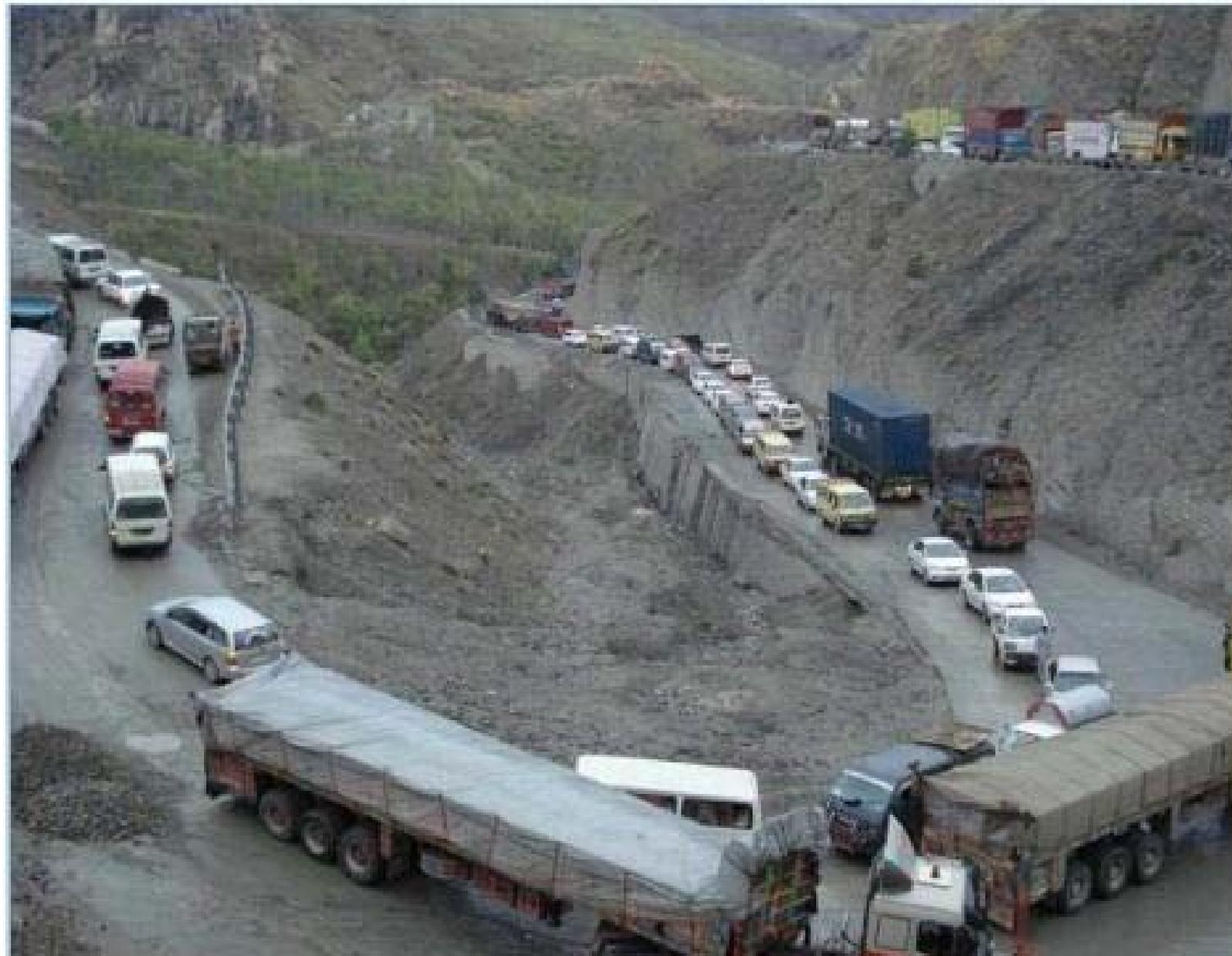




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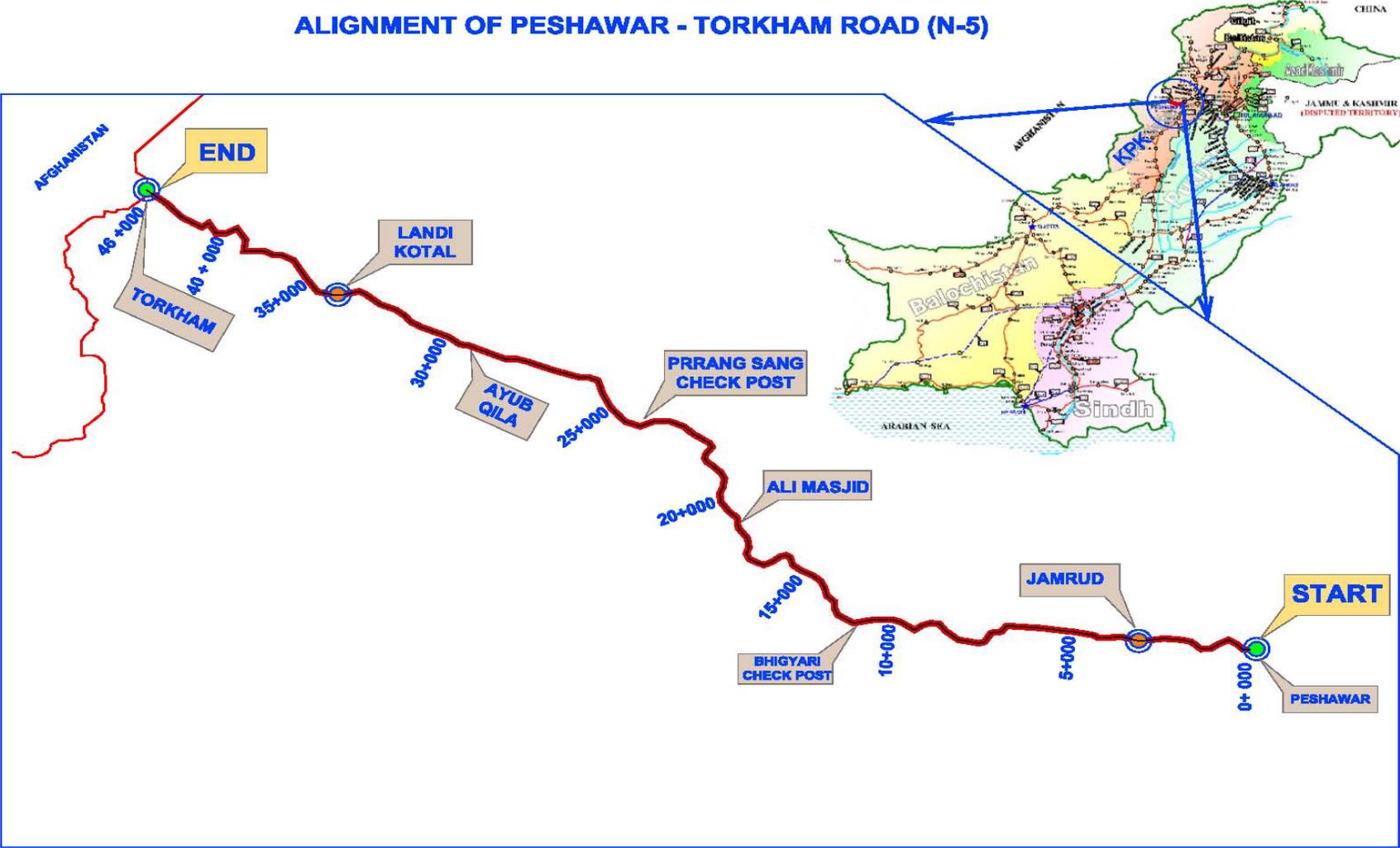
**STRENGTHENING & IMPROVEMENT OF PESHAWAR - TORKHAM ROAD
KHYBER AGENCY, FATA**

**MONTHLY PROGRESS REPORT # 08
JULY 2013**

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ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5)



EXECUTIVE SUMMARY

Peshawar – Torkham road is an integral part of National Highway (N-5), a vital piece of the nation’s infrastructure, which connects Pakistan with Afghanistan at Torkham border and plays an important role in the economic activities as well as providing timely logistic support to the security agencies deployed in Khyber Agency. The project “Strengthening & Improvement of Peshawar Torkham Road” is funded with United State Agency for International Development (USAID) grant amounting to USD 67 Million and implemented by FATA Secretariat as project proponent through Frontier Works Organization (FWO) as EPC (Engineer, Procure, and Construct) Contractor.

The 46 KM Peshawar – Torkham road (PTR) has been split into multiple sections for designing / construction purposes due to inherited site specific conditions such as live traffic corridor, gigantic hilly terrain, safety and security restrictions *etc.*

Work on section – I (KM: 0+000 To 9+000) of the project was initiated by FWO on October 15, 2012. Initially the progress of construction work was relatively slow. However with improved design & construction correlation and mobilization of additional resources, FWO managed to accelerate site activities and achieving significant progress in almost all project components.

- Key construction achievements made against section – I by the end of July 2013:-

• Earthwork:	100	%
• Sub Base:	100	%
• Aggregate Base Course:	100	%
• Asphaltic Base Course:	100	%
• Culverts:	78.51	%
• Retaining Walls:	66.00	%
- Traffic is switched onto the portion of section – I, where ACBC work is completed.
- With verification of IPC # 02 on July 26, 2013 for an amount of US\$ 2,494,227.00, the overall certified payment till date is US\$ 3,091,868 (US\$ 3.092 Million)
- FWO has started construction activities on section – II (KM: 9+000 To KM: 14+000), section – III (KM: 14+000 To KM: 19+861) & Landi Kotal bypass (KM: 36+500 To KM: 36+925) w.e.f March 18, 2013 & May 27, 2013 respectively.
- Parallel to field activities FWO/NESPAK has submitted cost estimate & design / drawings for section – II & III of the project; Bridge # 2 at RD 9+560 and a Multi-cell culvert at RD 11+190 in the last week of the reporting month. Preliminary technical comments on proposed design / drawings have been shared with FWO/NESPAK during the reporting period. While detailed review is in progress and additional comments shall be shared shortly.
- During the reporting period, the contractor teams were able to work 100% of 27 available working days.
- FWO was constantly pressed for demonstrating good environmental practice in conformity with the construction environmental management plan.

INTRODUCTION

1.1 PROJECT 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 long 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					
Physical Limits	Peshawar to Torkham				
Feature	Section – I	Section – II	Section – III	Section – IV	Section – V
Kilometers	0+00 to 9+00	9+00 to 14+00 (Revised)	14+00 to 19+00 (Revised)	19+00 to 36+00 (To be revised)	36+00 to 46+00 (To be revised)
Black Top	Total 12.3 meter (7.3 meter carriageway & 2.5 meter treated shoulders on either side)				
Completion Period	807 Calendar Days				

1.2 SCOPE OF WORK

The project involves widening, strengthening and improvement of the existing two lane carriageway, including construction of new cross drainage structures, bridges, rigid pavements and earth retaining structures spread over 46 KM. At a first stage, the FATA Secretariat has undertaken to contract out section – I of the project from KM: 0 +000 To KM: 9 + 000. Length of each package varies according to topographical features and live traffic conditions along the project route.

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. NESPAK is providing design and quality control services to FWO. While AGES Consultants has been entrusted with the Construction Monitoring and Evaluation Services including Quality Assurance and Environmental Monitoring of the project on behalf of the USAID Pakistan Mission.

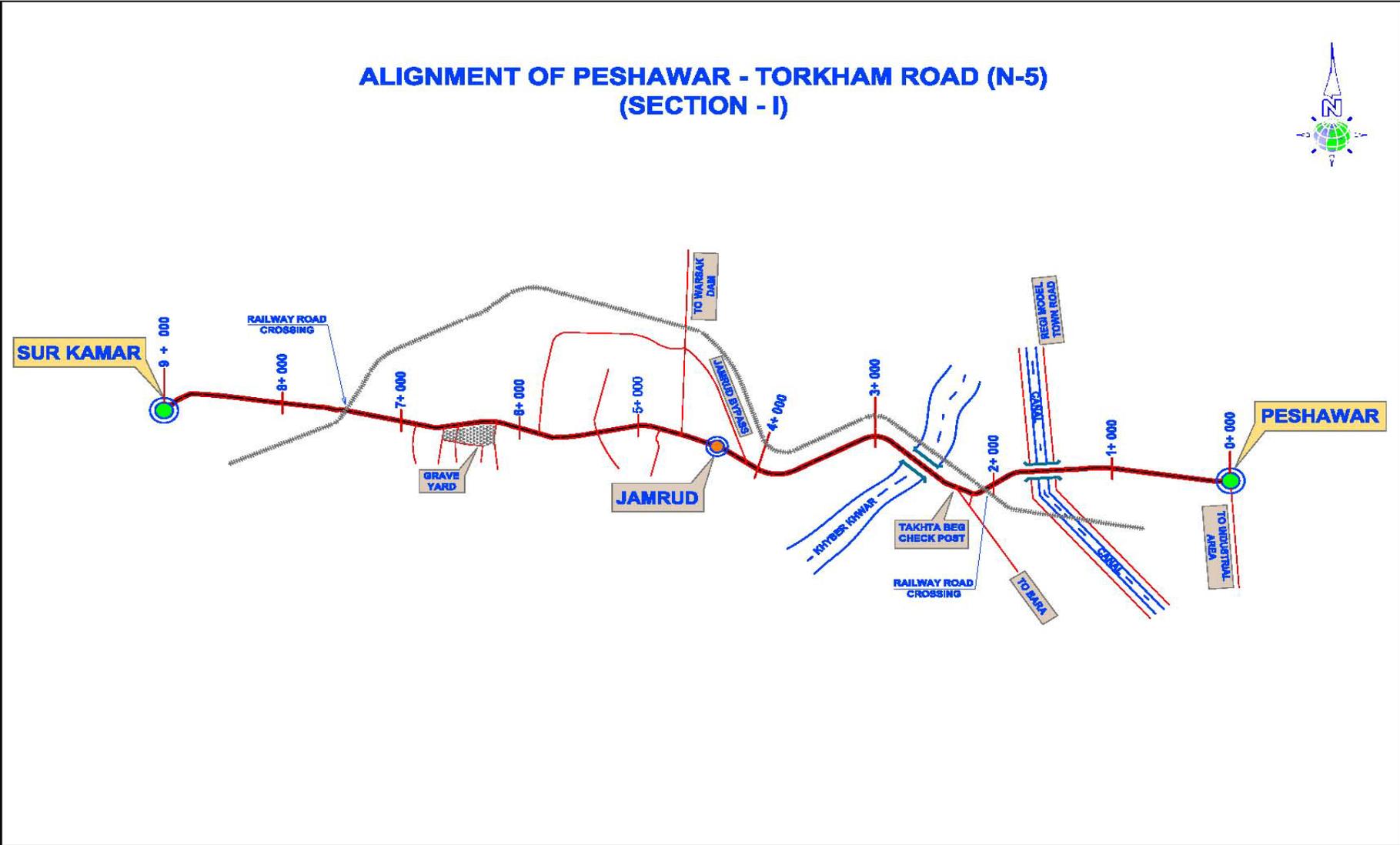
1.3 GENERAL CONTRACT DATA

1.	Name of Project	Strengthening and Improvement of Peshawar Torkham Road (N-5) Khyber Agency FATA
2.	Project Construction Cost	US \$ 67 Million
3.	Donor Agency	USAID PAKISTAN
4.	Donor's Agency Representative	Engr. Farhat Ali Shah Banori, USAID/COR
5.	Sponsoring Agency	FATA Secretariat, Peshawar
6.	Sponsoring Agency Representative	Mr. Roshan Mahsud, Project Director, PMU FATA
7.	Executing Agency	Frontier Works Organization (FWO)
8.	Executing Agency Representative	Col. Zahid (Project Director FWO)
9.	M&E Consultants	AGES Consultants
10.	M&E Consultants Representative	Engr. Aziz-ul- Haq, Project Manager
11.	Time for Completion	807 Calendar Days
12.	Mode of Construction Contract	EPC (Engineer, Procure and Construct) Contract
13.	Chronology	
	Signing of MoU (USAID–FATA–NHA)	Sep 18, 2012
	Signing of Consultancy Contract (USAID – AGES)	Sep 30, 2012
	M&E Consultants Mobilization	Oct 01, 2012
	Project Date of Commencement	Oct 15, 2012
	Project Date of Completion	Dec 31, 2014

