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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 # 06



MAY 2013

M&E Consultants



AL-KASIB GROUP OF ENGINEERING SERVICES

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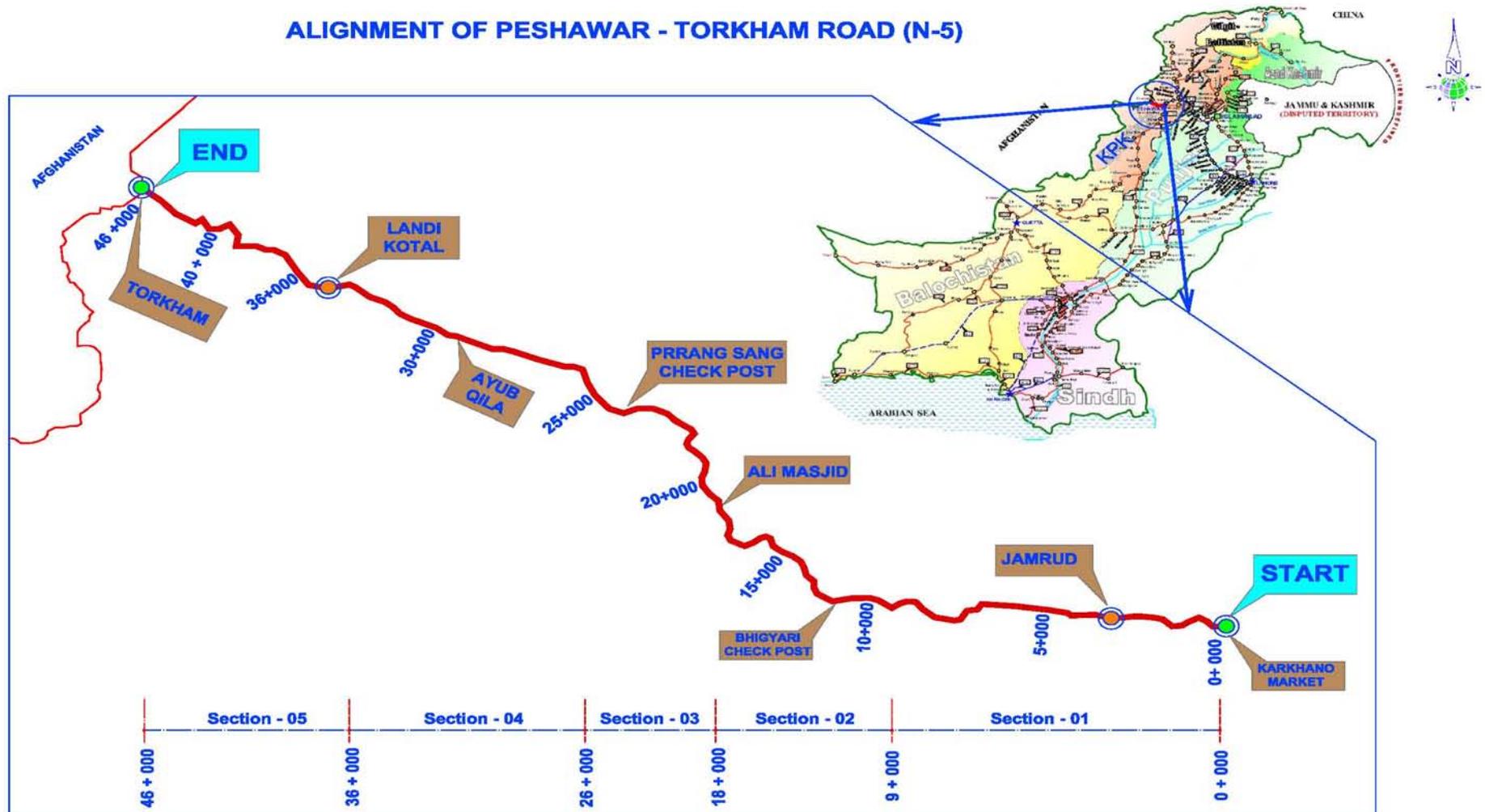
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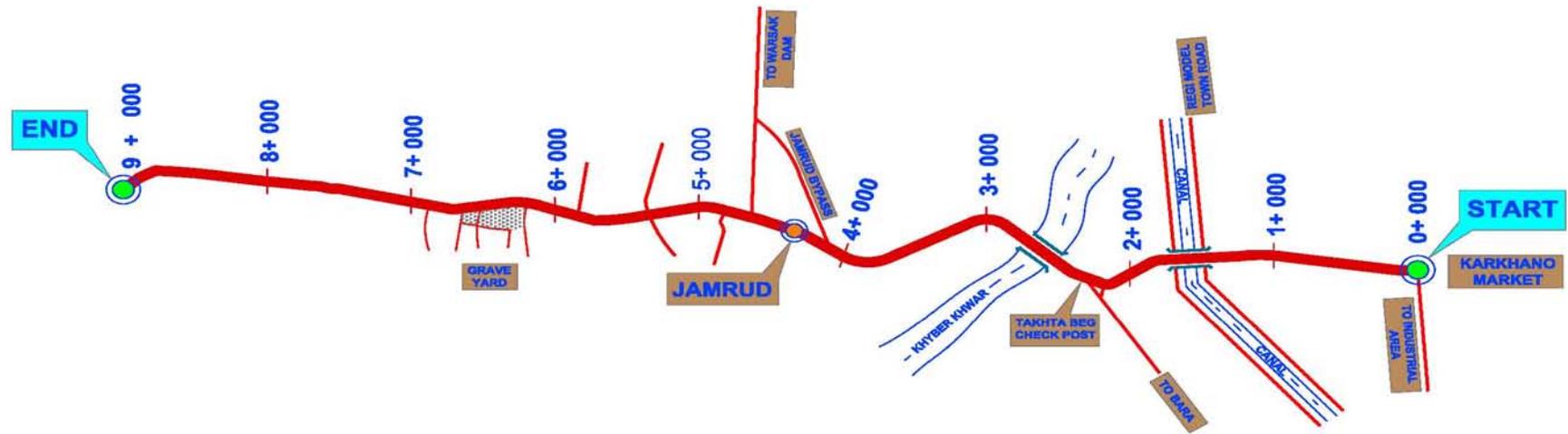
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LOCATION MAP



**ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5)
 (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 scheduled for completion by December 31 2014. To meet the deadline, the 46 KM Peshawar – Torkham road has been divided in multiple sections, so that work on different sections is carried out simultaneously. However, until now the Contractor could only 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 (09 KM) of the project were initiated by FWO on October 15, 2012. Total progress of work by end of the last month (April 2013) was 10.88 %. During the reporting month, commencement of aggregate base course and asphaltic base course activities has significantly improved the progress of work that resulted in overall progress of 22.85%. Also the contractor has proceeded with activities like earthwork and sub base preparation in section – II of the project. Project documents for section – II are yet to be approved by the competent forum.

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

- Material Testing Laboratory of M&E Consultants was made fully operational
- Quality Control tests were conducted by FWO and M&E Consultants
- Earthwork: 89.18 %
- Sub Base: 82.49 %
- Aggregate Base Course: 31.89 %
- Asphaltic Base Course: 19.56 %
- Culverts: 76.78 %
- Retaining wall: 53.53 %
- Drainage and Erosion Works: 01.34 %
- Technical staff of M&E Consultants including Environmental Compliance Officer regularly visited the site and documented their observations
- About 2.85 KM Traffic Diversion has been constructed in section-II
- Progress review meeting between FWO, NESPAK and M&E Consultants was held.

PROJECT IMPEDIMENTS & RECOMMENDATIONS

S. No	Issues	Recommendations
1	<p>Non availability of Project documents:</p> <p>According to the established procedure for project documents control as outlined in the EPC general conditions of contract, FWO is required to provide necessary project documents to the designated stakeholders to facilitate them in performing their responsibilities more effectively. In absence of such documents (design, drawings, construction schedule, diversion plan, etc.) it is very challenging to effectively monitor the progress as well as quality of construction work. Work on section - II is even in progress without having an approved PC - I.</p>	<p>Following documents should be immediately provided to M&E Consultants:</p> <p>Overall Project:</p> <ul style="list-style-type: none"> • Quality Control Plan • Work Plan <p>Section-I:</p> <ul style="list-style-type: none"> • Updated construction Schedule • Updated alignment and x-sections <p>Section-II:</p> <ul style="list-style-type: none"> • Design • Drawings • PC-1 / BOQ • Traffic Diversion Plan • Construction Schedule
2	<p>Coordination:</p> <p>Regular meetings between FWO, NESPAK and M&E Consultants are playing an important role in enhancing coordination among team members of all the three sides. It is, however, realized that information sharing among all stakeholders needs improvement. Also the turnaround time for a response is not established yet and sometime it takes even months to get information or documents. This is absolutely unacceptable for this type of project.</p>	<ul style="list-style-type: none"> • All necessary documents/information including minutes of meetings should be shared with concerned stakeholders • Check requests should be shared with M&E Consultants well on-time • In absence of work schedule, FWO is requested to inform M&E Consultants well before a critical activity (for example asphalt or concrete work) is executed; especially when work is to be done during off hours or holidays. • Communication gap among all stakeholders should be minimized. • Reasonable time for response should be established; for example 48 hours for issuance of draft minutes.

<p>3</p>	<p>Progress of work</p> <p>In Section-I, progress of work has improved with the inception of Aggregate & Asphalt base course activities. However the overall project progress is lagging behind the target schedule. One of the major reasons for slow progress is lack of an efficient and effective work plan highlighting deadlines for all critical events / milestones. Other possible reasons for the slow progress are delay in the design & drawing work, frequent design variations, ineffective construction management practices etc. It is worth-mentioning that being a very busy road, construction activities are causing inconvenience to the commuters as well as to the local residents and any delay in work will add to this concern.</p>	<p>FWO needs to analyze the current state of work, available resources, time left for the project completion, and then develop an efficient work plan both for design as well as construction activities. It is strongly recommended that at this point of time, FWO needs to work simultaneously on multiple activities, both at the design and construction stage. The contractor should prepare and implement an accelerated progress schedule that should be compatible with design/drawing preparation activities.</p> <p>In order to minimize inconvenience to the travelers and the adjoining community, the contractor needs to enhance his resources, including but not limited to construction crew and supervisory staff. FWO should strive for reducing the construction time through increased productivity.</p>
<p>4</p>	<p>Quality of work</p> <p>The Contractor is responsible for developing and implementing an effective Quality Control (QC) Plan for inspection, testing and other specified actions so that all aspects of construction work including production, transportation and placement meet the specifications. Despite a lapse of six months, the project-specific QC plan is yet to be finalized by FWO / NESPAK. Moreover FWO is encouraged to pay more focus on selection of adequate and sufficiently equipped sub-contractors and substantially improve supervision of subcontractor's works.</p>	<p>FWO / NESPAK should immediately establish and implement their QC plan, employ a QC officer as agreed in the previous fortnightly meeting with M&E Consultants, and enhance supervision of sub-contractor's works. FWO should also depute an environmental specialist who shall ensure compliance with the environmental protocols.</p> <p>Fortnightly meetings should be regularly held between FWO, NESPAK and M&E Consultants to discuss quality as well as progress of work and resolve any outstanding issues.</p>

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+00 to 46+00
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, FATA Secretariat has contracted out section – I of the project from KM: 0+000 To KM: 9+000. Work on section – II has also been initiated; however, the documentation (design, drawings, etc.) is yet to be finalized. Length of each section varies between 08 and 10KM.

