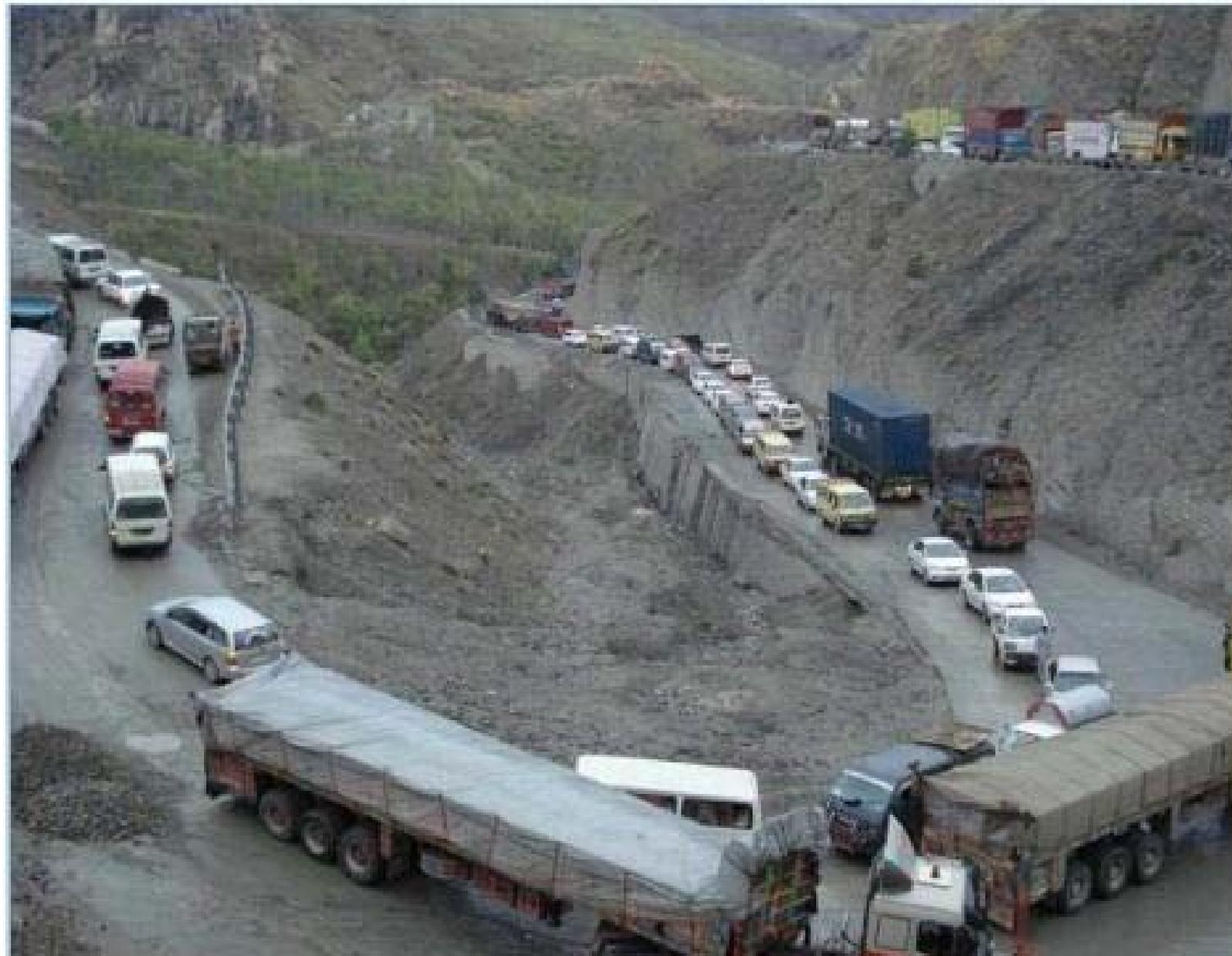




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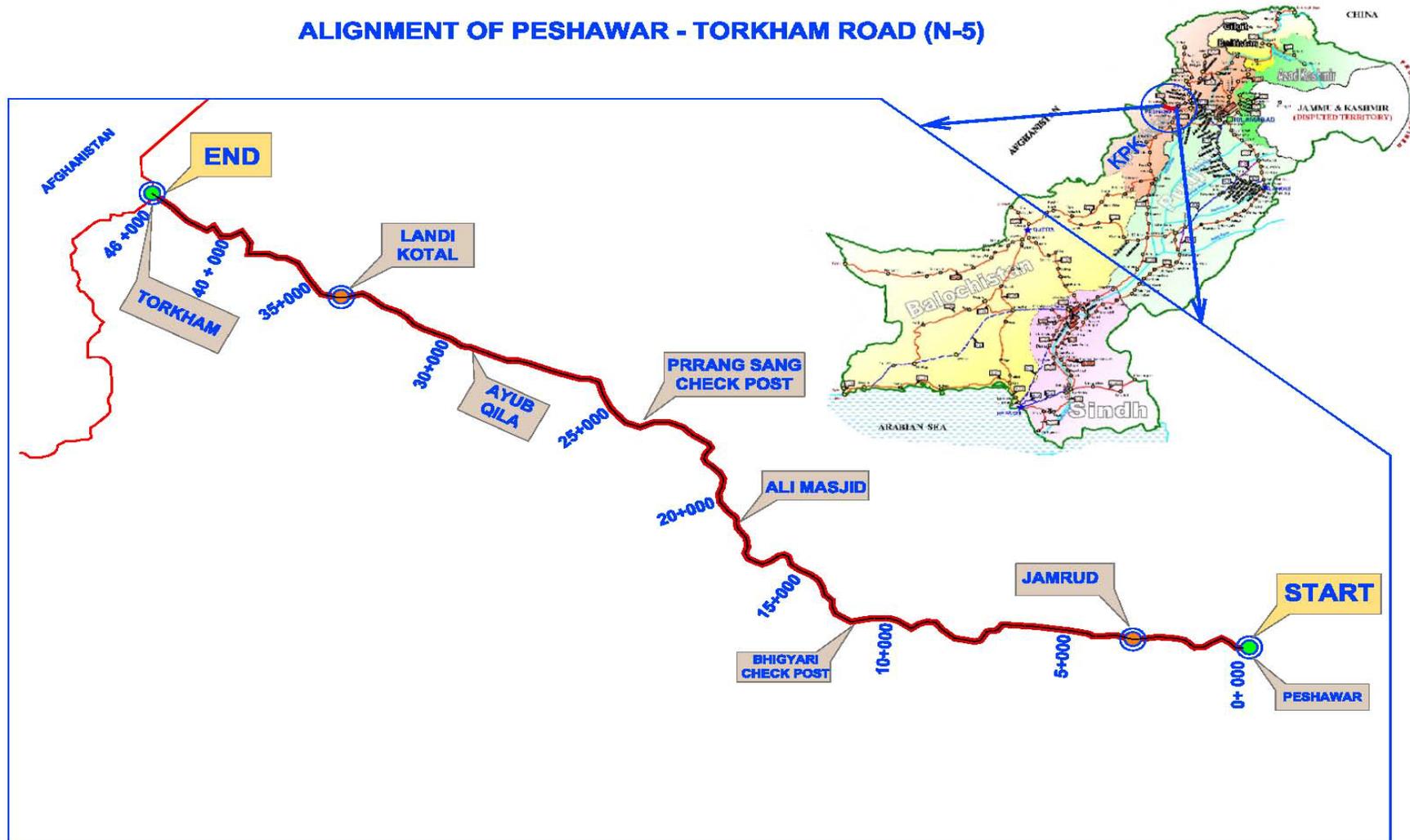
**STRENGTHENING & IMPROVEMENT OF PESHAWAR - TORKHAM ROAD
KHYBER AGENCY, FATA**

**MONTHLY PROGRESS REPORT # 09
AUGUST 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 August 2013:-
 - Earthwork: 100 %
 - Sub Base: 100 %
 - Aggregate Base Course: 100 %
 - Asphaltic Base Course: 100 %
 - Asphaltic Wearing Course: 78.89 %
 - Culverts: 84.55 %
 - Retaining Walls: 80.00 %
- Traffic is switched onto the full length of section – I, with asphalt paving work neared completion.
- Longitudinal drainage construction continued in section – I.
- Earthwork & WBM paving underway for local roads and connections in section – I.
- With verification of IPC # 03 on Aug 29, 2013 for an amount of US \$ 2,268,345.00, the overall certified payment till date is US \$ 5.36 Million.
- Bulk earthwork and roadway excavation continued in section – II & III of the project.
- Anchor piles concreting completed at bridge No: 02 (KM: 09+500), while preparation for static pile load testing continued.
- Construction continued on 10 No's cross drainage structures in section – II & III.
- Traffic being rerouted on diversions from KM: 9+700 To 12+700 & 15+500 To 18+200.
- Public utility (OFC) relocations continued in section – II.
- Batching plant construction neared completion at KM: 16 + 000 of section – III.
- Work progressed on preparation of detailed design and PC – 1's of section – II & III.
- Construction activities on section – IV (KM: 19+000 To KM: 26+000) & section – V (KM: 26+000 To KM: 34+000) started on Aug 15, 2013.

- Earthwork & sub-base paving work completed from KM: 24+550 To 26+100.
- Diversion opened for traffic between KM: 22+200 To 26+200.
- Work continued to finalizes the concept design for the section – IV To VI of the project.
- During the reporting period, the contractor teams were able to work 18 days of 25 available working days due to wet weather and EID holidays.
- 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	Section – VI
Kilometers	0+000 to 9+000	9+000 to 14+000 (Revised)	14+000 to 19+000 (Revised)	19+000 to 26+000 (Revised)	26+000 to 34+000 (Revised)	34+000 to 46+000 (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.