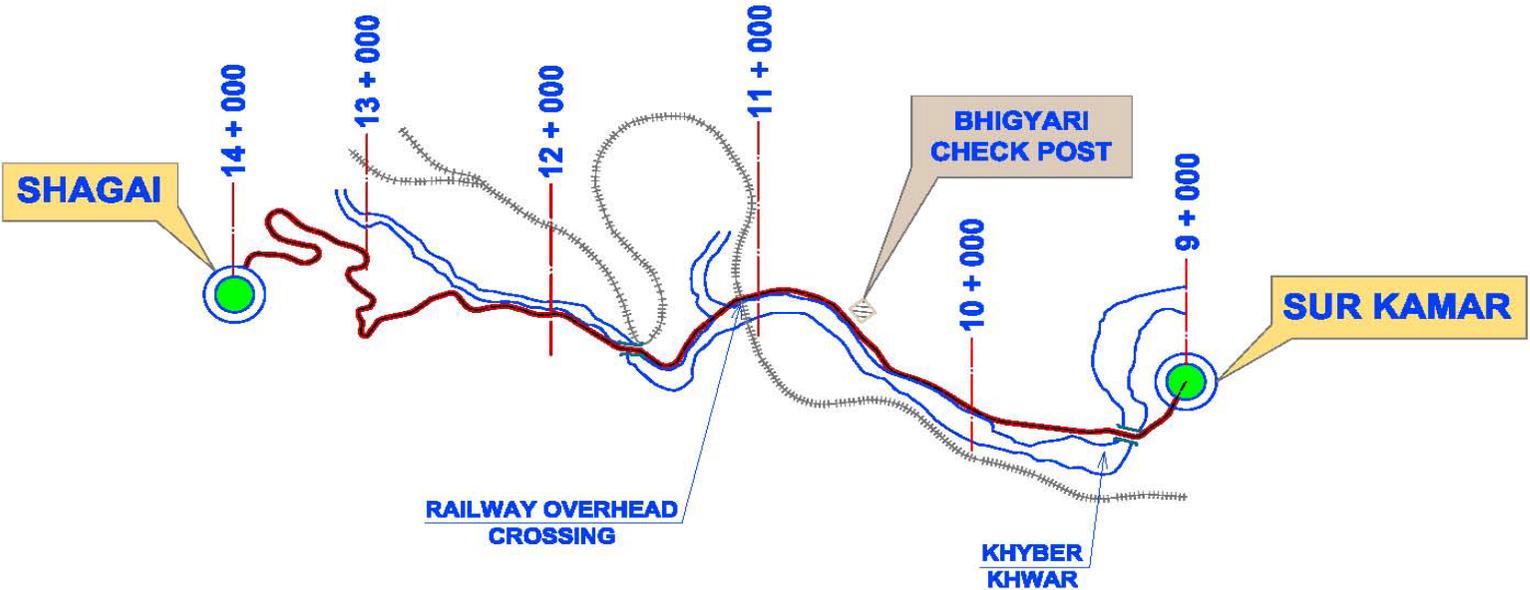
1.4 SECTIONS DATA

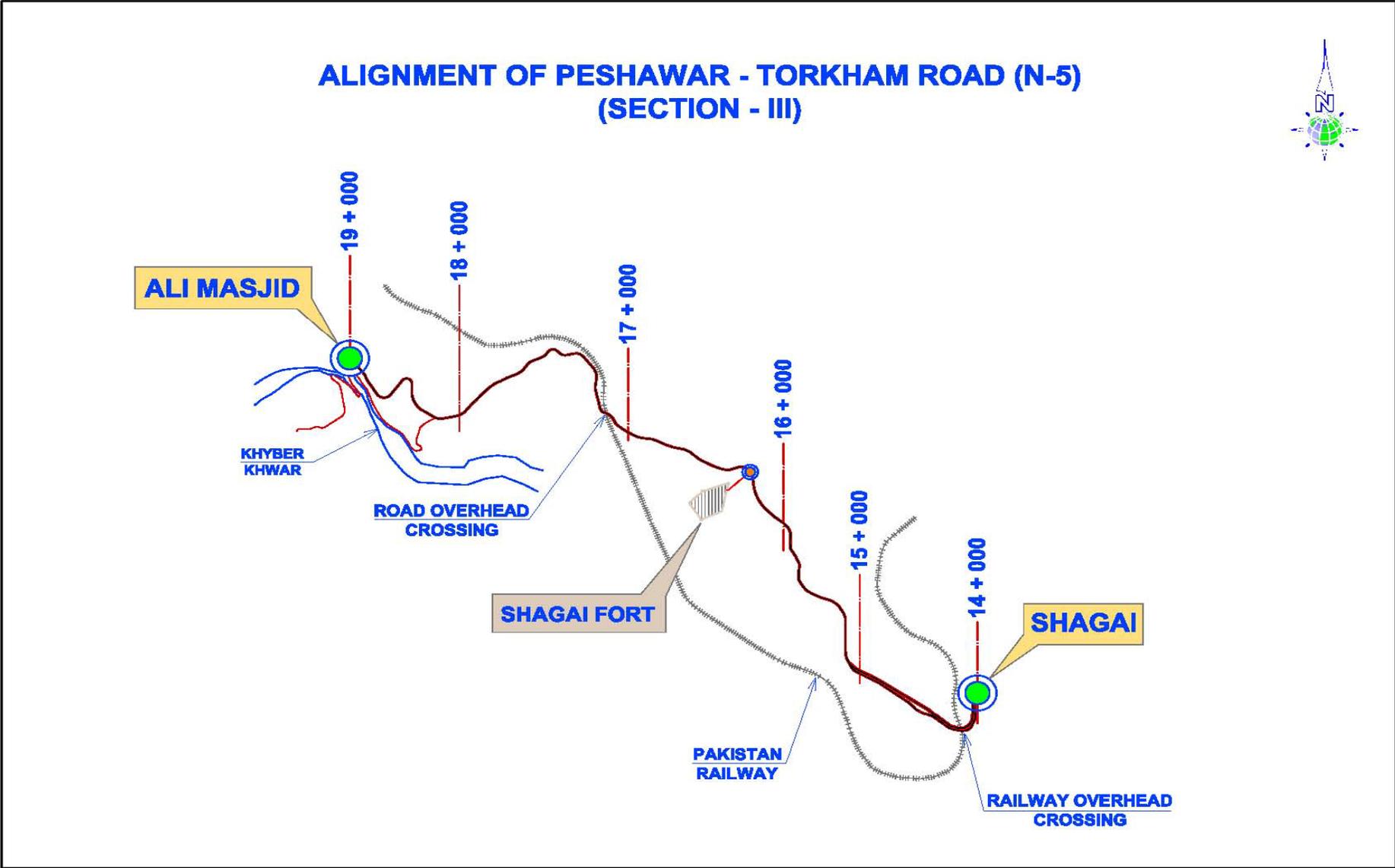
1.	Name of Package	Section – I (CH: KM: 0+000 to CH: KM: 9+000)
2.	Project Cost (Section – I)	Rs. 937.939 Million (US \$ 9.978 M)
3.	Approval of PC – 1 (Section – I)	Nov 20, 2012

1.5 ALIGNMENT SKETCHES

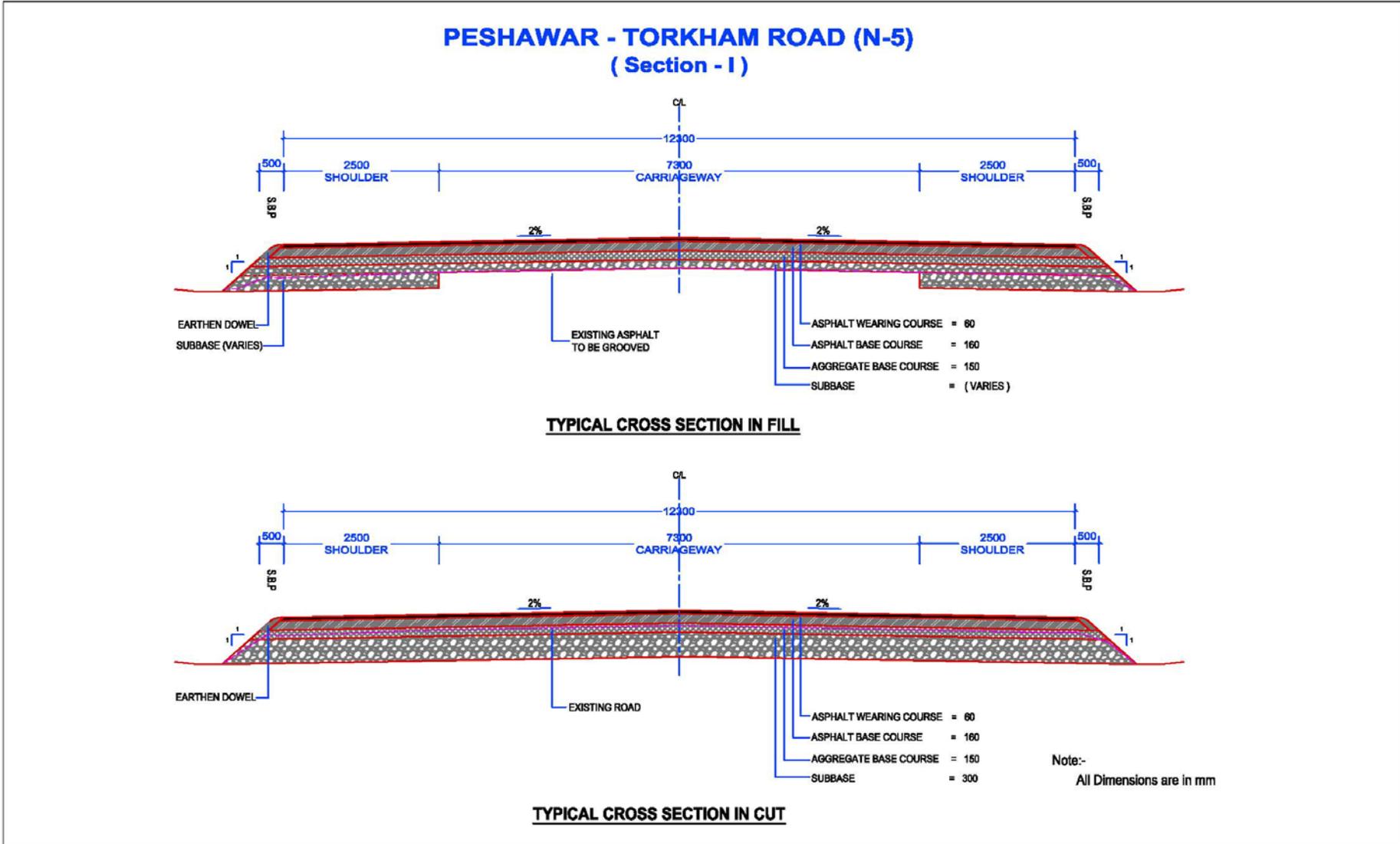


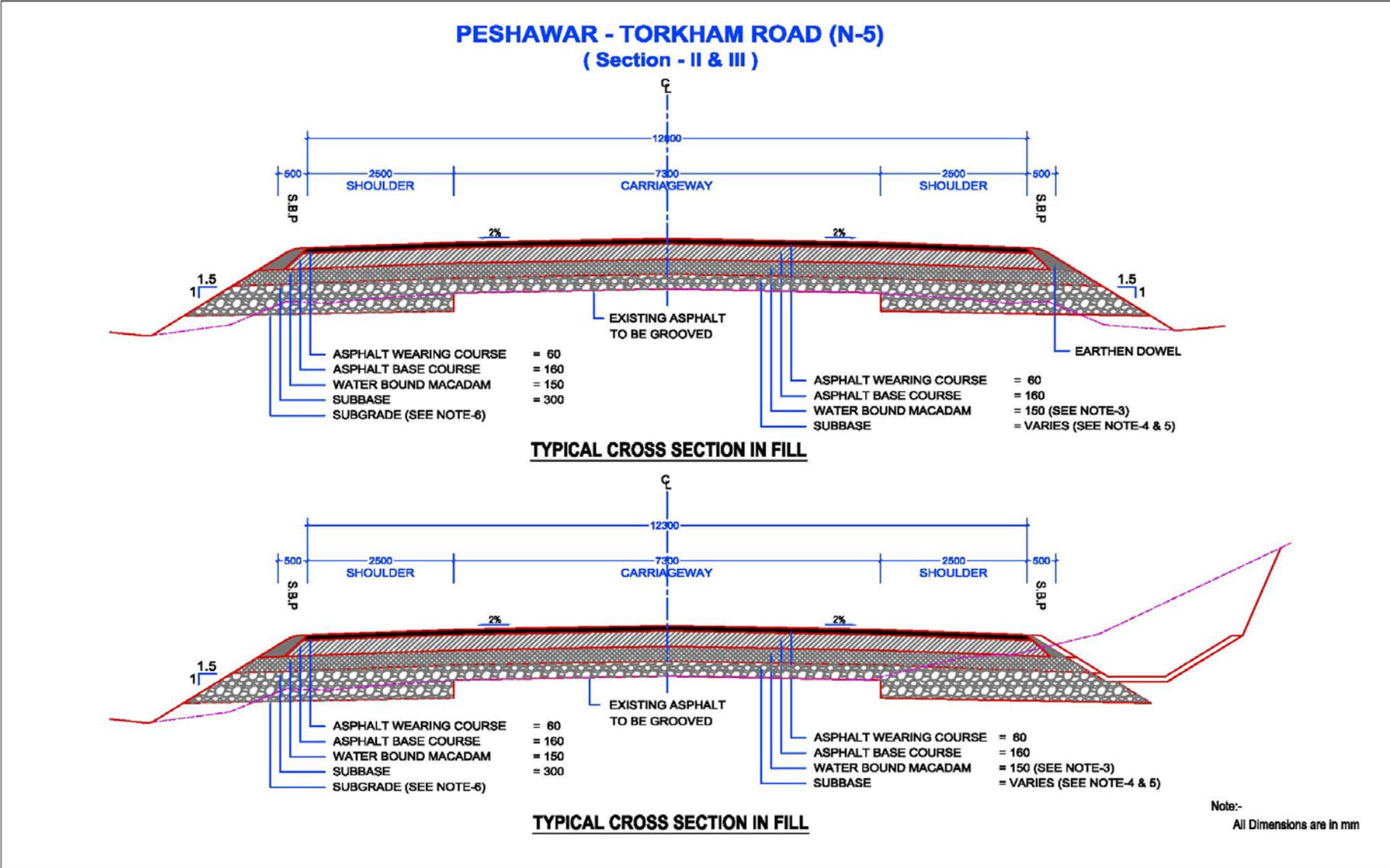
ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5) (SECTION - II)