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

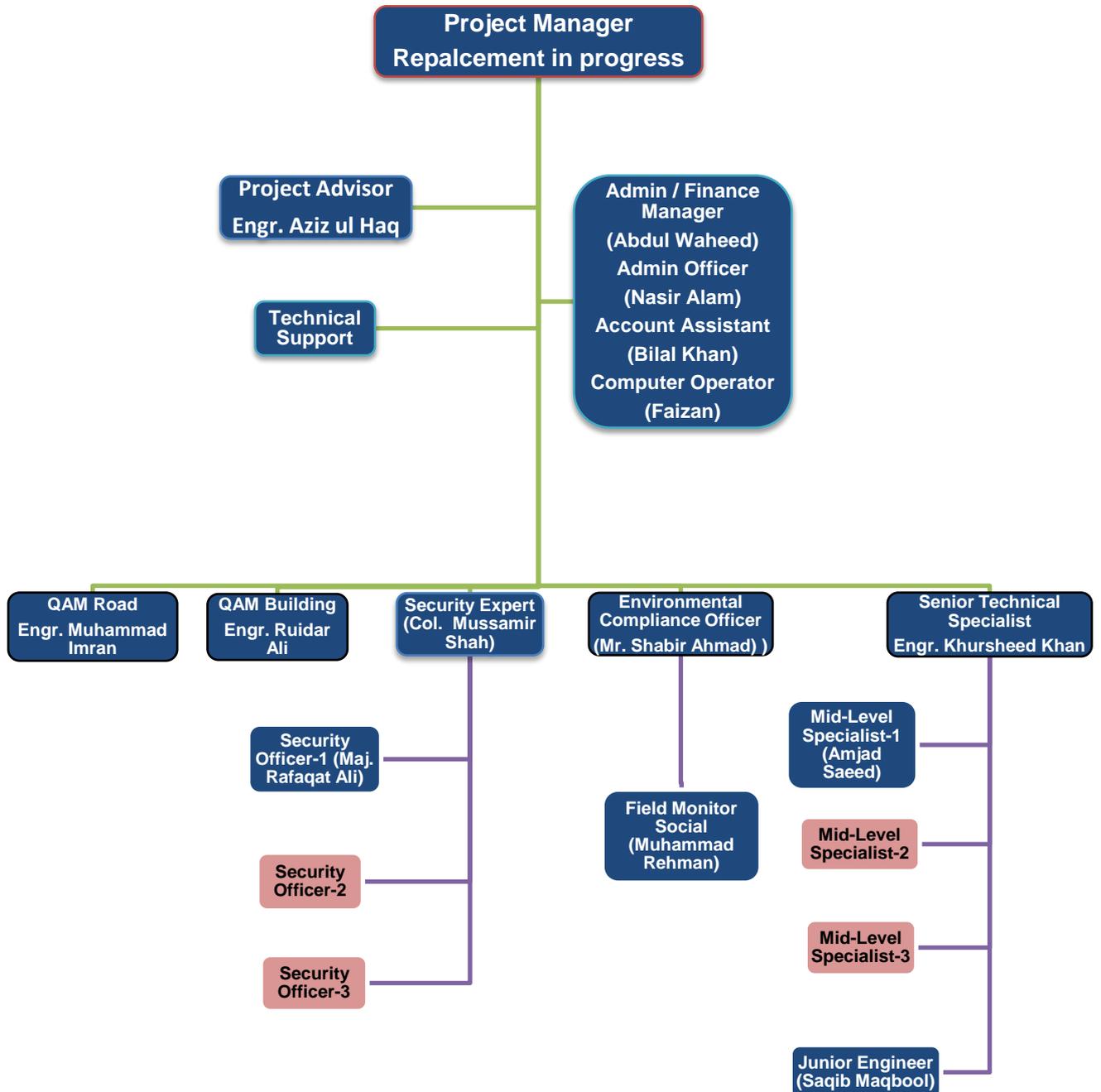
The Contract between USAID and AGES Consultants (called herein as M&E Consultants) for M&E services on the project was signed on September 30, 2012 following submission of proposal in response to RFP issued by USAID Contracting Officer. Mobilization of staff started on October 01, 2012.

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:

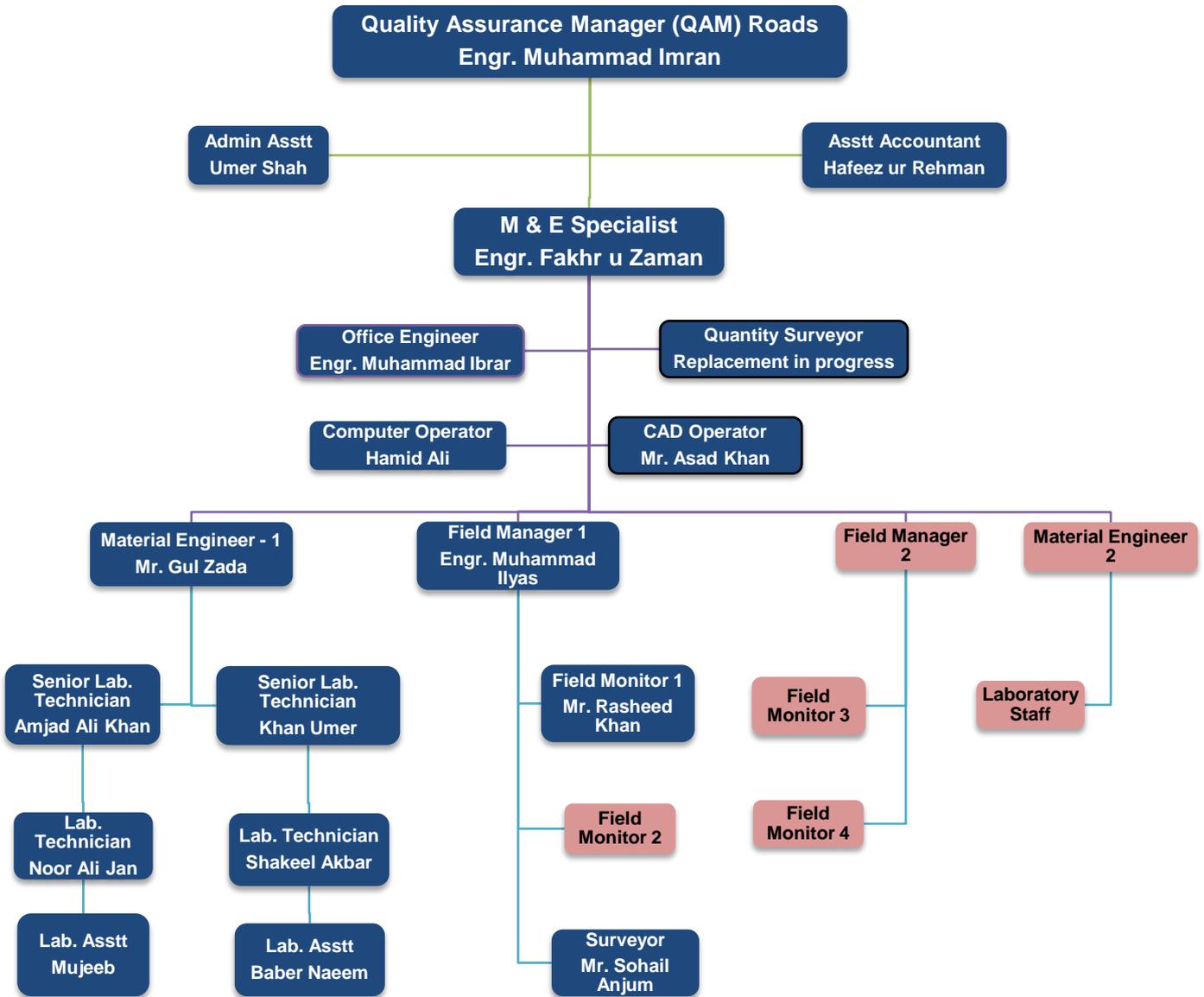


Mobilized



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 1.0m to 2.0m 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 of Section – I of the project, 14 No's of new Culverts are to be constructed while 02 No's existing Culverts are to be rehabilitated appropriately. Minor changes in location of a couple of culverts have been made as per site requirement. More-over 15 No's of service ducts as a pipe culvert are also being constructed as per demand of local community.

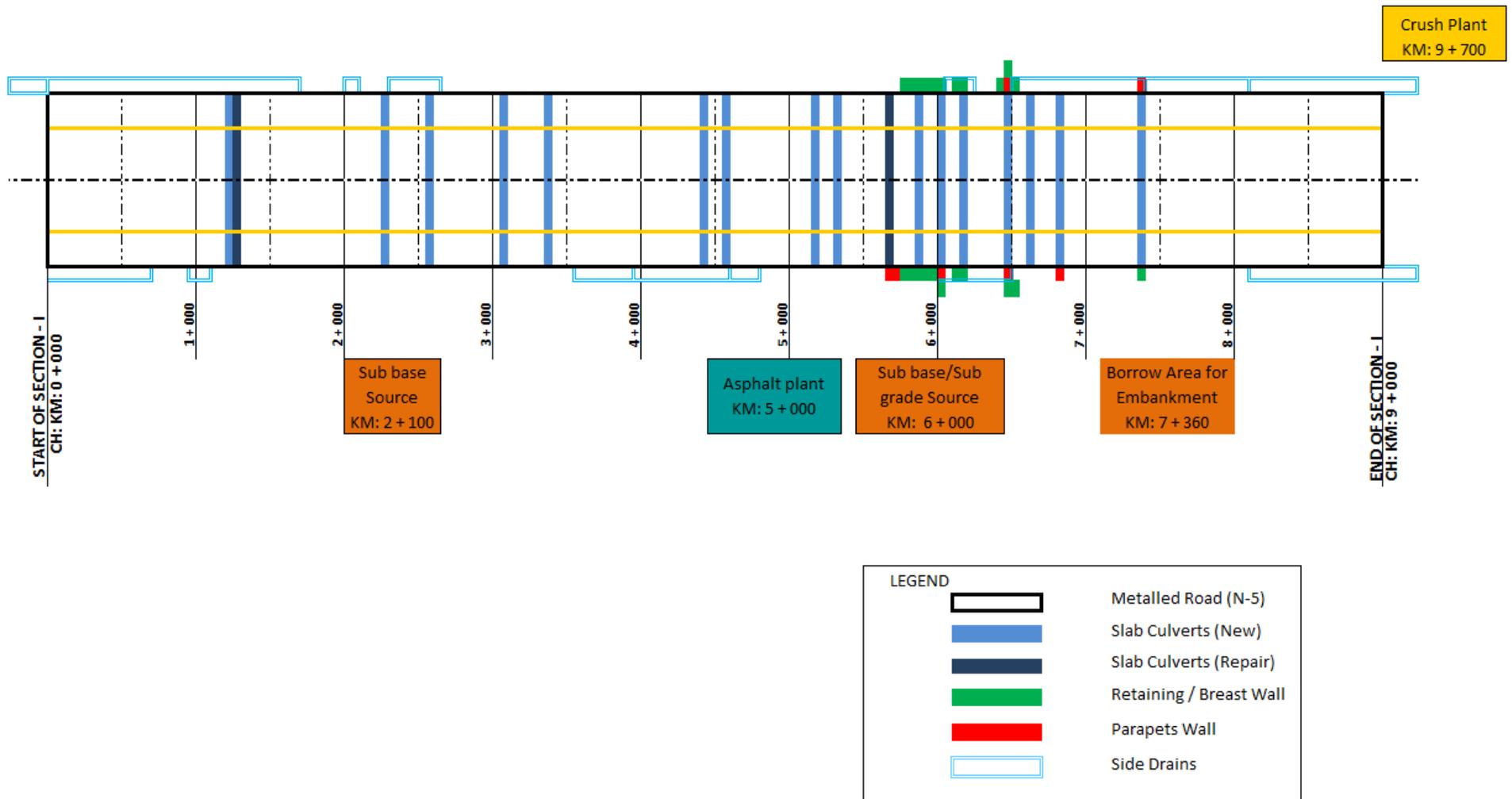
2.2 PROJECT DETAILS

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	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

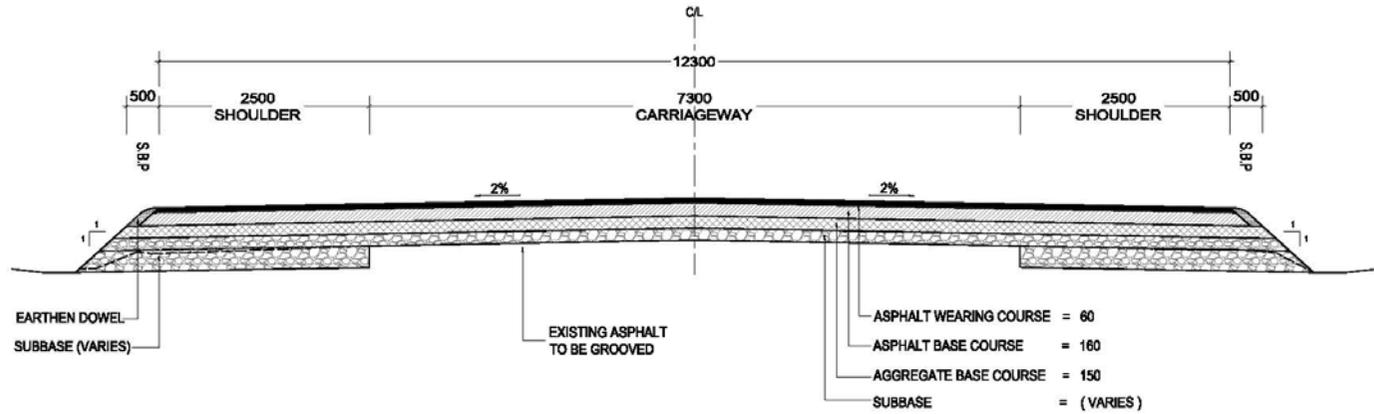
2.3 ENVIRONMENTAL COMPLIANCE

The environmental compliance officer of M&E consultants has visited the site during the month of May 2013, and compiled his observations in the form of Environmental Monitoring Report, which was submitted to USAID and is attached with this document for reference.

