.5	14.1	15.00 - 20°(Skew)	◆	◆	◆	◆		◆					△	
5	4+590		1	3 x 1.5		-												
6	5+180	5+202	1	2 x 1.5	14.1	-	◆	◆	◆	◆			◆	◆			△	
7	5+335	5+354	1	3 x 1.5		-	-	◆	◆					◆				
8	5+882	5+905	1	2 x 1.5	14.1	15.60 (Normal)	◆	◆	◆	◆	◆		◆	◆			◆	2 x 1.5

Legend:

△	In Progress
◆	Completed

S. NO	CHAINAGE AS PER DRAWG: (KM)	CHAINAGE AS PER SITE (KM)	NO. OF SPAN	SIZE (M x M)	LENGTH AS PER DRAWG: (M)	LENGTH AS PER SITE (M)	DEMOLISHED	SLAB CULVERTS							WING WALLS			Revised Size (M x M)
								Strl: Excavation	Lean Cont	Abt: Wall	Floor	Top. Slab	Rip Rap	Lean Cont:	Wall	Floor	Back Fill	
9	6+027	6+050	3	3 x 1.5			◆	◆	◆	△				◆	△			
10	6+167	6+191	2	3 x 1.5	14.1	14.40 (Normal)	◆	◆	◆	◆				◆	◆		◆	3 x 3
11	6+477	6+501	5	3 x 1.5	14.1	17.89 38°(Skew)	◆	◆	◆	△				◆	△			
12	6+625	6+648	1	2 x 1.5	14.1	14.10 (Normal)	◆	◆	◆	◆				◆	◆		△	2 x 2
13	6+850	6+883	1	2 x 1.5	14.1		◆	◆	◆	◆					△			
14	7+360	7+384	2	3 x 1.5	14.1	18.14 39°(Skew)	◆	◆	◆	△				◆	△			
14.a	-	8+000	1	450 mm dia	16.80	-		◆	◆			◆						Pipe Culvert
14.b	-	8+250	1	450 mm dia	19.30	-		◆	◆			◆						Pipe Culvert

Legend:

△	In Progress
◆	Completed

PROGRESS IN PERCENTAGE

4.1 SUMMERY: BILL OF QUANTITIES

MONTH: MARCH 2013

CONTRACT			WORK DONE UPTO PREVIOUS MONTH		WORK DONE THIS MONTH		WORK DONE UPTO DATE	
BILL NO	DESCRIPTION	AMOUNT (Rs.)	AMOUNT (Rs.)	PROGRESS %	AMOUNT (Rs.)	PROGRESS %	AMOUNT (Rs.)	PROGRESS %
1	EARTH WORK	4,396,321.49	5,386,920.65	122.53	2,818,678.35	64.11	8,205,599.00	186.65
2	SUB BASE AND BASE COURSE	417,440,419.46	15,060,158.08	3.61	11,233,552.78	2.69	26,293,710.87	6.30
3	SURFACE COURSES AND PAVEMENT	148,248,125.37	586,701.00	0.40	78,018.75	0.05	664,719.75	0.45
4a	STRUCTURES (RETAINING WALL/BREAST WALL)	2,990,459.56	-	-	-	-	-	-
4b	STRUCTURES (CULVERTS)	34,156,831.05	7,723,173.82	22.61	7,406,797.49	21.68	15,129,971.31	44.30
5a	DRAINAGE & EROSION WORKS (ROAD SIDE DRAIN)	146,629,248.32	-	-	-	-	-	-
5b	ROAD PROTECTION WORKS	851,203.80	-	-	-	-	-	-
6	ANCILLARY WORKS	4,189,586.08	-	-	-	-	-	-
7	DIVERSION	9,000,000.00	791,250.00	8.79	263,750.00	2.93	1,055,000.00	11.72
8	RELOCATION OF UTILITIES	900,000.00	-	-	-	-	-	-
Sub Total - Construction Cost		768,802,195.13	29,548,203.55	3.84	21,800,797.38	2.84	51,349,000.92	6.68
INDIRECT COST	Contingencies @ 0.5% of Total Construction Cost	3,844,010.98	147,741.02	3.84	109,003.99	2.84	256,745.00	6.68
	EPC Turnkey Cost	-	-	-	-	-	-	-
	- Design , Consultancy & Supervison 6%	46,128,131.71	1,772,892.21	3.84	1,308,047.84	2.84	3,080,940.06	6.68
	- Risk of Quantity Variation @7%	53,816,153.66	2,068,374.25	3.84	1,526,055.82	2.84	3,594,430.06	6.68
	- Market Fluctuation @ 4.5%	34,596,098.78	1,329,669.16	3.84	981,035.88	2.84	2,310,705.04	6.68
	Sub Total EPC Turnkey Cost	138,384,395.12	5,318,676.64	3.84	3,924,143.53	2.84	9,242,820.17	6.68
	Security /Hard Area @ 4%	30,752,087.81	1,181,928.14	3.84	872,031.90	2.84	2,053,960.04	6.68
TOTAL PROJECT COST (SECTION-I)		937,938,678.06	36,048,808.33	3.84	26,596,972.80	2.84	62,645,781.13	6.68

4.2 BILL NO. 1 EARTH WORK

MONTH: MARCH 2013

CONTRACT					WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UPTO DATE			
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (Rs)	AMOUNT (Rs)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
101	Clearing & Grubbing	SM	29,876	23.15	691,730.98	46,060.63	1,066,460.07	154.17	3,070.63	71,095.41	10.28	49,131.25	1,137,555.48	164.45
104	Compaction of Natural Ground	SM	29,876	23.58	704,502.97	28,184.50	664,615.88	94.34	1,703.88	40,178.91	5.70	29,888.38	704,794.78	100.04
106a	Structure Excavation in Unsuitable Material	CM	3,762	299.079	1,125,135.20	-	-	-	-	-	0.00	-	-	0.00
106bii	Excavate unsuitable Medium Rock Material	CM	-	443.63	-	-	-	-	-	-	-	-	-	-
106biii	Excavate unsuitable Soft Rock Material	CM	-	341.73	-	-	-	-	-	-	-	-	-	-
106c	Structure Excavation in Surplus Common Material	CM	-	154.59	-	-	-	-	-	-	-	-	-	-
106dii	Excavate Surplus Medium rock Material	CM	-	418.8	-	-	-	-	-	-	-	-	-	-
107a	Structure Excavation in Common Material	CM	-	181.29	-	-	-	-	-	-	-	-	-	-
108a	Formation of Embankment From Road way Exavation in Common Material	CM	4,000	398.64	1,594,540.80	3,624.23	1,444,744.57	90.61	2,770.55	1,104,436.79	69.26	6,394.77	2,549,181.36	159.87
108bii	Formation of Embankment From Road way Exavation in medium rock Material	CM	-	542.46	-	-	-	-	-	-	-	-	-	-
108c	Formation of Embankment From Borrow excavation in Common Material	CM	-	241.39	-	-	-	-	-	-	-	-	-	-
108d	Formation of Embankment From Borrow excavation in Medium Material	CM	-	109.38	-	-	-	-	-	-	-	-	-	-
109a	Subgrade Preparation in Earth Cut	SM	4,352	64.43	280,411.55	34,316.38	2,211,100.13	788.52	24,878.13	1,602,967.25	571.65	59,194.50	3,814,067.38	1,360.17
110	Improved Subgrade	CM	-	227.92	-	-	-	-	-	-	-	-	-	-
Total					4,396,321.49	5,386,920.65	122.53	2,818,678.35	64.11	8,205,599.00	186.65			

4.3 BILL NO. 2 SUB BASE & BASE COURSE

MONTH: MARCH 2013

CONTRACT						WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UP TO DATE		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (RS)	AMOUNT (RS)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
201	Granular Sub Base	CM	45,569	1700.75	77,501,427	8,855.02	15,060,158	19.43	6,605.06	11,233,553	14.49	15460.08	26293711	33.93
202	Agregate Base Course	CM	22,868	2232.15	51,044,772	-	-	-	-	-	-	-	-	-
203a	Asphaltic Base Course Plant Mix (Class-A)	CM	17,805	16225.45	288,894,221	-	-	-	-	-	-	-	-	-
TOTAL					417,440,419	-	15,060,158	3.61	6,605.06	11,233,553	2.69	26293711	6.30	

Note: Quantity of Aggregate Base Course includes 28 Nos. rural links upto 25m

4.4 BILL NO. 3 SURFACE COURSES AND PAVEMENT

CONTRACT						WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UP TO DATE		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (RS)	AMOUNT (RS)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
302a	Cut-Back Asphalt for Bituminous Prime Coat	SM	126,444	84.34	10,663,933	-	-	-	-	-	-	-	-	-
303a	Cut-Back Asphalt for Bituminous Tack Coat	SM	221,150	35.12	7,767,540	-	-	-	-	-	-	-	-	-
305b	Asphaltic Concrete for Wearing Course (Class "A")	CM	6,602	19500.1	128,739,353	-	-	-	-	-	-	-	-	-
NS	Grooving of existing asphalt layers at every 5M interval	SM	63,000	17.10	1,077,300	34310.00	586,701.0	54.5	4,562.5	78,019	7.24	38872.50	664719.75	61.70
TOTAL					148,248,125	-	586,701.00	0.40	78,018.8	0.05	664,719.75	0.45		

Note: Quantity of Prime Coat and Asphaltic Wearing Course includes 28 Nos. rural links upto 25m

4.5 BILL NO.4a STRUCTURES (Retaining Wall, RW2 Type)

MONTH: MARCH 2013

CONTRACT						WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UPTO DATE		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (RS)	AMOUNT (RS)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
107a	Structural Excavation in Common Material	CM	283	181.29	51,305	-	-	-	-	-	-	-	-	-
107e	Common Back fill	CM	96	116.64	11,197	-	-	-	-	-	-	-	-	-
401b	Concrete Class "B"	CM	11	5842.23	64,265	-	-	-	-	-	-	-	-	-
401f	Lean Concrete	CM	76	4120.90	313,188	-	-	-	-	-	-	-	-	-
411g	Roll pointing (Parapets over wall)	CM	130	168.01	21,841	-	-	-	-	-	-	-	-	-
411b	Stone Masonry Random with Mortar	CM	294	2450.42	720,423	-	-	-	-	-	-	-	-	-
412a	Stone Masonry Dressed Coursed With Mortar (Parapets over wall)	CM	24	2909.01	69,816	-	-	-	-	-	-	-	-	-
412a	Stone Masonry Dressed Coursed With Mortar (Parapets over Existing wall)	CM	108	2909.01	314,173	-	-	-	-	-	-	-	-	-
401b	Concrete Class "B" (Parapet over existing wall)	CM	14	5842.23	81,791	-	-	-	-	-	-	-	-	-
411g	Roll pointing (Parapets over Existing wall)	CM	600	168.01	100,806	-	-	-	-	-	-	-	-	-
TOTAL					1,748,807									

4.6 BILL NO.4b STRUCTURES (Culverts)

CONTRACT						WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UPTO DATE		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (RS)	AMOUNT (RS)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
NS	Widening and repair of existing Culverts at RD 1+290 & 5+692	No	2	821,155.68	1,642,311	-	-	-	-	-	-	-	-	-
NS	Construction of New Culverts No. of Span x Span Width x Height													
	1 x 2 x 1.5	No	7	1,484,606.61	10,392,246	1.52	2,259,143	21.74	1.72	2,558,220	24.62	3.24	4,817,364	46.36
	1 x 3 x 1.5	No	3	1,941,952.95	5,825,859	0.09	178,858	3.1	1.11	2,151,486	36.93	1.20	2,330,344	40.00
	2 x 3 x 1.5	No	2	3,155,221.89	6,310,444	1.33	4,201,959	66.6	0.09	276,588	4.4	1.42	4,478,546	71.0
	3 x 3 x 1.5	No	1	4,206,699.18	4,206,699	-	-	-	0.38	1,618,592	38.5	0.38	1,618,592	38.5
	5 x 3 x 1.5	No	1	5,779,271.61	5,779,272	0.19	1,083,214	18.7	0.14	801,911	13.9	0.33	1,885,126	32.6
TOTAL					34,156,831		7,723,174	22.61		7,406,797	21.68		15,129,971	44.30