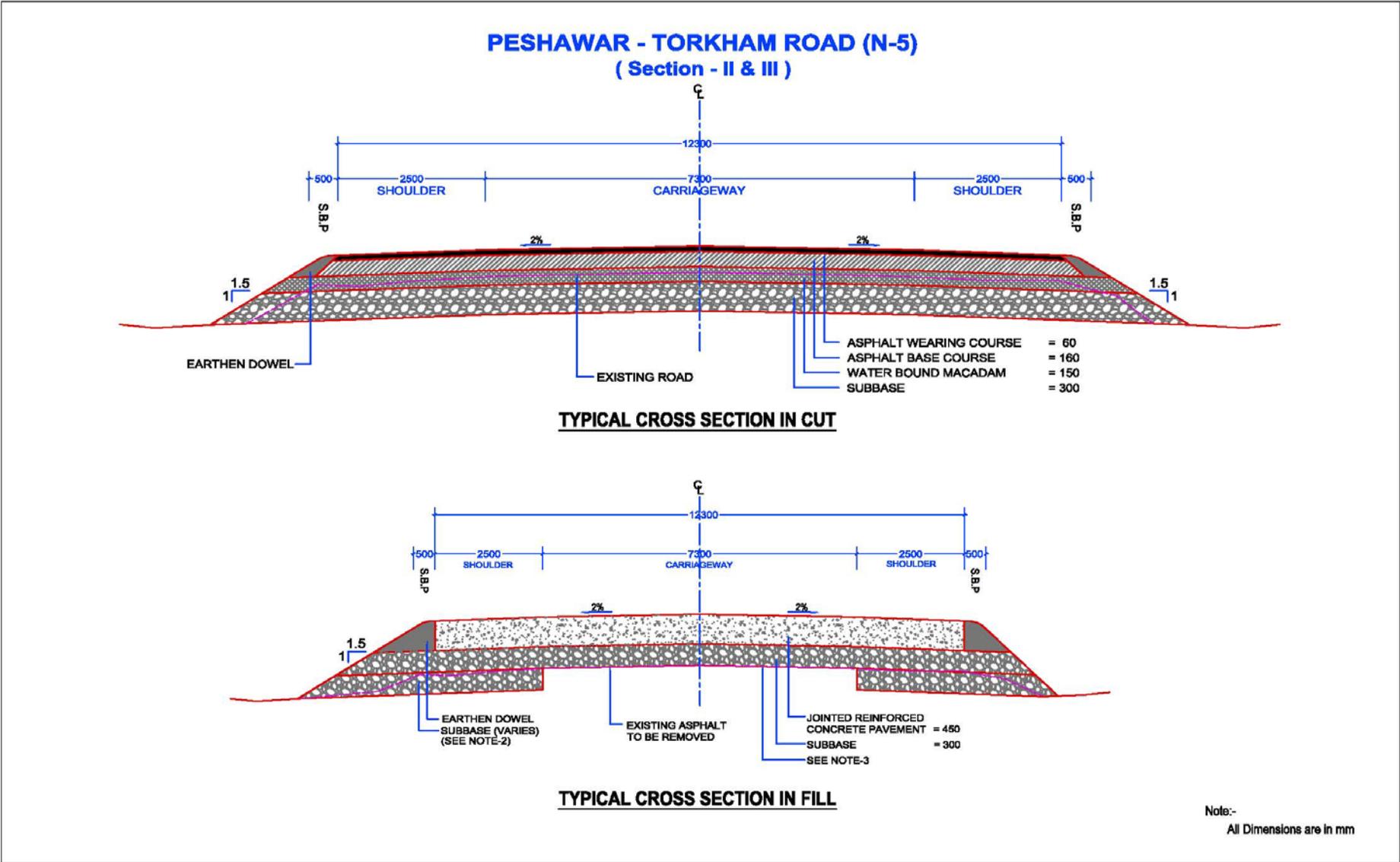




1.6 TYPICAL CROSS SECTIONS OF ROAD







M&E SERVICES & PROGRESS OF ACTIVITIES

2.1 MAJOR ACTIVITIES DURING THE REPORTING MONTH – JULY 2013

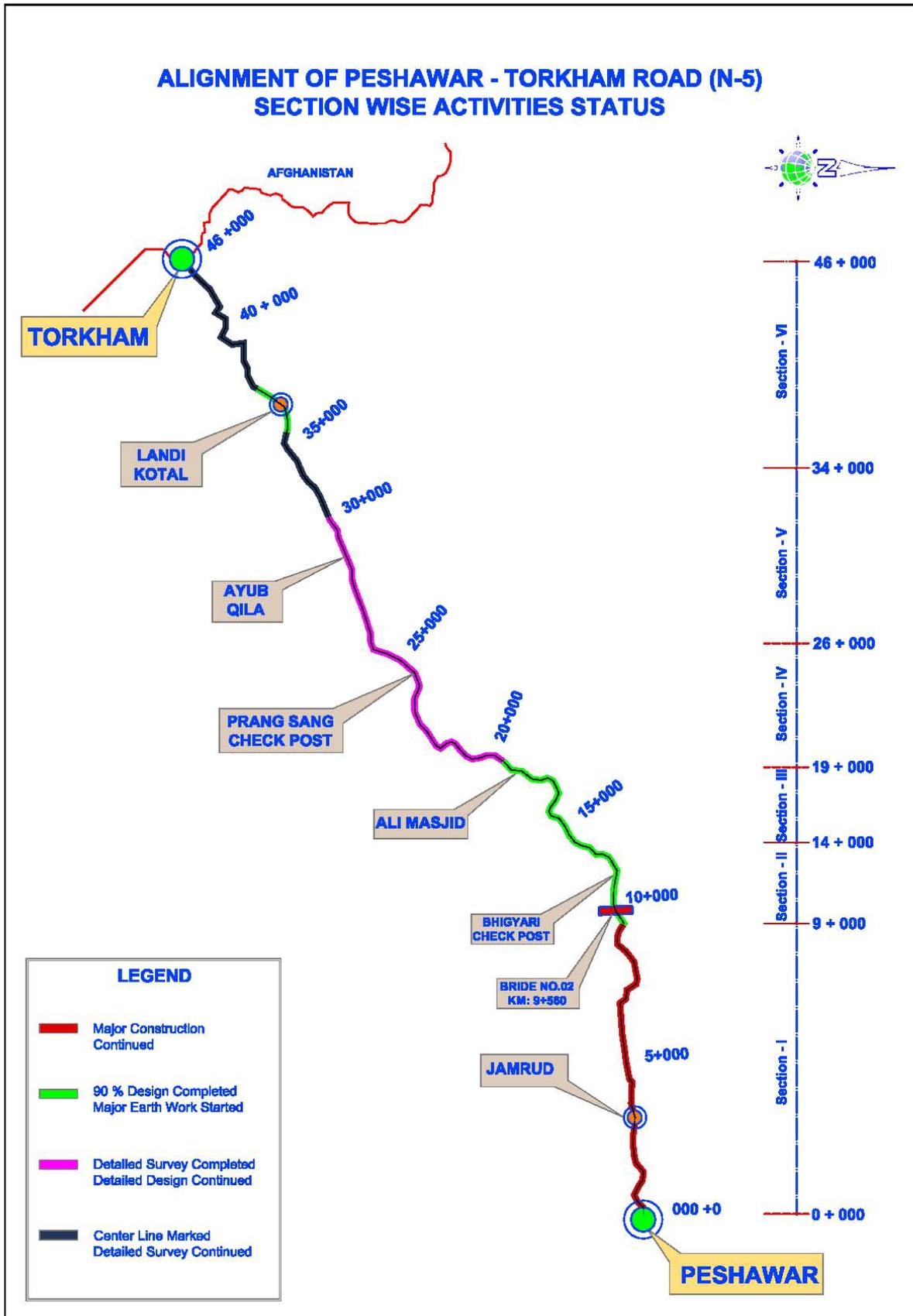
- IPC # 02 submitted to USAID by FWO through FATA Secretariat was certified on July 26, 2013 for an amount of PKR 2,494,227.00
- FWO managed to accelerate site activities and achieved significant progress in almost all project components. Key construction achievements made against section – I by the end of July 2013:-
 - Sub Base was taken from 97.22 to 100%.
 - Aggregate Base Course was taken 70.28% to 100%.
 - Asphaltic Base Course was taken from 49.72 to 100%.
 - Culverts were taken from 76.87 to 78.51%
 - Retaining Walls were taken from 62% to 66%.
- FWO has started activities on section – II (KM: 9+000 To KM: 14+000), section – III (KM: 14+000 To KM: 19+861) & Landi Kotal bypass (KM: 36+500 To KM: 36+925) w.e.f March 18, 2013 & May 27, 2013 respectively. These activities include:
 - Bulk earthwork, sub-base paving work & cross drainage work continued across the section's II & III.
 - Controlled blasting at KM: 10+400 & roadway excavation in widening portions continued.
 - Test pile boring & concreting completed at bridge No: 02 (KM: 09+500), while preparation for static pile load testing continued.
 - New concrete batching plant arrived at site, but not yet installed / commissioned.
 - A number of temporary traffic diversions / detours & switches were put in place.
- FWO/NESPAK has submitted cost estimate & design / drawings for section – II & III of the project in the last week of the reporting month. Preliminary technical comments on proposed design / drawings submitted to USAID & FWO / NESPAK during the reporting period. While detailed review is in progress and final comments shall be shared shortly.
- Work continued to finalize the detailed design & ground survey from KM: 19+861 To 46+000.
- During the reporting month, M&E consultants attended 02 meetings with relevant stakeholders and conducted joint site visits across the project corridor from Peshawar to Torkham.
- M&E consultants continued to liaise with relevant stakeholders about project and address environmental, planning and other concerns relating to the strengthening / improvement of the vital national traffic corridor.
- Actively participated in on-site discussions regarding alternative design options for P – T road b/w KM: 20+100 To 20+500 & Km: 43+000 To 46+000.

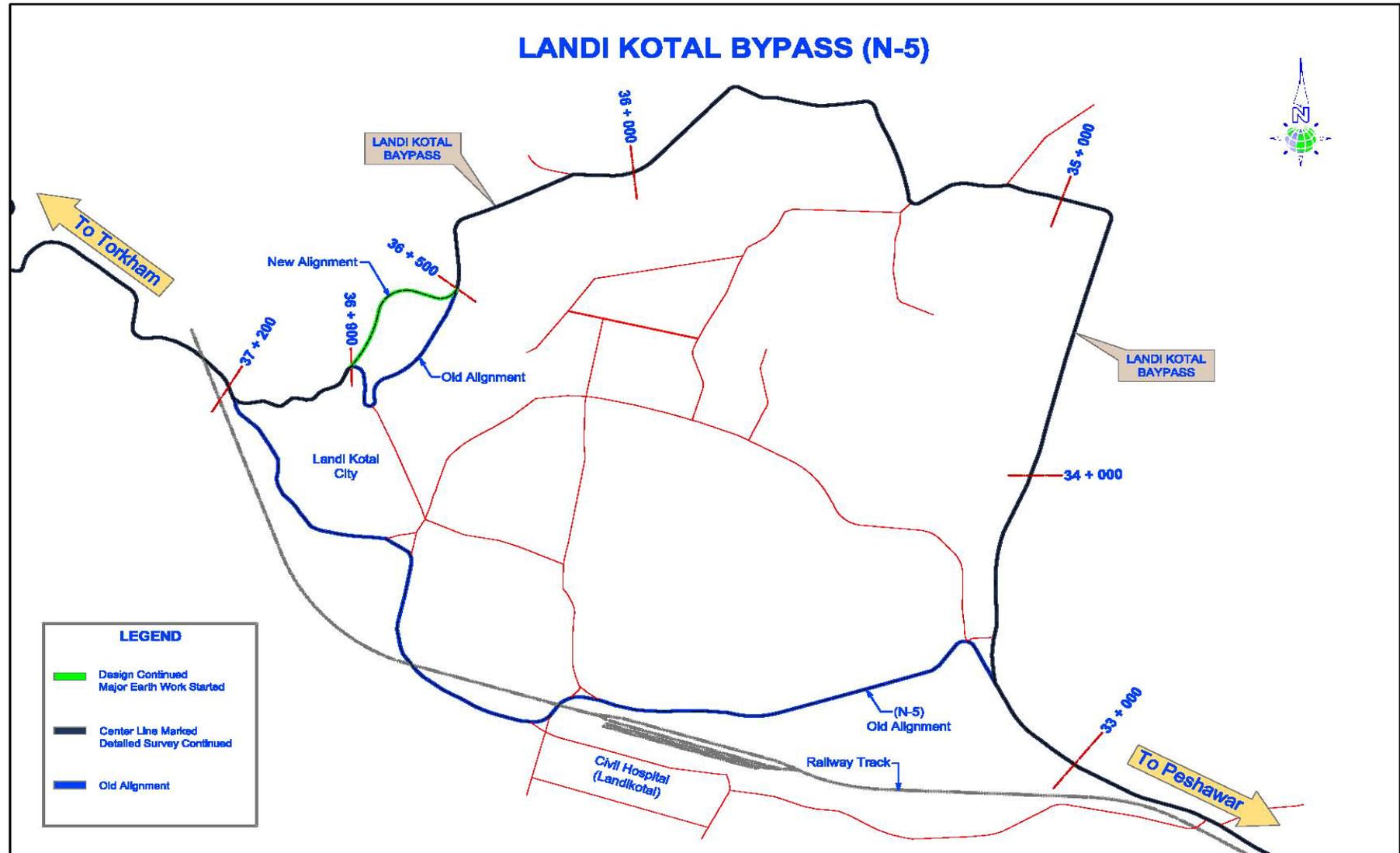
- FWO was constantly pressed for demonstrating good environmental practice in conformity with the construction environmental management plan.
- Total percent time elapsed up-to 31st July 2013 is 35.94 %.
- During the reporting period, not a single day was lost to wet weather and the contractor teams were able to work 100% of 27 available working days.