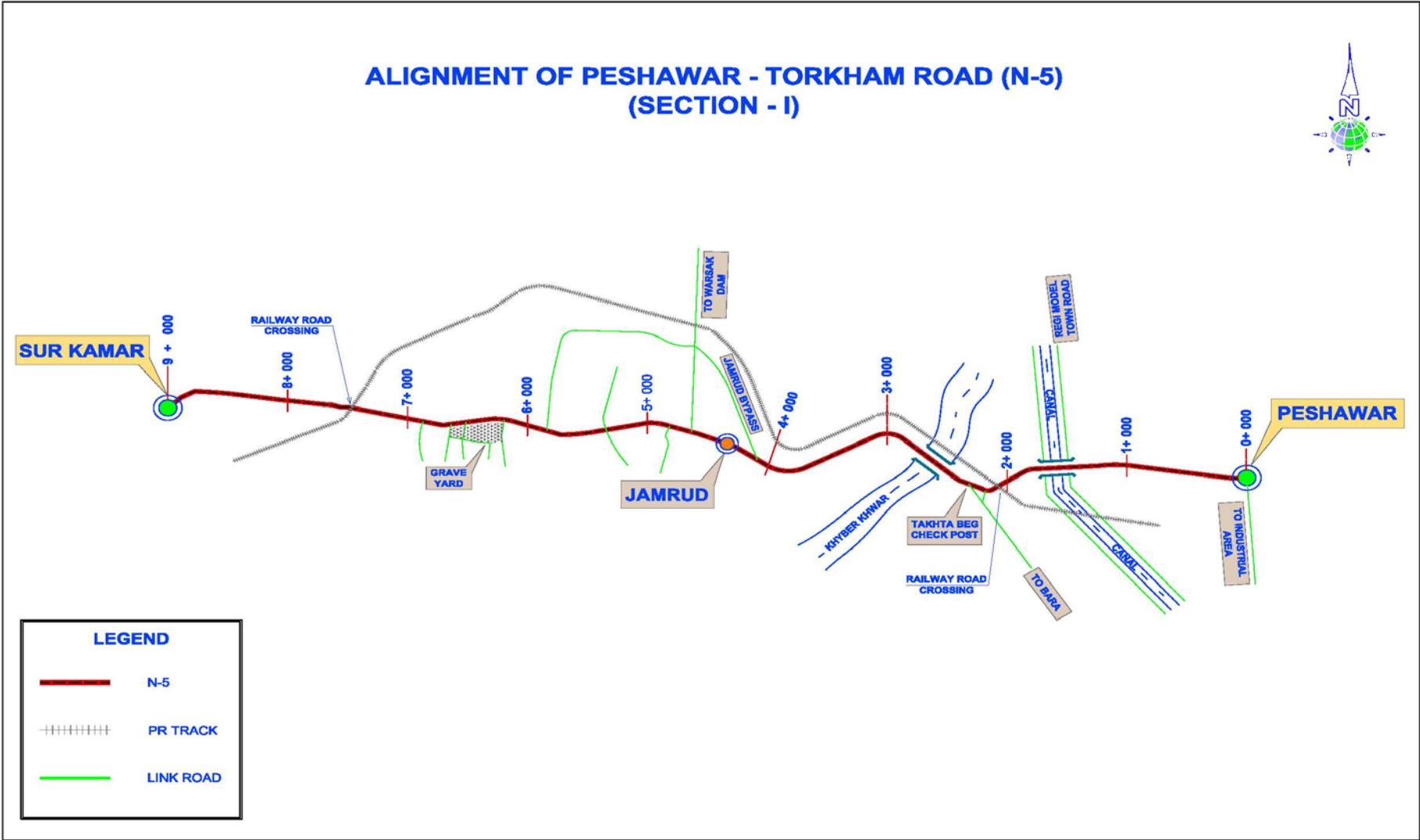
1.3 GENERAL CONTRACT DATA

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

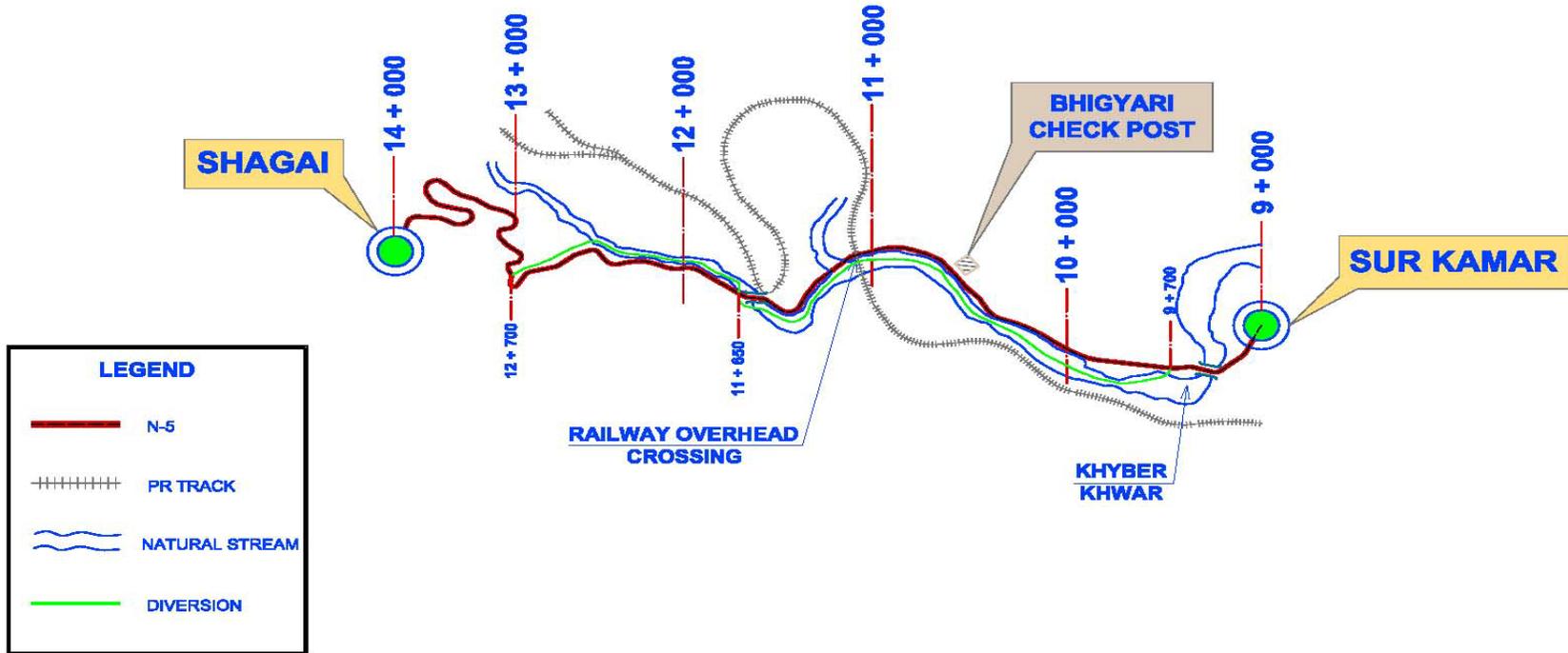
1.4 SECTIONS DATA

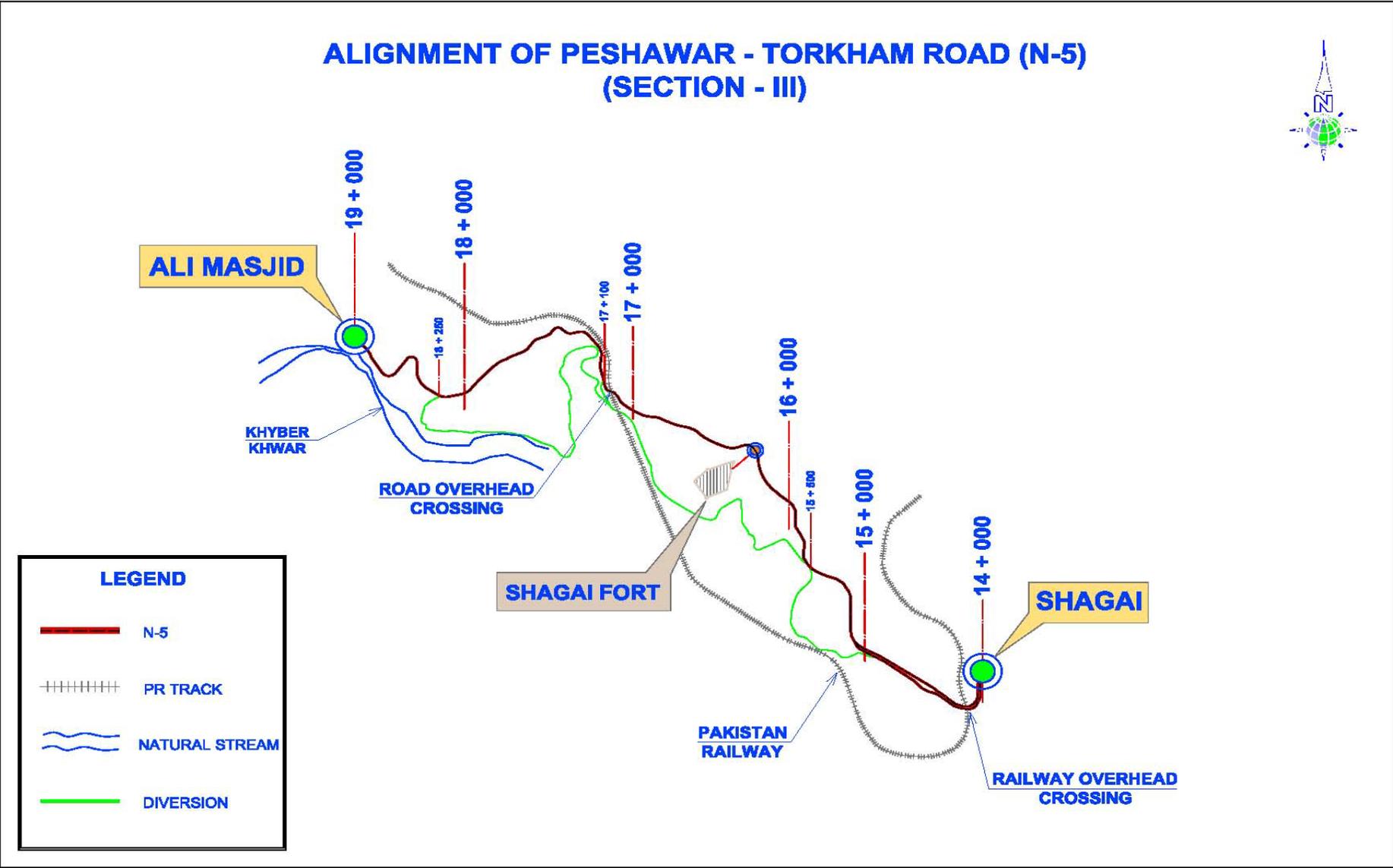
1.	Name of Package	Section – I (CH: KM: 0+000 to CH: KM: 9+000)
2.	Project Cost (Section – I)	Rs. 937.939 Million (US \$ 9.978 M)
3.	Approval of PC – 1 (Section – I)	Nov 20, 2012

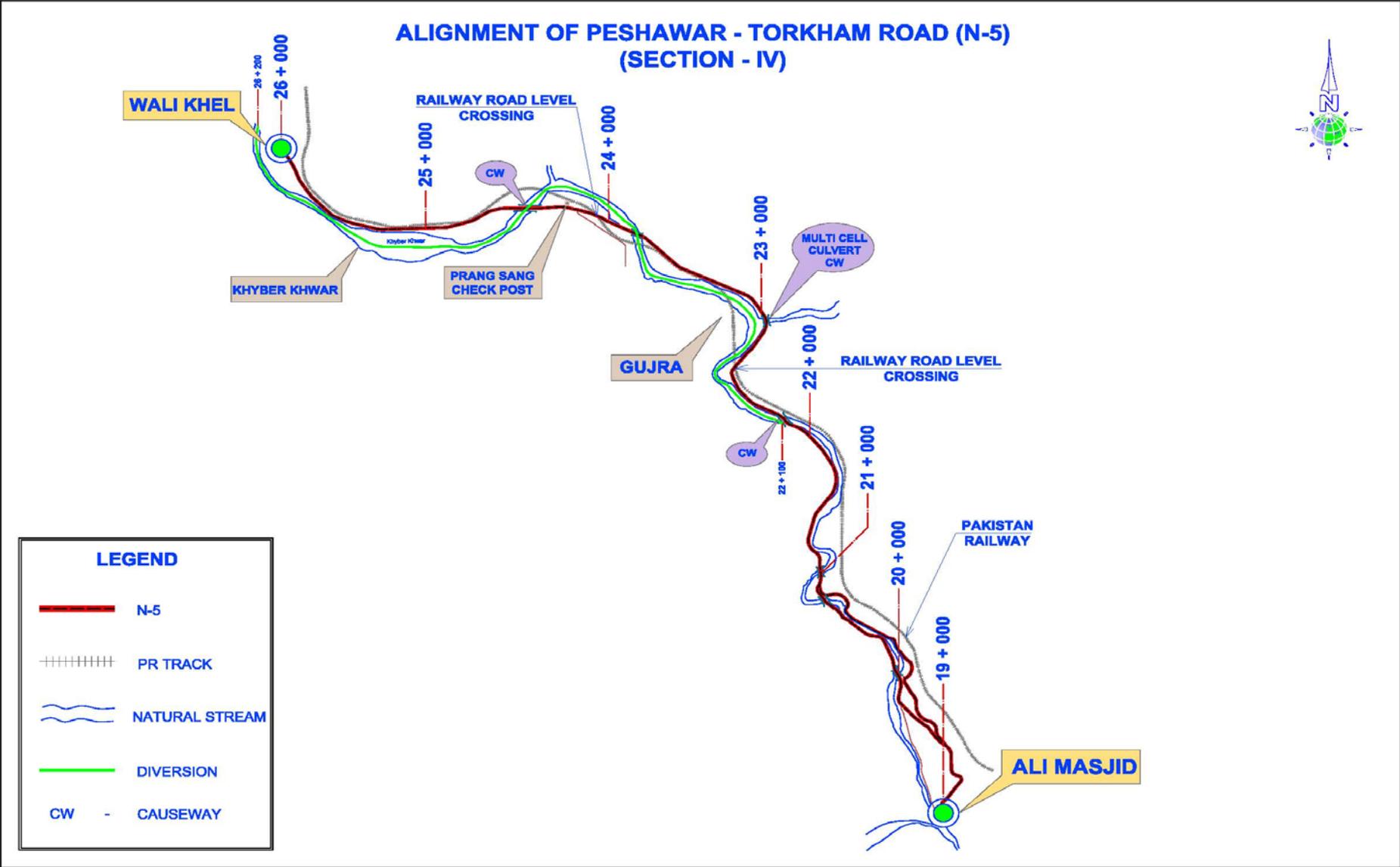
1.5 ALIGNMENT SKETCHES

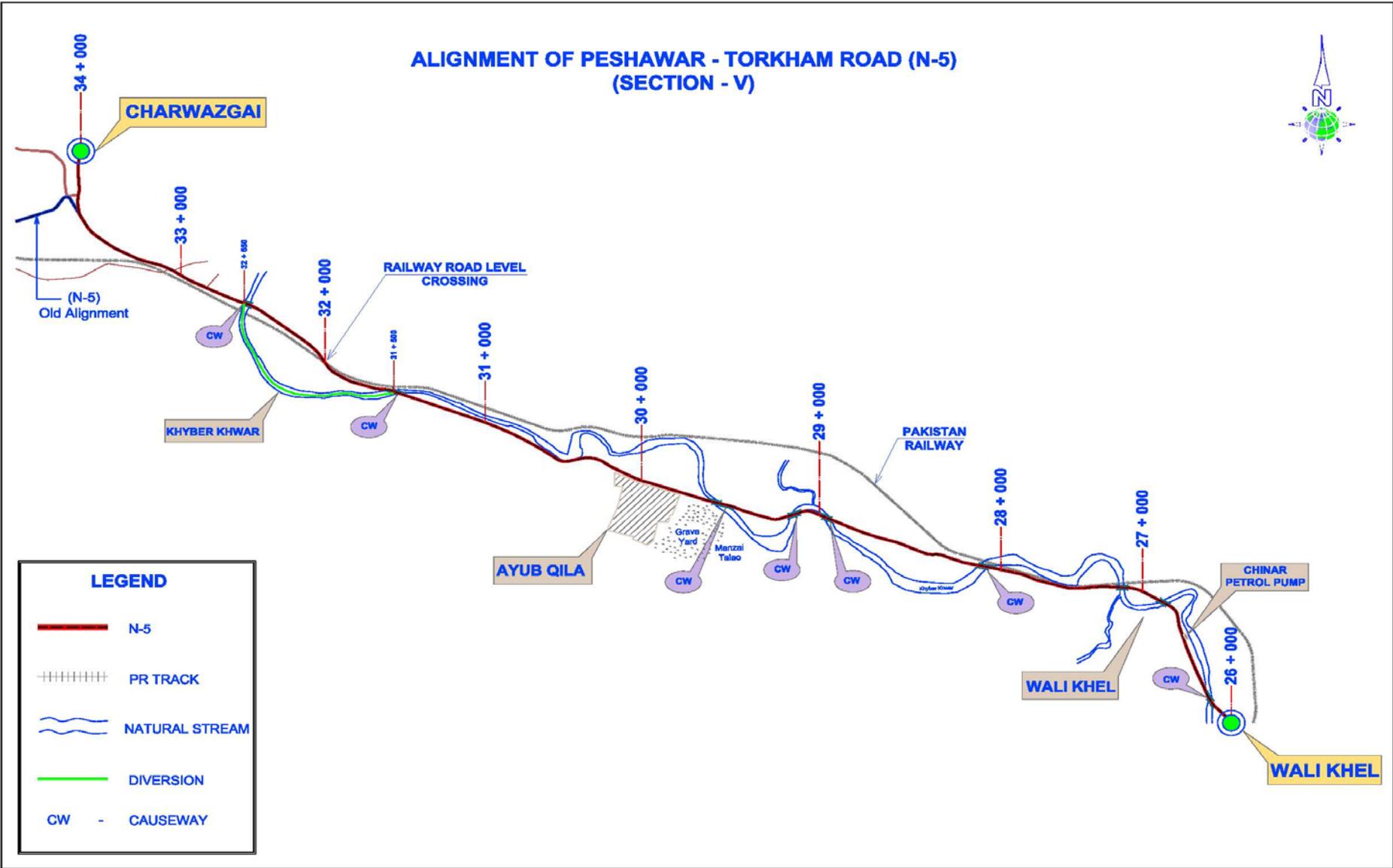


ALIGNMENT OF PESHAWAR - TORKHAM ROAD (N-5) (SECTION - II)