4.7 BILL NO.7 DIVERSIONS

MONTH: MARCH 2013

CONTRACT						WORK DONE UPTO PREVIOUS MONTH			WORK DONE THIS MONTH			WORK DONE UPTO DATE		
ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE (RS)	AMOUNT (RS)	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %	QUANTITY	AMOUNT (Rs.)	PROGRESS %
NS	Diversion for Traffic During Road Construction	KM	9	1,000,000	9,000,000	0.791	791,250	8.79	0.264	263,750	2.93	1.055	1,055,000	11.72
TOTAL					9,000,000		791,250	8.79		263,750	2.93		1,055,000	11.72

4.8 PHYSICAL AND FINANCIAL PROGRESS

General Details:

Date of Commencement	: Oct 15, 2012
Date of Completion	: Dec 31, 2014
Contractor	: Frontier Works Organization (FWO)
M&E Consultants	: AGES Consultant (Pvt) Ltd
Project Cost (Section-I)	: Rs. 937.940 Million

Project length

Section – I : KM 0+000 to KM 9+000

Section	Bill No:	Items	Cost Breakup (Rs: Million)	Achieved progress %age		
				FEB-2013	MAR-2013	Total To-Date
Section – I	01	Earth Works	4.396	122.53	64.11	186.65
	02	Sub Base Course	77.502	3.61	2.69	6.30
	02	Aggregate Base Courses	51.045			
	02	Asphaltic Base Course	288.894			
	03	Surface Course and Pavement	148.248	0.40	0.05	0.45
	04a	Structures (Retaining Walls & Breast Walls)	2.991			
	04b	Structures (Culverts)	34.157	22.61	21.68	44.30
	05a	Drainage & Erosion Works	146.629			
	05b	Road Protection	0.851			
	06	Ancillary Works	4.189			
	07&08	Detours/Miscellaneous works	9.900	8.79	2.93	11.72
	Total Construction Cost			768.802	3.84	2.84

Contract Duration (46 KM)	: 807 days
Time Elapsed up to 31 st March 2013	: 168 days
Time Elapsed %age	: (20.81%)

WORK INFORMATION FOR MARCH 2013

5.1 HIGHWAY SECTION REPORT

1. Planning for the Month of March, 2013

- i. Common excavation for both full width and widening portion of the road.
- ii. Compaction of Natural Ground.
- iii. Formation of embankment from road way/borrow excavation in common material.
- iv. Sub grade preparation in earth cut.
- v. Laying/Compaction of Granular sub base.
- vi. Laying/Compaction of Aggregate Base (Trial Section).
- vii. Grooving of existing asphalt Pavement at every 3 to 5 Meter interval.
- viii. Diversion for traffic during road construction.

2. Work Supervised in March, 2013

- i. Common excavation with a total length of 3.225 KM for sub grade top was carried out both in widening portion and in full width of the road.
- ii. Embankment construction both in full and half width with a total length of 0.5 KM was constructed in the month of March 2013.
- iii. Sub grade top preparation for a length of 0.5 KM has been executed in the month of March 2013 both in widening portion and in full width of the road.
- iv. Granular Sub base laying with a total length of 3.8 KM were executed both in widening portion and in full width of the road.
- v. Road cutting in full width with a total length of 0.575 KM was carried out near railway crossings at two locations and for base coarse at four locations.
- vi. Grooving in the existing Asphalt Pavement was executed with a total length of 5.550 KM.
- vii. Detour for traffic with a total length of 5.25 KM was operational during the month of March 2013 for section-I.
- viii. Detour for traffic with a total length of 1.5 KM was constructed for section-II.

3. Work Planned for April, 2013

- i. Common excavation for both full width and widening portion of the road (Section-I & II).
- ii. Compaction of Natural Ground (Section-I & II).
- iii. Formation of embankment from road way/borrow excavation in common material (Section-I & II).
- iv. Sub grade preparation in earth cut.
- v. Laying/Compaction of Granular sub base.
- vi. Laying/Compaction of Aggregate Base course.
- vii. Grooving in the existing asphalt Pavement at every 3 to 5 Meter interval.
- viii. Diversions for traffic during road construction (Section-I & II).
- ix. Asphalt Plant mobilization/installation at site.

5.2 STRUCTURE SECTION REPORT

1. Planning for the Month of March, 2013

- i. Structural excavation in common material.
- ii. Compaction of Natural Ground.
- iii. Lean concrete for culverts at KM: 2+611, 3+081, 5+354, 6+050
- iv. Class "B" concrete for culverts at KM: 2+611, 3+081, 4+480, 5+202, 5+354, 6+050, 6+501, 6+648, 6+883 and 7+384
- v. Stone masonry Random with mortar for culverts at KM: 2+611, 3+081, 4+480, 5+202, 5+354, 6+050, 6+501, 6+648, 6+883 and 7+384
- vi. Granular backfill for culverts in progress.
- vii. Class "A" concrete for RCC top slab of culverts at KM: 5+202, 5+905, 6+191, 6+648, 6+883 and 7+384
- viii. Stone pitching inside the culverts at KM: 5+202, 5+905, 6+191, 6+648 and 6+883
- ix. RCC concrete for parapet wall over culvert.
- x. Widening and repair of existing culverts at KM: 1+290 and KM: 5+692

2. Work Supervised in March, 2013

- i. Checking of layout and dimensions of the structures.
- ii. Concrete batching, pouring and curing operations of culverts at KM: 2+611, 3+081, 4+480, 5+202, 5+905, 6+050, 6+501, 6+648, 6+883, 7+384 were observed during the month of March-2013.
- iii. Stone masonry of Abutment walls, wing walls and central pier for culverts at KM: 3+081, 4+480, 5+202, 6+050, 6+501, 6+648, 6+883, 7+384 were observed during the month of March-2013.
- iv. Form work and Reinforcement of structures were inspected for culverts 4+480, 5+905, 6+648.
- v. Granular Back filling of culverts 3+081, 4+480, 5+202, 5+905, 6+191, 6+501, 6+648, 6+883 and 7+384.
- vi. Stone pitching inside the culverts between Abutments was observed for the culverts 4+480, 5+905, 6+648.
- vii. RCC Pipe service duct construction were observed at the following locations; 3+425, 3+480, 3+900, 4+180, 4+230, 4+550, 4+615, 8+00 and 8+250 during this month.

3. Work Planned for April, 2013

- i. Structural excavation for culverts, retaining walls, drainage and erosion works
- ii. Compaction of Natural Ground.
- iii. Lean concrete for culverts at KM: 1+230, 5+354.
- iv. Class "B" concrete for culverts at KM: 2+611, 5+354, 6+050, 6+501, and 7+384

- v. Class "A" concrete for top slab of culverts at KM: 2+611, 3+081, 5+202, 5+354, 6+050, 6+191, 6+501, 6+883 and 7+384
- vi. Stone masonry Random with mortar for culverts at KM: (2+611, 3+081, 5+354, 6+050, 6+501, and 7+384)
- vii. Granular backfill of culverts
- viii. Stone pitching inside the culverts KM: (2+611, 3+081, 5+202, 5+354, 6+050,6+191, 6+501, 6+883 and 7+384)
- ix. RCC Parapet wall for culverts.
- x. Widening and repair of existing culverts at KM: 1+290 and KM: 5+692.
- xi. Laying/Encasement of RCC pipe service ducts.

5.3 MATERIAL ENGINEER REPORT

1. Main Works Supervised during this Month (March 2013).

- i. Quality analysis of Borrow Material for Sub base, Sub grade, Embankment, NGC and Aggregate Base Course material.
- ii. Field Density Tests, Supervision of Lean concrete and class "A" concrete at site.
- iii. Trial Section for Aggregate Base Course.
- iv. Quality tests of Aggregate Base Course.

2. Earth Work Quality Test Report

S.No	Location	Description	Classification							MDD (g/cc)	OMC %	L.A %	CBR%	Remarks
			#4	#10	#40	#200	LL	PL	PI					
1	10+000	Sub base/ Sub grade	36.7	22.7	14.9	7.6			Non Plastic	2.246	6.5	26	69.5	
2										2.24	6.6		69	
3										2.248	6.4		75	
Total Nos.of Tests			1				1			3	3	1	3	

3. Aggregate Base Course Quality Test Reports

S.No	Location	Description	Sieve Analysis							MDD (g/cc)	OMC %	L.A %	CBR%	Remarks
			2"	1"	3/8"	#4	#10	#40	#200					
1	Crush Plant (Stock Pile)	Aggregate Base Course	100	87.9	50.2	35.4	26.8	14.6	3.8	2.309	5	26	96	
2	7+500		100	86.7	53.1	41.6	29	14.8	4.5	2.31	5.1	25.3	92	
Total Nos.of Tests			2							2	2	2	2	

4. Aggregate Base Course Tested in M&E Consultants Laboratory

S.No	Location	Description	Sieve Analysis							MDD (g/cc)	OMC %	CBR%	Remarks	
			2"	1"	3/8"	#4	#10	#40	#200					PI
1	7+490 C/L	ABC Trial Section	100	91.2	48.5	29.9	17.8	9.5	4.5	N/Plastic	2.368	5.2		
2	7+500 L/S	ABC Trial Section	100	93	57.1	36.1	21.1	11	5.1	N/Plastic				
3	7+475 R/S	ABC Trial Section	100	90.5	47.2	26	14.6	7.7	4.1	N/Plastic				
Total Nos.of Tests			3							3	1	1		

5. Summary: Compression Test of Concrete in FWO/NESPAK Laboratory (Joint Testing)

S.No.	Description	Casting Date	Testing Date	Age (Days)	Length (cm)	Dia (cm)	Area (cm ²)	Load in Kg	STRENGTH (Kg/cm ²)			Remarks
									Achieved	Average	Required	
1	Lean Concrete of Culvert Bed at KM: 6+883	11/2/2013	11/3/2013	28 Days	30.48	15.24	182.4	24000	131.579	135.2	100	Accepted
					30.48	15.24		25500	139.803			
					30.48	15.24		24500	134.320			
2	Lean Concrete of Culvert Bed at KM: 7+384	13/2/2013	13/2/2013	28 Days	30.48	15.24	182.4	22500	123.355	124.3	100	Accepted
					30.48	15.24		23000	126.096			
					30.48	15.24		22500	123.355			
3	Structure Concrete Pad Concrete Class "B" at KM: 6+191	16/2/2013	23/2/2013	7 Days	30.48	15.24	182.4	31000	169.956	169.0	127.5	Accepted
					30.48	15.24		30500	167.215			
					30.48	15.24		31000	169.956			
			16/3/2013	28 Days	30.48	15.24	182.4	39500	216.557	212.9	170	
					30.48	15.24		38000	208.333			
					30.48	15.24		39000	213.816			
4	Lean Concrete of Culvert Bed at KM: 6+501	20/2/2013	27/2/2013	7 Days	30.48	15.24	182.4	16000	87.719	89.5	75	Accepted
					30.48	15.24		16500	90.461			
					30.48	15.24		16500	90.461			
			20/3/2013	28 Days	30.48	15.24	182.4	22000	120.614	132.5	100	
					30.48	15.24		26000	142.544			
					30.48	15.24		24500	134.320			
5	Lean Concrete of Culvert Bed at KM: 5+202	20/2/2013	27/2/2013	7 Days	30.48	15.24	182.4	15000	82.237	86.8	75	Accepted
					30.48	15.24		16000	87.719			
					30.48	15.24		16500	90.461			
			20/3/2013	28 Days	30.48	15.24	182.4	24000	131.579	130.7	100	
					30.48	15.24		24000	131.579			
					30.48	15.24		23500	128.838			

Summary: Compression Test of Concrete in FWO/NESPAK Laboratory (Joint Testing)