2.2 MATTERS REQUIRING ATTENTION

1. In addition to other tests for Pre-mix Asphalt, a total of 155 tests were performed for core thickness of Asphaltic Base Course for 1st and 2nd layer wherein about of 26 tests were found short of the specified thickness in section – I (KM 1+000 to KM 5+000). However, when overall combined thickness of both the layers was taken into account, the number of points falling short of the overall specified thickness came to be eleven (11). FWO needs to cover the thickness deficiency in the Asphaltic Wearing Course layers with no additional cost to the Project. The matter has been already brought into the notice of NESPAK / FWO in the meeting of July 08, 2013 and USAID prior to laying of Asphaltic Wearing Course.
2. Moreover, FWO has reportedly planned to start laying of wearing course in section – I. JMF for the proposed section has however not been shared with USAID or AGES. JMF need to be shared with AGES / USAID timely so that it may be improved, if deemed necessary, prior to laying of ACWC.
3. In both section II & III, rigid pavement has been proposed in different portions with overall length almost 50% or more of the proposed two sections. FWO has been asked for a written justification to the fact that why rigid pavement has been proposed against the flexible pavement. Rigid pavement is a costlier proposition and we may exceed the overall funding limits set in the Activity Agreement for the entire road.
4. Flexible pavement may be opened for traffic after 24 hours or so. However, rigid pavement will need 21-28 days to attain its maximum strength. Again the temperature variation in the project area needs to be taken into consideration. Therefore, a construction methodology / method statement elaborating at least the following points may please be shared with us as to:
 - a. how will FWO take care of traffic management where diversion is not possible;
 - b. how will FWO ensure that the pavement has attained the desired strength before putting it into operation;
 - c. how will FWO ensure concreting in odd temperature;
 - d. how will FWO ensure curing of the proposed 45 cm thick rigid pavement?

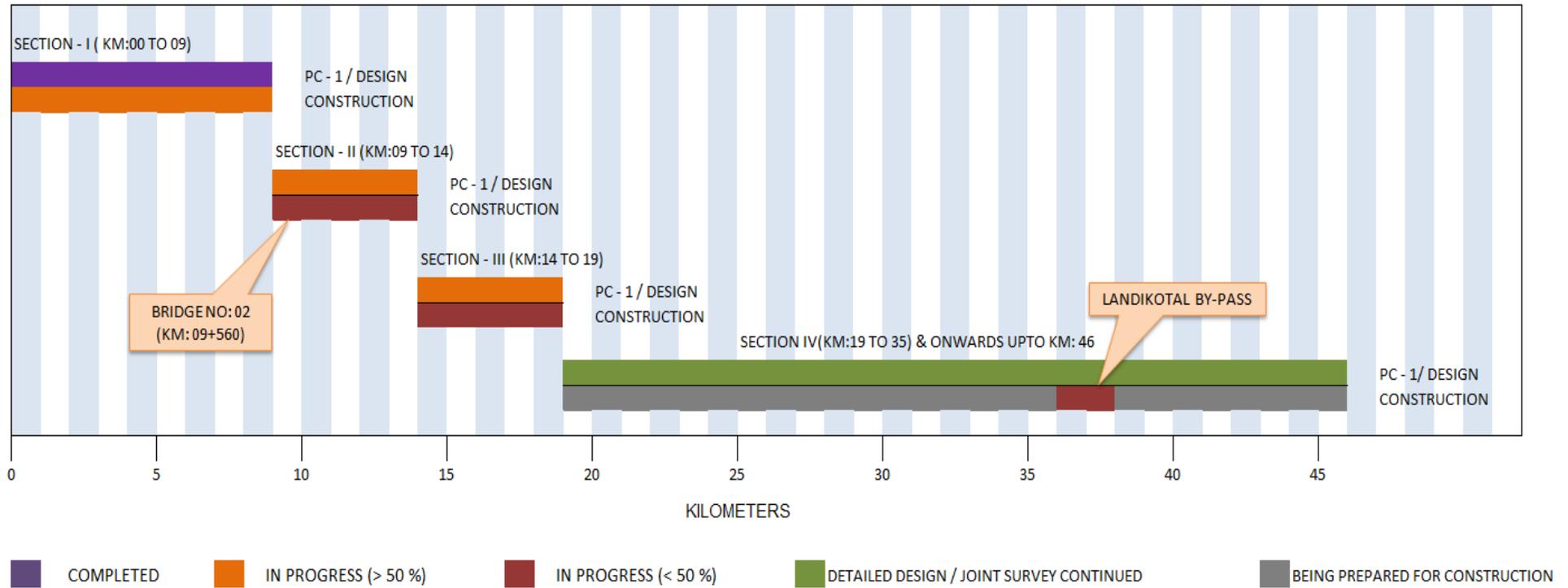
2.3 SECTION WISE ACTIVITIES STATUS





CIVIL WORKS PROGRESS STATUS

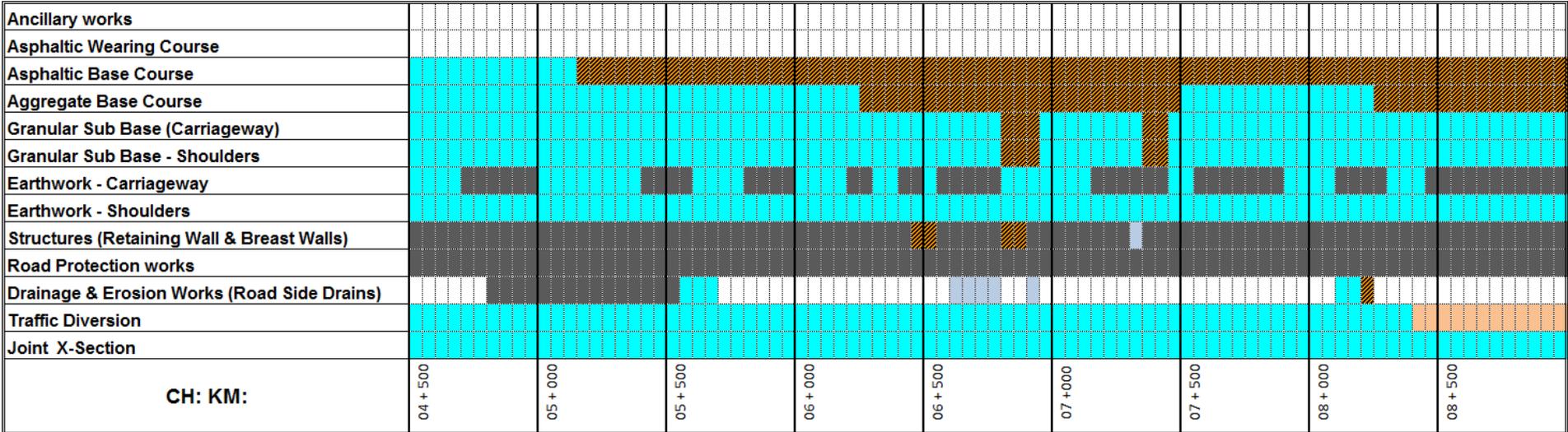
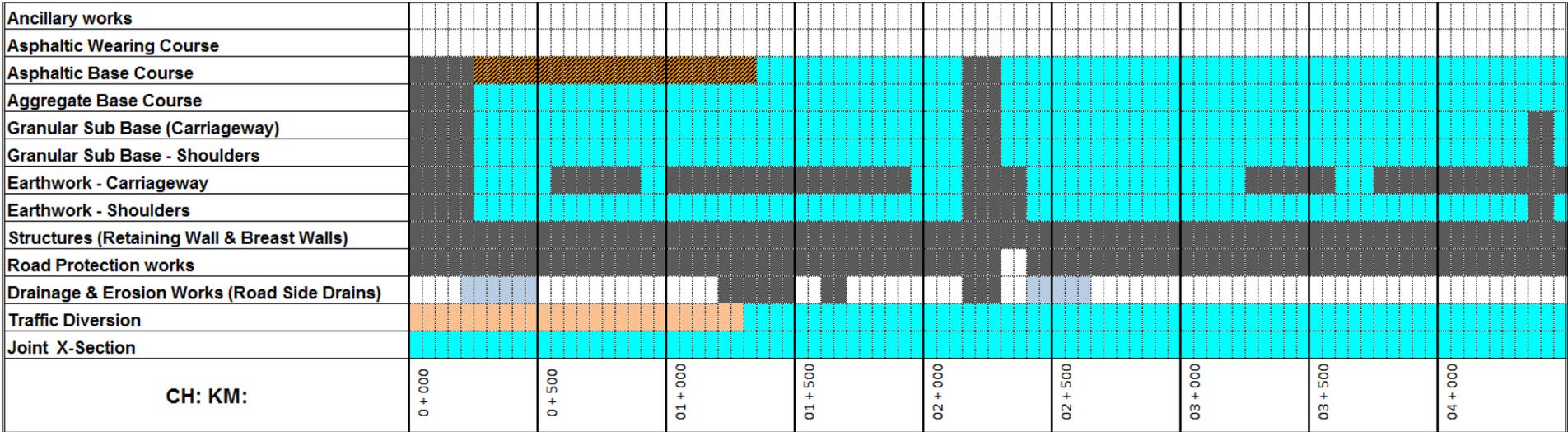
3.1 OVERALL PROGRESS STATUS



3.2 SECTION - I CUMULATIVE MILESTONE WISE PROGRESS STATUS

BILL NO	DESCRIPTION	MILESTONE UNIT	NUMBER OF MILESTONES	AMOUNT AS PER MILESTONE (US \$)	TOTAL AMOUNT (US \$)	PROGRESS UP TO PREVIOUS MONTH			PROGRESS IN THIS MONTH			MILESTONE WISE COMULATIVE PROGRESS		
						MILESTONE ACHIEVED	AMOUNT (US \$)	PROGRESS %	MILESTONE ACHIEVED	AMOUNT (US \$)	PROGRESS %	MILESTONE ACHIEVED	AMOUNT (US \$)	PROGRESS %
1	EARTH WORK	KM	9	6,339.85	57,058.65	9.00	57,058.65	100.00	-	-	-	9.00	57,058.65	100.00
2	SUB BASE AND BASE COURSE													
i	GRANULAR SUB BASE	KM	9	111,763.61	1,005,872.49	8.75	977,931.59	97.22	0.250	27,940.90	2.78	9.00	1,005,872.49	100.00
ii	AGGREGATE BASE COURSE	KM	9	73,611.56	662,504.04	6.33	465,961.17	70.33	2.67	196,542.87	29.67	9.00	662,504.04	100.00
iii	ASPHALTIC BASE COURSE	KM	9	416,608.69	3,749,478.21	4.48	1,866,406.93	49.78	4.52	1,883,071.28	50.22	9.00	3,749,478.21	100.00
3	SURFACE COURSES AND PAVEMENT	KM	9	213,785.71	1,924,071.39	-	-	-	-	-	-	-	-	-
4a	STRUCTURES (RETAINING WALL/BREAST WALL)	JOB	1	38,812.31	38,812.31	0.62	24,063.63	62.00	0.04	1,552.49	4.00	0.66	25,616.12	66.00
4b	STRUCTURES (CULVERTS)													
I	WIDENING AND REPAIR OF EXISTING CULVERTS AT RD 1+290 & 5+692	NUMBER	2	10,657.55	21,315.10	-	-	-	-	-	-	-	-	-
II	CONSTRUCTION OF NEW CULVERTS (No. of Span x Span Width x Height)													
	1 x 2 x 1.5	NUMBER	7	19,268.30	134,878.10	5.35	103,085.41	76.43	0.20	3,853.66	2.86	5.55	106,939.07	79.29
	1 x 3 x 1.5	NUMBER	3	25,204.07	75,612.21	1.47	37,049.98	49.00	0.03	756.12	1.00	1.50	37,806.11	50.00
	2 x 3 x 1.5	NUMBER	2	40,950.75	81,901.50	1.90	77,806.43	95.00	0.10	4,095.08	5.00	2.00	81,901.50	100.00
	3 x 3 x 1.5	NUMBER	1	54,597.59	54,597.59	0.80	43,678.07	80.00	0.05	2,729.88	5.00	0.85	46,407.95	85.00
	5 x 3 x 1.5	NUMBER	1	75,007.57	75,007.57	1.00	75,007.57	100.00	0.08	6,000.61	8.00	1.00	75,007.57	100.00
5a	DRAINAGE & EROSION WORKS (ROAD SIDE DRAIN)													
i	DRAIN TYPE D-1 & D-2 (COVERED)	KM	5.5	249,002.78	1,369,515.29	0.01	2,490.03	0.18	-	-	-	0.01	2,490.03	0.18
ii	DRAIN TYPE D-1a & D-2a (UNCOVERED)	KM	3	110,128.52	330,385.56	-	-	-	-	-	-	-	-	-
iii	DRAIN TYPE D-3	KM	1.5	135,439.74	203,159.61	-	-	-	-	-	-	-	-	-
5b	ROAD PROTECTION WORKS (100 M)	JOB	1	11,047.54	11,047.54	-	-	-	-	-	-	-	-	-
6	ANCILLARY WORKS COMPLETE IN ALL RESPECT	JOB	1	54,375.49	54,375.49	-	-	-	-	-	-	-	-	-
7	DIVERSION	KM	9	12,978.72	116,808.48	3.00	38,936.16	33.33	0.86	11,161.70	9.56	3.86	50,097.86	42.89
8	PLANTATION OF TREES (450 Nos)	KM	9	1,297.87	11,680.83							-	-	-
TOTAL PROJECT COST (SECTION-I)					9,978,081.96		3,769,475.62	37.78		2,137,704.58	21.42		5,901,179.59	59.14

3.3 SECTION - I PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS



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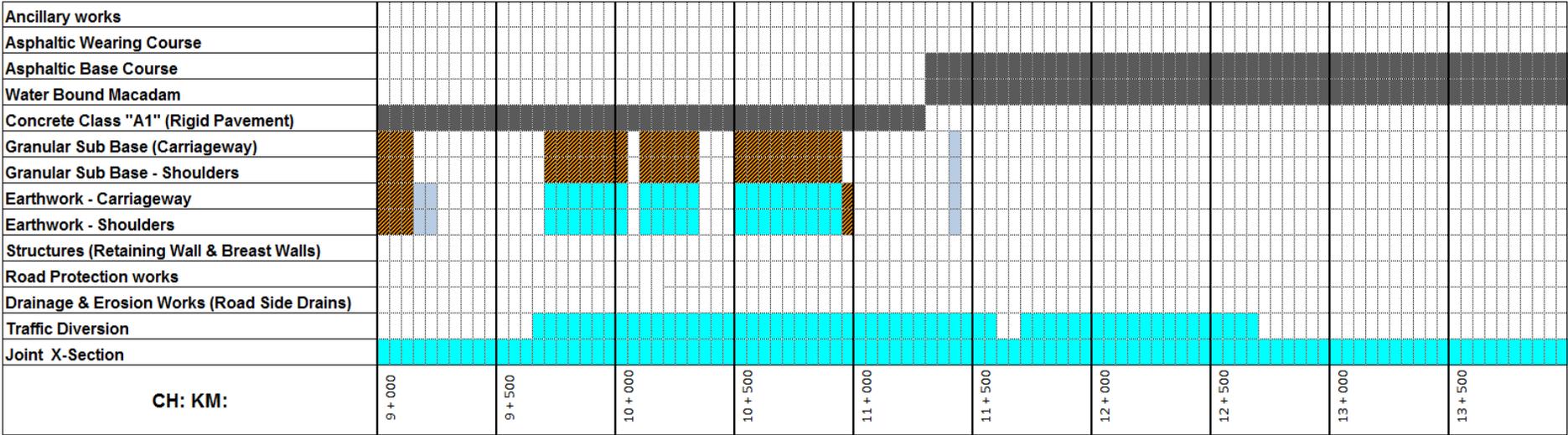


3.4 SECTION - I CULVERTS PHYSICAL PROGRESS STATUS

RCC Railing														
Roll Pointing														
RCC Slab Cast in situ														
Flooring/Cut-off wall/ Rip rap														
Back Filling														
Bed plate/Curtain wall														
Stone Masonry (Wing Walls)														
Stone Masonry (Abutments/ Pier)														
Lean Concrete														
Structural Excavation														
Dismantling of Existing Structure														
Activity														
KM	1+230	2+611	3+081	4+480	4+590	5+202	5+354	5+905	6+050	6+191	6+501	6+648	6+883	7+384