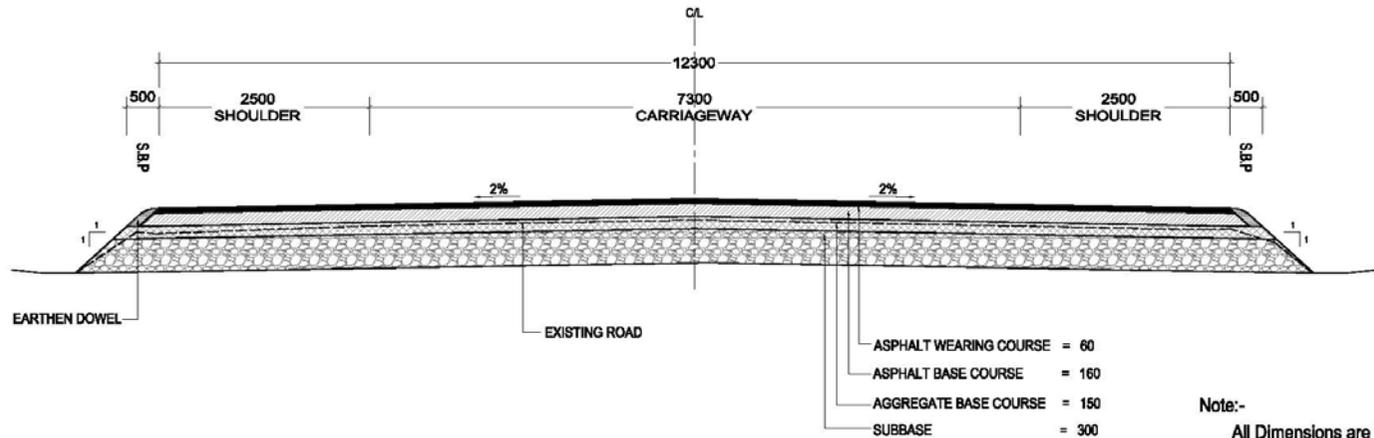
2.4 LINE SKETCH OF ALIGNMENT



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

3.2 CULVERTS PHYSICAL PROGRESS STATUS AS ON MAY 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	The proposed New Culvert Construction Deleted. The existing pipe culvert maintained under the roadway with extension on R.H.S													
1.a	-	1+940	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
2	2+290		1	2 x1.5	Location changed to KM: 2+611													
2.a	-	2+611	1	2 x1.5		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	Location changed to KM: 3+081													
3.a	-	3+425	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.b	-	3+480	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.c	-	3+500	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.d	-	3+900	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.e	-	4+180	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.f	-	4+230	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.g	-	4+550	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
3.h	-	4+615	1	450 mm dia		-		◆	◆		◆	◆					Pipe Culvert	
4	4+460	4+480	1	3 x 1.5	14.1	15.00 - 20°(Skew)	◆	◆	◆	◆	◆	◆				◆		

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
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
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
14.c	-	8+400	1	450 mm dia		-		◆	◆		◆	◆						Pipe Culvert
14.d	-	8+450	1	450 mm dia		-		◆	◆		◆	◆						Pipe Culvert
14.e	-	8+700	1	450 mm dia		-		◆	◆		◆	◆						Pipe Culvert
14.f	-	9+000	1	450 mm dia		-		◆	◆		◆	◆						Pipe Culvert

Legend:

△	In Progress
◆	Completed

PROGRESS IN PERCENTAGE

4.1 SUMMERY: BILL OF QUANTITIES

MONTH: MAY 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	3,660,808.47	83.27	259,745.63	5.91	3,920,554.09	89.18
2	SUB BASE AND BASE COURSE	417,440,419.46	50,425,555.16	12.08	86,299,327.32	20.67	136,724,882.48	32.75
3	SURFACE COURSES AND PAVEMENT	148,248,125.37	770,825.25	0.52	2,348,699.91	1.58	3,119,525.16	2.10
4a	STRUCTURES (RETAINING WALL/BREAST WALL)	2,990,459.56	271,862.96	9.09	1,328,799.20	44.43	1,600,662.15	53.53
4b	STRUCTURES (CULVERTS)	34,156,831.05	25,484,271.74	74.61	742,724.61	2.17	26,226,996.35	76.78
5a	DRAINAGE & EROSION WORKS (ROAD SIDE DRAIN)	146,629,248.32	1,466,595.81	1.00	492,535.38	0.34	1,959,131.19	1.34
5b	ROAD PROTECTION WORKS	851,203.80	-	-	-	-	-	-
6	ANCILLARY WORKS	4,189,586.08	-	-	-	-	-	-
7	DIVERSION	9,000,000.00	1,583,000.00	17.59	527,000.00	5.86	2,110,000.00	23.44
8	RELOCATION OF UTILITIES	900,000.00	-	-	-	-	-	-
Sub Total - Construction Cost		768,802,195.13	83,662,919.38	10.88	91,998,832.05	11.97	175,661,751.43	22.85
INDIRECT COST	Contingencies @ 0.5% of Total Construction Cost	3,844,010.98	418,314.60	10.88	459,994.16	11.97	878,308.76	22.85
	EPC Turnkey Cost	-	-	-	-	-	-	-
	- Design , Consultancy & Supervison 6%	46,128,131.71	5,019,775.16	10.88	5,519,929.92	11.97	10,539,705.09	22.85
	- Risk of Quantity Variation @7%	53,816,153.66	5,856,404.36	10.88	6,439,918.24	11.97	12,296,322.60	22.85
	- Market Fluctuation @ 4.5%	34,596,098.78	3,764,831.37	10.88	4,139,947.44	11.97	7,904,778.81	22.85
	Sub Total EPC Turnkey Cost	138,384,395.12	15,059,325.49	10.88	16,559,789.77	11.97	31,619,115.26	22.85
	Security /Hard Area @ 4%	30,752,087.81	3,346,516.78	10.88	3,679,953.28	11.97	7,026,470.06	22.85
TOTAL PROJECT COST (SECTION-I)		937,938,678.06	102,068,761.65	10.88	112,238,575.10	11.97	214,307,336.75	22.85

4.2 BILL NO. 1 EARTH WORK

MONTH: MAY 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	49,131.25	691,730.98	100.00	-	-	-	49,131.25	691,730.98	100.00
104	Compaction of Natural Ground	SM	29,876	23.58	704,502.97	29,994.63	704,502.97	100.00	279.74	6,596.64	0.94	30,274.38	704,502.97	100.00
106a	Structure Excavation in Unsuitable Material	CM	3,762	299.079	1,125,135.20	1,302.74	389,622.18	34.63	868.49	259,745.63	23.09	2,171.23	649,367.80	57.71
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	6,521.27	1,594,540.80	100.00	-	-	-	6,521.27	1,594,540.80	100.00
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	77,133.00	280,411.55	100.00	2,013.00	129,703.23	46.25	79,146.00	280,411.55	100.00
110	Improved Subgrade	CM	-	227.92	-	-	-	-	-	-	-	-	-	-
Total					4,396,321.49		3,660,808.47	83.27		396,045.49	9.01		3,920,554.09	89.18

4.3 BILL NO. 2 SUB BASE & BASE COURSE

MONTH: MAY 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 %
201	Granular Sub Base	CM	45,569	1700.75	77,501,426.62	29,649.03	50,425,555.16	65.06	7,940.11	13,504,140.58	17.42	37,589.14	63,929,695.74	82.49
202	Agregate Base Course	CM	22,868	2232.15	51,044,771.90	-	-	-	7,292.25	16,277,384.90	31.89	7,292.25	16,277,384.90	31.89
203a	Asphaltic Base Course Plant Mix (Class-A)	CM	17,805	16225.45	288,894,220.93	-	-	-	3,483.28	56,517,801.85	19.56	3,483.28	56,517,801.85	19.56
TOTAL					417,440,419.46	-	50,425,555.16	12.08	18,715.64	86,299,327.32	20.67	136,724,882.48	32.75	

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 UPTO 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	10,663,932.92	-	-	-	21,522.00	1,815,105.22	17.02	21,522.00	1,815,105.22	17.02
303a	Cut-Back Asphalt for Bituminous Tack Coat	SM	221,150	35.12	7,767,539.91	-	-	-	15,192.00	533,594.69	6.87	15,192.00	533,594.69	6.87
305b	Asphaltic Concrete for Wearing Course (Class "A")	CM	6,602	19500.05	128,739,352.55	-	-	-	-	-	-	-	-	-
NS	Grooving of existing asphalt layers at every 5M interval	SM	63,000	17.10	1,077,300.00	45077.50	770,825.25	71.55	-	-	-	45077.50	770,825.25	71.55
TOTAL					148,248,125.37	-	770,825.25	0.52	2,348,699.91	1.58	3,119,525.16	2.10		

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: MAY 2013

CONTRACT						WORK DONE UP TO 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 %
107a	Structural Excavation in Common Material	CM	283	310.01	87,731.67	1,450.50	87,731.67	100.00	-	-	-	1,450.50	87,731.67	100.00
107e	Common Back fill	CM	96	199.45	19,147.62	-	-	-	-	-	-	-	-	-
401b	Concrete Class "B"	CM	11	9,990.21	109,892.35	-	-	-	-	-	-	-	-	-
401f	Lean Concrete	CM	76	7,046.74	535,552.16	26.10	183,919.89	34.34	13.78	97,086.45	18.13	39.88	281,006.33	52.47
411g	Roll pointing (Parapets over wall)	CM	130	287.30	37,348.62	-	-	-	-	-	-	-	-	-
411b	Stone Masonry Random with Mortar	CM	294	4,190.22	1,231,924.15	-	-	-	419.81	1,231,924.15	100.00	419.81	1,231,924.15	100.00
412a	Stone Masonry Dressed Coursed With Mortar (Parapets over wall)	CM	24	4,974.41	119,385.77	-	-	-	-	-	-	-	-	-
412a	Stone Masonry Dressed Coursed With Mortar (Parapets over Existing wall)	CM	108	4,974.41	537,235.97	-	-	-	-	-	-	-	-	-
401b	Concrete Class "B" (Parapet over existing wall)	CM	14	9,990.21	139,862.99	-	-	-	-	-	-	-	-	-
411g	Roll pointing (Parapets over Existing wall)	CM	600	287.30	172,378.26	-	-	-	-	-	-	-	-	-
TOTAL					2,990,459.56		271,651.56	9.08	-	1,329,010.60	44.44	-	1,600,662.15	53.53