S.No.	Description	Casting Date	Testing Date	Age (Days)	Length (cm)	Dia (cm)	Area (cm ²)	Load in Kg	STRENGTH (Kg/cm ²)			Remarks
									Achieved	Average	Required	
6	Lean Concrete of Culvert Bed at KM: 6+501	21/2/2013	28/2/2013	7 Days	30.48	15.24	182.4	15500	#REF!	#REF!	75	Accepted
					30.48	15.24		16500	#REF!			
					30.48	15.24		16000	#REF!			
			21/3/2013	28 Days	30.48	15.24	182.4	23000	126.096	125.2	100	
					30.48	15.24		22500	123.355			
					30.48	15.24		23000	126.096			
7	Structure Concrete Pad Concrete Class "B" KM: 6+191	24/2/2013	3/3/2013	7 Days	30.48	15.24	182.4	31500	172.697	170.0	127.5	Accepted
					30.48	15.24		31000	169.956			
					30.48	15.24		30500	167.215			
			24/3/2013	28 Days	30.48	15.24	182.4	42000	230.263	227.5	170	
					30.48	15.24		41000	224.781			
					30.48	15.24		41500	227.522			
8	Structure Concrete Pad Concrete Class "B" at KM: 6+648	24/2/2013	3/3/2013	7 Days	30.48	15.24	182.4	32000	175.439	174.5	127.5	Accepted
					30.48	15.24		32500	178.180			
					30.48	15.24		31000	169.956			
			24/3/2013	28 Days	30.48	15.24	182.4	42000	230.263	229.3	170	
					30.48	15.24		41500	227.522			
					30.48	15.24		42000	230.263			
9	Lean Concrete of Culvert Bed at KM: 4+880	25/2/2013	4/3/2013	7 Days	30.48	15.24	182.4	16000	87.719	85.9	75	Accepted
					30.48	15.24		15500	84.978			
					30.48	15.24		15500	84.978			
			25/3/2013	28 Days	30.48	15.24	182.4	22000	120.614	119.7	100	
					30.48	15.24		22000	120.614			
					30.48	15.24		21500	117.873			
10	Lean Concrete of Culvert Bed at KM: 3+081	3/3/2013	10/3/2013	7 Days	30.48	15.24	182.4	15500	84.978	85.0	75	Accepted
					30.48	15.24		16000	87.719			
					30.48	15.24		15000	82.237			
			31/3/2013	28 Days	30.48	15.24	182.4	23000	126.096	124.3	100	
					30.48	15.24		22000	120.614			
					30.48	15.24		23000	126.096			

6. Main Works Planned for April 2013

- i. Supervision of Sub base, Sub grade and Embankment at site.
- ii. Identification of Sub Base Borrow for Section-II,
- iii. Identification of Sources for Asphaltic Base course and Wearing course.
- iv. Installation of Asphalt plant.

Comments of Material Engineer:

1. Contractor Base Laboratory.

The contractor has not yet established a fully equipped laboratory. The sources of Aggregates for Asphaltic base course and wearing course are still not identified.

2. Concrete Mix designs:

The Mix Designs for class "A", class "B" and Lean concretes are almost completed by the contractor.

3. Removal of oversize from Sub Base material:

The contractor (FWO) has installed a screen at KM: 2+100 for removal of oversize material; as a result the quality of Sub Base has been improved.

4. Crush plant and Asphalt plant:

The crush plant for Aggregate Base course at KM: 9+700 (approximately) is fully operational. While the foundation for Asphalt plant has been completed but time frame for complete mobilization, installation, testing and commissioning of Asphalt plant is yet awaited.

5. Trial Section for Aggregate Base Course:

The contractor (FWO) prepared a Trial Section for Aggregate base course at KM: 7+425 to 7+500 in full width but the section was highly segregated due to poor workmanship of the contractor's personnel at site. The samples were collected from the subject section and tested in the AGES laboratory as well as in the contractor's laboratory. The analysis of the subject material meets the specifications; however, the workmanship needs improvement to avoid segregation. The contractor has been advised to hire technical and skilled staff to control such type of deficiencies at site. The NESPAK Material Engineer has already rejected the subject Trial section and promised that they will improve the methodology for Aggregate base course stock piling, laying and compaction.

6. Curing at site:

During our routine site visits it has been observed that there is no proper curing of culverts stone masonry and concrete works while the temperature is increasing day by day and curing is the most important factor for strength of concrete as well as mortar.

5.4 WEATHER RECORD

Date	Temperature (°C)		Humidity (%)		Weather Condition	Rainfall – Last 24 hours in mm
	Maximum	Minimum	Maximum	Minimum		
01- Mar -13	23	8	87	31	Sunny	0 mm
02- Mar -13	26	9	87	34	Sunny	0 mm
03- Mar -13	26	12	82	36	Sunny	0 mm
04- Mar -13	27	12	82	30	Sunny	0 mm
05- Mar -13	29	13	82	35	Sunny	0 mm
06- Mar -13	29	13	82	32	Sunny	0 mm
07- Mar -13	29	14	77	30	Sunny	0 mm
08- Mar -13	28	14	77	45	Sunny	0 mm
09- Mar -13	22	17	77	56	Light Rainfall	21 mm
10- Mar -13	26	13	88	24	Sunny	0 mm
11- Mar -13	28	12	77	32	Sunny	0 mm
12- Mar -13	26	17	73	42	Sunny	0 mm
13- Mar -13	19	15	94	68	Rainy day	22 mm
14- Mar -13	16	13	100	77	Rainy day	28 mm
15- Mar -13	24	10	88	50	Sunny	0 mm
16- Mar -13	24	12	82	47	Sunny	0 mm
17- Mar -13	22	13	88	40	Sunny	0 mm
18- Mar -13	25	15	77	41	Sunny	0 mm
19- Mar -13	28	15	77	39	Sunny	0 mm
20- Mar -13	25	17	78	50	Sunny	0 mm
21- Mar -13	27	15	82	46	Sunny	0 mm
22- Mar -13	27	15	77	45	Cloudy	0 mm
23- Mar -13	19	15	88	77	Rainy day	32 mm
24- Mar -13	16	12	94	72	Rainy day	33 mm
25- Mar -13	25	10	94	44	Sunny	0 mm
26- Mar -13	28	12	77	37	Sunny	0 mm
27- Mar -13	27	15	77	45	Sunny	0 mm
28- Mar -13	27	17	72	42	Sunny	0 mm
29- Mar -13	25	16	82	54	Sunny	0 mm
30- Mar -13	26	17	78	48	Sunny	0 mm
31-Mar -13	25	16	77	52	Sunny	0mm

5.5 CONTRACTOR'S PLANT & EQUIPMENTS

Date	Loader	Back Hoe	Motor Grader	Dozer	Vibratory Roller	Dumper	Water Tanker	Tractor	Remarks
01- Mar -13	Holiday								-
02- Mar -13	2	4	5	2	5	10	5		-
03- Mar -13	2	4	5	2	5	8	5		-
04- Mar -13	2	4	5	2	5	8	5		-
05- Mar -13	2	4	5	2	5	10	5		-
06- Mar -13	2	5	5	2	5	9	5		-
07- Mar -13	2	4	5	2	6	12	4		-
08- Mar -13	Holiday								-
09- Mar -13	2	4	5	2	6	12	5		-
10- Mar -13	2	4	5	2	6	11	5		-
11- Mar -13	2	3	5	2	6	11	5		-
12- Mar -13	2	3	5	2	6	12	5		-
13- Mar -13	2	4	5	2	6	12	5		-
14- Mar -13	Work hampered due to heavy Rainfall								-
15- Mar -13	Holiday								-
16- Mar -13	2	4	5	2	6	12	5		-
17- Mar -13	2	4	5	2	6	12	5		-
18- Mar -13	2	5	5	2	6	12	5		-
19- Mar -13	2	5	5	2	6	12	5		-
20- Mar -13	2	5	5	2	6	14	5		-
21- Mar -13	2	2	5	2	6	12	5		-
22- Mar -13	Holiday								-
23- Mar -13	Work hampered due to heavy Rainfall								-
24- Mar -13	Work hampered due to heavy Rainfall								-
25- Mar -13	2	4	5	2	6	12	5		-
26- Mar -13	3	4	5	2	6	14	5		-
27- Mar -13	2	4	5	3	6	14	5		-
28- Mar -13	2	4	5	3	6	14	5		-
29- Mar -13	Holiday								-
30- Mar -13	3	4	5	2	6	12	5		-
31- Mar -13	3	4	5	2	6	12	5		-

ANNEXURES

INSPECTION FINDINGS AND RECOMMENDATIONS REPORT

Background

The United State Agency for International Development (USAID) has engaged AGES Consultants to execute the monitoring and evaluation aspects of the project “Strengthening and Improvement of Peshawar Torkham Road (N – 5)”. In order to fulfill their responsibilities more effectively, the M&E Consultants make regular visits to the project site, interact with the Contractor’s staff to discuss / resolve day to day construction related concerns and compile necessary observations. There are some critical issues pertaining to quality of the material and workmanship as well as construction methodology that have been repeatedly identified to the contractor (FWO); however, no action has been taken by FWO till this date. The attached site inspection / evaluation report is intended to document the aforementioned critical issues that need to be immediately addressed by FWO.

The scope of this evaluation is limited to the portion of road between KM: 0+000 To 9+000 (Section – I). The general scope of work for this report is to:

1. Review the contractor’s means and methods of construction.
2. Material, manpower & plant mobilization / operation status.
3. Evaluate quality of the construction work (pavement and structures) if it complies with the specifications.
4. Provide Recommendations

The quality of materials observed in the under construction work was generally found to be acceptable, with the notable exception of Stone Masonry Work and Crush Plant production (Aggregate Base) quality.

The workmanship of the observed work was found acceptable with the notable exceptions of stone masonry, backfilling and detour/traffic operation in work zone.

Recommendations have been provided in the report for addressing the identified issues. It is also recommended that FWO should employ staff for specialized tasks, like: traffic operation, traffic safety, construction supervision / quality control and environmental monitoring.

Site Inspection Findings & Recommendations

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
1	 <p>Fig- 01 KM: 6 + 501 (Culvert Abutment wall)</p>  <p>Fig- 02 KM: 6 + 501 (Culvert Abutment wall)</p>	<p>1. QUALITY CONTROL PRACTICES</p> <p>The prime contractor FWO has entrusted local / petty contractors to carry out construction of all proposed cross drainage structures. However, FWO's supervision of the stated works is quite unsatisfactory as evident from the attached photographs. It has been consistently observed that FWO is not fulfilling its responsibility to control the working details of the subcontractor work and to execute the work in accordance with specifications using standard construction practices. Although the M&E Consultants during their site visits, regularly interact with the FWO / NESPAK staff, and discuss issues pertaining to quality of material / workmanship and construction methodology of the ongoing works; however, very little compliance has been seen sub-contractors' works.</p> <p>As shown in Figure 01 & 02, the Culvert at KM: 6 + 501 is being constructed with undressed, irregular shaped stones at cores and backing without proper bedding and jointing of headers and stretchers. Also, the stones are neither cleaned nor thoroughly saturated with water before placing, and are being laid / packed dry without using cement sand mortar.</p>	<p>FWO / NESPAK must investigate the stated issue and ensure that best quality practice's adopted by subcontractors with the following general principles at minimum for stone masonry work.</p> <ul style="list-style-type: none"> • The largest stones should be used in the foundation to give the greatest strength and lessen the danger of unequal settlement. • A stone should be laid upon its broadest face, so that the spaces between the stones may be filled most easily. • For best appearance, the thickness of the courses should decrease gradually toward the top of the wall. • A stratified stone should be laid upon its natural bed. • Each stone must be completely dressed before being laid in the wall. • A stone in any course should break joints with or overlap the stone in the course below to bind the wall together lengthwise. • A large number of headers that extend from the front to the back / inside of a wall should be available to bind the wall together crosswise. • Hollow beds shall not be permitted.