 ACTIVITIES COMPLETED IN JULY-2013
 ACTIVITIES COMPLETED IN PREVIOUS MONTHS

3.5 SECTION - II PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS



LEGEND

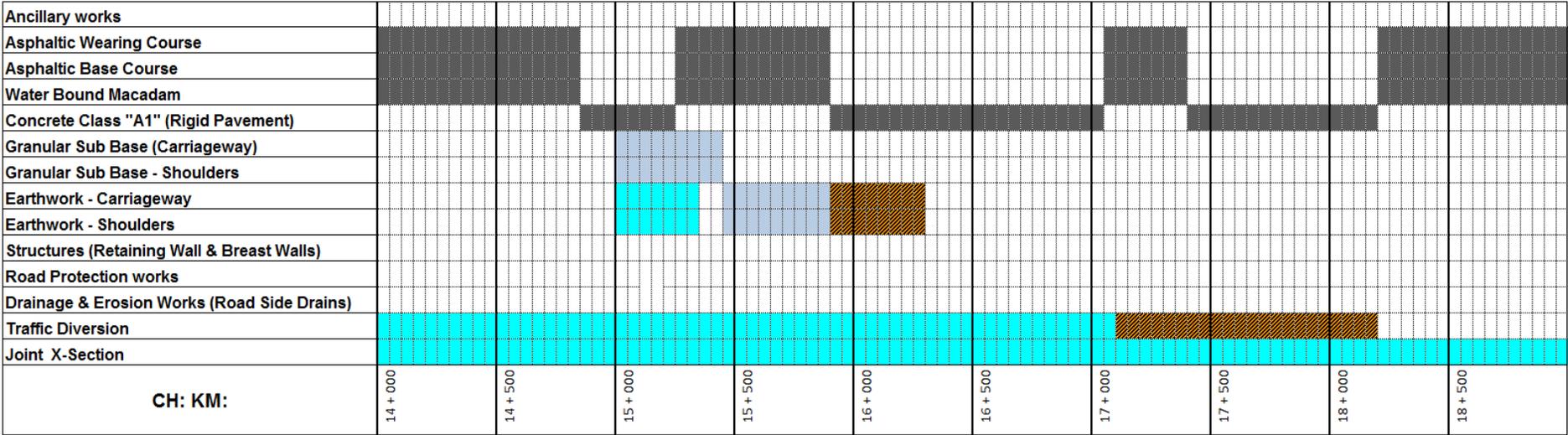
- WORKS COMPLETED IN JULY 2013
- WORKS COMPLETED IN PREVIOUS MONTHS
- PARTIAL COMPLETION
- SINGLE LANE TRAFFIC MAINTAINED
- ITEM NOT REQUIRED

3.6 SECTION - II CULVERTS PHYSICAL PROGRESS STATUS

RCC Railing	U/S side																	
	D/S side																	
Roll Pointing	Abt No1																	
	Abt No2																	
Flooring/Cut-off wall/ Rip rap	B/W																	
	Abts																	
RCC Slab/Precast Pannels																		
Bed plate/Curtain wall	Abt No1																	
	Abt No2																	
Back filling	Abt No1																	
	Abt No2																	
	B/W Abts																	
Stone Masonry (Wing Walls)	U/S side																	
	D/S side																	
Stone Masonry (Abutments/ Pier)	Abt No1																	
	Abt No2																	
Lean Concrete	Abt No1																	
	Abt No2																	
Structural Excavation	Abt No1																	
	Abt No2																	
Dismantling of Existing Structure																		
Construction Sequence (FW/HW)		FW	FW	FW	FW	FW	HW LHS	HW RHS	FW	FW	FW	FW	HW LHS	HW RHS	FW	FW	FW	FW
RD as per site		10+050					11+372					12+337	12+460					
RD as in Drawing		10+025	10+571	10+615	10+850	10+965	11+375	11+690	11+840	12+200	12+336	12+460	12+775	12+975	13+215	13+325		



3.7 SECTION - III PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS



LEGEND

- WORKS COMPLETED IN JULY 2013
- WORKS COMPLETED IN PREVIOUS MONTHS
- PARTIAL COMPLETION
- SINGLE LANE TRAFFIC MAINTAINED
- ITEM NOT REQUIRED

3.8 SECTION - III (LOOP NO. 1) PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS

Ancillary works			
Asphaltic Wearing Course			
Asphaltic Base Course			
Water Bound Macadam			
Concrete Class "A1" (Rigid Pavement)			
Granular Sub Base (Carriageway)			
Granular Sub Base - Shoulders			
Earthwork - Carriageway			
Earthwork - Shoulders			
Structures (Retaining Wall & Breast Walls)			
Road Protection works			
Drainage & Erosion Works (Road Side Drains)			
Traffic Diversion			
Joint X-Section			
CH: KM:	0 + 000	0 + 500	0 + 922

LEGEND

	WORKS COMPLETED IN JULY 2013		SINGLE LANE TRAFFIC MAINTAINED
	WORKS COMPLETED IN PREVIOUS MONTHS		ITEM NOT REQUIRED
	PARTIAL COMPLETION		

3.9 SECTION - III CULVERTS PHYSICAL PROGRESS STATUS

RCC Railing	U/S side																					
	D/S side																					
Roll Pointing	Abt No1																					
	Abt No2																					
Flooring/Cut-off wall/ Rip rap	B/W Abts																					
RCC Slab/Precast Pannels																						
Bed plate/Curtain wall	Abt No1																					
	Abt No2																					
Back filling	Abt No1																					
	Abt No2																					
	B/W Abts																					
Stone Masonry (Wing Walls)	U/S side																					
	D/S side																					
Stone Masonry (Abutments/ Pier)	Abt No1																					
	Abt No2																					
Lean Concrete	Abt No1																					
	Abt No2																					
Structural Excavation	Abt No1																					
	Abt No2																					
Dismantling of Existing Structure																						
Construction Sequence(FW / HW)		FW	FW																			
RD as per site																						
RD as in Drawing		14+075	14+250	14+250	14+300	14+300	14+431	14+431	14+600	15+138	15+640	15+795	16+313	16+625	16+750	16+996	17+400	17+561	17+665	17+909	18+142	



ACTIVITIES COMPLETED IN JULY-2013



ACTIVITIES NOT REQUIRED



ACTIVITIES COMPLETED IN PREVIOUS MONTHS



ACTIVITIES IN PROGRESS

QUALITY TEST REPORTS

4.1 AGGREGATE BASE COURSE FIELD DENSITY TEST REPORTS

S.No	Location	Description	Station	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compection	Required Compection	Pass/Fail	Remarks
1	8+800 ~ 8+950	Agg.Base Course	8+840	2.356	4.8	2.360	4.7	100.8	100	Pass	
2	6+150 ~ 6+250	Agg.Base Course	6+210	2.356	4.8	2.359	4.5	98.9	100	Fail	Note 01
3	6+150 ~ 6+250	Agg.Base Course	6+215	2.356	4.8	2.362	4.3	100.6	100	Pass	
4	6+450 ~ 6+500	Agg.Base Course	6+470	2.356	4.8	2.364	4.7	91.3	100	Fail	Note 01
5	6+450 ~ 6+500	Agg.Base Course	6+480	2.356	4.8	2.363	4.2	96.1	100	Fail	Note 01
6	6+650 ~ 6+750	Agg.Base Course	6+680	2.356	4.8	2.356	4.5	92.2	100	Fail	Note 01
7	6+650 ~ 6+750	Agg.Base Course	6+675	2.356	4.8	2.364	4.6	97.5	100	Fail	Note 01
8	6+500 ~ 6+650	Agg.Base Course	6+570	2.356	4.8	2.347	4.5	94.2	100	Fail	Note 01
9			6+625	2.356	4.8	2.337	4	100	100	Pass	
10	7+050 ~ 7+150	Agg.Base Course	7+100	2.339	5.6	2.333	4	100.3	100	Pass	
11	8+250 ~ 8+350	Agg.Base Course	8+340	2.339	5.6	2.337	4.6	95.8	100	Fail	Note 01
12	7+325 ~ 7+450	Agg.Base Course	7+345	2.339	5.6	2.339	4.7	95.6	100	Fail	Note 01
13	8+450 ~ 8+575	Agg.Base Course	8+525	2.339	5.6	2.337	4.5	100.5	100	Fail	Note 01
14			8+570	2.339	5.6	2.339	4	100.2	100	Fail	Note 01
15	6+750 ~ 6+825	Agg.Base Course	6+775	2.337	5.6	2.335	4.9	100.3	100	Pass	
16	8+250 ~ 8+350	Agg.Base Course	8+342	2.337	5.6	2.341	4.8	96.7	100	Fail	Note 01

Note 01. Subsequent layers placement and compaction postpond until previous layer properly compacted / accepted

4.2 SUBBASE FIELD DENSITY TEST REPORTS

S.No	Location	Description	Station	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compection	Required Compection	Pass/Fail	Remarks
1	9+725 ~ 9+825	Sub Base	9+800	2.270	6.3	2.269	4.9	97.3	98	Fail	Note 02
2	0+425 ~ 0+575	Sub Base (Lope)	0+530	2.270	6.3	2.274	4.4	97.7	98	Pass (Sec III)	
3	0+575 ~ 0+725	Sub Base (Lope)	0+600	2.270	6.3	2.269	5.0	99.6	98	Pass (Sec III)	
4	15+250 ~ 15+450	Sub Base	15+325 R/S	2.316	5.6	2.326	5.0	100.4	98	Pass	
5	15+150 ~ 15+250	Sub Base	15+185	2.316	5.6	2.310	5.0	99.5	98	Pass	
6	15+350 ~ 15+450	Sub Base	15+425 L/S	2.316	5.6	2.31	5.3	99.3	98	Pass	

Note 02. Subsequent layers placement and compaction postpone until previous layer properly compacted / accepted

4.3 COMPRESSIVE STRENGTH OF CONCRETE

Description	Casting date	Testing date	Age	Load in (KN)	Length (cm)	Dia (cm)	Area (cm ²)	Load in Kg	STRENGTH (Kg/cm ²)			Pass/Fail	Remarks
									Achieved	Average	Required		
Concrete Class "A" of Culvert Slab R.D. = 6+501	12/Jun/2013	10/Jul/2013	28 Days	429	30.48	15.24	182.4	43745	239.8	232.7	210	Pass	
				405	30.48			41298	226.4				
				415	30.48			42318	232.0				
Concrete Class "A-3" of Test Pile Bridge No.1	23/Jul/2013	30/Jul/2013	7 Days	247	30.48	15.24	182.4	25187	138.1	140.1	210	Fail	Note 03
				273	30.48			27838	152.6				
				232	30.48			23657	129.7				

Note 03. Concrete acceptance awaited till confirmation of 28 days strength result

4.4 SPECIFIC GRAVITY OF ASPHALTIC BASE COURSE AND AGGREGATE BASE COURSE

<u>Specific Gravity A.C (Gb) 1.030</u>										<u>Combined Specific Gravity of Aggregate (Gsb) 2.665</u>							
Paving Date	% A.C By Wt of Mix 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								
2-Jul-13	3.4	100	100	82.9	64.8	26.8	18.7	8	4.4	2.385	2.534	5.9	13.54	56.6	1356	16.4	12.1
8-Jul-13	3.3	100	100	81.1	65.6	28.6	21.1	8.3	4.3	2.417	2.544	5.0	12.38	59.8	1578	15.6	10.9
18-Jul-13	3.5	100	100	89.1	68	34	23.5	8.6	4.8	2.402	2.543	5.5	12.92	57.2	1566	16.8	12.1
26-Jul-13	3.6	100	100	89.6	71.1	37.2	26	9.6	4.8	2.405	2.541	5.4	13.01	58.8	1546	16.2	12.0

4.5 SUMMARY OF CORE THICKNESS OF ASPHALTIC BASE COURSE 1ST LAYER

S.No	CORE NO.	TESTING DATE	COVER AREA	STATION	OFF SET FROM C/L	CORES THICKNESS (cm)				Average Thickness (cm)	Required Thickness (cm)	REMARKS
						1	2	3	4			
1	T-1	19-Jul-13	6+450 ~ 6+550	6+470	1.0m L/S	8	7.9	7.8	7.8	7.9	8.0	OK
2	T-2			6+525	5.0m R/S	10	10.2	10	10.3	10.1	8.0	OK
3	T-3		6+550 ~ 6+650	6+585	0.5m L/S	9.1	9.4	9.5	9.6	9.4	8.0	OK
4	T-4			6+625	4.8m R/S	10	10.2	10.2	10.5	10.2	8.0	OK
5	T-5		6+650 ~ 6+700	6+675	3.7m L/S	8.2	8.5	8.5	8.2	8.4	8.0	OK
6	T-6		8+050 ~ 8+150	8+060	5.2m L/S	9	8.9	8.8	8.9	8.9	8.0	OK
7	T-7			8+120	1.3m R/S	9.5	9.2	9.2	9.0	9.2	8.0	OK
1	T-1	25-Jul-13	6+700 ~ 6+800	6+750	2.0m R/S	10.7	10.9	11.3	11.1	11.0	8.0	OK
2	T-2			6+785	4.9m L/S	7.4	7.9	8.2	7.8	7.8	8.0	OK
3	T-3		6+800 ~ 6+900	6+830	1.5m R/S	8.9	8.8	8.8	8.6	8.8	8.0	OK
4	T-4			6+870	3.5m L/S	9.5	10.3	10.1	9.9	10.0	8.0	OK
5	T-5		6+900 ~ 6+975	6+950	2.5m L/S	10.2	10	9.7	10.2	10.0	8.0	OK