4.6 BILL NO.4b STRUCTURES (CULVERTS)

CONTRACT						WORK DONE UP TO 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 %
NS	Widening and repair of existing Culverts at RD 1+290 & 5+692	No	2	821,155.68	1,642,311.36	-	-	-	-	-	-	-	-	-
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	10,392,246.27	5.31	7,883,261.10	75.86	0.02	29,387.05	0.28	5.33	7,912,648.15	76.14
	1 x 3 x 1.5	No	3	1,941,952.95	5,825,858.85	1.30	2,524,538.84	43.33	0.17	334,981.07	5.75	1.47	2,859,519.90	49.08
	2 x 3 x 1.5	No	2	3,155,221.89	6,310,443.78	2.37	6,310,443.78	100.00	0.41	1,297,992.86	20.6	2.78	6,310,443.78	100.00
	3 x 3 x 1.5	No	1	4,206,699.18	4,206,699.18	0.71	2,986,756.42	71.00	0.09	378,356.49	9.0	0.80	3,365,112.91	79.99
	5 x 3 x 1.5	No	1	5,779,271.61	5,779,271.61	1.07	5,779,271.61	100.0	0.12	718,254.76	12.4	1.19	5,779,271.61	100.00
TOTAL					34,156,831.05		25,484,271.74	74.61	-	2,758,972.22	8.08	-	26,226,996.35	76.78

4.7 BILL NO. 5a DRAINAGE & EROSION WORKS (ROAD SIDE DRAINS)

MONTH: MAY 2013

CONTRACT						WORK DONE UP TO 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 %
510	Dismantling of Structure and Obstruction (Old Casue ways and Culverts)	CM		621.58										
	DRAIN TYPE D-1 COVERED (100 M)													
107a	Structural Excavation in Common Material	CM	87	310.01	26,970.51	265.65	26,970.51	100.00	267.75	26,970.51	100.00	533.40	26,970.51	100.00
401f	Lean Concrete (1500 PSI)	CM	11	7,046.74	77,514.13	15.55	77,514.13	100.00	83.00	77,514.13	100.00	98.55	77,514.13	100.00
401a1iii	Conc. Class A-1 in Slab	CM	95	13,676.51	1,299,268.60	-	-	-	-	-	-	-	-	-
410	Brick Work	CM	12	7,977.59	95,731.14	-	-	-	51.80	95,731.14	100.00	279.73	95,731.14	100.00
404b	Reinfor Steel	Ton	1.3	148,188.67	192,645.27	-	-	-	-	-	-	-	-	-
601dii	Recast Kerb along both sides of drain	Lm	200	1,422.22	284,444.82	-	-	-	-	-	-	-	-	-
NS	Tuff Pavers	Sm	128	1,710.00	218,880.00	-	-	-	-	-	-	-	-	-
	DRAIN TYPE D-1a UNCOVERED (473 M)													
107a	Structural Excavation in Common Material	CM	409	310.01	126,792.41	-	-	-	-	-	-	-	-	-
401f	Lean Concrete (1500 PSI)	CM	51	7,046.74	359,383.69	-	-	-	-	-	-	-	-	-
410	Brick Work	CM	426	7,977.59	3,398,455.30	-	-	-	-	-	-	-	-	-
	DRAIN TYPE D-2 COVERED (5200)													
107a	Structural Excavation in Common Material	CM	5538	310.01	1,716,812.67	1,381.54	428,285.55	24.95	-	-	-	1,381.54	428,286.33	24.95
401f	Lean Concrete (1500 PSI)	CM	694	7,046.74	4,890,436.87	85.65	603,553.20	12.34	15.30	107,815.11	2.20	100.95	711,368.30	14.55
401a1iii	Conc. Class A-1 in Slab	CM	881	13,676.51	12,049,006.72	-	-	-	-	-	-	-	-	-
410	Brick Work	CM	5382	7,977.59	42,935,414.14	41.40	330,272.42	0.77	36.23	288,988.36	0.67	77.63	619,260.78	1.44
404b	Reinfor Steel	Ton	87	148,188.67	12,892,414.15	-	-	-	-	-	-	-	-	-
601dii	Recast Kerb along both sides of drain	LM	10400	1,422.22	14,791,130.64	-	-	-	-	-	-	-	-	-
NS	Tuff Pavers	SM	8216	1,710.00	14,049,360.00	-	-	-	-	-	-	-	-	-
	DRAIN TYPE D-2a COVERED (2400)													
107a	Structural Excavation in Common Material	CM	2556	310.01	792,375.08	-	-	-	-	-	-	-	-	-
401f	Lean Concrete (1500 PSI)	CM	320	7,046.74	2,254,956.48	-	-	-	-	-	-	-	-	-
410	Brick Work	CM	2322	7,977.59	18,523,974.66	-	-	-	-	-	-	-	-	-
	DRAIN TYPE D-3 COVERED (1350)													
107a	Structural Excavation in Common Material	CM	2133	310.01	661,242.58	-	-	-	-	-	-	-	-	-
401f	Lean Concrete (1500 PSI)	CM	405	7,046.74	2,853,929.30	-	-	-	-	-	-	-	-	-
401f	Concrete Class "B"	CM	1215	9,990.21	12,138,109.16	-	-	-	-	-	-	-	-	-
TOTAL BILL No.5a					146,629,248.32		1,466,595.81	1.00		597,019.25	0.41		1,959,131.19	1.34

4.8 BILL NO.7 DIVERSIONS

MONTH: MAY 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	1.58	1,583,000.00	17.59	0.527	527,000.00	5.86	2.11	2,110,000.00	23.44
TOTAL					9,000,000		1,583,000.00	17.59		527,000.00	5.86		2,110,000.00	23.44

4.9 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
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Section Bill No:	Items	Cost Breakup (Rs: Million)	Achieved progress %age			
			APR-2013	MAY-2013	Total To-Date	
Section – I	01	Earth Works	4.396	83.27	5.91	89.18
	02	Sub Base Course	77.502	65.06	17.43	82.49
	02	Aggregate Base Courses	51.045		31.89	31.89
	02	Asphaltic Base Course	288.894		19.56	19.56
	03	Surface Course and Pavement	148.248	0.52	1.58	2.10
	04a	Structures (Retaining Walls & Breast Walls)	2.991	9.08	44.45	53.53
	04b	Structures (Culverts)	34.157	74.62	2.16	76.78
	05a	Drainage & Erosion Works	146.629	1.00	0.34	1.34
	05b	Road Protection	0.851			
	06	Ancillary Works	4.189			
	07&08	Detours/Miscellaneous works	9.900	17.58	5.86	23.44
	Total Construction Cost		768.802	10.88	11.97	22.85

Contract Duration (46 KM)	: 807 days
Time Elapsed up to 31 st May 2013	: 229 days
Time Elapsed % age	: (28.38 %)

WORK INFORMATION FOR MAY 2013

5.1 HIGHWAY SECTION REPORT

1. Planning for the Month of May, 2013

- i. Common excavation in widening portion of the road from KM: 00+000 to KM: 00+350
- ii. Compaction of Natural Ground from KM: 00+000 to KM: 00+350
- iii. Sub grade preparation in earth cut from KM: 00+000 to KM: 00+350
- iv. Grooving in the existing asphalt Pavement at every 3 to 5 Meter interval from KM: 00+000 to KM: 00+350.
- v. Formation of embankment from road way/borrow excavation in common material.
- vi. Laying of Granular sub base for remaining portion of section-I and for section-II.
- vii. Laying of Aggregate Base course for section-I.
- viii. Arrangement of crushed aggregate source for asphaltic base course.
- ix. Commissioning of Asphalt Plant and its production during May 2013.
- x. Preparing JMF (Job Mix formula) for asphaltic base course.
- xi. Laying of asphaltic base course to be started in May 2013.
- xii. Maintenance of Diversion for traffic during road construction.
- xiii. Construction activities on section-II (KM: 9+000 to KM: 18+000).

2. Work Supervised in May, 2013

- i. Embankment construction both in full and half width with a total length of 0.125 KM was carried out during May 2013.
- ii. Granular Sub base was laid for a length of 1.450 KM in widening portion and in full width of the road in May 2013.
- iii. Aggregate base course was laid for a length of 2.725 KM in full width in the month of May 2013.
- iv. Asphaltic prime coat (Cut back MC-70) was applied for a total length of 1.950 KM during May 2013.
- v. Asphaltic Base course 1st layer was completed for a total length of 1.650 KM in May 2013.
- vi. Asphaltic Tack coat (Cut back RC-250) has been applied for a total length of 1.225 KM during May 2013.
- vii. Asphaltic Base course 2nd layer has been completed for a total length of 1.225 KM in May 2013.
- viii. Grooving in the existing Asphalt Pavement was executed with a total length of 0.675 KM during the month of May 2013.
- ix. Detour for traffic with a total length of 6.95 KM was operational during the month of May 2013 for section-I.

- x. Job mix formula (JMF) for Asphaltic base course has been prepared using Margalla hills Crushed aggregate and stone dust with asphalt cement (Grade 60-70) from Attock Refinery Limited.
- xi. Earth work activities were in progress on section-II from KM: 9+675 to KM: 11+450 during the month of May 2013.
- xii. Granular Sub base laying for a length of 0.434 KM for section-II was executed both in widening portion and in full width of the road in May 2013.
- xiii. Hill cutting and shifting of surplus material was in progress on section-II from KM: 10+400 to KM: 10+450, KM: 11+250 to KM: 11+500 (RHS), KM: 11+700 to KM: 12+650(LHS) and KM: 15+050 to KM: 15+500 (both sides) during the month of May 2013.
- xiv. Traffic diversion with a total length of 2.85 KM was operational during the month of May 2013 in section-II.

3. Work Planned for June,2013

- i. Common excavation and sub grade top preparation from KM: 00+000 to KM: 00+350.
- ii. Formation of embankment from road way/borrow excavation in common material for section-II in June 2013.
- iii. Laying of Granular sub base for remaining portion of section-I & II.
- iv. Laying of Aggregate Base course for section-I.
- v. Application of Asphaltic prime coat and tack coat for Asphalt base course 1st and 2nd layer respectively.
- vi. Asphaltic base course laying (both 1st & 2nd layer) throughout section-I.
- vii. Grooving in the existing asphalt Pavement at every 3 to 5 Meter interval in the remaining portion of section-I & II.
- viii. Construction of new Detour's for section-II and maintenance of Diversions for traffic during road construction for both section I & II.
- ix. Installation of concrete batching Plant at KM: 16+400.
- x. Construction activities (Earth work and hill cutting) on section-II (KM: 9+000 to KM: 18+000).

5.2 STRUCTURE SECTION REPORT

1. Planning for the Month of May, 2013

- ❖ Structures (Culverts)
- ❖ Retaining walls
- ❖ Drainage and Erosion Works (Road side Drains)
 - i. Structural excavation in common material.
 - ii. Compaction of Natural Ground.
 - iii. Lean concrete of Drain, retaining walls in section I.
 - iv. Class “B” and lean concrete of RCC Pipe service ducts.
 - v. Class “A” concrete for top slab of culverts at KM: (5+202, 5+354, 6+050, 6+501, and 7+384)
 - vi. Stone masonry in Retaining walls.
 - vii. Granular backfill for culverts at KM: (2+611, 3+081, 5+202, 5+354, 6+050, 6+501, 6+883 and 7+384).
 - viii. Stone pitching inside the culverts at KM: (5+354, 6+050)
 - ix. Roll pointing on stone masonry of culverts at locations KM: (4+480, 5+202, 5+354, 6+050, 6+191, 6+501, and 7+384).
 - x. Concrete guard railing of culverts.
 - xi. Widening and repair of existing culverts at KM: 1+290 and KM: 5+692.
 - xii. Construction of RCC pipe service ducts.
 - xiii. Culvert construction to be started in section II at some of the following proposed locations, KM: (10+025, 10+572, 10+614, 10+850 and KM: 10+965).