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
	 <p>Fig- 03 KM: 3 + 081 (Culvert bed backfilling)</p>  <p>Fig-04 KM 3+081 (undersize stones encircled)</p>	<p>It has been frequently observed that critical construction activities are executed in the absence of FWO / NESPAK personnel, thereby raising doubts about the legitimacy of the construction quality.</p> <p>The backfilling operation of culvert bed at KM: 3 + 081 is being handled by unskilled labor of subcontractor without any superintendence of prime contractor. The stone masonry mortar is still green and the backfill material is being deposited in layers exceeding the prescribed limits of 20cm loose thickness. NHA specification (107.3.3.h – Backfill) does not allow any backfilling against concrete or masonry structures before 14 days of placement. Further,</p> <p>Fig 04 highlights use of undersize stones in the Abutment wall No.2 of the culvert at KM: 3+081, which is again an example of poor quality control and non-compliance of the specifications.</p>	<ul style="list-style-type: none"> • The surface of porous stone should be moistened before the stone is bedded to prevent the stone from absorbing moisture from the mortar and thereby causing the mortar to shrink and become non-plastic. • A stone must not be dropped on the wall or slid along the wall during construction. If it is necessary to move a stone after it has been placed upon the mortar bed, it should be lifted clear, cleaned of mortar, and reset. • Stone should be clean when laid. All stones shall be well bedded in freshly made mortar and settled in place before the setting of the mortar • A vertical joint should not occur directly above or below a header. • Stones should never be bunched together. • Backfill should never be placed against stone masonry until the mortar has gained sufficient strength.

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
2	 <p>Fig- 04 Detour b/w KM: 5 + 800 To 6 + 200</p>  <p>Fig- 05 Detour b/w KM: 7 +025 To 7 + 100 (Inadequate work zone safety)</p>	<p>2. TRAFFIC ACCOMODATION</p> <p>Road construction causes inconvenience & safety concern to the road users as well as to the local inhabitants. A well planned traffic accommodation strategy can alleviate many of these difficulties and hazards. FWO is responsible to formulate and implement a proper traffic diversion / detour that will efficiently and safely move traffic through the construction zone at all times. However, so far FWO has been unable to provide and maintain a proper detour, which is evident from the following observed facts:</p> <ul style="list-style-type: none"> • Fig 04: No dust control; thus compromising environment, visibility and safety of public. • Fig 05: No signage or hazard markers for driver's guidance / warning and no barriers to protect drivers as well as labor on work. 	<ul style="list-style-type: none"> • In order to devise a strategy that will efficiently and safely move the traffic through and around the construction zone, the Contractor (FWO) should evaluate: <ol style="list-style-type: none"> a. Whether or not traffic will be able to safely maneuver through all the proposed detours, keeping in view the traffic density, detour capacity and tribal background of the construction zone b. The location of adjacent traffic relative to worker and traffic safety, c. Whether or not there is sufficient room for equipment maneuverability, and d. Whether or not the construction phasing is appropriate. • Moreover the Contractor should develop a Traffic Control & Management Plan (TCMP), in compliance with the specification and standard engineering practices. • The TCMP should be compatible with the physical & environmental conditions of work zone, construction sequence and timeframe. • The Contractor should assign to the project an employee experienced in all aspects of traffic control that will serve as Traffic Manager (TM). • The TCMP once implemented, must assure the safety of motorists, pedestrians, and construction workers during the construction period.

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
	 <p style="text-align: center;">Fig- 06 Detour b/w KM: 1 + 350 To 1+500</p>  <p style="text-align: center;">Fig- 07 Detour b/w KM: 7+600 To 8+100</p>	<ul style="list-style-type: none"> Fig 06 portrays another outcome of the poor traffic control practices, which is in the form of traffic jam observed all along the detours during the peak traffic hours. The detours are operating at an unacceptable level of service due to inadequate traffic capacity, substandard geometry and insufficient traffic controlling devices. Fig 07: Riding quality of the detour was further deteriorated after the rainfall. Poor surface condition and road geometry of the detour can jeopardize the safe maneuvering of traffic through the construction zone, especially during darkness. 	<ul style="list-style-type: none"> FWO on a regular basis should monitor the condition of the detour & route traveled through the work zone. This should be done not only during working hours but also at night time and holidays as well. The Traffic Control Plan should be regularly reviewed by the TM (FWO) with NESPAK & other project stakeholders. This review should be focused on the safety and efficiency of traffic movement through the construction zone, detours riding quality, geometric design elements, temporary cross drainage structures, dust suppression and whether traffic control conforms to the Traffic Control Plan. TM (FWO) to check that temporary structures and roadways (detours) are constructed & maintained in accordance with the requirements of the specifications. Traffic Control Devices must be reviewed continuously. The TM should make adjustments to the TCMP in the field as conditions warrant & put into practice immediately. Additional reviews to TCMP should be exercised following a change in the construction pattern or severe weather conditions. The M&E Consultants should regularly monitor and document the Contractor's surveillance and maintenance practices along the detour and the construction zone.

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
3	 <p data-bbox="398 762 779 826">Fig- 08 Culvert at KM: 6 + 501 (View from U/S side)</p>  <p data-bbox="398 1311 779 1375">Fig- 09 Culvert at KM: 6 + 501 (View from Abutment # 02)</p>	<p data-bbox="913 395 1413 427">3. Design concern of Culvert at KM: 6+501</p> <p data-bbox="860 437 1467 756">During their routine site visits, the M&E Consultants Field Staff pays special attention to the construction of new cross drainage structures along the natural streams. There are total 16 culverts to be constructed along section – I; work on 12 is in progress. Figure 08 to 11 highlights different sides of the 05 cells culvert (3m x 1.5m each cell) at KM: 6 + 501, which is being installed with 3% bed slope on erodible materials.</p> <p data-bbox="860 868 1467 1267">The attached figures (08-11) demonstrate the distinctive channel characteristics including transportation & accumulation of sediment load, channel clogging & upstream deposition of debris at the construction site following periodic rainfall and peak runoff event b/w Feb 01 To Mar 31, 2013 time period. Sediment deposition within a culvert system may cause significant problems to the hydraulic performance of the system in the event of a large storm. In addition, the deposition also poses a maintenance problem in the long run.</p>	<ul data-bbox="1503 395 2047 1321" style="list-style-type: none"> • A critical factor in the assessment of channel crossing design and structural capacity is its allowance for handling or passing sediments / debris. Experience has shown that channel crossings have failed not because of inadequate design to handle unanticipated water flows, but because of inadequate allowances for sediments load / floatable debris which eventually blocked water passage through the culvert. Therefore, the contractor (FWO) should analyze each channel crossing for its sediments / debris handling capacity, by hiring the services of specialist, preferably a hydrologist who made a site-specific evaluation of channel stability factors. • Since a successful bottomless culvert design depends on a clear understanding of upstream and downstream hydraulic conditions, therefore the proposed channel assessment must encompass the influencing factors in the water-shed

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
	 <p data-bbox="398 815 801 879">Fig- 10 Culvert at KM: 6 + 501 (View from D/S side)</p>  <p data-bbox="398 1358 801 1422">Fig- 11 Culvert at KM: 6 + 501 (View from D/S side)</p>	<p data-bbox="882 443 1469 639">Similarly provision of 3% slope for ensuring self cleaning velocity across the culvert will necessitate the outlets to be properly designed in order to withstand the high flow velocities and thus avoid excessive downstream scouring and possible road failure.</p> <p data-bbox="882 679 1469 876">The proposed downstream protection work at the stated culvert location, as obvious from the tender drawings are inadequate and warrants drastic modifications that must be compatible with site conditions and all flow regimes.</p>	<p data-bbox="1541 389 2056 501">that may change over time, resulting in differing sediment conditions at the culvert location.</p> <ul data-bbox="1496 528 2065 1161" style="list-style-type: none"> • The designer (FWO / NESPAK) needs to use engineering judgment to account for stated potential variances. • Scour calculations must be done carefully so that proper protective measures to resist undercutting and washout at the culvert outlet may be chosen. • The M&E Consultants will continuously monitor the design standards of cross drainage structures with regards to alignment with the channel, hydraulic capacity, sediments / debris control, energy dissipation and documents the protective measures that might be necessary to protect the culvert from scour.

ITEM #	PHOTOGRAPHIC EVIDENCE	INSPECTION FINDING	RECOMMENDATION
4	 <p>Fig-12 Compacted Aggregate Base Course layer with marked bands of segregation.</p>  <p>Fig- 13 Crush plant in action without screening operation following each successive stage of reduction.</p>	<p>4. AGGREGATE BASE COURSE</p> <p>During the site inspection of the ongoing construction activities of section – I, it was observed that the contractor has initiated work on laying & compaction of aggregate base course b/w KM: To, without conducting any trial section demonstration, as per specification requirements. Trial section demonstration is necessary in order to assess the methodology for deposition of material on finished roadbed, spreading to avoid segregation, the adequacy of the contractor's equipment, depth measurement of loose material to confirm achieving the specified compacted layer depths, the field moisture content, and the relationship between the number of compaction passes and the resulting density of the material.</p> <p>As shown in Fig 12, neglecting the specification requisites has resulted in compacted layers of base course with streak of coarse or fine materials concentration at different reaches. It was detected with concern that segregation and contamination of crushed material actually aggravated due to improper methods of crushing, handling and stockpiling at the crush plant at KM: 9 + 600 .The Jaw type crush plant consists of a primary and secondary crusher without any scalping/grizzly facilities. Similarly the blend sizes for meeting gradation requirements get destroyed due to absence of screen between the two successive crushers, thereby pushing the finished product towards the finer sizes.</p>	<ul style="list-style-type: none"> • Generally, the handling and stockpiling operations cause some segregation and breakage of coarse aggregate, but such difficulties can be minimized by separating the aggregate into a number of sizes by adoption of screens and by use of well designed and properly operated handling systems. • Aggregate should not be allowed to fall freely from the discharge end of a conveyor belt. • Stockpiles should not be built up in high cone shapes (conical pile) nor allowed to run down slopes, which will otherwise cause segregation. • Method of permitting hauling equipment to operate over the same level of stockpile repeatedly should be discouraged. • Pile built radially in horizontal layers by dozer / FEL working from materials as dropped from conveyor belt is permissible, but the progressive layers should not be stacked on slope falter than 1:3. • The end of the belt should be kept as low as possible and the aggregate should be discharged through a rock ladder containing baffles to prevent segregation. • In order to closely control the product size and limit the waste material, bottom of the swing jaw of the crusher should be adjusted according to the max aggregate size required. • It is a good crushing practice to install a scalper ahead of primary crusher and after each stage of reduction to remove the specification sizes. This separation direct certain selected material to receive additional or special processing, or certain material may be diverted to bypass unnecessary processing.