4.6 SUMMARY OF CORE THICKNESS OF ASPHALTIC BASE COURSE 2ND LAYER

S.No	CORE NO.	TESTING DATE	COVER AREA	STATION	OFF SET FROM C/L	CORES THICKNESS (cm)				Average Thickness (cm)	Required Thickness (cm)	REMARKS
						1	2	3	4			
1	T-1	3-Jul-13	0+238 ~ 0+338	0+250	4.6m L/S	8.0	7.8	7.2	8.0	7.8	8.0	
2	T-2			0+290	2.0m R/S	9.9	9.9	9.5	9.5	9.7	8.0	
3	T-3		0+338 ~ 0+438	2+350	2.0m L/S	8.2	8.2	8.0	8.0	8.1	8.0	
4	T-4			0+400	5.0m R/S	8.2	7.9	8.0	7.9	8.0	8.0	
5	T-5		0+438 ~ 0+538	0+450	4.0m L/S	8.1	8.2	8.4	8.1	8.2	8.0	
6	T-6			0+500	5.4m L/S	8.0	8.0	8.5	8.1	8.2	8.0	
7	T-7		0+538 ~ 0+638	0+545	2.3m R/S	8.5	8.8	8.5	8.5	8.6	8.0	
8	T-8			0+590	1.8m L/S	8.8	8.7	8.5	8.0	8.5	8.0	
9	T-9		0+638 ~ 0+738	0+650	5.0m R/S	9.2	9.2	9.2	9.4	9.3	8.0	
10	T-10			0+700	5.8m L/S	8.4	8.1	8.4	8.4	8.3	8.0	
11	T-11		0+738 ~ 0+838	0+750	2.4m R/S	8.0	7.5	7.8	8.0	7.8	8.0	
12	T-12			0+785	2.0m L/S	6.0	6.0	6.0	6.0	6.0	8.0	
13	T-13		0+838 ~ 0+938	0+845	5.0m R/S	9.0	9.1	9.1	9.1	9.1	8.0	
14	T-14			0+900	5.5m L/S	8.2	8.2	8.0	8.2	8.2	8.0	
15	T-15		0+938 ~ 1+038	0+950	1.8m R/S	8.0	8.2	8.0	8.3	8.1	8.0	
16	T-16			0+980	4.0m L/S	8.5	8.5	8.5	8.2	8.4	8.0	
17	T-17		1+038 ~ 1+138	1+100	1.0m R/S	17.0	17.0	17.5	17.5	17.3	16.0	Both Layer
18	T-18			1+125	2.0m R/S	14.8	14.8	15.0	14.9	14.9	16.0	Both Layer
19	T-19		1+138 ~ 1+238	1+150	2.5m L/S	7.2	7.2	7.4	7.3	7.3	8.0	
20	T-20			1+200	2.0m R/S	9.0	9.0	9.0	9.0	9.0	8.0	
21	T-21		1+238 ~ 1+360	1+260	2.5m L/S	7.8	7.7	8.0	8.0	7.9	8.0	
22	T-22			1+330	4.5m R/S	8.5	8.5	8.5	8.5	8.5	8.0	

SUMMARY OF CORE THICKNESS OF ASPHALTIC BASE COURSE 2ND LAYER

S.No	CORE NO.	TESTING DATE	COVER AREA	STATION	OFF SET FROM C/L	CORES THICKNESS (cm)				Average Thickness (cm)	Required Thickness (cm)	REMARKS
						1	2	3	4			
1	T-1	19-Jul-13	6+445 ~ 6+400	6+440	5.0m R/S	8.9	8.7	9	8.6	8.8	8.0	
2	T-2		6+400 ~ 6+300	6+375	4.8m L/S	8.2	8.6	8.3	8.6	8.4	8.0	
3	T-3			6+323	2.0m R/S	9.2	9.1	9.3	9.4	9.3	8.0	
4	T-4		6+300 ~ 6+200	6+283	4.5m L/S	8.7	8.6	8	7.6	8.2	8.0	
5	T-5			6+230	4.8m R/S	7.8	8.1	7.6	7.6	7.8	8.0	
6	T-6		6+200 ~ 6+100	6+170	1.5m L/S	8.5	8.6	8.3	8.5	8.5	8.0	
7	T-7			6+125	4.9m R/S	8.5	8.5	8.4	8.4	8.5	8.0	
8	T-8		6+100 ~ 6+000	6+075	2.0m L/S	9.5	9.5	9.4	9.4	9.5	8.0	
9	T-9			6+025	2.0m R/S	9	9	8.9	8.8	8.9	8.0	
10	T-10		6+000 ~ 5+900	5+975	0.8m L/S	17.5	17.1	17.3	17	17.2	16.0	Cores in Full Length
11	T-11			5+925	4.0m R/S	18.1	18.6	18.1	19	18.5	16.0	
1	T-1	23-Jul-13	7+475 ~ 7+575	7+500	5.0m L/S	8.1	8.1	7.7	7.8	7.9	8.0	Single Layer
2	T-2			7+540	4.8m R/S	15.6	15.4	15.9	15.6	15.6	16.0	Double Layer
3	T-3		7+575 ~ 7+675	7+590	2.0m L/S	8.0	8.0	8.0	8.1	8.0	8.0	Single Layer
4	T-4			7+650	4.5m R/S	15.2	15.6	15.6	15.5	15.5	16.0	Double Layer
5	T-5		7+675 ~ 7+775	7+712	4.2m L/S	17	17	17.1	16.8	17.0	16.0	Double Layer
6	T-6			7+760	3.6m R/S	13.9	13.5	13.8	13.8	13.8	16.0	Double Layer
7	T-7		7+775 ~ 7+875	7+800	1.7m L/S	16.1	15.8	15.8	16	15.9	16.0	Double Layer
8	T-8			7+850	3.8m R/S	16.5	16.9	16.4	16.4	16.6	16.0	Double Layer
9	T-9		7+875 ~ 7+975	7+902	2.9m L/S	15.9	15.7	15.7	15.2	15.6	16.0	Double Layer
10	T-10			7+950	3.5m R/S	17	17.2	16.9	16.9	17.0	16.0	Double Layer
11	T-11		7+975 ~ 8+050	8+005	5.2m L/S	16.7	16.5	17	17.1	16.8	16.0	Double Layer
12	T-12			8+040	1.8m R/S	16.3	16.5	16.5	16.8	16.5	16.0	Double Layer
1	T-1	25-Jul-13	6+425 ~ 6+525	6+470	5.0m L/S	16.1	16.1	15.8	16.1	16.0	16.0	Double Layer
2	T-2			6+515	3.0m R/S	16.6	17.3	17.3	17.1	17.1	16.0	
3	T-3		6+525 ~ 6+625	6+560	2.5m L/S	16.9	17.0	17.0	16.7	16.9	16.0	
4	T-4			6+620	2.0m R/S	17.0	16.7	16.7	16.6	16.8	16.0	
5	T-5		6+625 ~ 6+725	6+655	4.5m R/S	17.2	17.7	17.6	17.3	17.5	16.0	
6	T-6			6+700	3.8m L/S	18.3	18.1	17.7	17.7	18.0	16.0	
7	T-7		6+725 ~ 6+750	6+735	5.0m R/S	16.6	16.4	16.4	16.5	16.5	16.0	

4.7 SUMMARY OF CORE COMPACTION OF ASPHALTIC BASE COURSE 1ST LAYER

CORE NO.		TESTING DATE	COVER AREA	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	C-1	19-Jul-13	6+450 ~ 6+550	6+470	4.5m L/S	1432.6	831.4	1437	605.6	2.366	2.402	98.5	97	OK
2	C-2			6+525	1.0m R/S	1732	1010	1737	727	2.382	2.402	99.2	97	OK
3	C-3		6+550 ~ 6+650	6+585	4.5m L/S	1598.9	931.7	1604.9	673.2	2.375	2.402	98.9	97	OK
4	C-4			6+625	1.5m R/S	1936.8	1126.7	1940.1	813.4	2.381	2.402	99.1	97	OK
5	C-5		6+650 ~ 6+700	6+675	0.4m L/S	1322.9	767.2	1326.6	559.4	2.365	2.402	98.5	97	OK
6	C-6		8+050 ~ 8+150	8+060	1.7m L/S	1516	879.8	1521.9	642.1	2.361	2.402	98.3	97	OK
7	C-7			8+120	5.0m R/S	1387	806.4	1392.3	585.9	2.367	2.402	98.6	97	OK
1	C-1	25-Jul-13	6+700 ~ 6+800	6+750	5.6m R/S	2132.5	1230.7	2138.2	907.5	2.350	2.412	97.4	97	OK
2	C-2			6+785	5.2m L/S	1431.3	832	1437.9	605.9	2.362	2.412	97.9	97	OK
3	C-3		6+800 ~ 6+900	6+830	3.5m R/S	1435.5	828.2	1442.2	614	2.338	2.412	96.9	97	OK
4	C-4			6+870	2.0m L/S	1648.3	958	1655	697	2.365	2.412	98.0	97	OK
5	C-5		6+900 ~ 6+975	6+950	4.0m L/S	1497.3	866.6	1502.5	635.9	2.355	2.412	97.6	97	OK

4.8 SUMMARY OF CORE COMPACTION OF ASPHALTIC BASE COURSE 2ND LAYER

S.No	CORE NO.	TESTING DATE	COVERED AREA	STATION	OFFSET FROM C/L	WT. IN AIR (g)	WT. IN WATER (g)	SSD. WT in Air (g)	VOLUME (cc)	DENSITY (g/cc)	LAB.DENSITY (GMB)	ACHIEVED COMPACTION (%)	REQUIRED COMPACTION (%)	REMARKS
1	C-1	3-Jul-13	0+238 ~ 0+338	0+250	4.6m L/S	1331.8	779.8	1340.4	560.6	2.376	2.406	98.7	97	OK
2	C-2			0+290	2.0m R/S	1502.8	873.5	1510.4	636.9	2.360	2.385	98.9	97	OK
3	C-3		0+338 ~ 0+438	2+350	2.0m L/S	1500.2	876.1	1512.1	636	2.359	2.385	98.9	97	OK
4	C-4			0+400	5.0m R/S	1523.3	887.4	1530.5	643.1	2.369	2.385	99.3	97	OK
5	C-5		0+438 ~ 0+538	0+450	4.0m L/S	1418.6	824.1	1426.9	602.8	2.353	2.385	98.7	97	OK
6	C-6			0+500	5.4m L/S	1292.9	753.2	1299.8	546.6	2.365	2.385	99.2	97	OK
7	C-7		0+538 ~ 0+638	0+545	2.3m R/S	1571.3	911.8	1579.2	667.4	2.354	2.385	98.7	97	OK
8	C-8			0+590	1.8m L/S	1312.2	762.3	1320.2	557.9	2.352	2.385	98.6	97	OK
9	C-9		0+638 ~ 0+738	0+650	5.0m R/S	1576.5	912.8	1580	667.2	2.363	2.385	99.1	97	OK
10	C-10			0+700	5.8m L/S	1401.5	837.8	1434	596.2	2.351	2.385	98.6	97	OK
11	C-11		0+738 ~ 0+838	0+750	2.4m R/S	1261.9	730.7	1269.6	538.9	2.342	2.385	98.2	97	OK
12	C-12			0+785	2.0m L/S	1158.6	674.6	1164.5	489.9	2.365	2.385	99.2	97	OK
13	C-13		0+838 ~ 0+938	0+845	5.0m R/S	1596.3	929.1	1605.1	676	2.361	2.385	99.0	97	OK
14	C-14			0+900	5.5m L/S	1449.8	845.3	1460.4	615.1	2.357	2.385	98.8	97	OK
15	C-15		0+938 ~ 1+038	0+950	1.8m R/S	1332	772	1336.6	564.6	2.359	2.385	98.9	97	OK
16	C-16			0+980	4.0m L/S	1498.2	872.4	1507.6	635.2	2.359	2.385	98.9	97	OK
17	C-17		1+038 ~ 1+138	1+100	1.0m R/S	1238	719	1245.4	526.4	2.352	2.385	98.6	97	OK
18	C-18			1+125	2.0m R/S	1604.3	934.8	1613.3	678.5	2.364	2.385	99.1	97	OK
19	C-19		1+138 ~ 1+238	1+150	2.5m L/S	1059.7	616.2	1066	449.8	2.356	2.385	98.8	97	OK
20	C-20			1+200	2.0m R/S	1115.8	650.1	1123.3	473.2	2.358	2.385	98.9	97	OK
21	C-21		1+238 ~ 1+360	1+260	2.5m L/S	1322.3	773	1333	560	2.361	2.385	99.0	97	OK
22	C-22			1+330	4.5m R/S	1208.3	700.5	1215.2	514.7	2.348	2.385	98.4	97	OK

SUMMARY OF CORE COMPACTION OF ASPHALTIC BASE COURSE 2ND LAYER

S.No	CORE NO.	TESTING DATE	COVERED AREA	STATION	OFFSET FROM C/L	WT. IN AIR (g)	WT. IN WATER (g)	SSD. WT in Air (g)	VOLUME (cc)	DENSITY (g/cc)	LAB.DENSITY (GMB)	ACHIEVED COMPACTION (%)	REQUIRED COMPACTION (%)	REMARKS
1	C-1	19-Jul-13	6+445 ~ 6+400	6+440	1.5m R/S	1445.5	844.7	1451.6	606.9	2.382	2.402	99.2	97	OK
2	C-2		6+400 ~ 6+300	6+375	1.0m L/S	1298.4	751.8	1302.9	551.1	2.356	2.402	98.1	97	OK
3	C-3			6+323	4.7m R/S	1504.4	881.7	1511	629.3	2.391	2.402	99.5	97	OK
4	C-4		6+300 ~ 6+200	6+283	0.7m L/S	1561.9	908.1	1568.8	660.7	2.364	2.402	98.4	97	OK
5	C-5			6+230	1.2m R/S	1364.7	797.8	1370.6	572.8	2.383	2.402	99.2	97	OK
6	C-6		6+200 ~ 6+100	6+170	5.1m L/S	1511	887	1521.2	634.2	2.383	2.402	99.2	97	OK
7	C-7			6+125	0.8m R/S	2055.6	1191	2066.1	875.1	2.349	2.402	97.8	97	OK
8	C-8		6+100 ~ 6+000	6+075	4.8m L/S	1367.7	798.7	1373.7	575	2.379	2.402	99.0	97	OK
9	C-9			6+025	4.0m R/S	1910	1109.4	1916.4	807	2.367	2.402	98.5	97	OK
10	C-10		6+000 ~ 5+900	5+975	4.0m L/S	1692	986.5	1698.9	712.4	2.375	2.402	98.9	97	OK
11	C-11			5+925	1.6m R/S	1377.1	798	1383.3	585.3	2.353	2.402	98.0	97	OK
1	C-1	23-Jul-13	7+475 ~ 7+575	7+500	3.5m L/S	1451	838.7	1454.5	615.8	2.356	2.406	97.9	97	OK
2	C-2		7+575 ~ 7+675	7+540	2.5m R/S	1418.5	818.6	1421.7	603.1	2.352	2.406	97.8	97	OK
3	C-3			7+590	5.2m L/S	1922.2	1125.3	1926.3	801	2.400	2.406	99.7	97	OK
4	C-4		7+675 ~ 7+775	7+650	2.0m R/S	1348	782.4	1351.1	568.7	2.370	2.406	98.5	97	OK
5	C-5			7+712	2.5m L/S	1345.5	785.6	1349.5	563.9	2.386	2.406	99.2	97	OK
6	C-6		7+775 ~ 7+875	7+760	1.5m R/S	1223.2	717.4	1229.2	511.8	2.390	2.406	99.3	97	OK
7	C-7			7+800	4.5m L/S	1428	832.9	1429.9	597	2.392	2.406	99.4	97	OK
8	C-8		7+875 ~ 7+975	7+850	0.5m R/S	1296	751.4	1296.5	545.1	2.378	2.406	98.8	97	OK
9	C-9			7+902	5.0m L/S	1502.3	872.8	1504.5	631.7	2.378	2.406	98.8	97	OK
10	C-10		7+975 ~ 8+050	7+950	1.0m R/S	1457.1	847.5	1459.4	611.9	2.381	2.406	99.0	97	OK
11	C-11			8+005	2.5m L/S	1336.3	780.8	1341.3	560.5	2.384	2.406	99.1	97	OK
12	C-12		8+040	1.8m R/S	1500	874.9	1502.5	627.6	2.390	2.406	99.3	97	OK	
1	C-1	25-Jul-13	6+425 ~ 6+525	6+470	2.5m L/S	1340.8	785.9	1346.8	560.9	2.390	2.406	99.4	97	OK
2	C-2			6+515	4.5m R/S	1351.5	784	1357.9	573.9	2.355	2.406	97.9	97	OK
3	C-3		6+525 ~ 6+625	6+560	3.5m L/S	1434.2	827	1441.5	614.5	2.334	2.406	97.0	97	OK
4	C-4			6+620	4.8m R/S	1342.9	780.9	1350	569.1	2.360	2.406	98.1	97	OK
5	C-5		6+625 ~ 6+725	6+655	1.5m L/S	2600.5	1515.3	2612.1	1096.8	2.371	2.406	98.5	97	OK
6	C-6			6+700	2.9m L/S	1898	1105.2	1903.1	797.9	2.379	2.406	98.9	97	OK
7	C-7		6+725 ~ 6+750	6+735	2.8m R/S	2341	1360.6	2347.3	986.7	2.373	2.406	98.6	97	OK