2. Work Supervised during May, 2013

- i. Checking of layout and dimensions of the structures.
- ii. Concrete class “A” batching, pouring and curing operation of culverts at KM: 5+202, 5+353, 6+050, 6+501, 7+384 were observed during the month of May-2013.
- iii. Stone masonry of wing walls for culverts at KM: (5+353, 6+050, 6+501 and 7+384) were observed during the month of May-2013.
- iv. Form work and Reinforcement for top slab and RCC bed plate & curtain wall of the culvert were inspected at location KM: (5+202, 5+353, 6+050, 6+501 and 7+384).
- v. Granular Back filling of culverts at KM: (2+611, 3+081, 5+202, 5+353, 6+050 6+191, 6+501, and 7+384).
- vi. Stone pitching inside the culverts between Abutments and central piers was observed for the culverts at KM: (5+202, 5+353, 6+050 and 6+501).
- vii. Roll pointing both inside and on u/s and d/s side of the culverts were supervised at culvert KM: (6+501, 6+883 and 7+384).

- viii. Concrete guard rails for culvert KM: 4+480 was constructed in May 2013.
- ix. Widening of the culvert at KM: 1+250 was carried out on both sides by placing RCC pipe (01 No) on each side.
- x. RCC Pipe service duct construction activity was pending during the month of May 2013.
- xi. Brick masonry Drain construction was supervised during the month of May 2013 at following locations. KM: 4+480 to KM: 4+585 (RHS), KM: 4+615 to KM: 4+720 (LHS), KM: 5+560 to KM: 5+715 (LHS), and KM: 8+100 to KM: 8+225 (LHS).
- xii. Lean concrete of Drain from KM: 6+600 to KM: 6+800 (LHS) was poured in May 2013.
- xiii. Retaining wall stone masonry was carried out during May 2013 at three locations i.e. KM: 6+450 to KM: 6+478 (RHS), KM: 6+517 to KM: 6+537 (RHS) and KM: 6+835 to KM: 6+875 (RHS).
- xiv. Excavation for Retaining wall has been executed at two locations KM: 6+890 to KM: 6+910 (RHS) and KM: 7+390 to KM: 7+410 (LHS).

3. Work Planned for June,2013

- ❖ Structures (Culverts)
 - ❖ Retaining walls
 - ❖ Drainage and Erosion Works (Road side Drains)
- i. Structural excavation in common material for Drain and retaining walls in section I and for culverts in section II.
 - ii. Compaction of Natural Ground.
 - iii. Lean concrete for Drain, retaining walls and culverts.
 - iv. Class "B" and lean concrete operations for RCC Pipe service ducts.
 - v. Class "A1" concrete for top slab of culvert at KM: 6+501 in section I.
 - vi. Stone masonry with mortar for Retaining walls at KM: 6+517 to KM: 6+537 (RHS), KM: 6+835 to KM: 6+875 (RHS), KM: 6+890 to KM: 6+910 (RHS) and KM: 7+390 to KM: 7+410 (LHS).
 - vii. Granular backfill for culverts at KM: (5+202, 5+354, 6+050, 6+501 and 7+384).
 - viii. Roll pointing on stone masonry for culverts at locations, KM: (4+480, 5+202, 5+354, 6+050, 6+191, 6+501, and 7+384).
 - ix. Concrete guard rail of all culverts except at KM: 4+480 (Parapet over RCC slab).
 - x. Widening and repair of existing culverts at KM: 1+290 and KM: 5+692.
 - xi. Construction of remaining RCC pipe service ducts in section I.
 - xii. Construction of culverts in section-02 at some of the following proposed locations, KM: (10+025, 10+572, 10+614, and 10+850) and KM: 10+965.
 - xiii. Bridge at KM: 9+580 soil investigation will be started in June 2013.

5.3 MATERIAL ENGINEER REPORT

1. Main Works Supervised this Month (May 2013).

- i. Supervision of Sub Base, Aggregate Base Course and Asphaltic Base Course at site.
- ii. Quality analysis of Aggregates for Asphaltic Base Course.
- iii. Preparation of Job Mix Formula for Asphaltic Base Course.
- iv. Quality control analysis of Asphaltic Base Course.

2. M&E Consultants Lab: Testing Activities

A. Aggregate Base Course Field Density Test Report

S.No	Location (KM)	Description	Station	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compaction	Required Compaction	Remarks
1	4+950 ~ 5+150	Agg.Base Course	4+990	2.353	5.1	2.354	3.5	92.1	100	Fail
2	3+400 ~ 3+500	Agg.Base Course	3+460	2.346	5.7	2.346	5.0	99.9	100	Pass
3	2+900 ~ 3+025	Agg.Base Course	2+940	2.346	5.7	2.349	4.6	97.9	100	Fail
4			2+947	2.346	5.7	2.353	4.2	96.7	100	Fail
5	2+425 ~ 2+500	Agg.Base Course	2+460	2.346	5.7	2.382	5.0	101	100	Pass
6	2+600 ~ 2+700	Agg.Base Course	2+640	2.346	5.7	2.346	4.5	98.8	100	Fail
7	2+600 ~ 2+700	Agg.Base Course	2+615	2.346	5.7	2.346	4.5	101	100	Pass
8	1+575 ~ 1+600	Agg.Base Course	1+580	2.334	5.7	2.346	4.5	98	100	Fail
9	1+375 ~ 1+650	Agg.Base Course	1+400	2.334	5.7	2.334	5.5	100.9	100	Pass
10			1+600	2.334	5.7	2.334	5.2	100.8	100	Pass

B. Sub-base Field Density Test Report

S.No	Location	Description	Station	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compaction	Required Compaction	Remarks
1	7+050 ~ 7+175	Sub Base	7+125	2.273	6.3	2.276	5.1	93.4	98	Fail

C. Summary: Compression Test of Concrete Cylinders (Slab Culverts)

Description	Casting date	Testing date	Age	Load in (KN)	Length (cm)	Dia. (cm)	Area (cm ²)	Load in Kg	Strength (Kg/cm ²)			Remarks
									Achieved	Average	Required	
Concrete Class "A 1" of Culvert Slab at KM: 03+081	24/4/2013	1/5/2013	7 Days	291	30.48	15.24	182.4	29673	162.7	162.5	157.5	Accepted
				299	30.48			30489	167.2			
				282	30.48			28756	157.7			
Concrete Class "A1" of Culvert Slab at KM: 06+648	4/4/2013	2/5/2013	28 Days	327	30.48	15.24	182.4	33344	182.8	184.3	210	Not Accepted
				328	30.48			33446	183.4			
				334	30.48			34058	186.7			
Concrete Class "A1" of Culvert Slab at KM: 02+611	29/4/2013	6/5/2013	7 Days	322	30.48	15.24	182.4	32834	180.0	175.7	157.5	Accepted
				312	30.48			31815	174.4			
				309	30.48			31509	172.7			
Concrete Class "A1" of Culvert Slab at KM: 06+883	11/4/2013	9/5/2013	28 Days	452	30.48	15.24	182.4	46090	252.7	252.1	210	Accepted
				454	30.48			46294	253.8			
				447	30.48			45581	249.9			
Concrete Class "A1" of Culvert Pad at KM: 06+191	11/4/2013	9/5/2013	28 Days	442	30.48	15.24	182.4	45071	247.1	243.6	210	Accepted
				439	30.48			44765	245.4			
				426	30.48			43439	238.2			
Concrete Class "A1" of Culvert Pad at KM: 03+081	15/4/2013	13/5/2013	28 Days	366	30.48	15.24	182.4	37321	204.6	212.6	210	Accepted
				386	30.48			39360	215.8			
				389	30.48			39666	217.5			
Concrete Class "A1" of Culvert Slab at KM: 05+353	14/5/2013	21/5/2013	7 Days	280	30.48	15.24	182.4	28552	156.5	174.8	157.5	Accepted
				335	30.48			34160	187.3			
				323	30.48			32936	180.6			
Concrete Class "A1" of Culvert Slab at KM: 03+081	24/4/2013	22/5/2013	28 Days	379	30.48	15.24	182.4	38647	211.9	216.0	210	Accepted
				386	30.48			39360	215.8			
				394	30.48			40176	220.3			
Concrete Class "A1" of Culvert Slab at KM: 02+611	29/4/2013	27/5/2013	28 Days	445	30.48	15.24	182.4	45377	248.8	238.5	210	Accepted
				419	30.48			42725	234.2			
				416	30.48			42420	232.6			
Concrete Class "A1" of Culvert Slab at KM: 07+383	20/5/2013	27/5/2013	7 Days	345	30.48	15.24	182.4	35180	192.9	188.4	157.5	Accepted
				340	30.48			34670	190.1			
				326	30.48			33242	182.2			

D. Aggregate Quality Tests for Concrete (Class A1)

S.No	Location	Station (KM)	Description	Sieve Analysis												FM	L.A %	Sand Equivalent	Flakiness Index	Elongation Index	Remarks
				2"	1½"	1"	¾"	½"	3/8"	#4	#8	#16	#30	#50	#100						
1	Culvert Slab	5+211	Aggregate	-	-	100	72.6	28.1	17.0	2.7	0.2	-	-	-	-	-	-	-	33	27.8	Not Accepted
2	Cuvert Slab	6+883	Aggregate	-	-	100	99.8	44	22.3	0.9	-	-	-	-	-	-	-	-	-	-	Accepted

E. Aggregate Quality Tests for Asphaltic Base Course (Class A)

Sample No.	Location	Description	Aggregate Size	(% Used)	Sieve Analysis										FM	L.A %	Sand Equivalent (%)	Flakiness Index (%)	Elongation Index (%)	Specific Gravity	Absorption (%)	Remarks	
					2"	1½"	1"	¾"	½"	3/8"	#4	#8	#50	#200									
1	Cold Bin Sample	Bin #1	2" Down	26	100	100	46	1.9	0.2	-	-	-	-	-	-	-	-	-	-	2.641	0.88		
		Bin #2	1½" Down	24	-	100	100	60.7	4.1	2.7	-	-	-	-	-	-	-	-	-	2.621	0.93		
		Bin #3	¾" Down	22	-	-	100	88.7	61.8	15.3	1.7	-	-	-	-	-	-	-	-	2.6	1.13		
		Bin #4	Stone Dust	28	-	-	-	-	-	100	99.3	78.3	26.8	14.4	-	-	-	-	-	-	-	-	
		Combined Grading		100	100	86	65.1	48.4	42.1	31.1	22.3	7.5	4.0	-	-	-	-	-	-	-	-	-	
2	Hot Bin Sample	Bin #1	2" Down	25	100	100	5.9	0.4	0.06	-	-	-	-	-	-	-	-	-	-	2.64	0.74		
		Bin #2	1½" Down	22	-	100	96	54.3	3.2	0.19	-	-	-	-	-	-	-	-	-	2.627	0.84		
		Bin #3	¾" Down	24	-	-	100	100	97.7	80.9	14.1	0.5	0.1	-	-	-	-	-	-	2.595	1.2		
		Bin #4	Stone Dust	29	-	-	-	-	-	100	99.4	77.4	27.4	14.9	-	-	-	-	-	2.521	2.20		
		Combined Grading		100	100	76	65	53.2	48.5	32.2	22.6	8.0	4.3	-	-	-	-	-	-	-	-	-	
3	Hot Bin Sample	Bin #1	2" Down	23	100	100	12	2.1	0.4	0.2	-	-	-	-	-	-	-	-	-	2.623	0.79		
		Bin #2	1½" Down	24	-	100	94	51.4	2.9	0.6	0.4	-	-	-	-	-	-	-	-	2.619	0.83		
		Bin #3	¾" Down	26	-	-	100	100	98.5	85.4	15.7	0.7	0.1	-	-	-	-	-	-	2.593	1.19		
		Bin #4	Stone Dust	27	-	-	-	-	-	100	99.5	80.3	32.1	13.5	-	-	-	-	-	2.582	2.01		
		Combined Grading		100	100	78	65.8	53.4	49.9	31.1	21.9	8.7	3.7	-	-	-	-	-	-	-	-	-	
4	Hot Bin Sample	Bin #1	2" Down	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.633	0.79		
		Bin #2	1½" Down	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.631	0.82		
		Bin #3	¾" Down	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.627	1.05		
		Bin #4	Stone Dust	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.566	2.13		
		Combined Grading		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	Hot Bin Sample	Bin #1	2" Down	20	100	100	20	0.9	0.1	-	-	-	-	-	-	-	-	-	-	2.627	0.6		
		Bin #2	1½" Down	23	-	100	90	36.7	0.8	0.1	-	-	-	-	-	-	-	-	-	2.628	0.72		
		Bin #3	¾" Down	32	-	-	100	98.8	98.0	89.5	16.3	3.6	1.3	0.7	-	-	-	-	-	2.593	1.07		
		Bin #4	Stone Dust	25	-	-	-	-	-	100	99.8	82.4	32.6	17.3	-	-	-	-	-	-	-	-	
		Combined Grading		100	100	82	65.3	56.6	53.7	30.2	21.8	8.6	4.6	-	-	-	-	-	-	-	-	-	