ENVIRONMENTAL COMPLIANCE MONITORING REPORTS

ENVIRONMENTAL COMPLIANCE REPORT # 01

1. **Date of visit:** 18th March, 2013
2. **Environmental Compliance Officer:** **Shabir Ahmad Khan**
3. **Filed Monitor Social :** **Muhammad Rahman**
4. **Road Section under Construction:** Section Km 0+000 to Km 9+000
5. **Persons Consulted at Site:**

- i. Mr Nadeem Iqbal surveyer FWO
- ii. Mr. Sabir Surveyer FWO
- iii. Mr Naseem Surveyer helper FWO
- iv. Mr. Farooq Supervisor FWO
- v. Mr Mohammad Hanif L. Niak FWO
- vi. Mr. Abdur Raof Haveladar FWO

6. **Work Position:**
- Work Under way.
 - Work Stopped
 - Work Completed

7. **Quality of Environment Compliance:**
- ❖ Good
 - ❖ Satisfactory
 - ❖ Poor

8. **Issues:**
- (a) Damages to graves in quarry area.
 - (b) No sprinkling of water on road's diversion and near the residential areas.
 - (c) People demanded for constructions of stairs at some places of culvert's construction.
 - (d) Drainage problems at culvert's construction sites and quarry areas.
 - (e) Land leveling and refilling of adjacent previous quarry sites for sustainable use.
 - (f) Non availability of Environment Specialist/ Expert on site from FWO / NESPAK side.
 - (g) No Health and Safety arrangement at working sites.
 - (h) No road's traffic signs and speed checking for the safety of people.
 - (i) No records of EHS (Environment, Health and Safety) plans.
 - (j) Non availability of personal protective equipment

9. **Recommendation/Instructions:**

Please see advices and directions in detail at attached "Environmental Monitoring Check List"

Environmental Monitoring Check List for the Site

Activity	Mitigation Measures	Monitoring indicators	Observations
Construction Phase			
Use of heavy equipment	<ul style="list-style-type: none"> a. Minimize use of heavy machinery. b. Set protocols for vehicle Maintenance. c. Monitoring and cross checking of fuel level deliveries and use. d. Checking pipes and joints for leaks. e. Tightening generator and fuel lines. f. Preventing over filling of main storage and vehicle tanks. g. Heavy equipment should not be parked under the tree to avoid soil compaction and damage to the roots of the trees. 	Soil contaminations, stability and erosion	<p>FWO staff and site supervisors always maintain the machinery in good condition. Heavy machinery is parked in fenced area near the main camp at Jamrud. As this area has no vegetation/trees, therefore, no vegetation damage has occurred.</p> <p>Usually heavy machinery is used for carrying material from quarry area, therefore, advised FWO staff to always follow the compacted routes. FWO Machinery normally gets its maintenance inside the camps.</p> <p>Advised to set protocols for vehicle maintenance and regular inspection may please be carried out by the H&S Inspector.</p>
Flood protection	<ul style="list-style-type: none"> a. Culverts should be provided to control flood damages and provision of safety of Embankments. b. Road protection work along the river side. c. Construction of retaining wall d. New causeways for the smooth flow of water during rainy seasons and flooding. 	Site inspection	<p>The road construction work has started and works on different types of flood protection measures have also been started like culverts, retaining walls for smooth flow of water during rainy season and sewerage disposal.</p> <p>But it was noticed during site visit that no temporary arrangements have been made for disposal of flood and sewerage water nor any protection measures have been adopted for safety of other infrastructure like telephone cables etc. Advice FWO staff for protection of public infrastructures time and again. (Km 2+295, Km 3+375, Km 3+080). But Action has been taken by the FWO staff in this regard up till now.</p> <p>Please see photos (1,2,3,4,5,6,7,8)</p>
Handling and transportation of hazardous waste	<ul style="list-style-type: none"> a. Prevent dumping of hazardous materials especially near villages and water bodies. b. Burn waste oil that is not readily reusable. c. Recyclable material don't contain heavy metals 	Soil Contamination and Safety	No action is required at present stage.

	<p>that are inflammable, investigate and use less toxic alternative products.</p> <p>d. Prohibit use of waste oil as cooking oil.</p>		
Handling of solid Waste	<p>a. Site manager would be responsible for the collection and disposal of solid waste.</p> <p>b. Training of site personnel in waste management and chemical waste handling procedures.</p> <p>c. Separation of chemical waste for special handling.</p> <p>d. Recording system for the amount of waste generated recycled and reused.</p> <p>e. Proper storage and site practices to minimize the potential for damage or contamination of construction materials.</p> <p>f. General refuse would be stored in enclosed bins to separate from construction materials</p> <p>g. A reputable waste collection firm should be engaged by the contractor to remove the general refuse from the site.</p>	Toxicity, Soil Contamination and Pollution	<p><u>No waste segregation observed at construction site</u> nor any records regarding solid waste management had been shared till the time.</p> <p>The construction materials in the main store are generally stored in good condition to minimize the chance of damage to them. However the construction material at sites are not stored/placed in proper form.</p> <p>The sub Contractors also do not follow Environment, Health and Safety protocols.</p> <p>Although mixing of refuse with construction material not found at site but at the same time <u>no special bins or collector have been seen to collect refuse systematically.</u> It has been advised, especially to the subcontractors having contracts of culverts, to provide solid waste storage bin at their respective sites.</p> <p>No chemical waste has been seen in the project area.</p>
Construction crews and camps	<p>a. Explore off – site accommodations for crew, keep camp size in containers or specific facilitated position.</p> <p>b. Avoid as much clearing of vegetation as possible.</p> <p>c. Provide temporary sanitation on site such as pit latrines (assuring the water table is enough and soil and geology of appropriate composition).</p> <p>d. Use local or regional labor.</p> <p>e. Screen potential crew members of HIV and tuberculosis.</p> <p>f. Provide education and</p>	Surface and ground water pollution and conflicts with locals.	<p>Both construction crews and camps are maintained in a best manner at army accommodation, where all required facilities like washrooms, kitchen, TV lounge, café shop etc are available. These army camps have recently renovated by the FWO for the labor camps. The quality of food provided is good. Others protocols like hygienic water etc are satisfactory.</p> <p>Sub-contractor and some workers are local inhabitants of the area. FWO staff is educated and follow strict guidelines from their senior to interact with locals. <u>The guidelines for removal of trees have not been provided to be</u></p>

	<p>enforce guidelines on contact with local residents.</p> <p>g. Set guidelines for prohibiting poaching and collection of plants.</p> <p>h. Provide adequate quantities and good quality food and cooking fuel.</p> <p>i. If the water is stored for drinking water should meet the WHO standards and if it is used for construction purpose then it should be clearly demarcated.</p> <p>j. No domestic pets or livestock are allowed on the site.</p>		<p><u>followed as standard procedure.</u> Domestic livestock can be seen at site off and on, but the camps are away and are protected, so no entrance was seen during site visit.</p> <p>Please see Photos-(9),(10)</p>
<p>Material handling use and storage</p>	<p>a. Material should be appropriately secured to ensure safe passage b/w the destinations during transportation. Loads shall have proper cover to prevent spillage and contractor is responsible for any clean up resulting from failure.</p> <p>b. Materials from borrow site should be directly transported and deposited to the site where it has to be used. Stockpiles should be positioned and sloped to create less visual impact. No foreign materials generated or deposited should remain on the site after completion of the activity and the areas affected by stockpiling should be reinstated.</p> <p>c. Over spray of bitumen products outside the road surface on the road, vegetation should be preventing.</p> <p>d. Concrete mixing on the ground shall not be allowed.</p> <p>e. Pre-wet gravel when not available during the dry</p>	<p>Dust pollution</p>	<p><u>FWO staffs have been advised for safe passage of dumpers which usually carry materials.</u> No concrete batching plant is present nor any water storage observed at site.</p> <p><u>Loads vehicles have not proper cover to prevent spillage.</u> The concrete mixing on the ground is not found at site. <u>The contaminated water disposals are not appropriate.</u> Generally the Sub Contractors do not follow the Material handling protocols at sites, especially at culverts construction sites.</p> <p>Please see photos(1,2,3,4,5,6,7,8,11,12)</p>

	<p>season and store gravel in a way that will keep it wet, for instance, covered with plastic sheeting.</p> <p>f. Avoid using sensitive areas or sites that drain directly into a sensitive area.</p> <p>g. All runoff from batching plant should be strictly controlled and cement contaminated water should be collected, stored and disposed of at the designated site.</p> <p>h. Used empty cement bags should be collected and stored to deliver these to recycling plant.</p> <p>i. Contaminated water storage facilities should not be allowed to over flow and appropriate protection from rain should be implemented.</p>		
<p>Materials extraction Quarrying , logging</p>	<p>a. Identify the most environmentally sound source of materials that is within budget.</p> <p>b. Use materials from local road cuts first but only if it produces a suitable, durable aggregate for embankment fill, or surface stabilization materials.</p> <p>c. On removal of materials, the area should be restored and be treated with erosion control measures.</p> <p>d. Develop logging quarrying and borrowing plans and take into account accumulative effects.</p> <p>e. Take photos of site before initiating excavation, that restoration can match the original site characteristics as much as possible. Site quarries and gravel pits so that</p>	<p>Change in landscape & Creation of water ponds</p>	<p><u>FWO officials are not sharing and providing their logging, quarrying and borrowings plans nor any relevant photos</u></p> <p><u>At new quarry area at km 2+0, no dangerous terrain was observed during site visit. However, FWO staff does not care the safety protocols.</u> Therefore, advised to follow safety protocol while working. Apparently no risk of falling rocks or debris at this site was observed.</p> <p>During site visit, it was observed that in previous quarry area near km 6+50, no rehabilitation work has been made with respect to quarry logging environmental protocols. It is required to level and refill adjacent previous quarry sites for sustainable use. It was also advised to FWO staff to make drainage ways where ever applicable. But till the time no action has been taken in this regard. Moreover, the local inhabitants of the area should be consulted for better use of these quarry areas after completion.</p>

	<p>they are not visible to travelers on the roads,</p> <p>f. Monitor adherence to plans and impacts of extraction and modify as necessary.</p> <p>g. Restore area so it is suitable for sustainable use after extraction is completed.</p> <p>h. Install drainage structures to direct water away from pits.</p> <p>i. Implement safety protocols to minimize risks from falling rock or debris, collapsing quarry walls or accidental falls from clefts.</p> <p>j. Discuss with local community the option of retaining walls pits as water collection ponds for cattle, crops or similar use.</p>		<p>During excavation process in the quarry area near Km 6+50, has resulted in the opening up of some graves. It was the responsibility of the contractor to stop the work at site immediately and should restore the damaged graves with proper protective measures. Due to this negligence of contractor, social problems may arise. It has been emphasized on FWO to rectify/resolve this issue on top priority to avoid social conflict.</p> <p>At the time of incidence, Mr Hanif L Niak (FWO) was present at site. (Photo # 13, 14,15,16,17,18)</p>
<p>Site clearing or leveling</p>	<p>a. Minimize disturbance of native flora during construction.</p> <p>b. Minimize the amount of clearing of small areas for active work one at a time.</p> <p>c. Avoid use of herbicides. Any use should follow health and safety procedures to protect people and the environment.</p> <p>d. Herbicide should be used according to the manufacturer specifications</p> <p>e. Clear without destroying large plants and turf where possible and preserve for replanting in temporaries nurseries.</p> <p>f. Move earth and vegetation only during dry periods, Store top soil for re-spreading if vegetation must remove during wet periods; disturb ground only just before the actual</p>	<p>Loss of vegetation, soil erosion and stability , surface water pollution and occupational health of workers and community</p>	<p>As the area is almost rugged and without vegetation, so there is no impact on vegetation at site. Moreover at present time, the excavation is continuing at the shoulders of the existing road which is already cleared.</p> <p>The plantation along the whole Jamrud-Torkham road should be started with specific species identified according to the provision in Environment Management Plan.</p> <p>In this respect FWO should coordinate and facilitate forest department.</p> <p>There is no herbicides use at site and the soil conservation measures are also not required up to KM 10+000 as the area is leveled and the soil is consist of sand, silt and gravels which are more compacted.</p>

	<p>construction.</p> <p>g. Use erosion control measures such as hay bales</p> <p>h. Re-vegetate the recovered plants and other appropriate local flora immediately after equipment is removed from site.</p>		
<p>Excavation , cutting , and filling</p>	<p>a. Cover Pile with plastic sheeting, prevent run off with hay bales, or use similar measures.</p> <p>b. Place fence around excavation.</p> <p>c. Investigate shallow over excavation and no excavation alternatives.</p> <p>d. Have construction crews and supervisors be alert for buried historic, religious, and cultural objects and provide them with procedures to follow if such objects are discovered. Provide incentives for recovery of objects and disincentives for their destruction.</p> <p>e. Ensure excavation is accompanied by well-engineered drainage.</p> <p>f. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flow in channels.</p> <p>g. Use good engineering practices, for instance don't use soil alone. First lay a bed of rock and gravel.</p> <p>h. Balance the cuts and fills whenever possible to minimize the earth work movement.</p> <p>i. Water sprinkling should be carried out at the temporary access road and all the areas prone to dust pollution.</p>	<p>Soil erosion and stability and surface water contamination</p>	<p>The excavation is only done at the shoulders of the existing road in shallow depth of about one foot. Others mitigation measures are either appropriate or not required.</p> <p>At Km 5+630, excavated materials had been placed at graveyard from very long time. To avoid local conflict, advised FWO site Engineer time and again to shift the excavated material to some other suitable place. But no action has been taken till this site visit.</p> <p>At Km 2+600, where excavation of road shoulder is in process, main drain along the road is blocked near Total patrol pump</p> <p>Excavation of culvert at Km 4+600, in middle of Jamrud bazaar, has stopped drain passage due to which sewerage water is stagnant along the road. Moreover, temporary arrangement for drainage water and local access for community in case of emergency is very necessary. Therefore, time and again asked FWO staff to direct subcontractor for arrangements of these remedies to local people and also for early completion of this culvert to minimize the hardships of the people of Jamrud bazar.</p> <p>At construction of culvert on the west side of Jamrud Bazar at Km 4+650, the same difficulties were found.</p> <p>During excavation process at culverts sites (all locations), require fence around and a well engineering drainages for flow line of watershed, proper dumping of excavated material and sprinkling of water.</p> <p>Please see photo</p>