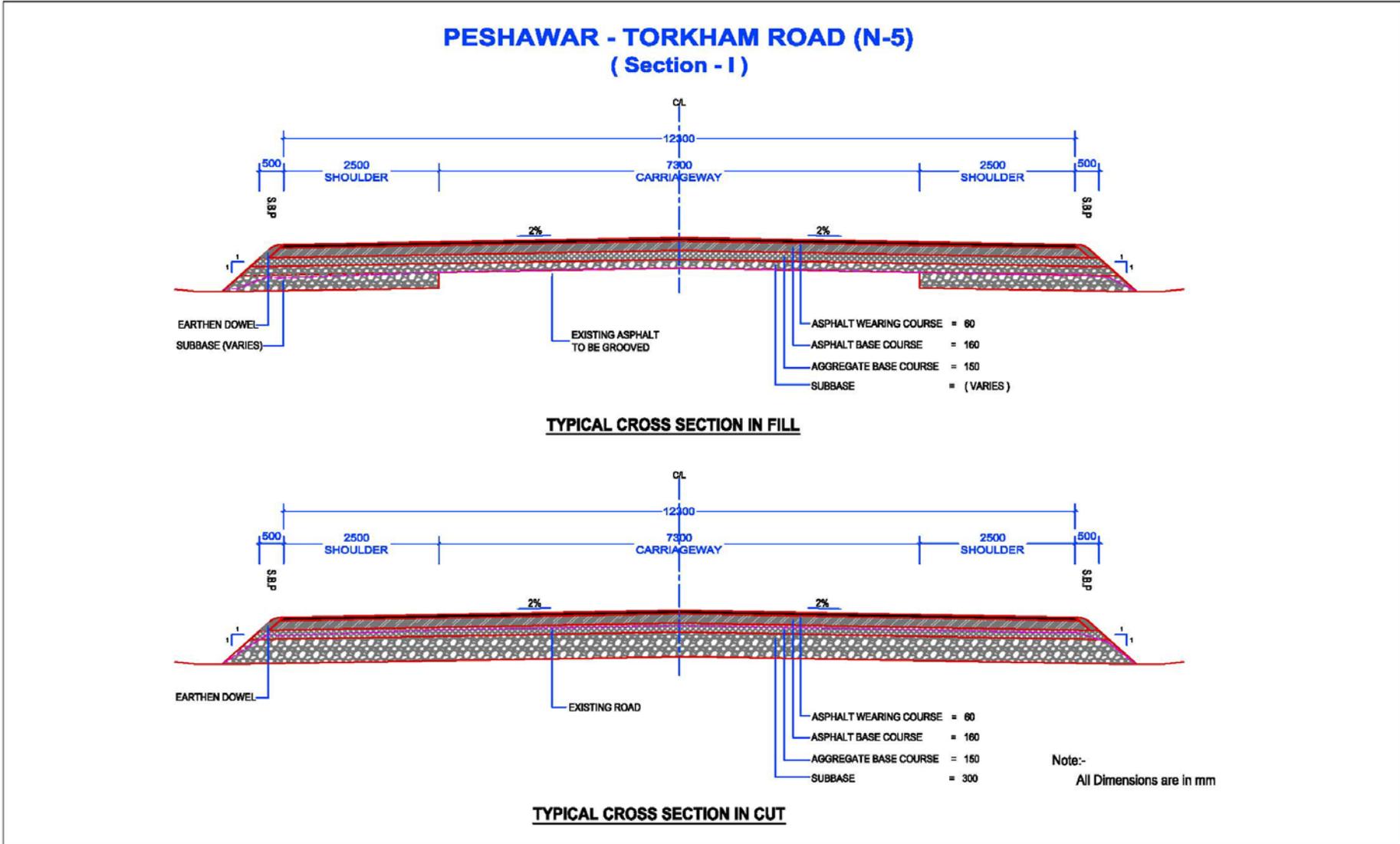


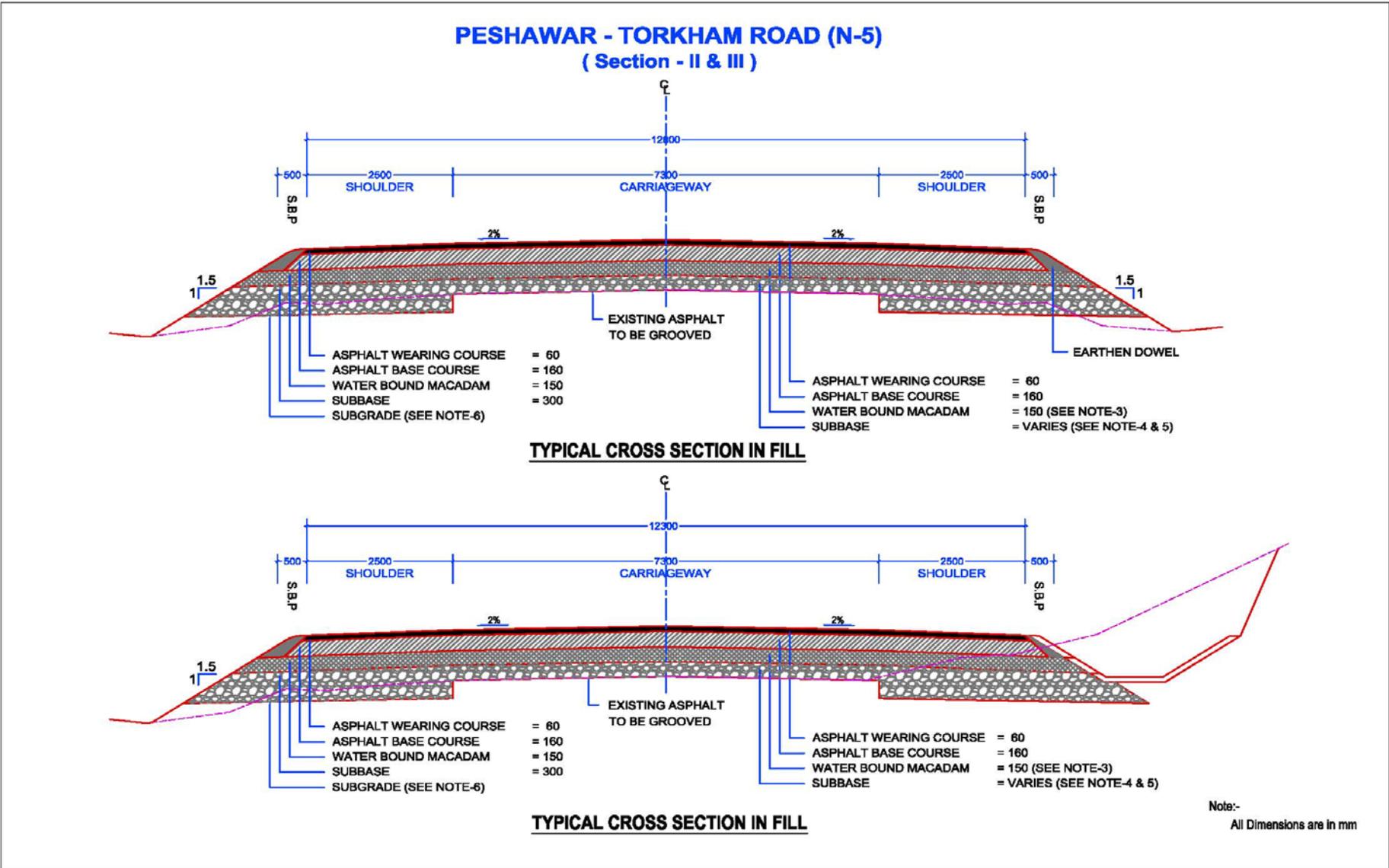


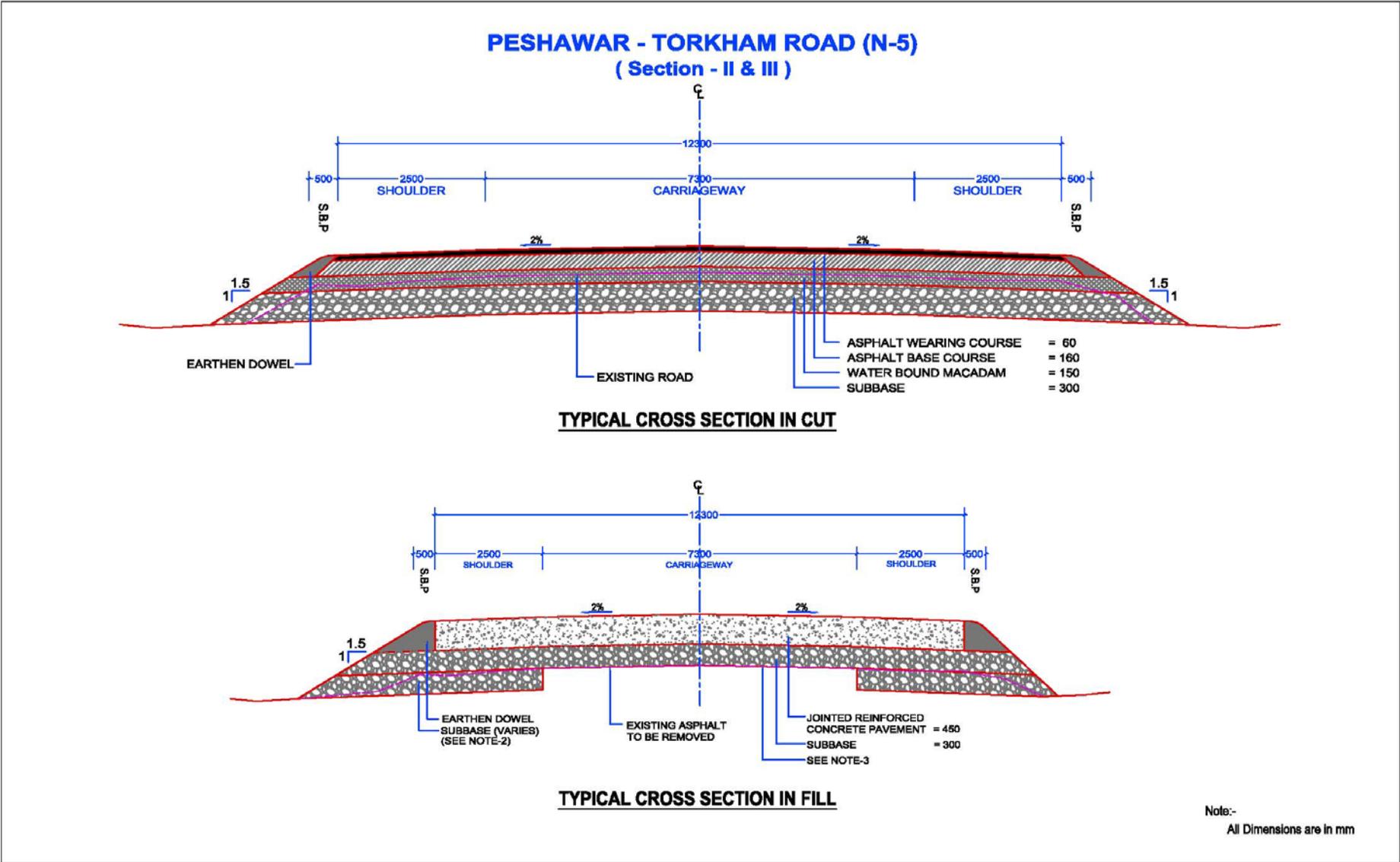




1.6 TYPICAL CROSS SECTIONS OF ROAD







M&E SERVICES & PROGRESS OF ACTIVITIES

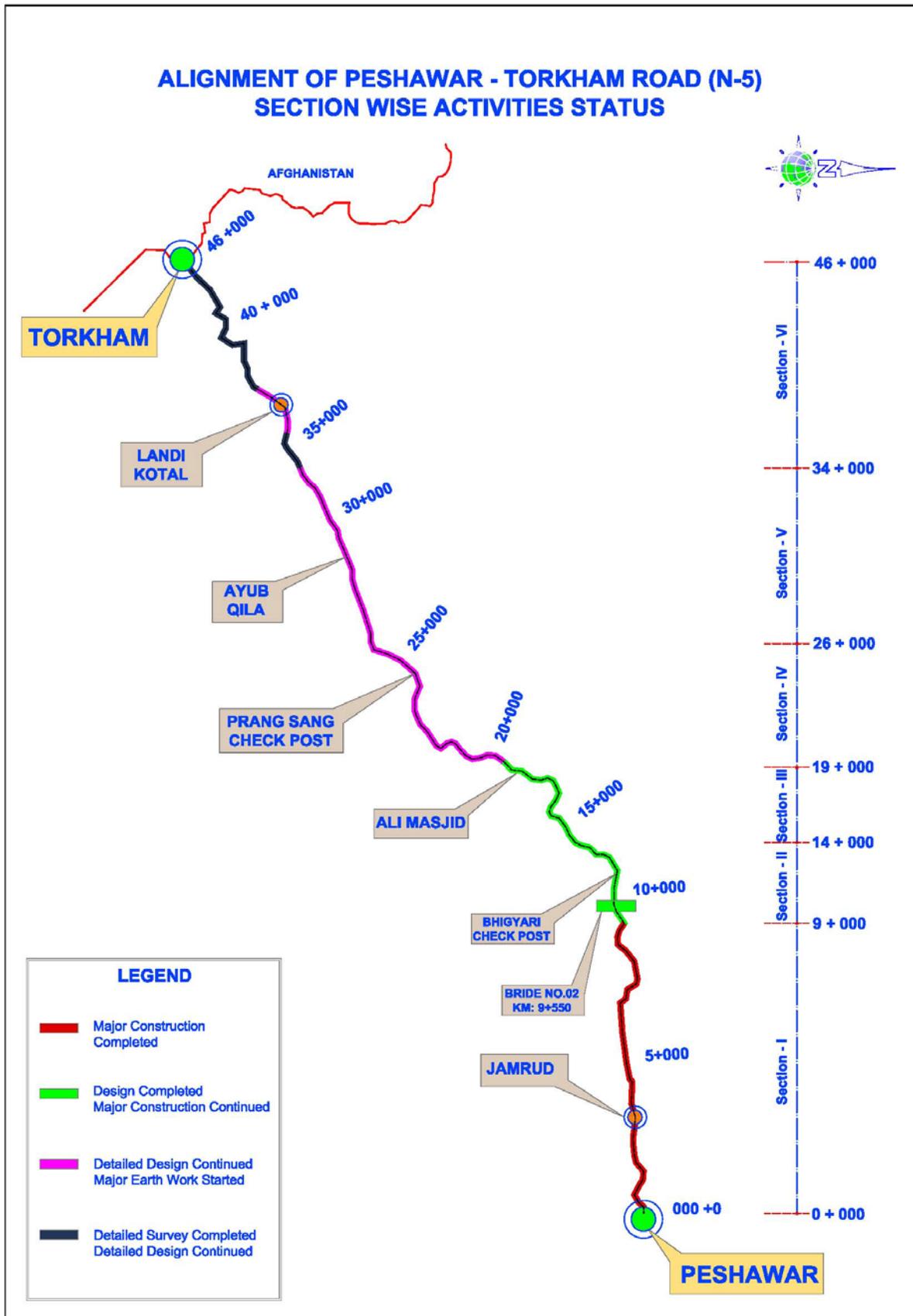
2.1 MAJOR ACTIVITIES DURING THE REPORTING MONTH – AUGUST 2013

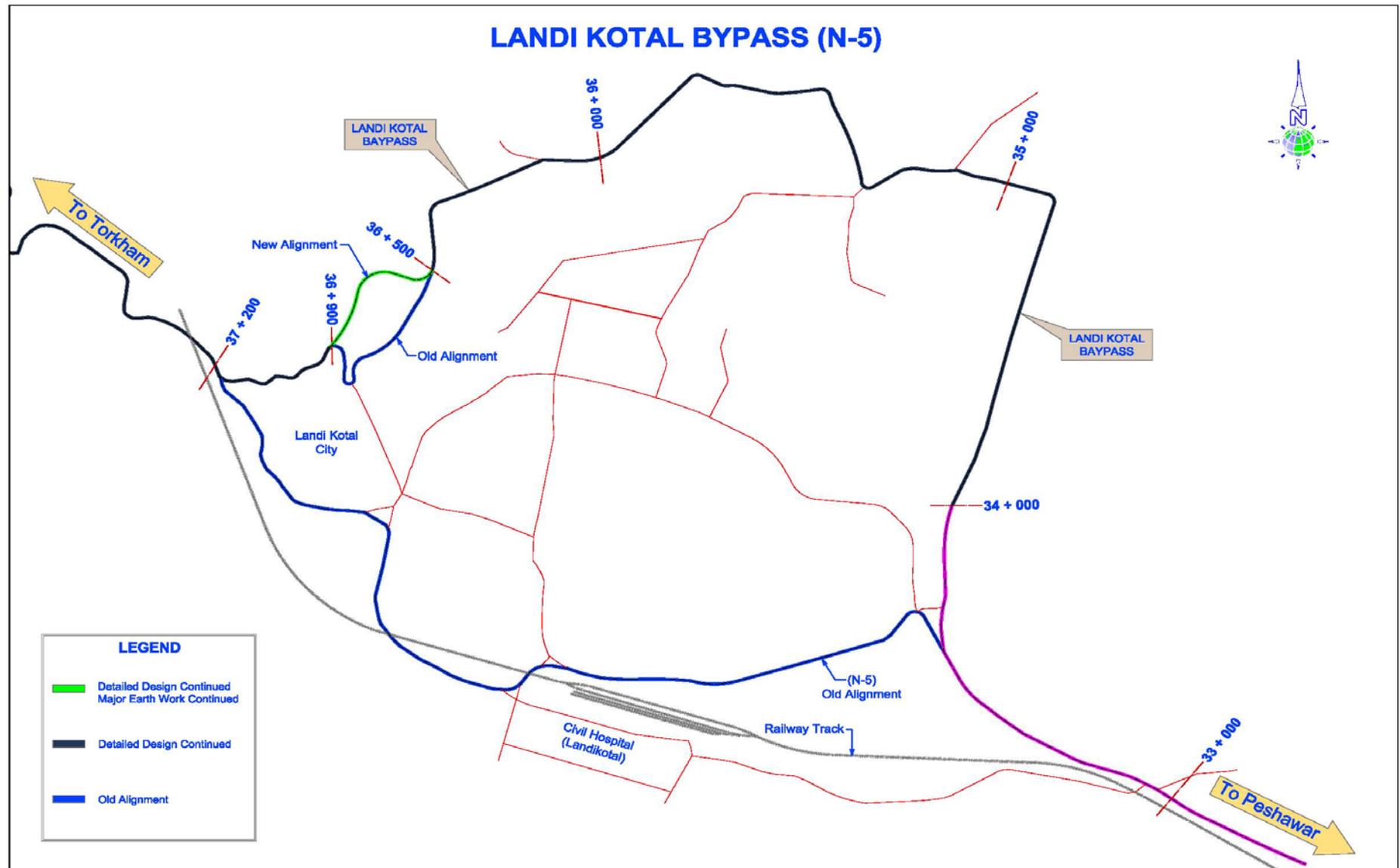
- IPC # 03 submitted to USAID by FWO through FATA Secretariat was certified on Aug 29, 2013 for an amount of US \$ 2,268,345.00
- FWO completed significant portion of principal project components like ACWC during the month. Key construction achievements made against section – I by the end of August 2013 are :-
 - Asphaltic Wearing Course was started and taken upto 78.54%.
 - Culverts were taken from 78.51 to 84.55%.
 - Retaining Walls were taken from 62% to 80%.
 - Roadside drains were taken from 0.1% to 7.05%
- Detailed technical comments on proposed cost estimate & design / drawings for section – II & III of the project have been shared with FWO/NESPAK during the reporting period.
- JMF for Asphaltic wearing course, submitted by FWO during the reporting month, was reviewed by M&E Consultants and found in conformity with NHA's specification.
- M&E Consultants continued to monitor the ACWC activities in the light of FWO's JMF during the reporting month and conducted requisite material sampling & testing as per NHA's guidelines.
- 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.
- FWO was constantly pressed for demonstrating good environmental practice in conformity with the construction environmental management plan.
- Total percent time elapsed up-to 31st August 2013 is 39.78 %.