F. Asphalt Base Course Quality Tests

Specific Gravity A.C (Gb) 1.030										Combined Specific Gravity of Aggregate (Gsb) 2.665							
Paving Date	% Bitumen By Wt of A C (Pb)	Sieve Analysis of Asphaltic Base Course								Bulk Sp. Gr. (Gmb)	Maximum Sp.Gravity (G _{mm})	% Air Voids (V _a)	VMA (%)	VFA (%)	Stability (Kg)	Los of Stability (%)	Flow (0.01") (0.25mm)
		Passing Percentage (%)															
		2"	1½"	1"	¾"	#4	#8	#50	#200								
15-May-13	3.46	100	100	85.4	58.5	28.8	20	7.7	4.0	2.392	2.554	6.4	13.37	52.4	1497	14.2	10.3
16-May-13	3.4	100	100	84.7	67.6	30.6	21.3	6.9	3.8	2.396	2.548	5.9	13.14	54.7	1476	12.8	10.1
21-May-13	3.8	100	100	83.1	63.5	33.3	22.2	7.7	3.6	2.398	2.537	5.5	13.44	59.2	1536.7	10.1	10.1
22-May-13	3.53	100	100	85.5	63.5	32.7	22.1	7.9	3.2	2.395	2.542	5.8	13.29	57	1640	14.5	10.1
23-May-13	3.68	100	100	85.1	65.6	30.9	22.6	8.7	4.3	2.416	2.544	5.01	12.66	60.4	1265.6	17.5	12.7
28-May-13	3.63	100	100	83.9	64.4	35.2	22	8	4.2	2.396	2.544	5.84	13.35	56.3	1394	16.6	12.7

G. Summary: Absorption and Compression Test of Bricks

Date	Specimen No.	Identification (Trade Mark)	Absorption (%) of Full Brick					Compressive Strength (Kg/cm ²)					
			Oven Dry Weight in (grams)	SSD Weight in (grams)	Weight of Water (grams)	Individual Absorption (%)	Average Absorption (%)	Dimintion of Half Brick (cm)		Area (cm ²)	Load in (Kn)	Achieved Strength (kg/cm ²)	Average Strength (kg/cm ²)
								Length	Width				
09-May 2013	1	33	2471	2962	491	19.9	19.9	11.5	10.8	124.2	257	211.0	207.2
	2	33						11.1	10.7	118.77	237	203.5	
	3	3	2467	2931	464	18.8	18.8	11	10.5	115.5	208	183.6	193.4
	4	3						10.8	10.5	113.4	226	203.2	
28-May 2013	1	K2	2567	3121	554	21.6	18.9	10.7	10.4	111.28	217	198.8	192.8
	2	K2						10.7	10.6	113.42	204	183.4	
	3	K2	2768	3224	456	16.5		10.3	10.5	108.15	237	223.5	
	4	K2						10.8	10.3	111.24	213	195.3	
	5	K2	2844	3374	530	18.6		12.1	10.6	128.26	196	155.8	
	6	K2						10.4	10.8	112.32	220	199.7	
Required Absorption (%)			16.7				Required Strength (kg/cm²)					140.8	

H. Core Thickness of Asphaltic Base Course

S.No	CORE NO.	TESTING DATE	CHAINAGE (KM)	STATION	OFFSET FROM C/L	CORES THICKNESS (cm)				Average Thickness (cm)	Required Thickness (cm)	REMARKS
						1	2	3	4			
1	T-22	28-May-13	2+700 ~ 2+800	2+703	4.0m R/S	8.6	8.2	8.1	9	8.5	8.0	OK
2	T-21			2+738	4.2m L/S	7.9	7.7	7.8	8.1	7.9	8.0	OK
3	T-20			2+782.5	4.0m R/S	8.8	8.7	8.5	8.7	8.7	8.0	OK
4	T-19		2+800 ~ 2+900	2+833	3.7m L/S	9.1	9.2	8.6	8.7	8.9	8.0	OK
5	T-18			2+882	0.8m R/S	8.9	9.2	8.8	8.9	9.0	8.0	OK
6	T-17		2+900 ~ 3+000	2+937	4.4m L/S	7.6	7.3	6.9	7.6	7.4	8.0	OK
7	T-16			2+988	4.5m R/S	9.3	9.1	9.2	9	9.2	8.0	OK
8	T-15		3+000 ~ 3+100	3+037.5	3.8m L/S	7.5	7.7	7.6	7.5	7.6	8.0	OK
9	T-14			3+092	3.9m R/S	9	8.6	8.3	8.4	8.6	8.0	OK
10	T-13		3+100 ~ 3+200	3+138	2.6m L/S	10.4	9.7	10.3	10.5	10.2	8.0	OK
11	T-12			3+190	4.3m R/S	9.5	9.2	9.4	9.2	9.3	8.0	OK
12	T-11		3+200 ~ 3+300	3+237	1.7m L/S	8.7	8.9	8.6	8.8	8.8	8.0	OK
13	T-10			3+287	1.5m R/S	8.8	8.7	8.9	8.6	8.8	8.0	OK
14	T-9		3+300 ~ 3+400	3+343	4.5m L/S	10.3	9.6	9.7	9.9	9.9	8.0	OK
15	T-8			3+397	3.5m R/S	7.8	7.2	7	7.4	7.4	8.0	OK
16	T-4		3+400 ~ 3+500	3+458	3.0m R/S	7.7	7.8	8	7.8	7.8	8.0	OK
17	T-3		3+500 ~ 3+675	3+625	0.5m R/S	8.1	8	7.8	6.9	7.7	8.0	OK
18	T-2		3+675 ~ 3+775	3+700	1.3m L/S	9.5	9.7	9.8	10	9.8	8.0	OK
19	T-7		3+775 ~ 3+875	3+845	4.5m R/S	9	9.6	8.9	9.2	9.2	8.0	OK
20	T-6			3+850	4.0m R/S	7.8	8	7.7	7.8	7.8	8.0	OK
21	T-5			3+855	3.5m L/S	5.4	5.7	5.5	5.6	5.6	8.0	To be Adjusted in 2nd Layer
22	T-1			3+790	3.5m R/S	9.5	9.4	9.1	9.3	9.3	8.0	OK

I. Cores Compaction (Density) of Asphaltic Base Course

Cores Compaction (Density) of Asphaltic Base Course													
CORE NO.	TESTING DATE	CHAINAGE (KM)	STATION	OFFSET FROM C/L (m)	WT. IN AIR (grams)	WT. IN WATER (grams)	SSD. WT (grams)	VOLUME (cc)	DENSITY (g/cc)	LAB. DENSITY (Gmb) (g/cc)	ACHIEVED COMPACTION (%)	REQUIRED COMPACTION (%)	REMARKS
1	28-May-13	2+700 ~ 2+800	2+705	4.0 m R/S	1408.4	817.5	1412.8	595.3	2.366	2.395	98.8	97	OK
2			2+740	4.3 m L/S	1274.8	740.5	1279.4	538.9	2.366	2.395	98.8	97	OK
3			2+785	4.1 m R/S	1604	935.1	1612.1	677.0	2.369	2.395	98.9	97	OK
4		2+800 ~ 2+900	2+835	3.9 m L/S	1656.2	945.8	1657.3	711.5	2.328	2.395	97.2	97	OK
5			2+884	0.5 m R/S	1330.2	772.1	1335.9	563.8	2.359	2.395	98.5	97	OK
6		2+900 ~ 3+000	2+940	3.5 m L/S	1252.5	730.6	1256.4	525.8	2.382	2.416	98.6	97	OK
7			2+990	2.0 m R/S	1041.1	607.7	1045.6	437.9	2.377	2.416	98.4	97	OK
8		3+000 ~ 3+100	3+040	4.0 m L/S	1560.8	914.7	1566.8	652.1	2.393	2.416	99.1	97	OK
9			3+090	4.0 m R/S	1198.8	698.7	1203.7	505.0	2.374	2.416	98.3	97	OK
10		3+100 ~ 3+200	3+140	2.6 m L/S	1551.2	898.2	1555.3	657.1	2.361	2.416	97.7	97	OK
11			3+192	4.0 m R/S	1532.1	896.9	1537.5	640.6	2.392	2.416	99.0	97	OK
12		3+200 ~ 3+300	3+240	1.5 m L/S	1485.4	859.2	1487.9	628.7	2.363	2.395	98.6	97	OK
13			3+290	1.5 m R/S	1578.4	915.1	1581.8	666.7	2.367	2.395	98.9	97	OK
14		3+300 ~ 3+400	3+345	4.0 m L/S	1867.4	1082.1	1868.2	786.1	2.376	2.395	99.2	97	OK
15			3+399	4.0 m R/S	1337.2	774.6	1339.2	564.6	2.368	2.395	98.9	97	OK
16		3+400 ~ 3+500	3+458	5.0 m L/S	1455.3	844.2	1460.1	615.9	2.363	2.395	98.7	97	OK
17		3+500 ~ 3+600	3+545	3.5 m L/S	1326.4	769.2	1328.1	558.9	2.373	2.395	99.1	97	OK
18		3+600 ~ 3+675	3+625	0.5 m L/S	1529.2	889.4	1534.1	644.7	2.372	2.398	98.9	97	OK
19		3+675 ~ 3+775	3+700	2.7 m R/S	1398.8	811.1	1400.3	589.2	2.374	2.398	99.0	97	OK
20		3+775 ~ 3+875	3+800	2.5 m L/S	1013.1	587	1015.2	428.2	2.366	2.396	98.7	97	OK

3. Main Works Planned for June 2013.

- i. Supervision of Sub Base, Aggregate Base Course and Asphaltic Base Course at site.
- ii. Preparation of Job Mix Formula for Wearing Course.
- iii. Quality control analysis of Sub Base, Aggregate Base Course and Asphaltic Base Course.