		(1,2,3,4,5,6,7,8,11,12)	
Traffic Control	<ul style="list-style-type: none"> a. Efforts should be made to accommodate the traffic along the road as far as practically possible. b. Provision of sign boards directing the drivers about the diversions. c. Contractor staff could be trained and put on the duty to manage the traffic during the construction activates taking place along the road. d. Temporary by pass if possible should be avoided as involved clearing of land. e. Max allowable speed for heavy machinery on the site should not exceed 20Km/hr. f. Keep road partly closures to a minimum Maintain safe passage of vehicles/pedestrians at all times g. Conduct work that requires road closure at times when traffic volume is low h. Schedule truck sand deliveries for periods of low traffic 	Health and Safety for the local population and workers.	<p>As far Traffic control is concerned, it can flow along the road or on the same road or at diversions. FWO has arranged diversions as well as existing kacha tracks along the road for traffic management but saw <u>no proper signboard</u> at any such location. Therefore, asked FWO official to clearly mark all diversion by installing temporary sign boards (having light reflecting materials for night time) for driver's guidance.</p> <p>Advised FWO staff for arrangement of water sprinkling and speed breakers at diversions and residential areas.</p> <p>The contractor's personnel at construction sites also help in traffic control. Heavy machinery speed was not checked on spot but due to activities under way, heavy machinery cannot move faster.</p> <p>At the road, heavy vehicles like containers are mostly found, those need speed check and other traffic arrangements.</p>
Blasting	<ul style="list-style-type: none"> a. Minimize blasting. b. Take safety precautions to protect workers and others from being injured by flying or falling rocks and avalanches and c. Provide Person protection equipments to the workforce. 	Noise pollution and occupational safety	There is no blasting at present stage, therefore, no action is required.
Source of building materials	<ul style="list-style-type: none"> a. Develop logging, quarrying and borrowing plans that take into account cumulative effects b. Monitor adherence to plans and impacts of extraction practices. Modify as necessary 	Damage aquatic ecosystems erosion , siltation, Harm terrestrial ecosystems and vector-borne diseases	At material extraction sites (Quarry) near Km 6+190 and 2+00, the area has not been restored and leveled. Asked FWO person at site for leveling and refilling the adjacent previous quarry sites for sustainable use and for making drainage ways, where applicable. The local

	<ul style="list-style-type: none"> c. Fill in quarries and pits before abandoning d. Control runoff into pit 		<p>inhabitants of the area should be contacted for better use of these quarry areas. Moreover, no safety protocols have been seen or followed at quarry sites.</p> <p>Please see photo. (13,14,15,16)</p>
Dust	<ul style="list-style-type: none"> a. Water spraying b. trucks should be covered with tarpaulins 	Nuisance to the public, undermining the air quality and water contamination	<p>Water spraying at diversions sites and residential areas was not appropriate on the date of visit. Advised FWO staff for regular sprinkling of water at diversion roads and along all the kacha tracks, especially at residential areas.</p> <p>Please see Photo.(19)</p>
Borrow Areas	<p>These impacts are reversible through a diligent restoration process which must be put in place by the contractor and approved by the Highway Division.</p>	Landscape rugged and interfere with the aesthetics of the area; pose danger to livestock and children; hold stagnant water and they take up agricultural land.	<p>There were no activities at site regarding borrow area use. Moreover, barrow areas are still to be identified, if required.</p>
Damages of existing infrastructure	<ul style="list-style-type: none"> a. Locate different infrastructure on opposite side of road b. Determine locations of water pipes, electricity pylons etc. and design scheme to avoid damages. 	Facilities to the locals	<p>The officials of PTCL and FWO were asked to care the cables at the time of excavation at sites, especially at culverts. It was also advised to FWO/NESPAK personals that PTCL Department must be informed before starting excavation activities.</p>
Health & Safety of the workers	<ul style="list-style-type: none"> a. Prepare and implement a site Health and Safety Plan. b. Exclude the public from site; c. Ensure that workers use Personal Protective Equipment d. Provide Health & Safety Training (including process of transmission of HIV/AIDS) for all personnel; e. Follow documented procedures for all site activities; f. Keep accident reports 	Workers and the public are at risk from accidents on site	<p>The contractor FWO generally follows Health and Safety requirements in the camps but does not keep H&S requirements at sites where construction works are being carried out. Therefore, asked FWO officials to prepare H&S plan and care the H & S protocols at site also and prepared documentation records about the accidents, illness and treatments etc.</p> <p>It is very necessary to provide H&S trainings to the workers and ensure personal protective equipment's to all the workers including the sub contractor's</p>

	and records		labors.
Local Employment	Contractor' should employ at least 50% of workforce from communities in vicinity of work site	Economic benefits of local people	Being an Army organization, the contractor FWO has regular employees. In case of subcontract/sublet of any small component to local contractor, local labor is hired.
Others like Resettlement Concerns etc	<ul style="list-style-type: none"> a. Resettlement if any b. Access roads or pedestrian of local peoples c. Infrastructure like telephone line, sewerage, water supply disturbance etc d. Social Conflict with locals 	Social and Resettlement Management	<p>The Peshawar Torkham road construction is continuing on existing road corridor, therefore, no resettlement issue is involved. Infrastructure like access roads of local people, sewerage, telephone line etc requires proper care and management. The Social problems observed during the visit are given below, which may kindly be address accordingly.</p> <ul style="list-style-type: none"> - During excavation in the quarry area near Km 6+50, some graves were explored but the contractor did not repair these graves. It was the responsibility of the contractor to stop the work at site immediately and should restore the damaged graves with proper protective measures. Due to this negligence of contractor, social problems may arise. At the time of incidence, Mr Hanif L Niak (FWO) was present at site. (Photo # 17,18) - Main drain blockage due to construction activities at km 2+700 near Total Petrol Pump (Photo # 20,21,22) - Stagnant water in residential area along the road at km 2+00 (Photo # 23,24) - Stagnant water though no construction activities at km 4+850 (Photo # 25,26) - Dumping excavated material in the grave yard at km 4+850 (Photo # 27) - Solid Waste dumping and standing water in front of houses along the road due

			<p>to construction activities (km1+600) (Photo # 28,29)</p> <ul style="list-style-type: none"> - At culvert site near km 4+625 at Jamrud bazaar, the people are in great trouble due to road closer, especially at the time of emergency. Therefore, advised FWO staff to construct culvert as soon as possible. Moreover, temporary arrangement for sewerage water disposal and access road for emergency may be arranged. - At km 6+648, where culvert is under construction, the surrounding population of the area demanded for construction of stairs at both ends of the culvert, to provide safe under passage to school children for crossing the road, as there is heavy traffic load and rush on this road. This type of demand is also from other sites. Therefore construction of stairs for passage of children's in the culverts places, near the residential areas may kindly be considered.
Operation and Maintenance of newly constructed road			
Road maintenance	<ul style="list-style-type: none"> a. Monitor and Maintain drainage structures and ditches including culverts. Clean out culverts and side channels. b. Fill mud holes and pot holes with good quality gravels, removed downed trees and limbs obscuring road ways. c. Use water from settling basin and retention ponds for road maintenance. 	Road Maintenance	No segment of the road construction has been completed.
Use and maintenance	Install concrete pads, drains and oil/water	Water and soil pollution	NA

of equipment's	separators in areas where vehicles and equipment maintenance and fueling will occur regularly.		
Accidents of hazardous materials	<ul style="list-style-type: none"> a. In case of spill, there should be a relevant department dealing with it. in accordance with emergency plan ; b. A road administration department should be established after the completion of the project which will administer the hazardous substances 	Accidents cases	NA
Vehicle management	<ul style="list-style-type: none"> a. Vehicle with excessive noise should be prohibited to travel on the road. b. Public should be educated about the noise and the air pollution and how to keep the road clean. 	Visual inspection	NA

ENVIRONMENTAL COMPLIANCE REPORT # 02

1. **Date of visit:** 26th March, 2013
2. **Environmental Compliance Officer:** Shabir Ahmad Khan
3. **Filed Monitor Social :** Muhammad Rahman
4. **Road Section under Construction:** Section Km 0+000 to Km 9+000
5. **Persons Consulted at Site:**
 - i. Mr Mehdi Hassan surveyer FWO
 - ii. Mr. Saeed Surveyer NESPAK
 - iii. Mr Masood Ahmad Site Supervisor FWO
 - iv. Mr. Hassan Survey Helper FWO

6. Work Position:

- Work Under way.
- Work Stopped
- Work Completed

7. Quality of Environment Compliance:

- ❖ Good
- ❖ Satisfactory
- ❖ Poor

8. Issues:

- (k) No sprinkling of water on road's diversion and near the residential areas.
- (l) Land leveling and refilling of adjacent previous quarry sites for sustainable use.
- (m) People demanded for constructions of stairs at some places of culvert's construction.
- (n) Drainage problems at culvert's construction sites and quarry areas.
- (o) Non availability of Environment Specialist/ Expert on site from FWO / NESPAK side.
- (p) No Health and Safety arrangement at working sites.
- (q) No road's traffic signs and speed checking for the safety of people.
- (r) No records of EHS (Environment, Health and Safety) plans.
- (s) Non availability of personal protective equipment

9. Recommendation/Instructions:

Please see advices and directions in detail at attached "Environmental Monitoring Check List".

Environmental Monitoring Check List for the Site

Activity	Mitigation Measures	Monitoring indicators	Observations
Construction Phase			
Use of heavy equipment	<ul style="list-style-type: none"> h. Minimize use of heavy machinery. i. Set protocols for vehicle Maintenance. j. Monitoring and cross checking of fuel level deliveries and use. k. Checking pipes and joints for leaks. l. Tightening generator and fuel lines. m. Preventing over filling of main storage and vehicle tanks. n. Heavy equipment should not be parked under the tree to avoid soil compaction and damage to the roots of the trees. 	Soil contaminations, stability and erosion	<p>FWO staff and site supervisors always maintain the machinery in good condition. Heavy machinery is parked in fenced area near the main camp at Jamrud. As this area has no vegetation/trees, therefore, no vegetation damage has occurred.</p> <p>Usually heavy machinery is used for carrying material from quarry area, therefore, advised FWO staff to always follow the compacted routes. FWO Machinery normally gets its maintenance inside the camps. Advised to set protocols for vehicle maintenance and regular inspection may please be carried out by the H&S Inspector.</p>
Flood protection	<ul style="list-style-type: none"> e. Culverts should be provided to control flood damages and provision of safety of Embankments. f. Road protection work along the river side. g. Construction of retaining wall h. New causeways for the smooth flow of water during rainy seasons and flooding. 	Site inspection	<p>The different types of flood protection measure works as a part of road improvement have been started like culverts, retaining walls for smooth flow of water during rainy season and sewerage disposal.</p> <p>During site visit, it was noticed that no temporary arrangements have been made for disposal of flood and sewerage water nor any protection measures have been adopted for safety of other infrastructure like telephone cables etc. There is no arrangement for solid waste disposal at site. Advice FWO staff for protection of public infrastructures and following the Environment Health and Safety protocols time and again. (Km 2+295, Km 3+550, Km 3+080). Please see photos (30,31,32)</p>
Handling and transportation of hazardous waste	<ul style="list-style-type: none"> e. Prevent dumping of hazardous materials especially near villages and water bodies. 	Soil Contamination and Safety	No action is required at present stage.