2.2 MATTERS REQUIRING ATTENTION

- In order to carry out the quality / quantity monitoring of construction activities in an acceptable manner, the Construction contractor (FWO), has to submit a detailed method statement for the works to be executed in compliance with contractual obligation.
M&E Consultants shall perform technical audit of the works, being executed at site and shall monitor compliance with the project requirements in conjunction with approved engineering design, technical specifications and sound engineering practices. Non provision of a detailed and comprehensive methodology statement for each & every activity results in frequent site disputes, work disruption etc.
- According to relevant applicable laws for environment protection, the construction contractor (FWO) has to ensure the protection of natural landscape during the construction operation & to avoid un-necessary destructions, scarring or defacing of the natural surroundings including erosion, sedimentation and pollution of natural water courses , obstructing the free passage of surface runoff in the vicinity of hydraulic structures etc. FWO compliance with construction related environmental requirements needs further improvement.
- The projects involving widening of existing roadways, passing through critical corridors under live traffic conditions with built-up areas pose significant challenges to general public & project stakeholders. Planning for construction safety, maintenance & protection of traffic, staged construction, community relations, careful preparation of work schedule and work methodology / approach are the basic parameters requiring utmost attention from the contractor's side.
- The stated issue can be resolved proficiently by incorporating an efficient traffic control plan (TCP) and depute traffic maintenance / protection team (MPT) for regular monitoring of safety / security aspects of the route travelled through and around the construction zone.

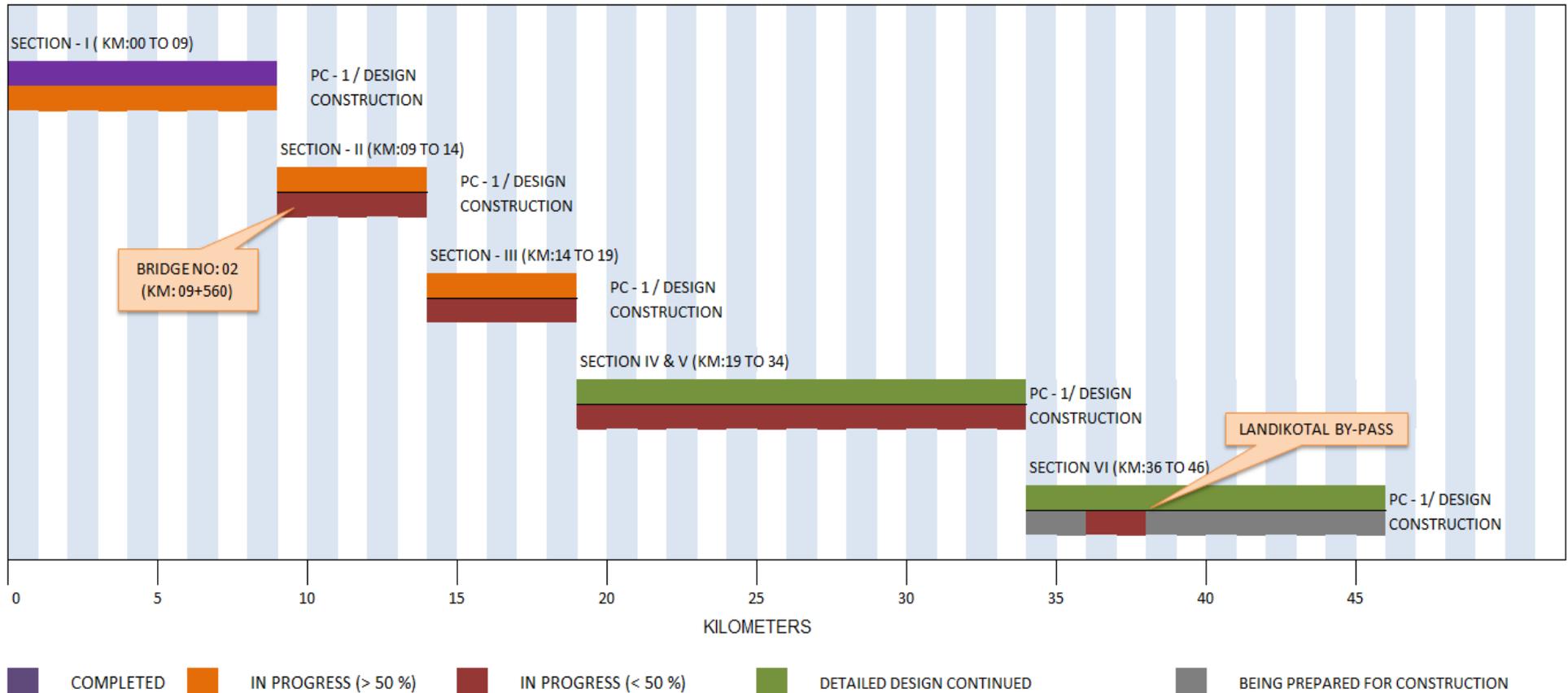
2.3 SECTION WISE ACTIVITIES STATUS





CIVIL WORKS PROGRESS STATUS

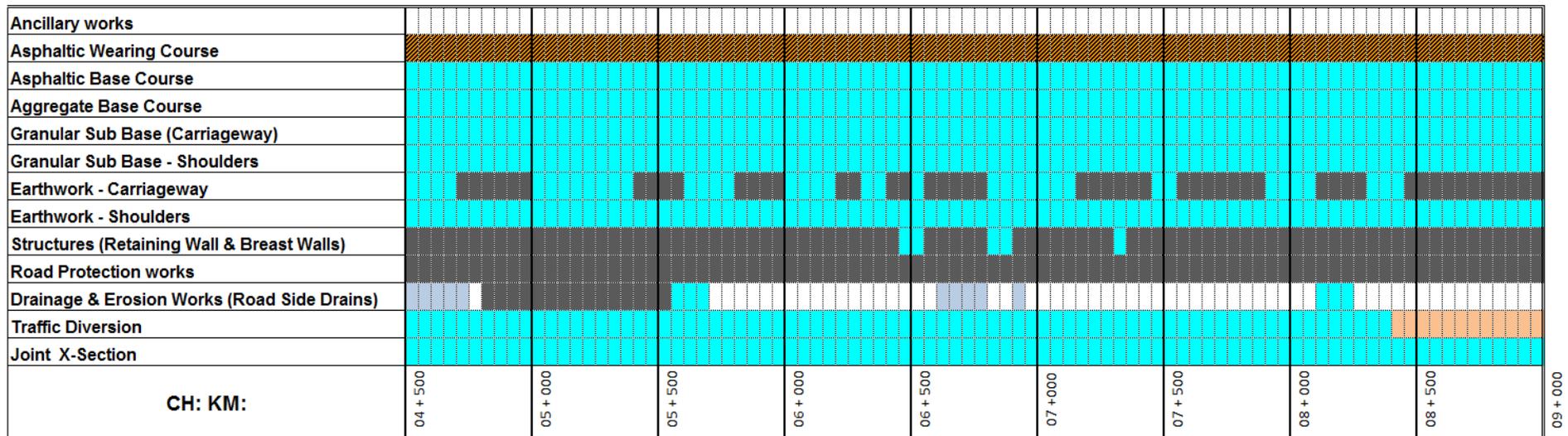
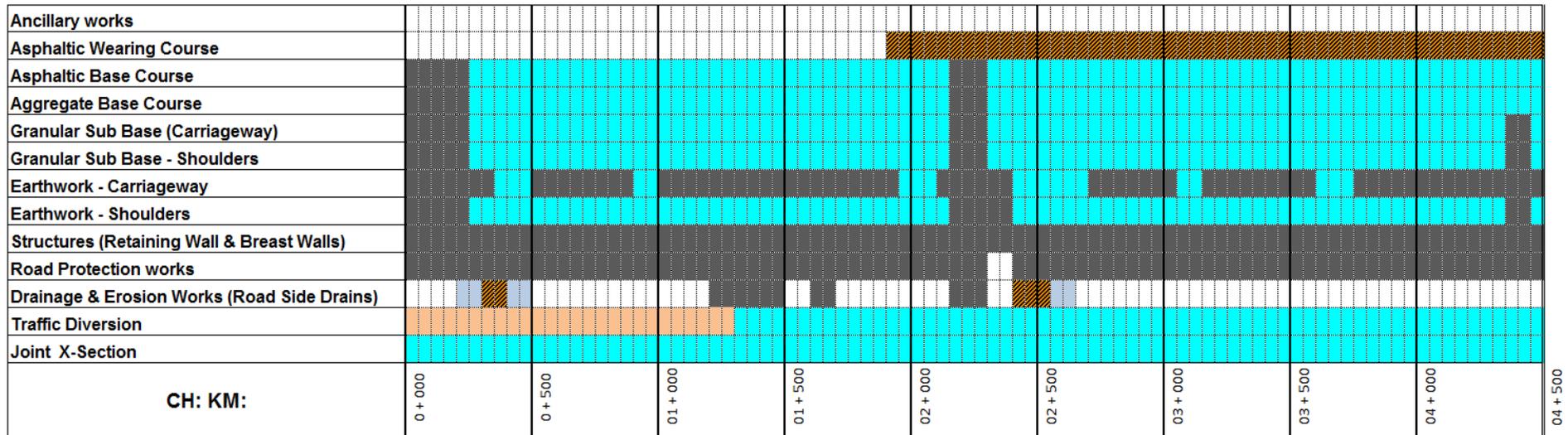
3.1 OVERALL PROGRESS STATUS



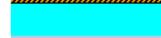
3.2 SECTION - I CUMULATIVE MILESTONE WISE PROGRESS STATUS

BILL NO	DESCRIPTION	MILESTONE UNIT	NUMBER OF MILESTONES	AMOUNT AS PER MILESTONE (US \$)	TOTAL AMOUNT (US \$)	PROGRESS UPTO 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	9.00	1,005,872.49	100.00	0.000	-	-	9.00	1,005,872.49	100.00
ii	AGGREGATE BASE COURSE	KM	9	73,611.56	662,504.04	9.00	662,504.04	100.00	0.000	-	-	9.00	662,504.04	100.00
iii	ASPHALTIC BASE COURSE	KM	9	416,608.69	3,749,478.21	9.00	3,749,478.21	100.00	0.000	-	-	9.00	3,749,478.21	100.00
3	SURFACE COURSES AND PAVEMENT	KM	9	213,785.71	1,924,071.39	-	-	-	7.10	1,517,878.54	78.89	7.10	1,517,878.54	78.89
4a	STRUCTURES (RETAINING WALL/BREAST WALL)	JOB	1	38,812.31	38,812.31	0.66	25,616.12	66.00	0.14	5,433.72	14.00	0.80	31,049.85	80.00
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	5.55	106,939.07	79.29	0.41	7,990.56	5.92	5.96	114,929.63	85.21
	1 x 3 x 1.5	NUMBER	3	25,204.07	75,612.21	1.50	37,806.11	50.00	0.42	10,585.71	14.00	1.92	48,391.81	64.00
	2 x 3 x 1.5	NUMBER	2	40,950.75	81,901.50	2.00	81,901.50	100.00	0.00	-	-	2.00	81,901.50	100.00
	3 x 3 x 1.5	NUMBER	1	54,597.59	54,597.59	0.85	46,407.95	85.00	0.15	8,189.64	15.00	1.00	54,597.59	100.00
	5 x 3 x 1.5	NUMBER	1	75,007.57	75,007.57	1.00	75,007.57	100.00	0.00	-	-	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	0.09	22,410.25	1.64	0.10	24,900.28	1.82
ii	DRAIN TYPE D-1a & D-2a (UNCOVERED)	KM	3	110,128.52	330,385.56	-	-	-	0.48	52,861.69	16.00	0.48	52,861.69	16.00
iii	DRAIN TYPE D-3	KM	1.5	135,439.74	203,159.61	-	-	-	0.13	16,929.97	8.33	0.13	16,929.97	8.33
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	3.86	50,097.86	42.89	0.77	9,993.61	8.56	4.63	60,091.47	51.44
8	PLANTATION OF TREES (450 Nos)	KM	9	1,297.87	11,680.83									
	TOTAL PROJECT COST (SECTION-I)				9,978,081.96		5,901,179.59	59.14		1,652,273.70	16.56		7,553,453.29	75.70

3.3 SECTION - I PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS



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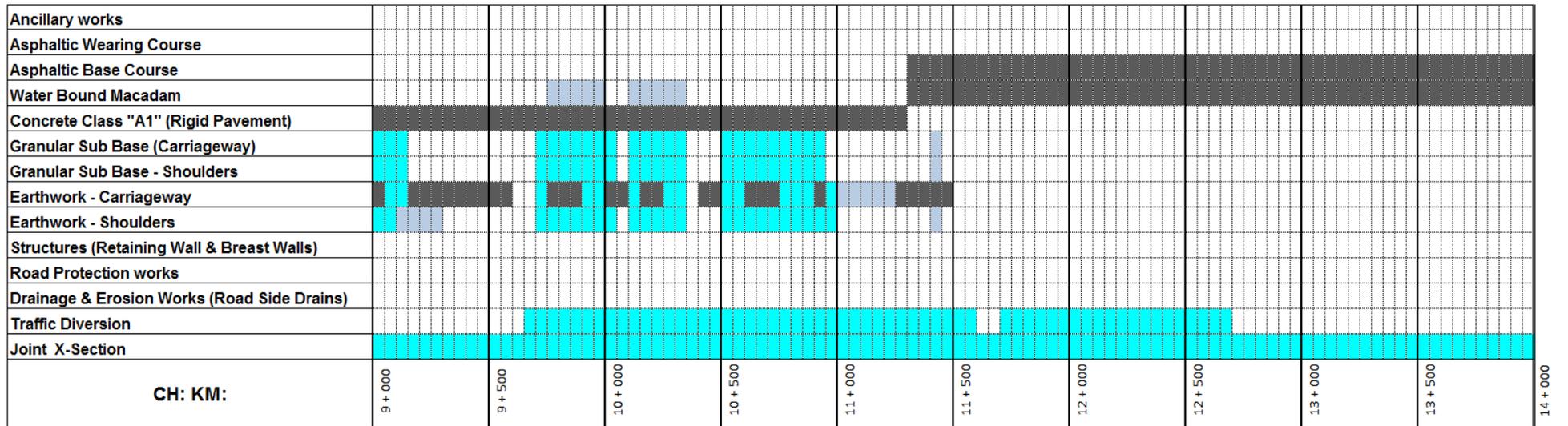
-  WORKS COMPLETED IN AUGUST 2013
-  WORKS COMPLETED IN PREVIOUS MONTHS
-  PARTIAL COMPLETION
-  SINGLE LANE TRAFFIC MAINTAINED
-  ITEM NOT REQUIRED

3.4 SECTION - I CULVERTS PHYSICAL PROGRESS STATUS

RCC Railing	Deleted - Replaced with Pipe Culvert Extension				Deleted												
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 AUGUST-2013
 ACTIVITIES COMPLETED IN PREVIOUS MONTH