4.9 SUMMARY OF AGGREGATE BASE COURSE QUALITY TESTS

S.No	Location	Description	Sieve Analysis							MDD (g/cc)	OMC (%)	Soundness	Sand Equivalent (%)	CBR (%) at		Specific gravity	Plastic Index	Remarks
			2"	1"	3/8"	#4	#10	#40	#200					0.1"	0.2"			
1	8+000 ~ 9+000	Agg.Base Course	100	92.5	61.2	43.3	28.1	15.4	7.3	2.356	4.8	0.41	32.3	91	130	2.687	Non Plastic	
2	6+710	Agg.Base Course	100	81.7	45.4	27.5	26.5	13.3	5	-	-	-	-	-	-	-	-	
3	6+650 ~ 6+750	Agg.Base Course	100	81.7	45.4	27.5	16.9	10.9	5.5	-	-	-	-	-	-	-	-	
4	8+450 ~ 8+575	Agg.Base Course	100	91.2	57.2	35.2	20.5	10.2	6.4	-	-	-	-	-	-	-	-	
5	7+325 ~ 7+450	Agg.Base Course	100	86.6	49	32	20.1	10.7	6.5	-	-	-	-	-	-	-	-	
6	6+450 ~ 6+500	Agg.Base Course	-	-	-	-	-	-	-	-	-	-	45.2	-	-	-	-	
Total Nos.of Tests			5							1	1	1	2	1	1	1	1	

4.10 SUMMARY OF SUB BASE QUALITY TESTS

S.No	Location	Description	Sieve Analysis							MDD (g/cc)	OMC %	L.A %	Sand Equivalent	CBR% at		Specific gravity	Plastic Index	Remarks
			2"	1"	3/8"	#4	#10	#40	#200					0.1"	0.2"			
1	10+000 ~ 11+00	Sub Base	100	84.9	60.8	43.8	27.3	15.4	9.3	2.27	6.5	29.1		60	78	2.667	Non Plastic	
2	17+400 Borrow	Sub Base	100	71.6	51.3	42.3	33.6	22.2	12.5	2.361	5.6	29.6	36	56	79	2.673	Non Plastic	
3	14+200 (14 Km)	Sub Base	100	83.8	65.5	53	37.5	21.8	12.6	2.272	5.9	27	27			2.569	4	
4	8+000 ~ 8+500	Sub Base	-	-	-	-	-	-	-	-	-	-	31.4	-	-	-	-	
Total Nos.of Tests			3							3	3	3	3	2	2	3	3	

SUMMARY OF SUB BASE QUALITY TESTS

S.No	Location	Description	Sieve Analysis							MDD (g/cc)	OMC %	L.A %	Sand Equivalent	CBR% at		Specific gravity	Plastic Index	Remarks
			2"	1"	3/8"	#4	#10	#40	#200					0.1"	0.2"			
1	12+750 L/S	Cut Material	100	89.3	48.9	30.9	17.5	8.4	5.3	2.261	7	37	-	20	22	2.555	Non Plastic	
Total Nos.of Tests			1							1	1	1				1	1	

4.11 SUMMARY OF AGGREGATE QUALITY TESTS

S.No	Location	Station (R.D.)	Description	Sieve Analysis												FM	L.A %	Sand Equivalent	Specifi Gravity	Flackiness & Elongation Index	Remarks	
				2"	1½"	1"	¾"	½"	3/8"	#4	#8	#16	#30	#50	#100							#200
1	Bridge No.1	Test Pile	Aggregate	100	79.1	45.5	11.3	10.3	8.1	-	-	-	-	-	-	-	-	-	2.639	-		
2	Bridge No.1	Test Pile	Aggregate	-	-	100	98.9	49.4	34.9	6.0	-	-	-	-	-	-	-	-	2.64	-		
3	Bridge No.1	Test Pile	Sand	-	-	-	-	-	100	96.5	87	67.4	34.0	12.4	4.5	2.8	2.98	-	-	-	-	

SUMMARY OF AGGREGATE QUALITY TESTS

S.No	Location	Description	Sieve Analysis												FM	L.A %	Sand Equivalent	Specifi Gravity	Flackiness & Elongation Index	Remarks	
			2"	1½"	1"	¾"	½"	3/8"	#4	#8	#16	#30	#50	#100							#200
1	Asphalt Plant Stock Pile	Bin #1	100	100	39.6	1.7	0.2	0.1	-	-	-	-	-	-	-	-	-	-	2.641	-	
2	Asphalt Plant Stock Pile	Bin #2	-	-	100	70.2	17.0	0.4	0.2	-	-	-	-	-	-	-	-	-	2.639	-	
3	Asphalt Plant Stock Pile	Bin #3	-	-	-	100	96.4	85.2	21.5	2.7	-	-	-	-	-	-	-	-	2.603	-	
4	Asphalt Plant Stock Pile	Bin #4	-	-	-	-	-	100	98.4	76.8	-	-	26.9	-	14.6	-	-	-	-	-	
	Combined Grading		100	100	-	69.1	-	-	36.5	21	-	-	7.2	-	3.9	-	-	-	-	-	

ENVIRONMENTAL COMPLIANCE MONITORING

Environmental Compliance Officer:

Shabir Ahmad Khan

Filed Monitor Social:

Muhammad Rahman

Road Section under Construction:

Section Km 0+000 to Km 9+000

Section Km 9+000 to Km 12+600

Persons Consulted at Site:

- i. Mr. Tufail Site Inspector NESPAK
- ii. Mr. Serwar din Surveyor FWO
- iii. Mr. Sajid Site Inspector NESPAK
- iv. Mr. Irfan Surveyor FWO

Work Status:

- Work in progress.
- Work Stopped
- Work Completed

Quality of Environment Compliance:

- Good
- Satisfactory
- Poor

Issues at site:

- No road's traffic signs and speed checking sign boards for the safety of people.
- No records of EHS (Environment, Health and Safety) plans.
- Non availability of personal protective equipment.
- No measures for land leveling and refilling of quarry sites for sustainable use.
- People demanded for construction of stairs and walkways under a couple of culverts to be used for road crossing.
- Non availability of Environment Specialist/ Expert on site from FWO / NESPAK side.
- No Health and Safety arrangement at work sites.
- No first aid box and Ambulance arrangement at site.

Environmental Monitoring Checklist 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 see photos # 01)</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 measures 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 all arrangement for disposal of flood and sewerage water have been made.</p> <p>(Please see photos # 02,03)</p>
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>No waste segregation observed at construction site. FWO should share their solid waste management plan. The construction materials in main store are generally stored in good condition. However the construction material at site is not stored/placed properly. 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. 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 culverts, to provide solid waste storage bin at their respective sites. No chemical waste has been seen in the project area.</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 	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 been renovated by the FWO for labor camps. The quality of food provided is good. Other protocols given like hygienic water etc. are satisfactory. Sub-contractor and some workers are local inhabitants of the area. FWO staff is adequately educated to follow strict guidelines from their senior to interact with locals. Guidelines like the removal of vegetation etc. have been followed by FWO contractor and sub-contractors. 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. (Please see photos # 04, 05)</p>

		<p>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>		
6	Material handling use and storage	<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 and on the vegetation should be prevented.</p> <p>d. Concrete mixing on the ground shall not be allowed.</p> <p>e. Use wet gravel on site.</p> <p>f. Avoid flowing of the drainage water directly into the 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</p>	Dust pollution	<p>Material securing, load prevention of 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. Generally the Sub Contractors do not follow the Material handling protocols at sites, especially at culvert construction sites.</p>

		<p>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>		
7	Materials extraction Quarrying , logging	<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 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>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, therefore need more care in this respect.</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 while working.</p> <p>During site visit, it was observed that in previous quarry area near KM 6+050 and 2+00, 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 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>(Please see photos # 06, 07, 08)</p>

8	Site clearing or leveling	<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. 	Loss of vegetation, soil erosion and stability, surface water pollution and occupational health of workers and community.	<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. 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>
9	Excavation , cutting , and filling	<ul style="list-style-type: none"> a. Cover Pile with plastic sheeting, prevent run off with hay bales, or use similar measures. b. Place fence around excavation. c. Investigate shallow over excavation and no excavation alternatives. 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. e. Ensure excavation is accompanied by well- 	Soil erosion and stability and surface water contamination	<p>The excavation at the shoulders of the existing road in shallow depth of about one foot and also at rocks. Others mitigation measures are either appropriate or not required. During site visit following irregularities were found which require proper attention to be removed.</p> <ul style="list-style-type: none"> • At KM 12+600, excavations of rocks, at KM 7+500 mixing of asphalt and at KM 12+336 of excavation of culvert continued but no safety protocols & personal protection measures were observed during site visit. During rock

		<p>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>excavation/ disposal activities, even traffic was not stopped which may be proving very dangerous for life of people.</p> <ul style="list-style-type: none"> • At KM 3+200, drain Blockage near Total Petrol pump since long time. • 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 till date no action had been taken. <p>During excavation process, fence is required around at all culvert sites, and appropriate engineering drainages for flow line of watershed, proper dumping of excavated materials and sprinkling of water.</p> <p>(Please see photos # 09,10,11 and 03)</p>
<p>10</p>	<p>Traffic Control</p>	<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. Max allowable speed for heavy machinery on the site should not exceed 20Km/hr.</p> <p>f. Keep road partly closures to a minimum Maintain safe passage of vehicles/pedestrians at all times</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 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 no proper signboards at any location were observed during visit. Therefore, asked 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>The contractor's staff at construction site can 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 cannot move faster.</p> <p>At the road, heavy vehicles like NATO containers are mostly found, which need speed check limit signboards.</p>

		<ul style="list-style-type: none"> g. Conduct work that requires road closure at times when traffic volume is low h. Schedule truck sand deliveries for periods of low traffic 		Similarly, others traffic arrangements are also required to take place immediately.
11	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 equipment to the workforce. 	Noise pollution and occupational safety	Currently, there is no excavation blasting, therefore, no action is required.
12	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 c. Fill in quarries and pits before abandoning d. Control runoff into pit 	Damage aquatic ecosystems erosion, siltation, Harm terrestrial ecosystems and vector-borne diseases	Material extraction sites (Quarry areas) near KM 6+050 and KM 2+00 have 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. 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. At new query area at KM 11+200, the environmental protocols may kindly be followed. (Please see photos # 06, 07,08)
13	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	At site visit, it was observed that, Water sprinkling vehicle was found at most of the places, where heavy dust pollution occurred at KM 11+600, 9+00 and by-pass roads. (Please see photos # 12,13, 14)
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	There were no activities at site regarding borrow area use. Moreover, barrow areas are still to be identified, if required.

			they take up agricultural land.	
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 personals 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>
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	<p>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. The Social problems observed during the visit are given below, which may kindly be address accordingly.</p> <ul style="list-style-type: none"> - At KM 11+372, damaged PTCL cable was

				<p>observed.</p> <ul style="list-style-type: none"> - Drain blockage due to construction activities at KM 2+700 near Total Petrol Pump - Dumping excavated materials in front of house at KM 2+800. - In mid of Jamrud bazaar at KM 4+100 and 4+600 blockage of main drain and solid waste placement.. - Dumping excavated material in the grave yard at KM 4+600 and KM 5+750. To avoid social conflict, the excavated material must shift to some other suitable place. - Giving consideration to the demand of local peoples, stairs may kindly be construct at both ends of the culvert at some places near residential areas, to provide safe under passage to school children for crossing the road, as there is heavy traffic load and rush on this road.
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.
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	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
22	Vehicle management	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

APPENDICES

6.1 CONTRACTOR IPC's

IPC No:	AMOUNT CLAIMED		DATE OF SUBMISSION BY CONTRACTOR TO FATA	DATE OF SUBMISSION BY FATA TO USAID	DATE OF CERTIFICATION BY M&E CONSULTANTS	AMOUNT CERTIFIED BY M&E CONSULTANTS		DATE OF PAYMENT TO CONTRACTOR
	US \$	EQUIVALENT PKR				US \$	EQUIVALENT PKR	
1	1,444,442	135,777,548	23-May-13	28-May-13	28-Jun-13	597,641	56,178,279	IN PROCESS
2	2,494,227	234,453,311	28-Jun-13	2-Jul-13	26-Jul-13	2494227	234,453,311	IN PROCESS
3	2,382,898	223,992,366	26-Jul-13	31-Jul-13	IN PROCESS	IN PROCESS	IN PROCESS	-

6.2 RECORD OF COORDINATION MEETINGS / JOINT SITE VISITS

Date	Meeting	Participants	Venue
08-Jul-13	Coordination Meeting	USAID, M&E Consultants, FWO, NESPAK	FWO Office Jamrud
08-Jul-13	Joint Site Visit (Section-I, II & III)	USAID, M&E Consultants, FWO, NESPAK	PT Road
23-Jul-13	Coordination Meeting	NESPAK, FWO and M&E Consultants	FWO Office Jamrud
23-Jul-13	Joint Site Visit (Section-I To V)	NESPAK, FWO and M&E Consultants	PT Road

6.3 MOBILIZATION OF M&E STAFF

The following members of the M&E Team were mobilized as various activities of the project progressed. Other staff members will be mobilized according to demand of work load.