	<ul style="list-style-type: none"> f. Burn waste oil that is not readily reusable. g. Recyclable material don't contain heavy metals that are inflammable, investigate and use less toxic alternative products. h. Prohibit use of waste oil as cooking oil. 		
<p>Handling of solid Waste</p>	<ul style="list-style-type: none"> h. Site manager would be responsible for the collection and disposal of solid waste. i. Training of site personnel in waste management and chemical waste handling procedures. j. Separation of chemical waste for special handling. k. Recording system for the amount of waste generated recycled and reused. l. Proper storage and site practices to minimize the potential for damage or contamination of construction materials. m. General refuse would be stored in enclosed bins to separate from construction materials n. A reputable waste collection firm should be engaged by the contractor to remove the general refuse from the site. 	<p>Toxicity, Soil Contamination and Pollution</p>	<p><u>No waste segregation observed at construction site</u> nor any records regarding solid waste management had been shared till the time.</p> <p>The construction materials in the main store are generally stored in good condition to minimize the chance of damage to them. However the construction material at sites is not stored/placed in proper form. The sub Contractors also does not follow Environment, Health and Safety protocols.</p> <p>Although mixing of refuse with construction material not found at site but at the same time <u>no special bins or collector have been seen to collect refuse systematically.</u> It has been advised, especially to the subcontractors having contracts of culverts, to provide solid waste storage bin at their respective sites.</p> <p>No chemical waste has been seen in the project area.</p>
<p>Construction crews and camps</p>	<ul style="list-style-type: none"> k. Explore off – site accommodations for crew, keep camp size in containers or specific facilitated position. l. Avoid as much clearing of vegetation as possible. m. Provide temporary sanitation on site such as pit latrines (assuring the water table is enough and soil and geology of appropriate composition). n. Use local or regional labor. 	<p>Surface and ground water pollution and conflicts with locals.</p>	<p>Both construction crews and camps are maintained in a best manner at army accommodation, where all required facilities like washrooms, kitchen, TV lounge, café shop etc are available. These army camps have recently renovated by the FWO for the labor camps. The quality of food provided is good. Others protocols like hygienic water etc are satisfactory.</p> <p>Sub-contractor and some workers are local inhabitants of</p>

	<ul style="list-style-type: none"> o. Screen potential crew members of HIV and tuberculosis. p. Provide education and enforce guidelines on contact with local residents. q. Set guidelines for prohibiting poaching and collection of plants. r. Provide adequate quantities and good quality food and cooking fuel. s. If the water is stored for drinking water should meet the WHO standards and if it is used for construction purpose then it should be clearly demarcated. t. No domestic pets or livestock are allowed on the site. 		<p>the area. FWO staff is educated and follow strict guidelines from their senior to interact with locals. <u>The guidelines for removal of trees have not been provided to be followed as standard procedure.</u></p> <p>Domestic livestock can be seen at site off and on, but the camps are away and are protected, so no entrance was seen during site visit.</p>
<p>Material handling use and storage</p>	<ul style="list-style-type: none"> j. Material should be appropriately secured to ensure safe passage b/w the destinations during transportation. Loads shall have proper cover to prevent spillage and contractor is responsible for any clean up resulting from failure. k. Materials from borrow site should be directly transported and deposited to the site where it has to be used. Stockpiles should be positioned and sloped to create less visual impact. No foreign materials generated or deposited should remain on the site after completion of the activity and the areas affected by stockpiling should be reinstated. l. Over spray of bitumen products outside the road surface on the road, vegetation should be preventing. m. Concrete mixing on the 	<p>Dust pollution</p>	<p>Material securing, load prevention of spillage and other visual impacts should be reduced as possible by appropriate measures. FWO staffs have been advised for safe passage of dumpers which usually carry materials. No concrete batching plant is present nor any water storage observed at site. <u>Loaded vehicles have not proper cover to prevent spillage.</u> The concrete mixing on the ground is not found at site. <u>The contaminated water disposals are not appropriate.</u> Generally the Sub Contractors do not follow the Material handling protocols at sites, especially at culverts construction sites.</p>

	<p>ground shall not be allowed.</p> <p>n. Pre-wet gravel when not available during the dry season and store gravel in a way that will keep it wet, for instance, covered with plastic sheeting.</p> <p>o. Avoid using sensitive areas or sites that drain directly into a sensitive area.</p> <p>p. All runoff from batching plant should be strictly controlled and cement contaminated water should be collected, stored and disposed of at the designated site.</p> <p>q. Used empty cement bags should be collected and stored to deliver these to recycling plant.</p> <p>r. Contaminated water storage facilities should not be allowed to over flow and appropriate protection from rain should be implemented.</p>		
<p>Materials extraction Quarrying , logging</p>	<p>k. Identify the most environmentally sound source of materials that is within budget.</p> <p>l. Use materials from local road cuts first but only if it produces a suitable, durable aggregate for embankment fill, or surface stabilization materials.</p> <p>m. On removal of materials, the area should be restored and be treated with erosion control measures.</p> <p>n. Develop logging quarrying and borrowing plans and take into account accumulative effects.</p> <p>o. Take photos of site before initiating excavation, that restoration can match the</p>	<p>Change in landscape & Creation of water ponds.</p>	<p><u>FWO officials are not sharing and providing their logging, quarrying and borrowings plans nor any relevant photos</u> <u>At new quarry area at km 2+0, no dangerous terrain was observed during site visit. However, FWO staff does not care the safety protocols.</u> Therefore, advised to follow safety protocol while working. Apparently no risk of falling rocks or debris at this site was observed. <u>During site visit, it was observed that in previous quarry area near km 6+050, no rehabilitation work has been started with respect to quarry logging environmental protocols. It is required to level and refill adjacent previous quarry sites for sustainable use.</u> It was also advised to FWO staff to construct drainage ways where ever applicable. But till</p>

	<p>original site characteristics as much as possible. Site quarries and gravel pits so that they are not visible to travelers on the roads,</p> <p>p. Monitor adherence to plans and impacts of extraction and modify as necessary.</p> <p>q. Restore area so it is suitable for sustainable use after extraction is completed.</p> <p>r. Install drainage structures to direct water away from pits.</p> <p>s. Implement safety protocols to minimize risks from falling rock or debris, collapsing quarry walls or accidental falls from clefts.</p> <p>t. Discuss with local community the option of retaining walls pits as water collection ponds for cattle, crops or similar use.</p>		<p>the time no action has been taken in this regard. Moreover, the local inhabitants of the area should be consulted for better use of these quarry areas after completion.</p> <p>In previous visit, we have pointed out the opening of graves during excavation process in quarry area near Km 6+050. To avoid any social issues, It was advised to FWO staff to restore the damaged graves with proper protective measures. During recent visit we observed that the contractor had tried to cover the graves but these had not been properly protected and covered. Therefore, once again it is reminded to FWO staff to rectify/resolve this issue on top priority base to avoid social conflict. Due to this negligence of contractor, social problems may arise.</p> <p>(Photos-33,34,35,36)</p>
<p>Site clearing or leveling</p>	<p>i. Minimize disturbance of native flora during construction.</p> <p>j. Minimize the amount of clearing of small areas for active work one at a time.</p> <p>k. Avoid use of herbicides. Any use should follow health and safety procedures to protect people and the environment.</p> <p>l. Herbicide should be used according to the manufacturer specifications</p> <p>m. Clear without destroying large plants and turf where possible and preserve for replanting in temporaries nurseries.</p> <p>n. Move earth and vegetation only during dry periods, Store top soil for re-spreading if</p>	<p>Loss of vegetation, soil erosion and stability, surface water pollution and occupational health of workers and community.</p>	<p>As the area is almost rugged and without vegetation, so there is no impact on vegetation at site. Moreover at present time, the excavation is continuing at the shoulders of the existing road which is already cleared. The plantation along the whole Peshawar-Torkham road should be started with specific species identified according to the provision in Environment Management Plan.</p> <p>In this respect FWO should coordinate and facilitate forest department.</p> <p>There is no herbicides use at site and the soil conservation measures are also not required up to KM 10+000 as the area is leveled and the soil is consist of sand, silt and gravels which are more compacted.</p>

	<p>vegetation must remove during wet periods; disturb ground only just before the actual construction.</p> <ul style="list-style-type: none"> o. Use erosion control measures such as hay bales p. Re-vegetate the recovered plants and other appropriate local flora immediately after equipment is removed from site. 		
Excavation , cutting , and filling	<ul style="list-style-type: none"> j. Cover Pile with plastic sheeting, prevent run off with hay bales, or use similar measures. k. Place fence around excavation. l. Investigate shallow over excavation and no excavation alternatives. m. Have construction crews and supervisors be alert for buried historic, religious, and cultural objects and provide them with procedures to follow if such objects are discovered. Provide incentives for recovery of objects and disincentives for their destruction. n. Ensure excavation is accompanied by well-engineered drainage. o. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flow in channels. p. Use good engineering practices, for instance don't use soil alone. First lay a bed of rock and gravel. q. Balance the cuts and fills whenever possible to minimize the earth work movement. r. Water sprinkling should be carried out at the temporary access road and all the areas prone 	<p>Soil erosion and stability and surface water contamination</p>	<p>The excavation is only done at the shoulders of the existing road in shallow depth of about one foot. Others mitigation measures are either appropriate or not required.</p> <p>At Km 5+630, excavated materials had been placed at graveyard from very long time. To avoid local conflict, advised FWO site Engineer time and again to shift the excavated material to some other suitable place. But no action had been taken till this site visit.</p> <p>At Km 3+550 stagnant water, poor drainage and solid waste dumping along the road have been found due to the excavation of shoulders.(Please See Photo-2,3)</p> <p>Excavation of culvert at Km 4+600, in middle of Jamrud bazaar, has stopped drain passage due to which sewerage water is stagnant along the road. Moreover, irregular placement of construction material and solid waste dumping should also be removed. FWO staff should direct subcontractor for arrangements of these remedies to local people and also for early completion of this culvert to minimize the hardships of the people of Jamrud bazar.</p> <p>At construction of culvert on the west side of Jamrud Bazar at Km 4+650, the same difficulties were found.</p> <p>Stagnant water and poor</p>

	to dust pollution.		<p>drainage along the road or at center of the road, due to excavation process of shoulders at many places, is a common problem up to Km 9+000. During excavation process at culverts sites (all locations), require fence around and a well engineering drainages for flow line of watershed, proper dumping of excavated material and sprinkling of water.</p> <p>Please see photos (37, 38, 39, 40)</p>
Traffic Control	<ul style="list-style-type: none"> i. Efforts should be made to accommodate the traffic along the road as far as practically possible. j. Provision of sign boards directing the drivers about the diversions. k. Contractor staff could be trained and put on the duty to manage the traffic during the construction activates taking place along the road. l. Temporary by pass if possible should be avoided as involved clearing of land. m. Max allowable speed for heavy machinery on the site should not exceed 20Km/hr. n. Keep road partly closures to a minimum Maintain safe passage of vehicles/pedestrians at all times o. Conduct work that requires road closure at times when traffic volume is low p. Schedule truck sand deliveries for periods of low traffic 	Health and Safety for the local population and workers.	<p>As far Traffic control is concerned, it can flow along the road or on the same road or at diversions. FWO has arranged diversions as well as existing kacha tracks along the road for traffic management but observed <u>no proper signboard</u> at any such location. Therefore, asked FWO official to clearly mark all diversion by installing temporary sign boards (having light reflecting materials for night time) for driver's guidance. Advised FWO staff for arrangement of water sprinkling and speed breakers at diversions and residential areas. The contractor's personnel at construction sites can also help in traffic control. Heavy machinery speed was not checked on spot but due to activities under way, heavy machinery operate at low speed. At the road, heavy vehicles like containers are mostly found, those need speed check and other traffic arrangements.</p>
Blasting	<ul style="list-style-type: none"> d. Minimize blasting. e. Take safety precautions to protect workers and others from being injured by flying or falling rocks and avalanches and 	Noise pollution and occupational safety	There is no blasting at present stage; therefore, no action is required.