3.5 SECTION - II PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS

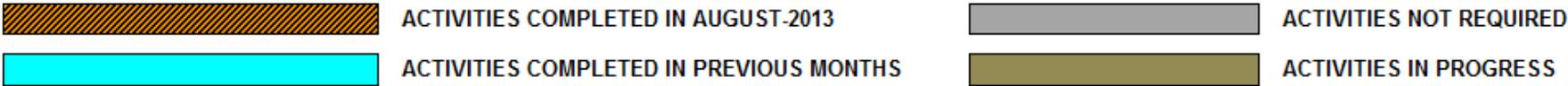


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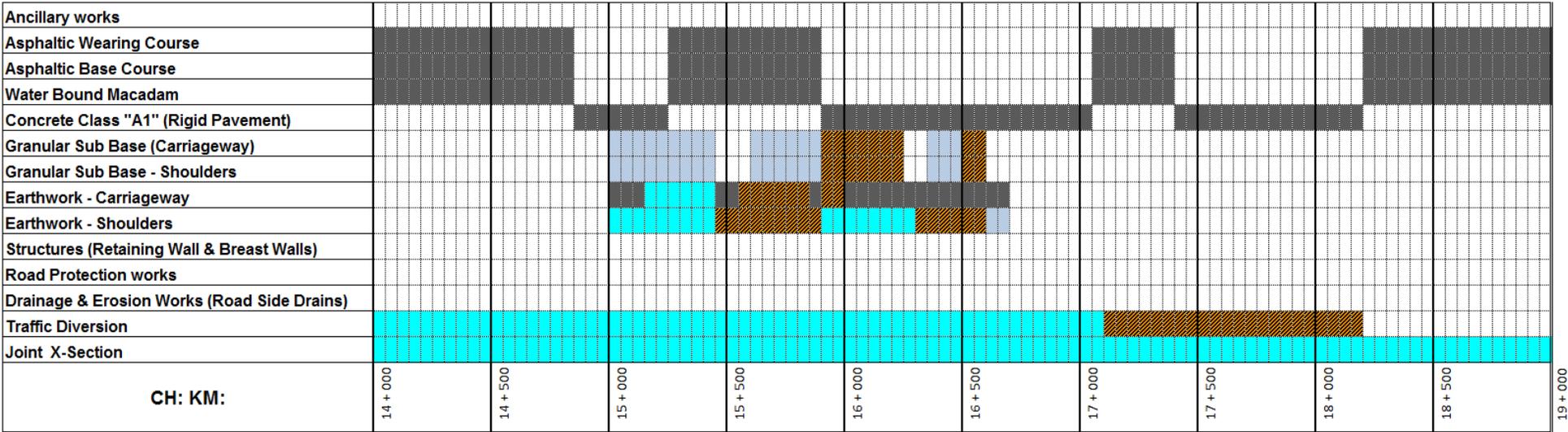


3.6 SECTION - II CULVERTS PHYSICAL PROGRESS STATUS

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 AUGUST 2013
- WORKS COMPLETED IN PREVIOUS MONTHS
- SINGLE LANE TRAFFIC MAINTAINED
- PARTIAL COMPLETION
- 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 AUGUST 2013
 WORKS COMPLETED IN PREVIOUS MONTHS
 PARTIAL COMPLETION



SINGLE LANE TRAFFIC MAINTAINED
 ITEM NOT REQUIRED

QUALITY TEST REPORTS

4.1 SUB BASE COURSE FIELD DENSITY TEST REPORTS

S.No	Location (KM)	Description	Station (KM)	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compection	Required Compection	Remarks
1	24+650 ~ 24+750	Sub Base	24+700	2.406	4.8	2.397	4.6	99.5	98	Pass

4.2 SUBGRADE FIELD DENSITY TEST REPORTS

S.No	Location (KM)	Description	Station (KM)	MMD (g/cc)	OMC (%)	Adj.MDD (g/cc)	M.C (%)	Achieved Compection	Required Compection	Remarks
1	25+100 ~ 25+150	Sub Grade	25+120	2.406	4.8	2.445	4.5	98.2	95	Pass

4.3 ABSORPTION AND COMPRESSIVE STRENGTH OF BRICK

Description		Brick for Drain Type 2											
Source		From Site Stock				Station			0+500 R/S				
Location		0+250 ~ 0+600				Testing Date			20/Aug/2013				
Specimen No.	Identification (Trade Mark)	Absorption (%) of Half Brick					Compressive Strength (Kg/cm ²)						
		Oven Dry Weight in (grams)	SSD Weight (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					
1	MZ	1273	1520	247	19.4	19.5	10.9	10.74	117.066	202	176.0	178.5	
2	MZ	1218	1456	238	19.5		10.4	10.4	108.16	192	181.0		
3	MZ	1311	1573	262	20.0	19.7	10.9	10.4	113.36	199	179.0	176.2	
4	MZ	1317	1573	256	19.4		10.2	10.2	104.04	177	173.5		
5	8	1263	1514	251	19.9	19.9	11.2	10.4	116.48	189	165.5	162.2	
6	8	1332	1597	265	19.9		10.74	10.4	111.696	174	158.8		
7	8	1256	1522	266	21.2	21.1	10.9	10.74	117.066	156	135.9	148.6	
8	8	1312	1589	277	21.1		10.2	10.1	103.02	163	161.3		
Required Absorption (%)						16.7	Required Strength (kg/cm ²)					140.8	

4.4 ASPHALT WEARING COURSE QUALITY TEST REPORTS

Specific Gravity A.C (Gb) 1.030									Combined Specific Gravity of Aggregate (Gsb) 2.656							
Paving Date	% A.C By Wt of Mix Pb	Sieve Analysis of Asphaltic Wearing 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 (%)														
		1"	3/4"	3/8"	#4	#8	#50	#200								
31-Jul-13	4.17	100	87.7	61.1	38	26	8.6	5.2	2.381	2.489	4.3	14.07	69.3	1374	12.3	10.8
15/Aug/2013	4.01	100	91.9	67.1	41.7	28	8.7	4.5	2.358	2.487	5.2	14.77	65	1292	13	12.1
21/Aug/2013	4.07	100	90.7	66.5	40	27.9	8.3	3.8	2.362	2.488	5	14.62	65.5	1271	13.2	12.3
27/Aug/2013	4.06	100	89.7	67.1	41.4	27.8	9.9	5.1	2.355	2.486	5.3	14.95	64.6	1296	13.5	13.1
JMF LIMITS	3.6 ~ 4.2	100	85 ~ 99	59~73	38 ~ 46	24 ~ 32	6 ~ 14	3.7~5.7	-	-	4 ~ 8	13 % Min	55 ~ 75	1000 Kg Min	20%	8 ~ 14 at (0.01")

4.5 SUMMARY OF CORE OF ASPHALT WEARING COURSE FOR COMPACTION

S.No	Core No.	Date	Covered Area	Station	Offset From C/L	Wt. in Air (g)	Wt. in Water (g)	SSD. WT (g)	Volume (cc)	Density (g/cc)	Lab.Density (GMB)	Acheived Compaction	Required Compaction	Remarks
5+250 ----- 6+750 F/W														
1	C-1	19/Aug/2013	6+750 ~ 6+650	6+730	2.3m R/S	1367	780.2	1370.7	590.5	2.315	2.359	98.1	97	OK
2	C-2			6+680	3.5m L/S	1052.7	603	1055.4	452.4	2.327	2.359	98.6	97	OK
3	C-3		6+650 ~ 6+550	6+610	2.5m R/S	1357.2	780	1361.6	581.6	2.334	2.359	98.9	97	OK
4	C-4			6+565	4.5m L/S	1060.1	608.7	1063.5	454.8	2.331	2.359	98.8	97	OK
5	C-5		6+550 ~ 6+450	6+520	1.8m R/S	1308.2	752	1313	561	2.332	2.359	98.9	97	OK
6	C-6			6+470	2.7m L/S	1330.2	764.2	1334.1	569.9	2.334	2.359	98.9	97	OK
7	C-7		6+450 ~ 6+350	6+427	4.7m R/S	1195.3	683.9	1198	514.1	2.325	2.359	98.6	97	OK
8	C-8			6+375	1.7m L/S	1383.9	797.6	1388.3	590.7	2.343	2.359	99.3	97	OK
9	C-9		6+350 ~ 6+250	6+335	4.3m R/S	1438.6	825.6	1444	618.4	2.326	2.356	98.7	97	OK
10	C-10			6+275	1.9m L/S	1389.7	793	1392.3	599.3	2.319	2.356	98.4	97	OK
11	C-11		6+250 ~ 6+150	6+215	4.0m R/S	1144.8	651.2	1147.1	495.9	2.309	2.356	98.0	97	OK
12	C-12			6+185	5.0m L/S	1118	644.6	1121.6	477	2.344	2.356	99.5	97	OK
13	C-13		6+150 ~ 6+050	6+100	0.5m R/S	727.8	418.8	730.8	312	2.333	2.356	99.0	97	OK
14	C-14			6+060	4.5m L/S	1138.5	659.3	1144.2	484.9	2.348	2.356	99.7	97	OK
15	C-15		6+050 ~ 5+950	6+020	2.0m R/S	1134.2	650.5	1138	487.5	2.327	2.356	98.8	97	OK
16	C-16			5+970	3.5m L/S	981.7	559.1	985	425.9	2.305	2.356	97.8	97	OK
17	C-17		5+950 ~ 5+850	5+925	1.5m R/S	1183.9	680.3	1186.6	506.3	2.338	2.356	99.3	97	OK
18	C-18			5+890	5.2m L/S	1034.8	594.6	1038.5	443.9	2.331	2.356	98.9	97	OK
19	C-19		5+850 ~ 5+750	5+830	2.5m R/S	1342.4	775.6	1346.4	570.8	2.352	2.362	99.6	97	OK
20	C-20			5+770	5.4m L/S	1123.1	643.8	1127.7	483.9	2.321	2.362	98.3	97	OK
21	C-21		5+750 ~ 5+650	5+715	2.0m R/S	1312.2	753.1	1315.1	562	2.335	2.362	98.9	97	OK
22	C-22			5+680	1.3m L/S	1185.4	680.5	1188.9	508.4	2.332	2.362	98.7	97	OK
23	C-23		5+650 ~ 5+550	5+625	5.7m R/S	1281.9	737.8	1284.4	546.6	2.345	2.362	99.3	97	OK
24	C-24			5+575	2.1m L/S	1199.5	685.2	1204.3	519.1	2.311	2.362	97.8	97	OK
25	C-25		5+550 ~ 5+450	5+510	5.0m R/S	1024.1	589.1	1227	637.9	1.605	2.362	68.0	97	OK
26	C-26			5+465	2.5m L/S	1220.3	704.5	1224	519.5	2.349	2.362	99.4	97	OK
27	C-27		5+450 ~ 5+350	5+429	5.2m R/S	1255.3	720.4	1258.6	538.2	2.332	2.362	98.7	97	OK
28	C-28			5+375	2.2m L/S	1106.2	632.2	1110	477.8	2.315	2.362	98.0	97	OK
29	C-29		5+350 ~ 5+250	5+335	5.0m R/S	1015.2	578.2	1020.2	442	2.297	2.362	97.2	97	OK
30	C-30			5+280	1.5m L/S	916.8	523.9	919.5	395.6	2.317	2.357	98.3	97	OK

SUMMARY OF CORE OF ASPHALT WEARING COURSE FOR COMPACTION

S.No	Core No.	Date	Covered Area	Station	Offset From C/L	Wt. in Air (g)	Wt. in Water (g)	SSD. WT (g)	Volume (cc)	Density (g/cc)	Lab.Density (GMB)	Acheived Compaction	Required Compaction	Remarks
6+750 ----- 8+050 F/W														
1	C-1	24/Aug/2013	6+750 ~ 6+850	6+790	1.5m L/S	1601.4	921.4	1604.5	683.1	2.344	2.358	99.4	97	OK
2	C-2			6+830	4.2m R/S	1443	828.9	1445.7	616.8	2.339	2.358	99.2	97	OK
3	C-3		6+850 ~ 6+950	6+865	2.3m L/S	1299.2	748.4	1304.6	556.2	2.336	2.358	99.1	97	OK
4	C-4			6+925	4.5m R/S	1264.6	728.7	1270.6	541.9	2.334	2.358	99.0	97	OK
5	C-5		6+950 ~ 7+050	6+985	1.8m L/S	899.1	518.5	904.9	386.4	2.327	2.358	98.7	97	OK
6	C-6			7+040	5.0m R/S	1270.5	732.8	1277.6	544.8	2.332	2.358	98.9	97	OK
7	C-7		7+050 ~ 7+150	7+100	1.5m L/S	1036.9	598.1	1042.3	444.2	2.334	2.358	99.0	97	OK
8	C-8			7+130	4.5m R/S	1160.1	670.4	1168.5	498.1	2.329	2.358	98.8	97	OK
9	C-9		7+150 ~ 7+250	7+170	2.3m L/S	1368.7	790.7	1375.2	584.5	2.342	2.358	99.3	97	OK
10	C-10			7+225	5.3m R/S	1200.9	691.9	1205.5	513.6	2.338	2.362	99.0	97	OK
11	C-11		7+250 ~ 7+350	7+260	2.8m L/S	1034.6	598.3	1043.2	444.9	2.325	2.362	98.5	97	OK
12	C-12			7+335	4.0m R/S	1066.3	612.9	1069.2	456.3	2.337	2.362	98.9	97	OK
13	C-13		7+350 ~ 7+450	7+360	0.5m L/S	1324.5	761.5	1329.2	567.7	2.333	2.362	98.8	97	OK
14	C-14			7+425	4.5m R/S	1120.3	648.7	1128.9	480.2	2.333	2.362	98.8	97	OK
15	C-15		7+450 ~ 7+550	7+480	1.5m L/S	1133.7	655.3	1141.5	486.2	2.332	2.362	98.7	97	OK
16	C-16			7+530	4.0m R/S	1223.1	710.8	1230.7	519.9	2.353	2.362	99.6	97	OK
17	C-17		7+550 ~ 7+650	7+580	0.5m L/S	989.3	572.6	995.4	422.8	2.340	2.362	99.1	97	OK
18	C-18			7+620	4.9m R/S	905.1	523.8	911	387.2	2.338	2.362	99.0	97	OK
19	C-19		7+650 ~ 7+750	7+675	1.0m L/S	1098.9	635.1	1106.7	471.6	2.330	2.362	98.7	97	OK
20	C-20			7+740	5.2m R/S	971.5	551.9	973.7	421.8	2.303	2.362	97.5	97	OK
21	C-21		7+750 ~ 7+850	7+770	0.5m L/S	994.5	574.5	998.9	424.4	2.343	2.362	99.2	97	OK
22	C-22			7+825	5.0m R/S	1016.6	584.9	1018.3	433.4	2.346	2.362	99.3	97	OK
23	C-23		7+850 ~ 7+950	7+890	2.0m R/S	1100.6	629.8	1104	474.2	2.321	2.362	98.3	97	OK
24	C-24			7+935	4.5m L/S	937.9	533.4	941.2	407.8	2.300	2.362	97.4	97	OK
25	C-25		7+950 ~ 8+050	7+985	4.5m R/S	1147.5	659.8	1150.4	490.6	2.339	2.362	99.0	97	OK
26	C-26			8+030	5.2m L/S	1217.5	702.8	1223.5	520.7	2.338	2.362	99.0	97	OK