PROJECT MANAGER OFFICE – STAFF DEPLOYMENT

S. No.	Name	Designation	
1	Aziz-ul-Haq	Project Manager	ROAD COMPONENT
2	Nasir-ul-Mulk	Project Advisor	
3	Fakhr uz Zaman	Senior Technical Specialist	
4	Shabir Ahmad Khan	Environmental Compliance Officer	
5	Amjad Saeed	Mid-Level Specialist	
6	Saqib Maqbool	Junior Engineer	
7	Arshad Khan	CAD Operator	
8	Sohail Anjum	Senior Surveyor	
9	Abdul Waheed	Manager Admin/Finance	
10	Amir Habib	IT Officer	
11	Muhammad Bilal	Assistant Accountant	
12	Faizan Khan	Computer Operator	
13	Muhamamd Rehman	Field Monitor Social	OTHER CONSTRUCTION COMPONENT
14	Anwar Dad	Quantity Surveyor	
15	Waqar ul Mulk	Junior Architect	
16	Naeem Jan	Senior Surveyor	
17	Muhammad Waqas	Survey Assistant	
18	Muhammad Ayaz	Survey Assistant	
19	Muhammad Zeeshan Atta	Survey Assistant	
20	Sana ullah	Accountant	
21	Hamid Ullah	Computer Operator	

QAM Office (Road Component)

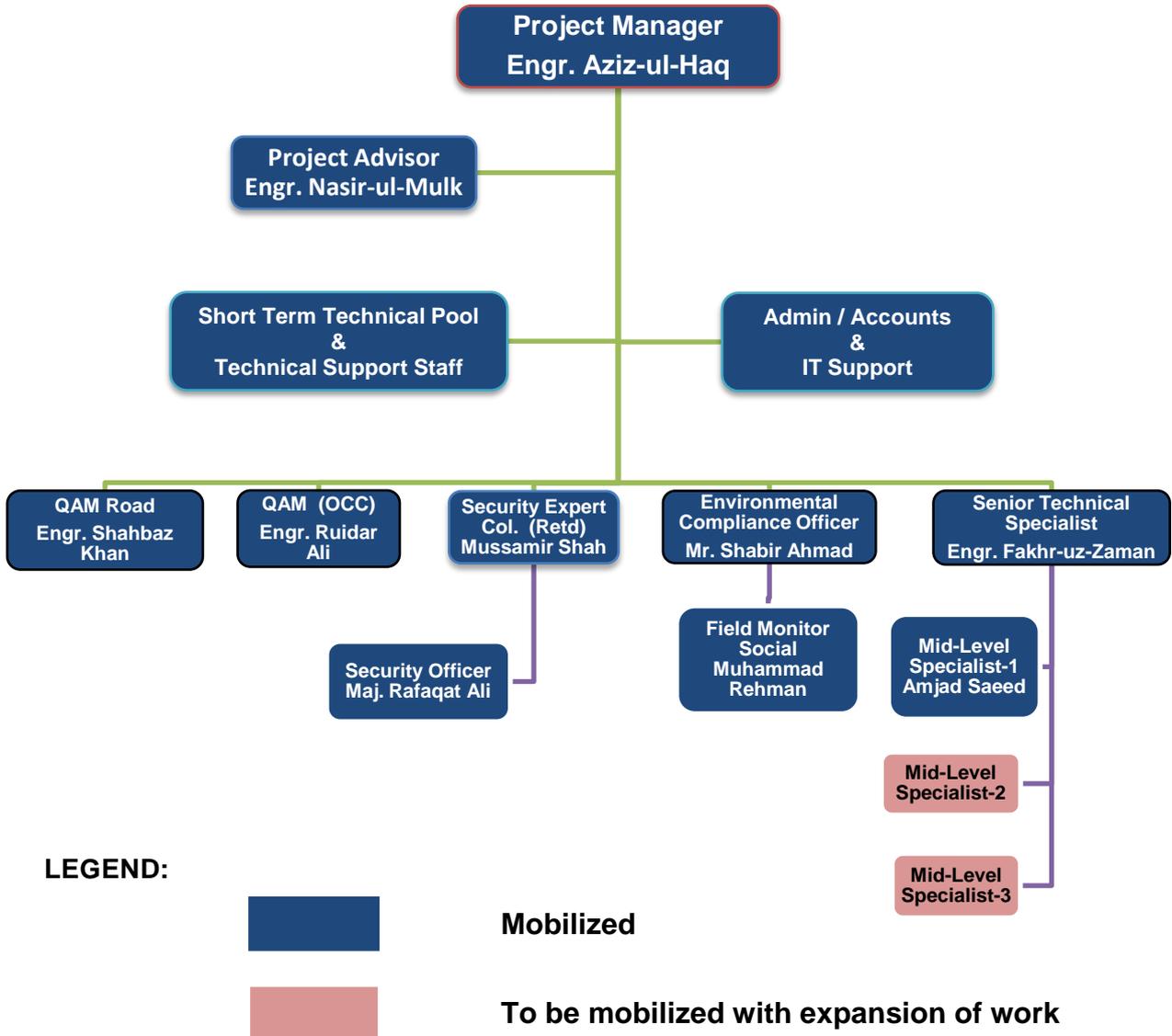
S. No.	Name	Designation
1	Shahbaz Khan	Quality Assurance Manager (Road)
2	Muhammad Khushid	M&E Specialist Road
3	Muhammad Ilyas	Field Manager M&E
4	Muhammad Ibrar	Office Engineer
5	Rasheed Khan	Field Monitor Road

6	Tariq Ibrahim Khan	Quantity Surveyor
7	Asad Khan	CAD Operator
8	Ihsan Ullah	Accountant
9	Hafiz ur Rehman	Assistant Accountant
10	Nasir Alam	Admin Officer
11	Umar Shah	Assistant Office Admin
12	Hamid Ali	Computer Operator

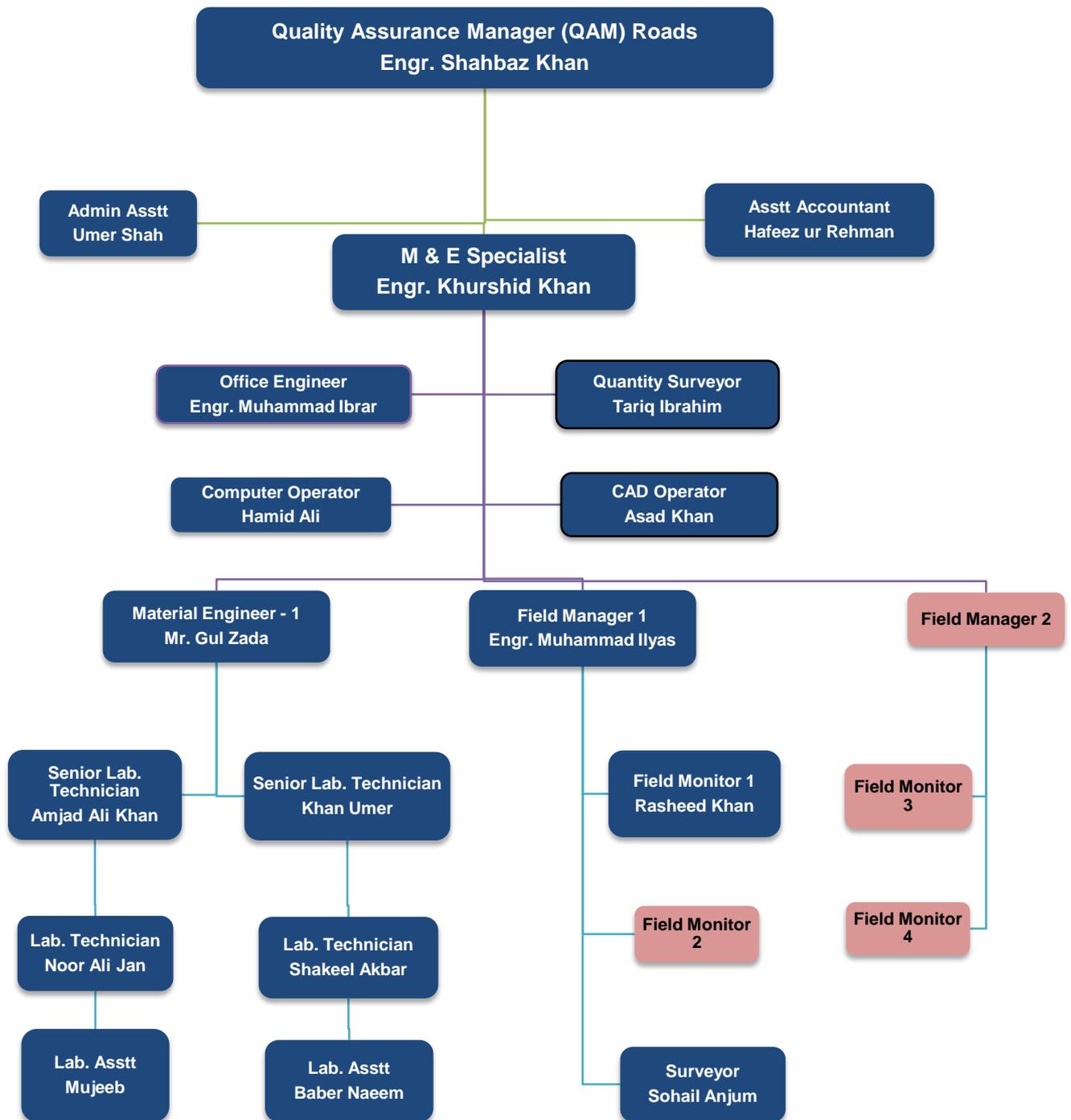
Laboratory Staff (Road Component)

S. No.	Name	Designation
1	Gul Zada	Material Engineer
2	Amjad Ali Khan	Senior Lab. Technician
3	Khan Umar	Senior Lab. Technician
4	Shakeel Akbar	Lab. Technician
5	Noor Ali Jan	Lab. Technician
6	Mujeeb Khan	Assistant Lab. Technician
7	Babar Naeem	Assistant Lab. Technician

6.4 ORGANIZATION CHART FOR CMEP OFFICE, PESHAWAR



6.5 ORGANIZATION CHART FOR ROAD COMPONENT OF CMEP PROJECT



LEGEND:



Mobilized



To be mobilized with expansion of work

PROJECT PHOTOGRAPHS

PAVEMENT SECTION-I



KM 0+225 To.0+570

Half width LHS ACBC 2nd layer final rolling in progress



KM 0+225 To.0+570

Half width LHS ACBC 2nd layer laying in progress



KM 0+225 To.1+100

Half width RHS Tack coat applied over ACBC 1st layer



KM 5+150 To.5+500

Full width Prime coat applied yesterday



KM 5+550 To.5+900

Full width ACBC 1st layer laying in progress



KM 6+050 To.6+450

Half width M&E Consultants Surveyor checking compacted thickness of ACBC 1st layer



KM 6+120 To.6+425

Full width ACBC 2nd layer laying in progress



KM 6+450 To.6+725

Half width ACBC 1st layer laying in progress



KM 7+475 To.7+750

Half width M&E Consultants checking loose thickness of ACBC 2nd layer



KM 7+725 To.8+025

Half width ACBC 1st layer final rolling in progress



KM 7+750 To.8+000

Full width Cleaning & Brooming in progress



KM 8+150 To.8+500

Half width LHS ACBC 1st layer final rolling in progress



KM 8+150 To.8+650

Half width LHS ACBC 2nd layer in progress



KM 8+300 To 9+000

Half width RHS ACBC 2nd layer final rolling in progress

SECTION-II



KM: 9+000 To 9+125 Half Width Sub Base top layer preparation in progress



KM: 9+375 To 9+500 Cutting for new Alignment of the road in progress



KM: 10+050 To 10+500 Full width Sub base top layer leveling & grading in progress



KM: 10+125 To 10+250 Full width Sub base top layer compaction in progress



KM: 10+950 To 10+975 Half width RHS Sub grade top layer preparation in progress



KM: 10+950 To 10+975 Half width RHS Sub grade top layer preparation in progress



KM: 11+200 To 11+450

Embankment formation in progress with traffic plying on river bed diversion



KM: 11+200 To 11+225

Full width Earth fill 5th layer leveling & garding in progress



KM: 11+200 To 11+225 Full width Earth fill 7th layer leveling & garding in progress



KM: 11+325 To 11+360 RHS hill cutting in progress



KM: 11+325 To 11+360 RHS hill cutting in progress



KM: 12+555 To 12+750 RHS hill cutting in progress

SECTION-III



KM 0+100 To 0+200

Full width Loop No-1 Section-III Sub base 1st layer leveling in progress



KM 0+350 To 0+425

Loop No-1 Section-III Sub base 1st layer preparation in progress



KM 0+425 To 0+575

Loop No-1 Section-III Sub base 1st layer ready for inspection



KM 15+050 To 15+150

Half width RHS sub base 1st layer compaction in progress



KM 15+050 To 15+350

Half width LHS Sub base 1st layer leveling & grading in progress



KM 15+150 To 15+300

Half width RHS Sub base 1st layer preparation in progress



KM 15+450 To 15+550

Half width LHS Sub grade 1st layer preparation in progress



KM 15+650 To 15+750

Half width RHS Sub grade 1st layer ready for inspection



KM 15+675 To 15+725 Half width LHS Sub grade 1st layer in progress



KM 15+775 To 15+875 Half width LHS Spreading of Sub grade top in progress



KM 15+775 To 15+875

Half width LHS Spreading of Sub grade top layer in progress



KM 15+800 To 15+875

Full width Earth fill 1st layer grading in progress



KM 15+900 M&E Consultant checking survey data



KM 16+300 To 17+100 Grooving in existing Asphalt pavement completed



KM 17+150 To 17+250

RHS hill cutting in progress



KM 17+450 To 17+500

RHS hill cutting in progress



KM 17+500 To 17+550

RHS hill cutting in progress



KM 17+600 To 17+650

RHS hill cutting in progress

LANDIKOTAL BYPASS



KM 36+850 To 36+925

Hill cutting on LandiKotal Bypass



KM 36+850 To 36+925

Hill cutting on LandiKotal Bypass

STRUCTURES



Bridge at KM: 9+560

Test pile bore in progress



Bridge at KM: 9+560

Test Pile concrete cylinder casting in progress



Culvert 10+050 Full width Structural Excavation completed



Culvert 11+372 Half width LHS stone masonry construction in progress



Culvert 12+337 Abutment walls stone masonry in progress



Culvert 12+460 Half width RHS Formwork for lean concrete in progress



Culvert 16+740

Full width Lean concrete completed



Culvert 18+146

Half width LHS Structural Excavation completed

FIELD / LAB TESTING



KM: 6+215 Field Density Test of Aggregate Base Course in Progress



KM: 6+470 Joint Field Density Test of Aggregate Base Course by NESPAK and M&E Consultants



KM: 7+475 To 8+050

Asphalt Base Course 2nd layer coring in progress



KM: 8+100 To 8+ 375

Asphalt Base Course 2nd layer coring in progress



KM: 12+336 Material Engineer M&E Consultants checking Culvert material



KM: 0+530 (Loop No. 1 Section-III) Field Density Test of Sub base in progress



KM: 12+337 Casting of cylinders from lean concrete of culvert bed



Jointly measuring sand unit weight in FWO LAB

ENVIRONMENTAL MONITORING



(Photo # 01) Heavy Vehicle Stand at FWO camp.



(Photo # 02) Construction of new main drain along the road at KM.3+00, near Total Petrol pump



(Photo # 03) culvert construction site at KM 12 +334 (the labors are working without personal protective equipment.)



(Photo # 4) Outside view of FWO Labor camp.



(Photo # 05) Inside view of FWO Labor camp residence.



(Photos # 06) Quarry Area at KM. at 6+050 still need proper leveling and refilling



(Photo # 07) At KM.11+200, the new quarry area is very close to residential houses, require to be shifted to some other place and the area must require proper leveling and refilling, according to the quarry area protocols.



(Photo # 08) New Query Site at Km 11+200, needs quarry area protocols implementations



(Photo # 09) Rock excavation along the road, the labors are without safety measures/Personal protective measures at Km 12+600



(Photo # 10) Rock excavation along the road, the labors are without safety measures/Personal protective measures at Km 12+600 even traffic is not staff during the process which may prove very dangerous for life of people.



(Photos # 11) Black topping of Asphalt mixture placement at KM 7+ 500 without safety and Personal Protective Measures.



(Photo # 12) Water spraying for dust control at KM: 9+000



(Photos #13) Water spraying for dust control at KM 10+600



(Photo # 14) Water spraying for dust control at KM 12+600



(Photo # 15) At KM 11+372 during excavation for culvert construction, PTCL cable was damaged. At picture PTCL employs are working to repair the cable.