Comments of Material Engineer

- a) Quality control tests report of Bitumen from Independent (Commercial) Laboratory: FWO / NESPAK has been advised to provide all the required test reports of Bitumen (Grade 60-70) to the M&E consultants. The contractor should also submit the manufacturer certificates to M&E consultants. Similarly the test reports of MC-70 for Prime coat and RC-250 for Tack coat from Independent Laboratory should be provided to M&E consultants.
- b) Wearing Course Job Mix Formula (JMF): The contractor has been advised to start working on the JMF for Asphaltic Wearing Course because Wearing Course will be the next activity after Asphaltic Base Course is completed.
- c) Asphalt Plant Calibration: The Asphalt Plant has been calibrated on dated 1st May 2013 but still the Calibration report has not been submitted to the M&E consultants.
- d) Petrographic analysis of Aggregates: A copy of the relevant report should be provided to the M&E Consultants

5.4 WEATHER RECORD

Date	Temperature (°C)		Humidity (%)		Weather Condition
	Maximum	Minimum	Maximum	Minimum	
01- May-13	31	21	73	19	Cloudy/Rainy day
02- May -13	34	18	68	24	Sunny
03- May -13	34	19	69	28	Sunny
04- May -13	34	20	69	24	Sunny
05- May -13	34	22	65	26	Sunny
06- May -13	33	21	65	27	Sunny
07- May -13	34	16	64	27	Sunny
08- May -13	34	21	69	32	Sunny
09- May -13	37	23	65	25	Sunny
10- May -13	37	23	65	25	Sunny
11- May -13	34	25	61	36	Sunny
12- May -13	30	23	65	42	Sunny
13- May -13	32	21	78	43	Sunny
14- May -13	35	24	69	39	Sunny
15- May -13	35	23	65	32	Sunny/Rainfall
16- May -13	39	21	73	29	Sunny
17- May -13	42	23	61	10	Sunny
18- May -13	40	24	54	20	Sunny
19- May -13	40	26	51	24	Sunny
20- May -13	40	26	51	20	Cloudy
21- May -13	41	27	51	24	Sunny
22- May -13	43	27	51	18	Sunny
23- May -13	43	27	58	15	Sunny
24- May -13	43	27	66	19	Cloudy /Rainy day
25- May -13	40	27	62	23	Cloudy
26- May -13	35	23	83	38	Cloudy /Rainy day
27- May -13	33	22	83	34	Sunny
28- May -13	37	22	64	21	Sunny
29- May -13	33	22	60	36	Sunny
30- May -13	34	21	66	28	Sunny
31- May -13	33	22	62	35	Sunny

5.5 CONTRACTOR'S PLANT & EQUIPMENTS

Date	Motor Grader	Vibratory Roller	Back Hoe	Dumper	Water Tanker	Loader	Dozer	Asphalt Paver Machine	Tandum Roller	PTR	Asphalt Dumpers	Broomer with Tractor	Air Compressor	Remarks
1-May-13	Labor's Day													
2-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
3-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	Friday
4-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
5-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
6-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
7-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
8-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
9-May-13	5	6	3	13	5	3	1	-	-	-	-	-	-	-
10-May-13	Holiday													Friday
11-May-13	Election Day													-
12-May-13	Election Day													-
13-May-13	3	6	5	13	6	3	5	-	-	-	-	-	-	-
14-May-13	3	6	5	13	6	3	5	-	-	-	-	-	-	-
15-May-13	5	6	3	13	6	2	1	1	1	2	5	-	-	-
16-May-13	5	6	3	13	5	2	1	1	1	3	5	-	-	-
17-May-13	Holiday													Friday
18-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
19-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
20-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
21-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
22-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
23-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
24-May-13	-	-	-	-	-	-	-	-	-	-	1	1	-	Friday
25-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
26-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
27-May-13	5	6	3	13	5	1	1	1	1	3	5	1	1	-
28-May-13	5	6	3	13	5	1	1	1	1	3	-	1	1	-
29-May-13	4	6	3	11	5	1	1	1	3	1	-	1	1	-
30-May-13	4	3	2	10	5	1	1	-	1	3	-	1	1	-
31-May-13	-	-	-	5	-	1	-	1	1	3	-	1	1	Friday

ANNEXURES

ENVIRONMENTAL COMPLIANCE MONITORING REPORT

ENVIRONMENTAL COMPLIANCE REPORT

Date of visit: 15th May, 2013
Visit No: 9th
Environmental Compliance Officer: Shabir Ahmad Khan
Field Monitor Social: Muhammad Rahman
Road Section under Construction: Section - I KM: 0+000 to KM: 9+000
 Section - II KM: 9+000 to KM: 18+000
Persons Consulted at Site:
 Major Ajmal Khan, FWO Major Mohammad Atif, FWO
 Mr. Mohammad Saleem, Surveyor FWO Mr. Mohammad Asif, Site Engineer FWO

Work Status:

- Work in progress
- Work Stopped
- Work Completed

Quality of Environment Compliance:

- Good
- Satisfactory
- Poor

Issuesat site:

- (a) No sprinkling of water on road's diversion and near the residential areas.
- (b) No road's traffic signs and speed checking sign boards for the safety of people.
- (c) No records of EHS (Environment, Health and Safety) plans.
- (d) Non availability of personal protective equipment.
- (e) No measures for land leveling and refilling of quarry/borrow material sites for sustainable use.
- (f) People demanded for construction of stairs and walkways for road crossing under a couple of culverts.
- (g) Drainage problems at culvert's construction sites and quarry areas.
- (h) Non availability of Environment Specialist/ Expert from FWO / NESPAK side.
- (i) No public safety arrangement in construction zone.
- (j) No first aid box and Ambulance arrangement at site.

Environmental Monitoring Check List for the Site

S. #	Activity	Mitigation Measures	Monitoring indicators	Observations
Construction Phase				
1	Use of heavy equipment	<ul style="list-style-type: none"> a. Set protocols for vehicle Maintenance. b. Checking of fuel level deliveries and use. c. Checking pipes and joints for leaks. d. Tightening generator and fuel lines. e. Preventing over filling of main storage and vehicle tanks. f. 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>The Contractor staff and site supervisors maintain the machinery in proper 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 follow the compacted routes. Contractor's 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, as per required H & S plan.</p> <p>Please refer to photos (01, 02, 03, 04)</p>
2	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. 	Road protection and Safety	<p>Flood protection works as part of road improvement have been started, like culverts for smooth flow of water during rainy season and sewerage disposal and retaining walls etc.</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. Therefore, we advised the FWO staff to protect the Public Infrastructures and also make sure to follow the Environmental</p>

				health and safety protocols. Please refer to photos (05,06)
3	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 should not contain heavy metals that are inflammable, investigate and use less toxic alternative products. d. Prohibit use of waste oil as cooking oil. 	Soil Contamination and Safety	No action is required at present stage.
4	Handling of solid Waste	<ul style="list-style-type: none"> a. Site manager would be responsible for the collection and disposal of solid waste. b. Training of site personnel in waste management and chemical waste handling procedures. c. Separation of chemical waste for special handling. d. Recording system for the amount of waste generated recycled and reused. e. Proper storage and site practices to minimize the potential for damage or contamination of construction materials. f. General refuse would be stored in enclosed bins to separate from construction materials g. A reputable waste collection firm should be engaged by the contractor to remove the general refuse from the site. 	Toxicity, Soil Contamination and Pollution	<p>FWO should share their solid waste management plan with the M&E Consultants.</p> <p>The construction materials in main store are generally stored in good condition. However the construction material at site is not stored / placed properly.</p> <p>The sub-Contractors also do not follow Environment, Health and Safety protocols. There is no arrangement for solid waste disposal at site. During the site visit, the solid waste dumping found at KM: 3+725 along the road side, at KM: 3+740 in front of education office Jamrud. Similarly at KM: 5+630 excavated materials have been placed at graveyard since long time. To avoid local conflict, advised FWO site Engineer time and again to shift the excavated material to some other suitable place. But till date no action has been taken.</p> <p>Although mixing of refuse with construction material was not found at site but at the same time no special bins or collector have been seen to collect refuse systematically. It has been advised especially to the subcontractors having contracts of</p>

				<p>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>(Please refer to photos # 07, 08, 09)</p>
5	Construction crews and camps	<ul style="list-style-type: none"> a. Check accommodations for site crew and maintain it in good condition. b. Avoid as much clearing of vegetation as possible. c. Provide temporary sanitation on site such as pit latrines (assuring the water table is enough and soil and geology of appropriate composition). d. Use local or regional labor. e. Screen potential crew members of HIV and tuberculosis. f. Provide education and enforce guidelines on contact with local residents. g. Set guidelines for prohibiting poaching and collection of plants. h. Provide adequate quantities and good quality food and cooking fuel. 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. j. No domestic pets or livestock are allowed on the site. 	<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, Generators etc. are available. These army camps have been renovated by the FWO for labor camps. The quality of food and water provided is good according to hygienic point of view.</p> <p>Sub-contractor and some workers are local inhabitants of the area. FWO staff is adequately educated to follow guidelines from their senior to interact with locals.</p> <p>Guidelines like for removal of vegetation etc. have not been followed by FWO contractor and sub-contractors.</p> <p>Domestic livestock can be seen at site off and on but the camps are away and are protected, so no entrance of live stocks had been found during site visits.</p> <p>(Please refer to photos # 10, 11, 12, 13, 14, 15)</p>

6	Material handling use and storage	<ul style="list-style-type: none"> 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. 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. c. Over spray of bitumen products outside the road surface and on the vegetation should be prevented. d. Concrete mixing on the ground shall not be allowed. e. Use wet gravel on site. f. Avoid falling of drainage water directly into the sensitive area. 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. h. Used empty cement bags should be collected and stored to deliver these to recycling plant. i. Contaminated water storage facilities should not be allowed to over flow and appropriate protection from rain should be implemented. 	Dust pollution	<p>Material securing, load prevention from spillage and other visual impacts should be reduced as much as possible by appropriate measures.</p> <p>FWO staff has been advised to provide safe passage to dumpers which usually carry materials. No concrete batching plant was present nor any water storage observed at site.</p> <p>Loaded vehicles do not have proper cover to prevent spillage.</p> <p>The concrete mixing on the ground was not found at site.</p> <p>The contaminated water disposals are not appropriate.</p> <p>Generally the Sub Contractors do not follow the Material handling protocols at sites, especially at culvert construction sites.</p>
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7	<p>Materials extraction Quarrying logging</p>	<ul style="list-style-type: none"> a. Identify the most environmentally sound source of materials that is within budget. b. Use materials from local road cuts first but only if it produces a suitable, durable aggregate for embankment fill, or surface stabilization materials. c. On removal of materials, the area should be restored and be treated with erosion control measures. d. Develop logging quarrying and borrowing plans and take into account accumulative effects. 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 they are not visible to travelers on the roads, f. Monitor adherence to plans and impacts of extraction and modify as necessary. g. Restore area so it is suitable for sustainable use after extraction is completed. h. Install drainage structures to direct water away from pits. i. Implement safety protocols to minimize risks from falling rock or debris, collapsing quarry walls or accidental falls from clefts. j. Discuss with local community the option of retaining walls pits as water collection ponds for cattle, crops or similar use. 	<p>Change in landscape & Creation of water ponds.</p>	<p>FWO officials are not sharing and providing their logging, quarrying and borrowing plans nor any relevant photos.</p> <p>At new quarry area near KM: 11+200, somewhat dangerous terrain observed. Also, the material was borrowed by excavating bed of the existing stream. FWO was advised to stop this practice and refill the pit as well as reinstate the existing bed condition of the stream, because a hydraulic structure will be constructed at this location.</p> <p>FWO staff does not care safety protocols. The personal protective equipments were also not provided to staff members. Therefore, advised FWO staff to follow safety protocols during work.</p> <p>During site visit, it was observed that in previous quarry area near KM: 6+050 and KM: 2+000, 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. It was also advised FWO staff to make drainage ways wherever applicable. But till this 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>(Please refer to photos # 16, 17, 18, 19)</p>
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<p>8</p>	<p>Site clearing or leveling</p>	<ul style="list-style-type: none"> a. Minimize disturbance of native flora during construction. b. Minimize the amount of clearing of small areas for active work one at a time. c. Avoid use of herbicides. Any use should follow health and safety procedures to protect people and the environment. d. Herbicide should be used according to the manufacturer specifications e. Clear without destroying large plants and turf where possible and preserve for replanting in temporaries nurseries. 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 construction. g. Use erosion control measures such as hay bales h. Re-vegetate the recovered plants and other appropriate local flora immediately after equipment is removed from site. 	<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 continued at the shoulders of the existing road which is already cleared.</p> <p>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 with 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 consist of sand, silt and gravels which are more compacted.</p>
<p>9</p>	<p>Excavation , cutting , and filling</p>	<ul style="list-style-type: none"> a. Place fence around excavation. b. Investigate shallow over excavation and no excavation alternatives. c. Have construction crews and supervisors been 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 	<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. Other mitigation measures are either appropriate or not required. During site visit following irregularities were found which require proper remedial actions:</p> <p>At KM: 4+100, during site visit solid waste and poor drainage were observed in Jamrud Bazar.</p> <p>At KM: 4+600 blockage of drain and stagnant water (middle of Jamrud Bazar)</p>