SUMMARY OF CORE OF ASPHALT WEARING COURSE FOR COMPACTION

S.No	Core No.	Date	Covered Area	Station	Offset From C/L	Wt. in Air (g)	Wt. in Water (g)	SSD. WT (g)	Volume (cc)	Density (g/cc)	Lab.Density (GMB)	Acheived Compaction	Required Compaction	Remarks
8+050 ----- 8+950 F/W														
1	C-1	25/Aug/2013	8+050 ~ 8+150	8+090	2.5m L/S	960.9	551.7	966	414.3	2.319	2.362	98.2	97	OK
2	C-2			8+130	5.0m R/S	1013.9	581.4	1018.7	437.3	2.319	2.362	98.2	97	OK
3	C-3		8+150 ~ 8+250	8+165	4.0m L/S	1017.2	582.6	1019.5	436.9	2.328	2.362	98.6	97	OK
4	C-4			8+210	1.5m R/S	1293.6	741.1	1295.8	554.7	2.332	2.362	98.7	97	OK
5	C-5		8+250 ~ 8+350	8+270	4.9m L/S	1156.4	663.1	1158.9	495.8	2.332	2.362	98.7	97	OK
6	C-6			8+325	2.0m R/S	1267.3	718.4	1270.6	552.2	2.295	2.362	97.2	97	OK
7	C-7		8+350 ~ 8+450	8+390	5.0m L/S	1197.7	690	1199.8	509.8	2.349	2.362	99.5	97	OK
8	C-8			8+440	2.3m R/S	1017.6	582.7	1020.9	438.2	2.322	2.362	98.3	97	OK
9	C-9		8+450 ~ 8+550	8+500	4.5m L/S	1225	705.8	1227.4	521.6	2.349	2.362	99.4	97	OK
10	C-10			8+525	1.0m R/S	1353.6	776.4	1358.4	582	2.326	2.362	98.5	97	OK
11	C-11		8+550 ~ 8+650	8+575	3.0m L/S	1278.9	737.1	1285.4	548.3	2.332	2.362	98.8	97	OK
12	C-12			8+628	5.2m R/S	1364.4	781.8	1366.2	584.4	2.335	2.362	98.8	97	OK
13	C-13		8+650 ~ 8+750	8+680	4.7m L/S	1255.9	716.4	1261	544.6	2.306	2.362	97.6	97	OK
14	C-14			8+735	2.3m R/S	976.5	560.8	979	418.2	2.335	2.362	98.9	97	OK
15	C-15		8+750 ~ 8+850	8+785	5.0m L/S	1001.5	575.1	1005	429.9	2.330	2.362	98.6	97	OK
16	C-16			8+825	1.8m R/S	928.6	535.2	934	398.8	2.328	2.362	98.6	97	OK
17	C-17		8+850 ~ 8+950	8+875	4.9m L/S	1121.8	643	1127	484	2.318	2.362	98.1	97	OK
18	C-18			8+920	0.5m R/S	1168.5	672.3	1172.4	500.1	2.337	2.362	98.9	97	OK

SUMMARY OF CORE OF ASPHALT WEARING COURSE FOR COMPACTION

S.No	Core No.	Date	Covered Area	Station	Offset From C/L	Wt. in Air (g)	Wt. in Water (g)	SSD. WT (g)	Volume (cc)	Density (g/cc)	Lab.Density (GMB)	Acheived Compaction	Required Compaction	Remarks
4+100 ----- 5+250 F/W														
1	C-1	29/Aug/2013	5+250 ~ 5+150	5+230	5.0m L/S	1074.8	620.3	1080.4	460.1	2.336	2.361	98.9	97	OK
2	C-2			5+190	1.5m R/S	1084.5	622.4	1087.7	465.3	2.331	2.359	98.8	97	OK
3	C-3		5+150 ~ 5+050	5+140	4.5m L/S	1329.9	764.8	1340.5	575.7	2.310	2.359	97.9	97	OK
4	C-4			5+080	1.5m R/S	1291.7	737.5	1297.3	559.8	2.307	2.359	97.8	97	OK
5	C-5		5+050 ~ 4+950	5+040	4.7m L/S	1135.9	652.2	1141.8	489.6	2.320	2.359	98.3	97	OK
6	C-6			4+990	2.0m R/S	1277.6	727.9	1282.9	555	2.302	2.359	97.6	97	OK
7	C-7		4+950 ~ 4+850	4+945	0.5m L/S	1104.2	633.2	1107.8	474.6	2.327	2.359	98.6	97	OK
8	C-8			4+890	4.9m R/S	1047	597	1052.1	455.1	2.301	2.359	97.5	97	OK
9	C-9		4+850 ~ 4+750	4+845	1.5m L/S	1008.4	577.4	1014.3	436.9	2.308	2.359	97.8	97	OK
10	C-10			4+785	3.8m R/S	1093.8	625.6	1097.4	471.8	2.318	2.359	98.3	97	OK
11	C-11		4+750 ~ 4+650	4+745	0.5m L/S	814.4	471.6	819.8	348.2	2.339	2.359	99.1	97	OK
12	C-12			4+700	5.0m R/S	982.1	565.1	987.1	422	2.327	2.359	98.7	97	OK
13	C-13		4+650 ~ 4+550	4+630	1.0m L/S	956.2	544.3	960.8	416.5	2.296	2.362	97.2	97	OK
14	C-14			4+575	5.2m R/S	1054.2	598	1057.5	459.5	2.294	2.362	97.1	97	OK
15	C-15		4+550 ~ 4+450	4+545	2.0m L/S	992.3	568.4	996.2	427.8	2.320	2.362	98.2	97	OK
16	C-16			4+470	5.0m R/S	1262.6	727.5	1270	542.5	2.327	2.362	98.5	97	OK
17	C-17		4+450 ~ 4+350	4+440	2.0m L/S	863.6	493.3	867	373.7	2.311	2.362	97.8	97	OK
18	C-18			4+380	4.5m R/S	1084.9	620.4	1088.5	468.1	2.318	2.362	98.1	97	OK
19	C-19		4+350 ~ 4+250	4+340	1.5m L/S	1010.5	580.8	1016.3	435.5	2.320	2.362	98.2	97	OK
20	C-20			4+270	5.0m R/S	935.8	531.9	939	407.1	2.299	2.362	97.3	97	OK
21	C-21		4+250 ~ 4+150	4+225	2.5m L/S	1194.7	688.9	1202.2	513.3	2.327	2.360	98.6	97	OK
22	C-22			4+175	5.2m R/S	883.9	498.7	885.8	387.1	2.283	2.360	96.8	97	OK
23	C-23		4+150 ~ 4+100	4+135	3.9m L/S	1220.2	695.2	1225.8	530.6	2.300	2.360	97.4	97	OK

SUMMARY OF CORE OF ASPHALT WEARING COURSE FOR COMPACTION

S.No	Core No.	Date	Covered Area	Station	Offset From C/L	Wt. in Air (g)	Wt. in Water (g)	SSD. WT (g)	Volume (cc)	Density (g/cc)	Lab.Density (GMB)	Acheived Compaction	Required Compaction	Remarks
3+000 ----- 4+100 F/W														
1	C-1	31/Aug/2013	4+100 ~ 4+000	4+080	3.9m L/S	1504.2	866.2	1509.1	642.9	2.340	2.360	99.1	97	OK
2	C-2			4+035	1.0m R/S	1274.9	732.3	1278.5	546.2	2.334	2.360	98.9	97	OK
3	C-3		4+000 ~ 3+900	3+990	4.5m L/S	1363.5	783.4	1368.3	584.9	2.331	2.360	98.8	97	OK
4	C-4			3+945	5.0m R/S	1514.2	869.3	1517.6	648.3	2.336	2.360	99.0	97	OK
5	C-5		3+900 ~ 3+800	3+875	5.2m L/S	1017.6	582.9	1020.2	437.3	2.327	2.360	98.6	97	OK
6	C-6			3+840	0.5m R/S	1043.6	597	1047.7	450.7	2.316	2.360	98.1	97	OK
7	C-7		3+800 ~ 3+700	3+780	4.5m L/S	1060.6	609.6	1062.2	452.6	2.343	2.360	99.3	97	OK
8	C-8			3+710	1.5m R/S	1210.4	690.8	1214	523.2	2.313	2.359	98.1	97	OK
9	C-9		3+700 ~ 3+600	3+660	5.0m L/S	1474.7	849.2	1479.6	630.4	2.339	2.359	99.2	97	OK
10	C-10			3+620	2.5m R/S	1457.1	839.6	1462.4	622.8	2.340	2.359	99.2	97	OK
11	C-11		3+600 ~ 3+500	3+575	4.0m L/S	1207.1	692.3	1208.9	516.6	2.337	2.359	99.1	97	OK
12	C-12			3+505	1.5m R/S	1379.7	790.8	1383.2	592.4	2.329	2.359	98.7	97	OK
13	C-13		3+500 ~ 3+400	3+450	3.9m L/S	985.9	558.3	988	429.7	2.294	2.359	97.3	97	OK
14	C-14			3+405	2.0m R/S	1245.5	717	1248.6	531.6	2.343	2.359	99.3	97	OK
15	C-15		3+400 ~ 3+300	3+360	1.7m L/S	1003.5	571	1005.9	434.9	2.307	2.359	97.8	97	OK
16	C-16			3+320	4.9m R/S	897.4	512.1	900.2	388.1	2.312	2.360	98.0	97	OK
17	C-17		3+300 ~ 3+200	3+270	1.0m L/S	979.7	563.3	983	419.7	2.334	2.360	98.9	97	OK
18	C-18			3+220	4.2m R/S	1317	749.5	1321	571.5	2.304	2.360	97.6	97	OK
19	C-19		3+200 ~ 3+100	3+175	2.0m L/S	1310.7	745.6	1313	567.4	2.310	2.360	97.9	97	OK
20	C-20			3+125	4.7m R/S	1636.1	929.1	1638.5	709.4	2.306	2.360	97.7	97	OK
21	C-21		3+100 ~ 3+000	3+065	1.3m L/S	870.2	493.4	872.2	378.8	2.297	2.360	97.3	97	OK
22	C-22			3+020	4.9m R/S	1058.7	604.6	1062.4	457.8	2.313	2.360	98.0	97	OK

4.6 SUMMARY OF CORE THICKNESS OF ASPHALT WEARING COURSE

S.No	Core No.	Date	Covered Area	Station	Off Set From C/L	Cores Thickness (cm)				Average Thickness (cm)	Required Thickness (cm)	Remarks
						1	2	3	4			
5+250 ----- 6+750 F/W												
1	T-1	19/Aug/2013	6+750 ~ 6+650	6+730	4.0m R/S	7	7.5	7.3	7.3	7.3	6.0	
2	T-2			6+680	1.5m L/S	5.9	5.8	6.2	6.1	6.0	6.0	
3	T-3		6+650 ~ 6+550	6+610	4.2m R/S	6.4	6.4	6.4	6.1	6.3	6.0	
4	T-4			6+565	2.0m L/S	6.2	6.1	5.6	6.2	6.0	6.0	
5	T-5		6+550 ~ 6+450	6+520	5.3m R/S	7.4	7.7	7.3	7.4	7.5	6.0	
6	T-6			6+470	5.0m L/S	7.3	7	6.8	6.9	7.0	6.0	
7	T-7		6+450 ~ 6+350	6+427	2.2m R/S	7	7	7.3	6.6	7.0	6.0	
8	T-8			6+375	3.8m L/S	8.1	8.1	7.5	7.6	7.8	6.0	
9	T-9		6+350 ~ 6+250	6+335	2.5m R/S	7.6	7.5	7.4	7.4	7.5	6.0	
10	T-10			6+275	5.4m L/S	6.7	7.1	7.2	6.8	7.0	6.0	
11	T-11		6+250 ~ 6+150	6+215	2.0m R/S	7.3	7.1	7.2	6.5	7.0	6.0	
12	T-12			6+185	2.5m L/S	6.5	6.5	5.8	6.2	6.3	6.0	
13	T-13		6+150 ~ 6+050	6+100	3.7m R/S	5	5	4.7	4.6	4.8	6.0	
14	T-14			6+060	1.0m L/S	6.6	6.5	6.2	6.8	6.5	6.0	
15	T-15		6+050 ~ 5+950	6+020	4.7m R/S	5.5	5.9	5.9	6	5.8	6.0	
16	T-16			5+970	0.8m L/S	5.4	5.5	5.5	5.6	5.5	6.0	
17	T-17		5+950 ~ 5+850	5+925	4.0m R/S	6.4	6.5	6.7	6.5	6.5	6.0	
18	T-18			5+890	2.2m L/S	5.7	5.3	5.6	5.6	5.6	6.0	
19	T-19		5+850 ~ 5+750	5+830	4.7m R/S	6.6	6.9	6.6	6.2	6.6	6.0	
20	T-20			5+770	1.5m L/S	6.5	6.5	6.4	6.5	6.5	6.0	
21	T-21		5+750 ~ 5+650	5+715	4.0m R/S	6.6	6.2	6.6	6.7	6.5	6.0	
22	T-22			5+680	4.3m L/S	6.6	6.8	6.4	6.3	6.5	6.0	
23	T-23		5+650 ~ 5+550	5+625	2.7m R/S	6.1	6.1	5.8	6	6.0	6.0	
24	T-24			5+575	4.9m L/S	6.4	6.4	6.1	6.4	6.3	6.0	
25	T-25		5+550 ~ 5+450	5+510	3.0m R/S	5.9	5.5	5.5	5.4	5.6	6.0	
26	T-26			5+465	4.8m L/S	6.7	6.6	6.6	6.6	6.6	6.0	
27	T-27		5+450 ~ 5+350	5+429	1.5m R/S	6	6	6.4	6.3	6.2	6.0	
28	T-28			5+375	4.9m L/S	6.3	5.7	5.7	6.1	6.0	6.0	
29	T-29		5+350 ~ 5+250	5+335	0.5m R/S	7.5	7.1	7.1	7.2	7.2	6.0	
30	T-30			5+280	4.5m L/S	5.6	5.3	5.3	5.7	5.5	6.0	

SUMMARY OF CORE THICKNESS OF ASPHALT WEARING COURSE

S.No	Core No.	Date	Covered Area	Station	Off Set From C/L	Cores Thickness (cm)				Average Thickness (cm)	Required Thickness (cm)	Remarks
						1	2	3	4			
6+750 ----- 8+050 F/W												
1	T-1	24/Aug/2013	6+750 ~ 6+850	6+790	3.9m L/S	6.9	7.0	7.1	7.0	7.0	6.0	
2	T-2			6+830	2.0m R/S	7.8	7.4	7.8	7.7	7.7	6.0	
3	T-3		6+850 ~ 6+950	6+865	4.2m L/S	6.8	7.1	6.9	7.1	7.0	6.0	
4	T-4			6+925	2.5m R/S	7.0	6.9	6.9	6.8	6.9	6.0	
5	T-5		6+950 ~ 7+050	6+985	5.0m L/S	5.2	5.0	5.1	5.1	5.1	6.0	
6	T-6			7+040	2.0m R/S	7.0	7.0	7.0	7.0	7.0	6.0	
7	T-7		7+050 ~ 7+150	7+100	4.7m L/S	6.3	6.3	6.3	6.3	6.3	6.0	
8	T-8			7+130	2.0m R/S	6.3	6.4	6.2	6.3	6.3	6.0	
9	T-9		7+150 ~ 7+250	7+170	5.0m L/S	6.2	6.2	6.2	6.2	6.2	6.0	
10	T-10			7+225	1.9m R/S	7.3	7.4	7.2	7.3	7.3	6.0	
11	T-11		7+250 ~ 7+350	7+260	4.5m L/S	6.0	6.1	5.9	6.0	6.0	6.0	
12	T-12			7+335	1.0m R/S	6.9	6.8	6.9	6.8	6.9	6.0	
13	T-13		7+350 ~ 7+450	7+360	3.8m L/S	7.7	7.8	7.9	7.8	7.8	6.0	
14	T-14			7+425	1.0m R/S	6.5	6.5	6.5	6.4	6.5	6.0	
15	T-15		7+450 ~ 7+550	7+480	5.0m L/S	6.2	6.2	6.1	6.2	6.2	6.0	
16	T-16			7+530	1.0m R/S	7.3	7.1	7.1	7.3	7.2	6.0	
17	T-17		7+550 ~ 7+650	7+580	5.2m L/S	5.7	5.8	5.7	5.9	5.8	6.0	
18	T-18			7+620	2.8m R/S	6.6	6.5	6.6	6.6	6.6	6.0	
19	T-19		7+650 ~ 7+750	7+675	4.5m L/S	6.4	6.4	6.3	6.4	6.4	6.0	
20	T-20			7+740	5.2m R/S	6.6	6.7	6.6	6.6	6.6	6.0	
21	T-21		7+750 ~ 7+850	7+770	4.5m L/S	6.0	6.1	6.0	6.0	6.0	6.0	
22	T-22			7+825	1.0m R/S	6.5	6.4	6.5	6.6	6.5	6.0	
23	T-23		7+850 ~ 7+950	7+890	3.7m R/S	6.6	6.5	6.7	6.6	6.6	6.0	
24	T-24			7+935	1.5m L/S	5.7	5.7	5.7	5.7	5.7	6.0	
25	T-25		7+950 ~ 8+050	7+985	4.5m R/S	6.3	6.4	6.4	6.4	6.4	6.0	
26	T-26			8+030	2.5m L/S	6.8	6.8	6.9	6.8	6.8	6.0	