	f. Provide Person protection equipments to the workforce.		
Source of building materials	<p>e. Develop logging, quarrying and borrowing plans that take into account cumulative effects</p> <p>f. Monitor adherence to plans and impacts of extraction practices. Modify as necessary</p> <p>g. Fill in quarries and pits before abandoning</p> <p>h. Control runoff into pit</p>	<p>Damage aquatic ecosystems erosion, siltation, Harm terrestrial ecosystems and vector-borne diseases</p>	<p>At material extraction sites (Quarry) near Km 6+050 and 2+00, the area has not been restored and leveled. Asked FWO person at site for leveling and refilling the adjacent previous quarry sites for sustainable use and for making drainage ways, where applicable. The local inhabitants of the area should be contacted for better use of these quarry areas. Moreover, no safety protocols have been seen or followed at quarry sites.</p>
Dust	<p>c. Water spraying</p> <p>d. trucks should be covered with tarpaulins</p>	<p>Nuisance to the public, undermining the air quality and water contamination</p>	<p>Water spraying at diversions sites and residential areas was not appropriate on the date of visit. Advised FWO staff for regular sprinkling of water at diversion roads and along all the kacha tracks, especially at residential areas. During the site visit, dust pollution observed at Km 3+000, Km 5+900, Km 6+550 and km 8+500. Please see photos(41, 42)</p>
Borrow Areas	<p>These impacts are reversible through a diligent restoration process which must be put in place by the contractor and approved by the Highway Division.</p>	<p>Landscape rugged and interfere with the aesthetics of the area; pose danger to livestock and children; hold stagnant water and they take up agricultural land.</p>	<p>There were no activities at site regarding borrow area use. Moreover, barrow areas are still to be identified, if required.</p>
Damages of existing infrastructure	<p>c. Locate different infrastructure on opposite side of road</p> <p>d. Determine locations of water pipes, electricity pylons etc. and design scheme to avoid damages.</p>	<p>Facilities to the locals</p>	<p>The officials of PTCL and FWO were asked to care the cables at the time of excavation at sites, especially at culverts. It was also advised to FWO/NESPAK personnel that PTCL Department must be informed before starting excavation activities.</p>

<p>Health & Safety of the workers</p>	<p>g. Prepare and implement a site Health and Safety Plan.</p> <p>h. Exclude the public from site;</p> <p>i. Ensure that workers use Personal Protective Equipment</p> <p>j. Provide Health & Safety Training (including process of transmission of HIV/AIDS) for all personnel;</p> <p>k. Follow documented procedures for all site activities;</p> <p>l. Keep accident reports and records</p>	<p>Workers and the public are at risk from accidents on site</p>	<p>The contractor FWO generally follows Health and Safety requirements in the camps but does not keep H&S requirements at sites where construction works are being carried out. Therefore, asked FWO officials to prepare H&S plan and care the H & S protocols at site also and prepared documentation records about the accidents, illness and treatments etc.</p> <p>It is very necessary to provide H & S trainings to the workers and ensure personal protective equipment's to all the workers including the sub contractor's labors.</p>
<p>Local Employment</p>	<p>Contractor' should employ at least 50% of workforce from communities in vicinity of work site</p>	<p>Economic benefits of local people</p>	<p>Being an Army organization, the contractor FWO has regular employees. In case of subcontract/sublet of any small component to local contractor, local labor is hired.</p>
<p>Others like Resettlement Concerns etc</p>	<p>e. Resettlement if any</p> <p>f. Access roads or pedestrian of local peoples</p> <p>g. Infrastructure like telephone line, sewerage, water supply disturbance etc</p> <p>h. Social Conflict with locals</p>	<p>Social and Resettlement Management</p>	<p>The Peshawar Torkham road construction is being executed existing road corridor, therefore, no resettlement issue is involved. Infrastructure like access roads of local people, sewerage, telephone line etc requires proper care and management. The Social problems observed during the visit are given below, which may kindly be address accordingly.</p> <ul style="list-style-type: none"> - During excavation at quarry area near Km 6+50, some graves were open. On our previous visit instruction, the contractor repairs these graves, but not properly. Therefore, we once again request solve the issue properly otherwise social problems may arise due to this negligence. - Main drain blockage due to construction activities at km 2+700 near Total Petrol Pump

			<ul style="list-style-type: none"> - Stagnant water in residential area along the road at km 3+300. - Stagnant water and solid waste dumping at km 3+550. - Dumping excavated material in the grave yard at km 4+850. - At culvert site near km 4+625 at Jamrud bazaar, stagnant water, and haphazard placement of construction's material and solid waste dumping issues may please be resolved. - Giving consideration to the demand of local peoples, stairs may kindly be constructed at both ends of the culvert at some places near residential areas, to provide safe under passage for school children under the roadway due to heavy traffic volume and density.
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Operation and Maintenance of newly constructed road

Road maintenance	<p>d. Monitor and Maintain drainage structures and ditches including culverts. Clean out culverts and side channels.</p> <p>e. Fill mud holes and pot holes with good quality gravels, removed downed trees and limbs obscuring road ways.</p> <p>f. Use water from settling basin and retention ponds for road maintenance.</p>	Road Maintenance	No segment of the road construction has been completed.
Use and maintenance of equipment's	Install concrete pads, drains and oil/water separators in areas where vehicles and equipment maintenance and fueling will occur regularly.	Water and soil pollution	NA

Accidents of hazardous materials	<ul style="list-style-type: none"> c. In case of spill, there should be a relevant department dealing with it. in accordance with emergency plan ; d. A road administration department should be established after the completion of the project which will administer the hazardous substances 	Accidents cases	NA
Vehicle management	<ul style="list-style-type: none"> c. Vehicle with excessive noise should be prohibited to travel on the road. d. Public should be educated about the noise and the air pollution and how to keep the road clean. 	Visual inspection	NA

PROJECT PHOTOGRAPHS

PAVEMENT STRUCTURE



Lat 33; 59; 55, Lon 71; 24; 20
KM: 1+675 To 1+775 (RHS Shoulder) Sub base 1st layer compaction is in progress



Lat 33; 59; 55 .3, Lon 71; 24; 20.1
KM: 1 + 825 To 1 + 925 Sub base grading in full width is in progress



Lat 34; 0; 4.4 Lon 71; 23; 54.4

KM: 2 + 475 To 2 + 600

(LHS Half Width) Sub base 1st layer grading is in progress



Lat 34; 0; 2.8, Lon 71; 23; 12.3

KM: 3+600 To 3+700

Windrows of aggregate base course material for trial section



KM: 4+350 To 4+450

Lat 34; 0; 8.7, Lon 71; 22; 44
Ripping of existing roadbed at Bab e Khyber is in progress



KM: 4+800 To 4+925

Lat 34; 0; 7, Lon 71; 22; 34.9
(Full width) Sub base top layer grading is in progress



KM: 5 + 400 To 5 + 575 **Lat 34; 0; 9, Lon 71; 21; 56.9**
(Full Width) Sub base top layer grading is in progress



KM: 6 + 650 Detour dusty surface without traffic safety devices



Lat 34; 0; 17, Lon 71; 20; 47

KM: 7+575 To 7+725

Aggregate base course windrows for trial section



Lat 34; 0; 17.5, Lon 71; 20; 38.7

KM: 7+725 To 7+875

Sub base 2nd layer compaction is in progress

CULVERTS



Lat 34; 0; 5.4, Lon 71; 23; 50.9
KM: 2 + 611 (Culvert) Stone masonry construction is in progress



Lat 34; 0; 0, Lon 71; 23; 33.7
KM: 3 + 081 (Culvert) Stone masonry construction has been completed



Lat 34; 0; 8.7, Lon 71; 22; 44
KM: 4 + 480 (Culvert) Pouring of Class-A concrete for top slab is in progress



Lat 34; 0; 6.3, Lon 71; 22; 15.7
KM: 5 + 202 (Culvert) Stone masonry construction has been completed



Lat 34; 0; 7.9, Lon 71; 21; 49.2
KM: 5 + 905 (Culvert) Curing of top slab concrete is in progress



Lat 34; 0; 8.0, Lon 71; 21; 44.0
KM: 6 + 050 (Culvert) Stone masonry construction is in progress



Lat 34; 0; 10.876, Lon 71; 21; 25.325
KM: 6 + 501 (Culvert) Stone masonry construction of Abutments & Piers is in progress



Lat 34; 0; 11.441, Lon 71; 21; 20.862
KM: 6 + 648 (Culvert) Curing of Bearing Pad/Curtain wall is in progress



Lat 34; 0; 13.295, Lon 71; 21; 11.898
KM: 6 + 883 (Culvert) Stone masonry construction of wing wall is in progress



Lat 34; 0; 15.455, Lon 71; 20; 53.345
KM: 7 + 384 (Culvert) Stone masonry construction of abutments is in progress

FIELD TESTING



Lat 34; 0; 16.33, Lon 71; 21; 45.8

KM: 7+475 Inspection of Aggregate base course windrows by Material Engineer M&E Consultants (Trial Section)



Joint Testing of Concrete cylinder in FWO Lab:



Sub base material testing in M&E Consultants Lab:



Lat 34; 0; 1.7, Lon 71; 19; 27.8
KM: 9 + 000 Aggregate base course material Crush plant production is in progress

PHOTOGRAPHS OF ENVIRONMENTAL COMPLIANCE MONITORING



Photo # 1



Photo # 2

Construction material haphazard dumping, drainage problem and other social issues due to culvert construction at KM: 3+375 (Photo # 1, 2)



Photo # 3



Photo # 4



Photo # 5



Photo # 6



Photo # 7



Photo # 8

Stagnant sewerage water due to construction of culvert at start of Jamrud bazaar at KM: 4+600 (Photo # 3, 4, 5, 6, 7, 8)



Photo # 9



Photo # 10

View of Contractor Camp (FWO) (Photo # 9, 10)



Photo # 11



Photo # 12

Blockage of sewerage water and other social problems due to culvert construction at KM: 6+191 (Photo # 11, 12)



Photo # 13



Photo # 14



Photo # 15



Photo # 16

Stagnant water, land pits of quarry area require proper land leveling, proper drainage and reuse of land at KM: 6+50 (Photo # 13, 14, 15, 16)



Photo # 17



Photo # 18

During excavation process in the quarry area near KM: 6+50, some graves were exposed at site (near KM: 6+50) but the contractor did not repair the graves. The contractor should have stopped the work at site immediately and restore the damage graves with proper protective measures. Due to this negligence social problems may arise. At the time of incidence, Mr Hanif L Niak (FWO) was present at site. (Photo # 17, 18)



Dust Pollution at KM:1+000 (Photo # 19)



Photo # 20



Photo # 21

Main drain blockage due to construction activities at KM: 2+700 near Total Petrol Pump (Photo # 20, 21, 22)



Photo # 22



Photo # 23

Stagnant water though no construction activities at KM: 4+850 (Photo # 23, 24)



Photo # 24



Photo # 25
Stagnant water near residential area at KM: 6+100 (Photo # 25, 26)



Photo # 26



Photo # 27
Dumping excavated material in the grave yard at KM: 4+850



Photo # 28



Photo # 29



Photo # 30

Solid waste dumping and stagnant water in front of houses along the road due to construction activities (KM: 1+600) (Photo # 28, 29)

Drainage Blockage due to construction of Road at KM: 2+295 (Photo # 30)



Photo # 31

Dumped excavated and Solid Waste materials, and Stagnant water due to construction of road at KM: 3+550 (Photos-31, 32)



Photo # 32



View of new quarry area at KM: 2+000 (Photos-33, 34)



(Photo-35) View of Graves, open during excavation which is not properly cover at quarry area near KM: 6+050



(Photo-36) land pits of previous quarry area require proper land leveling, proper drainage and reuse of land at KM: 6+050



(Photos-37, 38) Dumped materials in graveyard due to construction of road near KM: 5+630



Haphazard placement of construction materials at Culvert's construction in middle of Jamrud Bazar KM: 4+600 (Photos-39, 40)



Dust due to no sprinkling water near KM: 3+00 and KM: 8+500 (Photos-41, 42)