		<p>destruction.</p> <p>d. Ensure excavation is accompanied by well-engineered drainage.</p> <p>e. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flow in channels.</p> <p>f. Balance the cuts and fills whenever possible to minimize the earth work movement.</p> <p>g. Water sprinkling should be carried out at the temporary access road and all the areas prone to dust pollution.</p>		<p>At KM: 3+200, drain Blockage near Total Petrol pump.</p> <p>At KM: 5+630 excavated materials had been placed at graveyard for a long time. To avoid local conflict, advised FWO site Engineer time and again to shift the excavated material to some other suitable place. But till date no action has been taken.</p> <p>During excavation process, fence is required around at all culvert sites, and appropriate engineering drainage for flow line of watershed, proper dumping of excavated materials and sprinkling of water.</p> <p>Please refer to photos (08, 09)</p>
10	Traffic Control	<p>a. Efforts should be made to accommodate the traffic along the road as far as practically possible.</p> <p>b. Provision of sign boards directing the drivers about the diversions.</p> <p>c. Contractor staff should be trained and put on the duty to manage the traffic during the construction activates taking place along the road.</p> <p>d. Temporary by pass if possible should be avoided as involved clearing of land.</p> <p>e. Speed limit for heavy machinery on the site should be observed.</p> <p>f. Keep road partly close to maintain safe passage of vehicles/pedestrians</p> <p>g. Conduct work that requires road closure at</p>	<p>Health and Safety for the local population and workers.</p>	<p>As far as Traffic control is concerned, it can flow along the road through the construction zone or over diversion. FWO has arranged diversions as well as existing Kacha tracks along the road for traffic management, but no proper signboards at any location were observed during visit. Therefore, advised FWO officials to clearly mark all diversion by installing temporary sign boards (having reflective materials for night time visibility) for driver's guidance.</p> <p>Advised FWO staff for arrangement of water sprinkling at diversions and near residential areas.</p> <p>The contractor's staff at construction site also helps the people in traffic control. Heavy machinery speed limit sign boards were not observed on site but because of activities under way, heavy machinery/vehicles cannot move faster.</p> <p>At the road, heavy vehicles like NATO containers</p>

		<p>times when traffic volume is low</p> <p>h. Schedule dump truck movement during low traffic period</p>		<p>are mostly found, which need speed check limit signboards. Similarly, other traffic arrangements are also required to take place immediately.</p>
11	Blasting	<p>a. Minimize blasting.</p> <p>b. Take safety precautions to protect workers and others from being injured by flying or falling rocks and avalanches and</p> <p>c. Provide Person protection equipment to the workforce.</p>	<p>Noise pollution and occupational safety</p>	<p>Currently, there is no excavation blasting, therefore, no action is required.</p>
12	Source of building materials	<p>a. Develop logging, quarrying and borrowing plans that take into account cumulative effects</p> <p>b. Monitor adherence to plans and impacts of extraction practices. Modify as necessary</p> <p>c. Fill in quarries and pits before abandoning</p> <p>d. Control runoff into pit</p>	<p>Damage aquatic ecosystems</p> <p>erosion , siltation, Harm terrestrial ecosystems and vector-borne diseases</p>	<p>Material extraction sites (Quarry areas) near KM: 6+050 and KM: 2+00 has not been restored and leveled. Advised FWO staff at site for leveling and refilling the adjacent quarry areas for sustainable use and for making of drainage ways, where applicable. Moreover, no safety protocols have been seen or followed at quarry sites.</p> <p>(Please refer to photos # 16, 17, 18, 19)</p>
13	Dust	<p>a. Water spraying</p> <p>b. trucks should be covered with tarpaulins</p>	<p>Nuisance to the public, undermining the air quality and water contamination</p>	<p>During site visit, no water sprinkling vehicle was found at any place and heavy dust pollution occurred at different places such as at KM: 1+050, at KM: 2+500, at diversion near at KM: 7+200, KM: 9+00 and at KM: 11+800 etc. The local population informed that there is no water spraying for the last three days and the population along the road is in great trouble. Advised FWO staff for regular sprinkling of water all along the road (Kacha tracks) particularly near residences and diversion roads.</p> <p>Please refer to photos (20, 21, 22, 23, 24)</p>

14	Borrow Areas	These impacts are reversible through a diligent restoration process which must be put in place by the contractor and approved by the Highway Division.	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.	There were no activities at site regarding borrow area restoration.
15	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	The officials of PTCL and FWO were asked to take care of 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.
16	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 and records 	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, advised FWO officials to prepare H&S plan and to follow H&S protocols at site and also to prepare documentation records of 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. The first aid box at site and ambulance may also be provided.</p> <p>(Please refer to Photos # 09, 14, 18)</p>

17	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.
18	Others concerns like Resettlement 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	The Peshawar Torkham road construction is continued on existing road corridor; therefore, no resettlement issue is involved. Infrastructure like access roads to local people, sewerage, telephone line etc. requires proper care and management.
Operation and Maintenance of newly constructed road				
19	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 yet.
20	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
21	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 	Accidents cases	NA

		project which will administer the hazardous substances		
22	Vehicle management	<p>a. Vehicle with excessive noise should be prohibited to travel on the road.</p> <p>b. Public should be educated about the noise and the air pollution and how to keep the road clean.</p>	Visual inspection	NA

PROJECT PHOTOGRAPHS

PAVEMENT STRUCTURE



Lat 33; 59; 59.6, Lon 71; 24; 36.4

KM: 1 + 100 To 1 + 220 Full width Windrows of aggregate base course



Lat 34; 59; 56.7 Lon 71; 24; 54.6

KM: 1+525 To 1+600 Full width aggregate base course compaction in progress



Lat 34; 0; 1.3 Lon 71; 24; 20.2

KM: 2 + 300 To 2 + 600

Full width cleaning of aggregate base course in progress



Lat 33; 59; 59.6 Lon 71; 23; 33.9

KM: 2 + 950 To 3 + 200

Compaction of asphaltic base course 1st layer in progress



Lat 34; 0; 0.0 Lon 71; 23; 36.9
KM: 2 + 950 To 3 + 200 Half width Laying of asphaltic base course 1st layer in progress



Lat 34; 0; 2.4 Lon 71; 23; 22.6
KM: 3 + 537 To 3 + 775 String line checking of asphaltic base course 1st layer by M&E Consultants



KM: 3 + 550 To 3 + 775

Lat 34; 0; 3.9 Lon 71; 22; 52.7
Asphaltic base course 1st layer survey inspection by M&E Consultants



KM: 3 + 600 To 3 + 875

Lat 34; 0; 3.9 Lon 71; 22; 56.4
Inspection of asphaltic base course 2nd layer by M&E Consultants with final rolling in progress



Lat 34; 0; 4.3 Lon 71; 22; 22.3

KM: 3 + 875 To 4 + 025

Inspection of asphaltic base course 1st layer by M&E Consultants



Lat 34; 0; 8.22 Lon 71; 22; 9.8

KM: 5 + 356 To 5 + 375

Full width embankment formation 1st layer in progress

CULVERTS



Lat 34; 0; 5.4, Lon 71; 23; 50.9
KM: 2 + 611 (Culvert) Curing of top slab in progress



Lat 34; 0; 0, Lon 71; 23; 33.7
KM: 3 + 081 (Culvert) Asphalt base course 1st layer rolling in progress



Lat 34; 0; 8.7, Lon 71; 22; 44
KM: 4 + 480 (Culvert) Form work for Concrete guard rails is ready for concrete pouring



Lat 34; 0; 6.3, Lon 71; 22; 15.7
KM: 5 + 202 (Culvert) Curing of top slab in progress



Lat 34; 0; 8.12, Lon 71; 22; 10
KM: 5 + 354 (Culvert) Curing of top slab in progress



Lat 34; 0; 8.0, Lon 71; 21; 44.0
KM: 6 + 050 (Culvert) Curing of top slab in progress



Lat 34; 0; 10.896, Lon 71; 21; 38.05
KM: 6 + 191 (Culvert) Curing of top slab in progress



Lat 34; 0; 10.876, Lon 71; 21; 25.325
KM: 6 + 501 (Culvert) Form work erection for top slab in progress



Lat 34; 0; 15.455, Lon 71; 20; 53.345
KM: 7 + 384 (Culvert) Curing of top slab in progress

RETAINING WALLS



Lat 34; 0; 12.01, Lon 71; 21; 26.9
KM: 6 + 450 To 6 + 478 (Retaining wall) Backfilling in progress



Lat 34; 0; 11.5, Lon 71; 21; 26.2
KM: 6 + 517 To 6 + 533 (Retaining wall) Stone masonry construction in progress



KM: 6 + 835 To 6 + 875 **Lat 34; 0; 13.8, Lon 71; 21; 13.7**
(Retaining wall) Stone masonry construction in progress



KM: 7 + 395 To 7 + 415 **Lat 34; 0; 15.8, Lon 71; 20; 52.7**
(Retaining wall) Preparation of foundation bed in progress

ROAD SIDE DRAINS



Lat 34; 0; 8.3, Lon 71; 22; 41.9
KM: 4 + 480 To 4 + 585 (Drain Type D1) Brick masonry in progress (RHS)



Lat 34; 0; 7.3, Lon 71; 22; 36.8
KM: 4 + 615 To 4 + 720 (Drain Type D1) Brick masonry in progress (LHS)



Lat 34; 0; 10.6, Lon 71; 21; 13.4
KM: 5 + 560 To 5 + 715 (Drain Type D1) Brick masonry in progress



Lat 34; 0; 18.5, Lon 71; 20; 21.4
KM: 8 + 100 To 8 + 175 (Drain Type D2) Form work erection for top slab in progress

FIELD TESTING



Asphalt Plant main Assembly in FWO main camp at Jamrud near KM: 5 + 200



KM: 2 + 900 To 3 + 025 Field density testing in the presence of M&E Consultants senior staff



KM: 3 + 125 To 3 + 275 Asphalt base course 1st layer core sampling in progress by FWO and M&E Consultants



KM: 3 + 125 To 3 + 275 Asphalt base course 1st layer core sampling in progress by FWO and M&E Consultants



KM: 6 + 050 (Culvert) Casting of class A1 concrete cylinders from top slab



Crushing of brick in M&E Consultants lab is in progress

PHOTOGRAPHS OF ENVIRONMENTAL COMPLIANCE MONITORING



(Photo # 01) View of FWO Work shop



(Photo #02) Diesel Stock and heavy machinery of FWO



(Photo #03) Heavy Vehicle Stand of the FWO



(Photo # 04) Front view of Asphalt Plant of FWO for road Construction



(Photos # 05) At KM: 6+050, the subcontractor labors are working at culvert construction site



(Photo # 06) KM: 10+450 Rock cutting along the road, labors are working without safety measures/ Personal protective measures



(Photo # 07) At KM: 3+740 FWO was advised to remove the solid waste dumped in front of Education office Jamrud



(Photo # 08) KM: 3+200: FWO was advised to clear the blockage of main drain near Petrol Pump



(Photo # 09) At KM: 5+630 Removal of material from the graveyard has been advised to FWO multiple times



(Photo # 10) Drinking Water Supply arrangements for Labor Camp of FWO



(Photo # 11) Dining Hall for Labor Camp



(Photo # 12) Wash Room arrangements at FWO Camp



(Photo # 13) Canteen for Labor Camp of FWO



(Photo # 14) Generator arrangement of Labor camp of FWO



(Photo # 15) Signs Boards for roads construction work in FWO labor camp



(Photos # 16) Quarry Area at KM: 6+050, still need proper leveling and refilling



(Photos # 17) Quarry area at KM: 2+000 still needs proper leveling and refilling



(Photo # 18) New quarry site at KM: 11+200 needs H&S protocol implementations



(Photo # 19) New Quarry site at KM: 11+200, needs H&S protocol implementations



(Photo # 20) Dust pollution near KM: 1+050, need regular sprinkling of water



(Photo # 21) Dust pollution at KM: 5+710 need regular sprinkling of water



(Photo # 22) Dust Pollution at KM: 7+200 needs regular sprinkling of water



(Photo # 23) Dust Pollution at KM: 9+000 needs regular sprinkling of water



(Photo # 24) Dust Pollution at KM: 10+500 on diversion needs regular sprinkling of water