SUMMARY OF CORE THICKNESS OF ASPHALT WEARING COURSE

S.No	Core No.	Date	Covered Area	Station	Off Set From C/L	Cores Thickness (cm)				Average Thickness (cm)	Required Thickness (cm)	Remarks
						1	2	3	4			
8+050 ----- 8+950 F/W												
1	T-1	25/Aug/2013	8+050 ~ 8+150	8+090	4.5m L/S	6.0	6.1	6.0	6.0	6.0	6.0	
2	T-2			8+130	2.3m R/S	6.4	6.5	6.4	6.4	6.4	6.4	6.0
3	T-3		8+150 ~ 8+250	8+165	2.5m L/S	5.9	5.9	5.9	6	5.9	6.0	
4	T-4			8+210	3.8m R/S	6.8	6.8	6.8	6.7	6.8	6.0	
5	T-5		8+250 ~ 8+350	8+270	1.9m L/S	6.5	6.5	6.6	6.5	6.5	6.0	
6	T-6			8+325	4.8m R/S	7.3	7.3	7.3	7.3	7.3	6.0	
7	T-7		8+350 ~ 8+450	8+390	1.5m L/S	6.5	6.5	6.5	6.4	6.5	6.0	
8	T-8			8+440	5.0m R/S	6.5	6.5	6.5	6.6	6.5	6.0	
9	T-9		8+450 ~ 8+550	8+500	0.5m L/S	7.0	6.8	7.0	7.0	7.0	6.0	
10	T-10			8+525	4.0m R/S	7.0	7.0	7.0	7.0	7.0	6.0	
11	T-11		8+550 ~ 8+650	8+575	5.0m L/S	7.3	7.3	7.2	7.1	7.2	6.0	
12	T-12			8+628	2.8m R/S	6.9	6.9	6.8	6.8	6.9	6.0	
13	T-13		8+650 ~ 8+750	8+680	2.0m L/S	7.2	7.2	7.3	7.2	7.2	6.0	
14	T-14			8+735	4.8m R/S	5.5	5.7	5.7	5.7	5.7	6.0	
15	T-15		8+750 ~ 8+850	8+785	1.5m L/S	5.6	5.7	5.6	5.6	5.6	6.0	
16	T-16			8+825	4.0m R/S	5.0	5.2	5.2	5.3	5.2	6.0	
17	T-17		8+850 ~ 8+950	8+875	2.5m L/S	6.6	6.7	6.6	6.6	6.6	6.0	
18	T-18			8+920	4.0m R/S	6.5	6.6	6.5	6.5	6.5	6.0	

SUMMARY OF CORE THICKNESS OF ASPHALT WEARING COURSE

S.No	Core No.	Date	Covered Area	Station	Off Set From C/L	Cores Thickness (cm)				Average Thickness (cm)	Required Thickness (cm)	Remarks
						1	2	3	4			
4+100 ----- 5+250 F/W												
1	T-1	29/Aug/2013	5+250 ~ 5+150	5+230	2.0m L/S	6.0	5.9	6.0	6.0	6.0	6.0	
2	T-2			5+190	4.9m R/S	6.4	6.6	6.6	6.5	6.5	6.0	
3	T-3		5+150 ~ 5+050	5+140	1.8m L/S	7.8	7.6	7.7	7.7	7.7	6.0	
4	T-4			5+080	2.0m R/S	7.3	7.5	7.5	7.6	7.5	6.0	
5	T-5		5+050 ~ 4+950	5+040	1.7m L/S	5.8	6.1	6	6	6.0	6.0	
6	T-6			4+990	5.0m R/S	7.3	7.3	7.2	7.2	7.3	6.0	
7	T-7		4+950 ~ 4+850	4+945	3.8m L/S	6.5	6.5	6.5	6.2	6.4	6.0	
8	T-8			4+890	1.8m R/S	6.3	6.7	6.7	6.6	6.6	6.0	
9	T-9		4+850 ~ 4+750	4+845	0.5m L/S	6.2	5.9	5.9	5.9	6.0	6.0	
10	T-10			4+785	4.0m R/S	6.6	6.5	6.6	6.3	6.5	6.0	
11	T-11		4+750 ~ 4+650	4+745	4.5m L/S	22.4	22.7	22.6	22.5	22.6	22.0	Full Length
12	T-12			4+700	1.5m R/S	5.8	5.6	5.6	5.6	5.7	6.0	
13	T-13		4+650 ~ 4+550	4+630	1.0m L/S	5.2	4.9	5	5	5.0	6.0	
14	T-14			4+575	2.5m R/S	6.3	6.3	6.3	6.1	6.3	6.0	
15	T-15		4+550 ~ 4+450	4+545	4.5m L/S	6.1	6.1	5.7	6.1	6.0	6.0	
16	T-16			4+470	1.5m R/S	6.2	6.4	6.4	6.2	6.3	6.0	
17	T-17		4+450 ~ 4+350	4+440	4.9m L/S	5.4	5.6	5.6	5.6	5.6	6.0	
18	T-18			4+380	2.0m R/S	6.8	6.4	6.4	6.4	6.5	6.0	
19	T-19		4+350 ~ 4+250	4+340	4.7m L/S	6	6	6	5.8	6.0	6.0	
20	T-20			4+270	1.0m R/S	5.9	5.7	5.7	5.7	5.8	6.0	
21	T-21		4+250 ~ 4+150	4+225	4.9m L/S	7.0	6.6	6.8	6.8	6.8	6.0	
22	T-22			4+175	1.5m R/S	6.3	6.3	6.3	6.2	6.3	6.0	
23	T-23		4+150 ~ 4+100	4+135	0.5m L/S	6.9	6.8	7	7	6.9	6.0	

SUMMARY OF CORE THICKNESS OF ASPHALT WEARING COURSE

S.No	Core No.	Date	Covered Area	Station	Off Set From C/L	Cores Thickness (cm)				Average Thickness (cm)	Required Thickness (cm)	Remarks
						1	2	3	4			
3+000 ----- 4+100 F/W												
1	T-1	31/Aug/2013	4+100 ~ 4+000	4+080	0.5m L/S	7.2	7.4	7.4	7.5	7.4	6.0	
2	T-2			4+035	4.0m R/S	7.5	7.6	7.6	7.4	7.5	6.0	
3	T-3		4+000 ~ 3+900	3+990	1.5m L/S	7.6	7.6	7.7	7.6	7.6	6.0	
4	T-4			3+945	2.0m R/S	7.5	7.5	7.3	7.5	7.5	6.0	
5	T-5		3+900 ~ 3+800	3+875	2.5m L/S	6	6.0	6	5.9	6.0	6.0	
6	T-6			3+840	5.0m R/S	6.2	6.1	6.2	6.2	6.2	6.0	
7	T-7		3+800 ~ 3+700	3+780	1.0m L/S	6.3	6.3	6.3	6.3	6.3	6.0	
8	T-8			3+710	4.5m R/S	6.6	6.4	6.5	6.5	6.5	6.0	
9	T-9		3+700 ~ 3+600	3+660	2.0m L/S	7.9	8.4	8.4	8.2	8.2	6.0	
10	T-10			3+620	4.7m R/S	5.8	6.1	6.1	6	6.0	6.0	
11	T-11		3+600 ~ 3+500	3+575	1.0m L/S	6.6	6.4	6.4	6.4	6.5	6.0	
12	T-12			3+505	4.5m R/S	6.9	7	7	7	7.0	6.0	
13	T-13		3+500 ~ 3+400	3+450	0.5m L/S	6	6	6.1	6.1	6.1	6.0	
14	T-14			3+405	4.0m R/S	6.2	6.1	6.2	6.2	6.2	6.0	
15	T-15		3+400 ~ 3+300	3+360	5.1m L/S	5.6	5.5	5.5	5.6	5.6	6.0	
16	T-16			3+320	2.7m R/S	6	6	6.1	5.8	6.0	6.0	
17	T-17		3+300 ~ 3+200	3+270	4.5m L/S	6	6	6	6.1	6.0	6.0	
18	T-18			3+220	2.8m R/S	7.5	7.4	7.4	7.5	7.5	6.0	
19	T-19		3+200 ~ 3+100	3+175	4.0m L/S	6.3	6.7	6.6	6.4	6.5	6.0	
20	T-20			3+125	1.8m R/S	8	8	7.8	8	8.0	6.0	
21	T-21		3+100 ~ 3+000	3+065	5.0m L/S	21.2	21.0	21.0	21.0	21.1	22.0	F/L , W.C=5.1
22	T-22			3+020	1.5m R/S	6.5	6.3	6.5	6.5	6.5	6.0	

4.7 SUMMARY OF SUB BASE AND SUB GRADE MATERIAL QUALITY TEST REPORT

S.No	Location (KM)	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	24+000 ~ 26+000	Sub Base/ Sub Grade	100	73.7	45.8	33.9	24.8	16.6	12.2	2.406	4.8	30.27	26.7	82	110	2.75	5.7	Borrow Area 24+500
Specification Limits for Sub Base			100	55~8 5	40~7 0	30~6 0	20~5 0	10~3 0	5~15	-	-	50% Max	25% Min	50% Min		-	6 Max	
Total Nos.of Tests			1							1	1	1	1	1	1	1	1	

4.8 SUMMARY OF AGGREGATE QUALITY TEST FOR ASPHALT WEARING COURSE

S.No	Location	Description	Seive Analysis											FM	L.A %	Absorption (%)	Specifi Gravity	Flackiness & Elongation Index	Remarks
			1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200						
1	Asphalt Plant Stock Pile Hot Bin Samples	Bin #1	100.0	71.0	2.9	0.4	0.2	-	-	-	-	-	-	-	-	0.8	2.638	-	
2		Bin #2	100.0	100.0	95.4	82.5	9.4	0.9	-	-	0.7	-	-	-	-	0.91	2.633	-	
3		Bin #3	100	100	96.4	100.0	99.6	82.9	-	-	28.6	-	15.2	-	-	2.1	2.589	-	
Combined Grading			100	91.6	70.1	65	37.4	28.5	-	-	10.0	-	5.2	-	-	-	-	-	
JMF Limits		Minimum	100	89.7	-	59	38.0	24	-	-	6.0	-	3.7	-	-	-	-	-	
		Maximum	100	98.7	-	73	46.0	32	-	-	14.0	-	5.7	-	-	-	-	-	
Specification Limits		Minimum	100	90	-	56.0	35.0	23.0	-	-	5	-	2	-	-	-	-	-	
		Maximum	100	100.0	-	70	50.0	35	-	-	12.0	-	8	-	-	-	-	-	

ENVIRONMENTAL COMPLIANCE MONITORING

Environmental Compliance Officer:

Shabir Ahmad Khan

Filed Monitor Social:

Muhammad Rahman

Road Section under Construction:

Section-I: KM: 00+000 to KM: 09+000

Section-II: KM: 09+000 to KM: 14+000

Section-III: KM: 14+000 to KM: 19+000

Persons Consulted at Site

Mohammad Ali, Site Inspector NESPAK

Mr. Server din, Surveyor FWO

Mohammad Hussain, Surveyor NESPAK

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.
- 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. 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)</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, side drains and retaining walls etc.</p> <p>(Please refer to 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 	Soil Contamination and Safety	No action is required at present stage.

		metals that are inflammable, investigate and use less toxic alternative products. d. Prohibit use of waste oil as cooking oil.		
4	Handling of solid Waste	<p>a. Site manager would be responsible for the collection and disposal of solid waste.</p> <p>b. Training of site personnel in waste management and chemical waste handling procedures.</p> <p>c. Separation of chemical waste for special handling.</p> <p>d. Recording system for the amount of waste generated recycled and reused.</p> <p>e. Proper storage and site practices to minimize the potential for damage or contamination of construction materials.</p> <p>f. General refuse would be stored in enclosed bins to separate from construction materials</p> <p>g. A reputable waste collection firm should be engaged by the contractor to remove the general refuse from the site.</p>	Toxicity, Soil Contamination and Pollution	<p>No waste segregation observed at construction site. FWO should share their solid waste management plan.</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.</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 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 # 04)</p>
5	Construction crews and camps	<p>a. Check accommodations for site crew and maintain it in good condition.</p> <p>b. Avoid as much clearing of vegetation as possible.</p> <p>c. Provide temporary sanitation on site such as pit latrines (assuring the water table is enough and soil and geology of appropriate</p>	Surface and ground water pollution and conflicts with locals.	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

		<p>composition).</p> <p>d. Use local or regional labor.</p> <p>e. Screen potential crew members of HIV and tuberculosis.</p> <p>f. Provide education and enforce guidelines on contact with local residents.</p> <p>g. Set guidelines for prohibiting poaching and collection of plants.</p> <p>h. Provide adequate quantities and good quality food and cooking fuel.</p> <p>i. If the water is stored for drinking water should meet the WHO standards and if it is used for construction purpose then it should be clearly demarcated.</p> <p>j. No domestic pets or livestock are allowed on the site.</p>		<p>satisfactory.</p> <p>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.</p> <p>Guidelines like the removal of vegetation etc. have not been followed by FWO contractor and sub-contractors.</p> <p>Domestic livestock can be seen at site but the camps are away and are protected from the entrance of live stocks.</p> <p>(Please refer to photos # 05, 06)</p>
<p>6</p>	<p>Material handling use and storage</p>	<p>a. Material should be appropriately secured to ensure safe passage b/w the destinations during transportation. Loads shall have proper cover to prevent spillage and contractor is responsible for any clean up resulting from failure.</p> <p>b. Materials from borrow site should be directly transported and deposited to the site where it has to be used. Stockpiles should be positioned and sloped to create less visual impact. No foreign materials generated or deposited should remain on the site after completion of the activity and the areas affected by stockpiling should be reinstated.</p>	<p>Dust pollution</p>	<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. 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>The Sub Contractors were advised to follow the Material handling protocols at sites, especially at culvert construction sites.</p>

		<ul style="list-style-type: none"> 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 the 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. 		
7	Materials extraction Quarrying , logging	<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 	Change in landscape & Creation of water ponds.	<p>FWO staff should improve construction site 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 abundant quarry areas near KM: 6+050 and KM: 11+00 were refilled with Quarry waste and leveled as the sites were in the center or along the banks of rain water streams. Rehabilitation work has been started with respect to quarry logging environmental protocols by the FWO itself.</p>

		<p>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> <ul style="list-style-type: none"> 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. 		
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 	<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, as the area is leveled or rocky nature and the soil consist of</p>

		<p>vegetation must remove during wet periods; disturb ground only just before the actual construction.</p> <p>g. Use erosion control measures such as hay bales</p> <p>h. Re-vegetate the recovered plants and other appropriate local flora immediately after equipment is removed from site.</p>		<p>sand, silt and gravels which are more compacted.</p>
9	Excavation , cutting , and filling	<p>a. Cover Pile with plastic sheeting, prevent run off with hay bales, or use similar measures.</p> <p>b. Place fence around excavation.</p> <p>c. Investigate shallow over excavation and no excavation alternatives.</p> <p>d. Have construction crews and supervisors be alert for buried historic, religious, and cultural objects and provide them with procedures to follow if such objects are discovered. Provide incentives for recovery of objects and disincentives for their destruction.</p> <p>e. Ensure excavation is accompanied by well-engineered drainage.</p> <p>f. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flow in channels.</p> <p>g. Use good engineering practices, for instance don't use soil alone. First lay a bed of rock and gravel.</p> <p>h. Balance the cuts and fills whenever possible to minimize the earth work movement.</p> <p>i. Water sprinkling should be carried out at the</p>	<p>Soil erosion and stability and surface water contamination</p>	<p>The excavation has been started at the shoulders of the existing road in shallow depth of about 30cm 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: 10+400 and KM: 12+600 excavations of rocks, at KM: 8+200 mixing of asphalt and at KM: 12+460 excavation of culvert continued but no safety protocols & personal protection measures were observed during site visit. During rocks excavation traffic needed to be properly controlled which may otherwise prove very dangerous for life of people. <p>During excavation process of culverts fence is required around all sites and appropriate engineering drainages for flow line of watershed, proper dumping of excavated materials and sprinkling of water.</p> <p>(Please refer to photos # 04, 07, 08, 09)</p>

		temporary access road and all the areas prone to dust pollution.		
10	Traffic Control	<ul style="list-style-type: none"> a. Efforts should be made to accommodate the traffic along the road as far as practically possible. b. Provision of sign boards directing the drivers about the diversions. c. Contractor staff should be trained and put on the duty to manage the traffic during the construction activities taking place along the road. d. Temporary by pass if possible should be avoided as involved clearing of land. e. Max allowable speed for heavy machinery on the site should not exceed 20Km/hr. f. Keep road partly closures to a minimum Maintain safe passage of vehicles/pedestrians at all times g. Conduct work that requires road closure at times when traffic volume is low h. Schedule truck sand deliveries for periods of low traffic 	Health and Safety for the local population and workers.	<p>As far 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, 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>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 cannot move faster.</p> <p>At the road, heavy vehicles like NATO containers are mostly found, which need speed check limit signboards. Similarly, others traffic arrangements are also required to take place immediately.</p>
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 rock excavation is carried out at KM: 10+400 and KM: 12+600 for widening of road and during blasting safety protocols should be adopted.
12	Dust	<ul style="list-style-type: none"> a. Water spraying b. trucks should be covered with tarpaulins 	Nuisance to the public,	At this site visit water sprinkling vehicle were observed while spraying at many dust pollution

			undermining the air quality and water contamination	places such as at KM: 11+150, KM: 16+550 and KM: 16+850. (Please refer to photos # 10,11, 12)
13	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 use. Moreover, barrow areas are still to be identified, if required.
14	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 advised 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.
15	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; 	Workers and the public are at risk from accidents on site	The 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. It is very necessary to provide H&S trainings to the

		<p>e. Follow documented procedures for all site activities;</p> <p>f. Keep accident reports and records</p>		<p>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>
16	Local Employment	<p>Contractor' should employ at least 50% of workforce from communities in vicinity of work site</p>	<p>Economic benefits of local people</p>	<p>Being an Army organization, the FWO has regular employees. In case of subcontract/sublet of any small component to local contractor, local labor is hired.</p>
17	Others concerns like Resettlement etc.	<p>a. Resettlement if any</p> <p>b. Access roads or pedestrian of local peoples</p> <p>c. Infrastructure like telephone line, sewerage, water supply disturbance etc</p> <p>d. Social Conflict with locals</p>	<p>Social and Resettlement Management</p>	<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 site visit are given below, which may kindly be addressed accordingly.</p> <ul style="list-style-type: none"> - Drain blockage due to construction activities at KM3+200, KM 3+725, KM 3+740, KM 4+100 and at KM5+905. - In mid of Jamrud bazaar at KM 4+100and 4+600, blockage of main drain and solid waste placement. - Dumping of excavated material in grave yard at KM 5+630. To avoid social conflict, excavated material must shift to some other suitable place. - Giving consideration to the demand of local peoples, stairs may kindly be constructed at both ends of the culvert at some places near residential areas, to provide safe under passage to school children for crossing the road, as there

				is heavy traffic load and rush on this road. (Please refer to photos # 04)
Operation and Maintenance of newly constructed road				
18	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.
19	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
20	Accidents of hazardous materials	<ul style="list-style-type: none"> a. In case of spill, there should be a relevant department dealing with it. in accordance with emergency plan ; b. A road administration department should be established after the completion of the project which will administer the hazardous substances 	Accidents cases	NA
21	Vehicle management	<ul style="list-style-type: none"> a. Vehicle with excessive noise should be prohibited to travel on the road. b. Public should be educated about the noise and the air pollution and how to keep the road clean. 	Visual inspection	NA

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 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	2,494,227	234,453,311	IN PROCESS
3	2,382,898	223,992,366	26-Jul-13	31-Jul-13	29-Aug-13	2,268,345	213,224,394	IN PROCESS

6.2 RECORD OF COORDINATION MEETINGS / JOINT SITE VISITS

Date	Meeting	Participants	Venue
20-Aug-13	Coordination Meeting	USAID, FATA , NHA, M&E Consultants, FWO, NESPAK	FWO Office Jamrud
20-Aug-13	Joint Site Visit (Section-I, II, III & IV)	USAID, FATA, NHA, M&E Consultants, FWO, NESPAK	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	

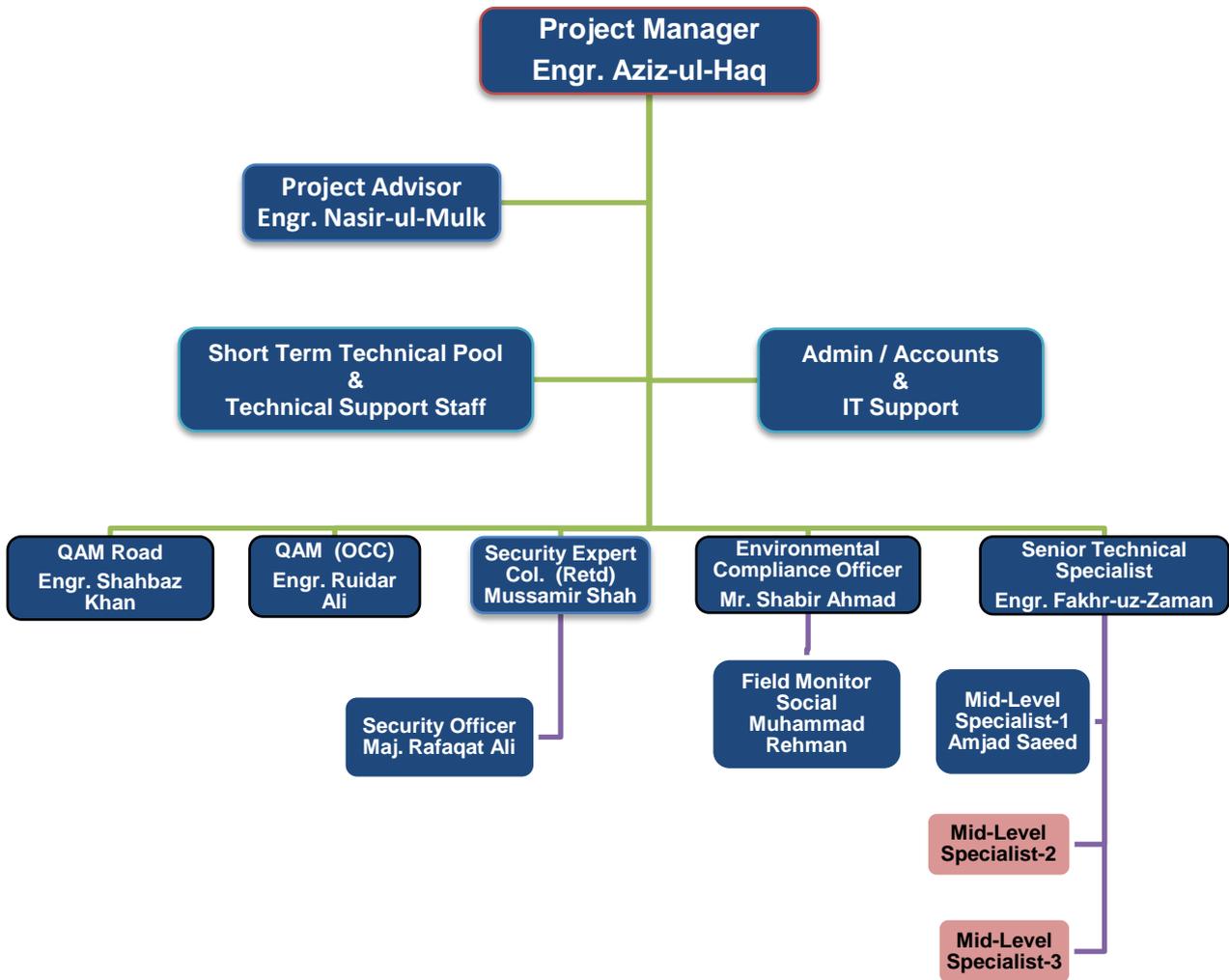
QAM Office (Road Component)

S. No.	Name	Designation
1	Shahbaz Khan	Quality Assurance Manager (Road)
2	Muhammad Khrushid	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



LEGEND:

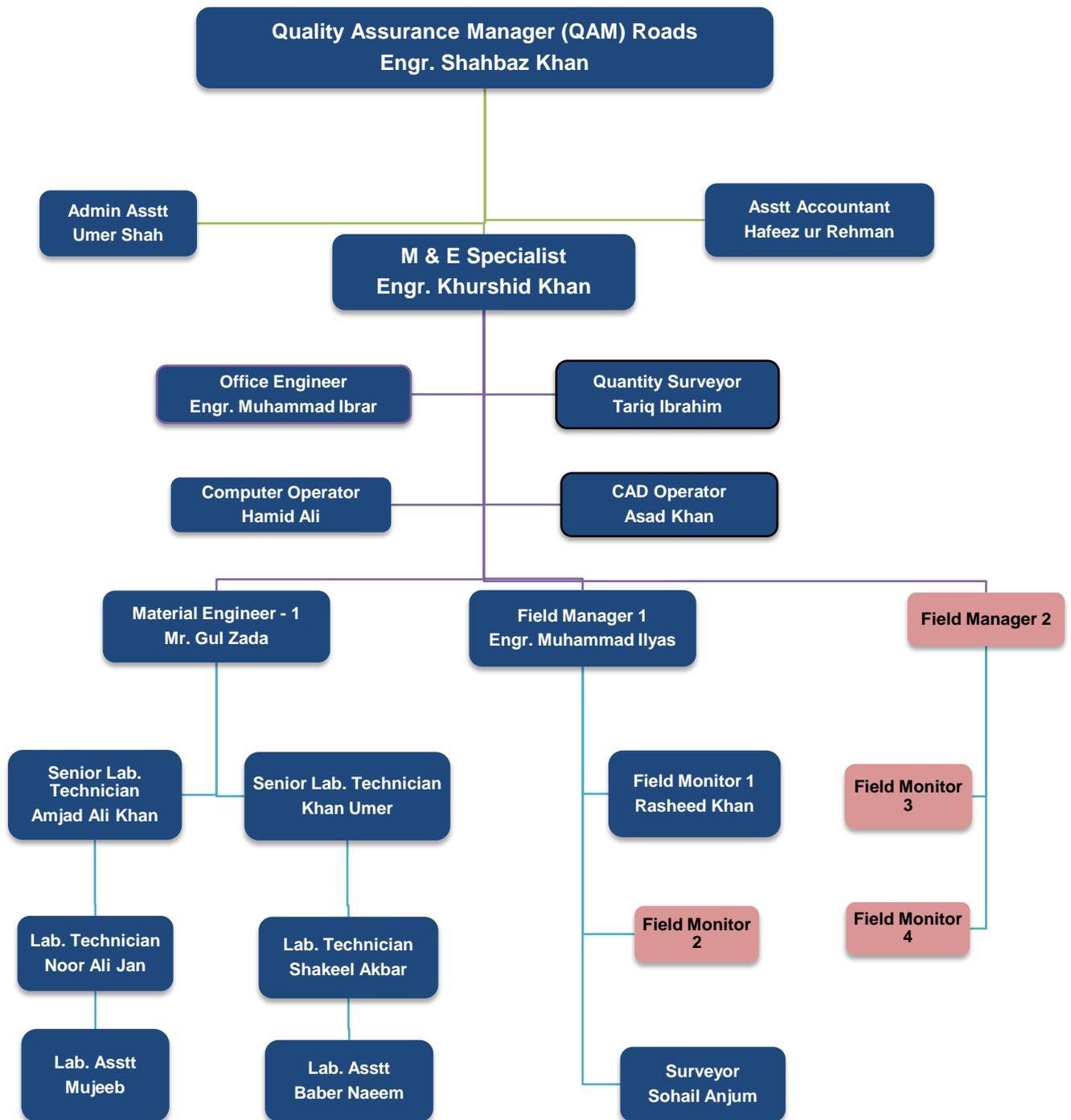


Mobilized



To be mobilized with expansion of work

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 2+725 To.3+200

Half width RHS final rolling of ACBC in progress



KM 3+200 To.3+700

Full width final rolling of ACBC in progress



KM 5+350 To.5+625

FW full width ACWC site visit by NESPAK and M&E Consultants



KM 4+300 To.4+750

Half width LHS temperature recorded of ACWC



KM 5+825 To.6+400

Full width M&E Consultants checking loose thickness of ACWC



KM 6+450 To.6+725

Half width ACWC layer laying in progress



KM 6+750 To.7+300

Full width Cleaning and brooming of in progress



KM 7+250 To.7+750

Full width final rolling of ACBC in progress



KM 7+750 To.8+250

Half width Tack coat application in progress



KM 7+750 To.8+250

Half width ACWC layer laying in progress

SECTION-II



KM: 9+175 To 9+275

Half Width roadway excavation in progress



KM: 9+125 To 9+300

Half Width RHS roadway excavation in progress



KM: 9+150 To 9+300

Half width RHS sub base 1st layer spreading in progress



KM: 9+800 To 9+900

RHS Dumping of material for water bound macadam in progress



KM: 9+900 To 9+975

Half Width RHS water bound macadam base preparation in progress



KM: 11+000 To 11+150

LHS Dumping of material for earth fill in progress



KM: 12+600 To 12+650 LHS roadway excavation in progress



KM: 12+700 To 12+750 LHS roadway excavation in progress

SECTION-III



KM 15+600 To 15+700

RHS windrows of sub grade top layer



KM 16+000 To 16+100

Full Width sub base top layer compaction in progress



KM 16+350 To 16+450 Half Width RHS sub grade top layer compaction in progress



KM 16+525 To 16+625 Full Width Sub base top layer grading in progress



KM 17+500 To 17+550

RHS roadway excavation in progress

SECTION-IV & V



KM 24+275 To 24+400

RHS widening portion common excavation in progress



KM 24+650 To 24+800

Half width LHS Material Engineer M&E Consultants checking sub base material



KM 24+950 To 25+200

RHS widening portion Sub base top layer preparation in progress



KM 25+275 To 25+250

Half width RHS Sub grade top layer compaction in progress



KM 25+475 To 25+600 FW Earth fill zone B top grading in progress



KM 32+800 To 32+850 LHS Widening portion sub grade preparation in progress

STRUCTURES



Culvert 9+560

Anchor pile concreting in progress



Culvert 10+050

Stone masonry construction in progress



Culvert 12+460

Half width Structural excavation for tor wall in progress



Culvert 16+316

Full width Structural excavation in progress



Culvert 17+050 Half width RHS Structural Excavation in progress



KM: 0+300 To 0+450 RHS brick masonry of Drain in progress



KM: 2+425 To 2+525

Steel reinforcement fixed for top slab of Drain



KM: 4+480 To 4+600

RHS brick masonry of Drain in progress

FIELD / LAB TESTING



KM: 6+400 Coring of Asphalt wearing course in progress



KM: 24+700 Field Density Test of Sub Base Course in progress



KM: 25+020

Field density test of sub grade in progress



KM: 25+025

Sample collection of Sub grade and sub base material



Measurement of core density at FWO lab



Marshal stability test in M&E Consultants lab in progress

ENVIRONMENTAL MONITORING



(Photo # 01) Heavy Vehicle Stand at FWO camp



(Photo # 02) Construction of new main drain along the road at KM: 03+000



(Photo # 03) Culvert construction site at KM: 12 +334



(Photo # 4) At KM: 4+100 Jamrud Bazar, Standing of sewerage water and dumping of solid waste along the road bank.



(Photo # 05) Drinking Water Supply arrangements for Labor at FWO camp



(Photos # 06) Dining Hall for Labors at FWO Camp



(Photo # 07) At KM: 8+200 Black topping is in progress without safety protocols



(Photo # 08) At KM: 10+400 Cutting of Rocks for widening of road is in progress, while labors are working without safety measures.



(Photo # 09) At KM: 12+600 Cutting of rocks for widening of road without safety measures



(Photo # 10) At KM: 11+150 Water sprinkling at road to control dust pollution



(Photos # 11) At KM: 16+550 near Shagai Fort, dust pollution needs sprinkling of water



(Photo # 12) At KM: 16+850 Dust suppression activities in progress.