



USAID | **PAKISTAN**
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CONSTRUCTION MONITORING & EVALUATION PROGRAM

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

CONTRACT NO. SOL-391-12-000038

MONTHLY PROGRESS REPORT # 03



FEBRUARY 2013

M&E Consultants



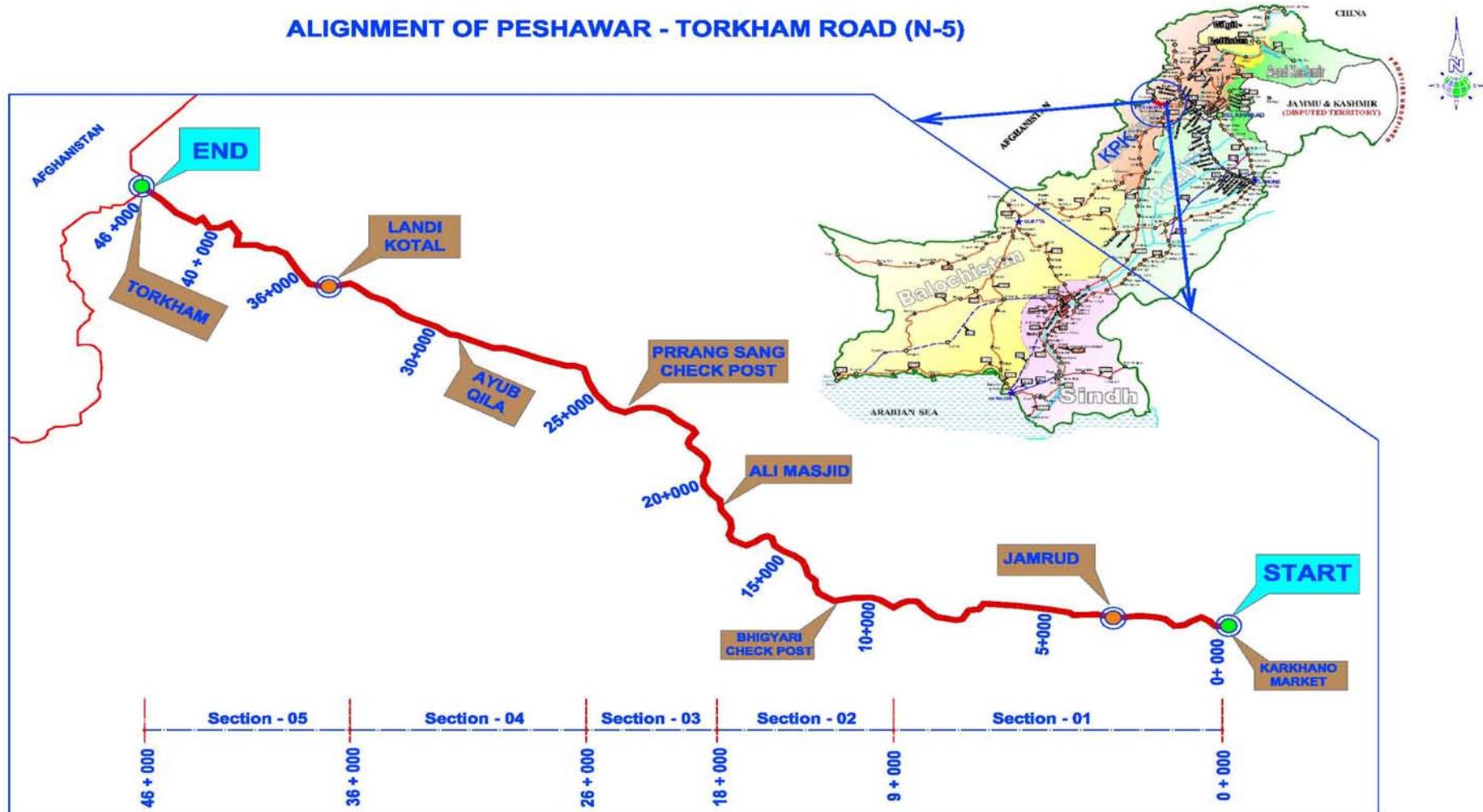
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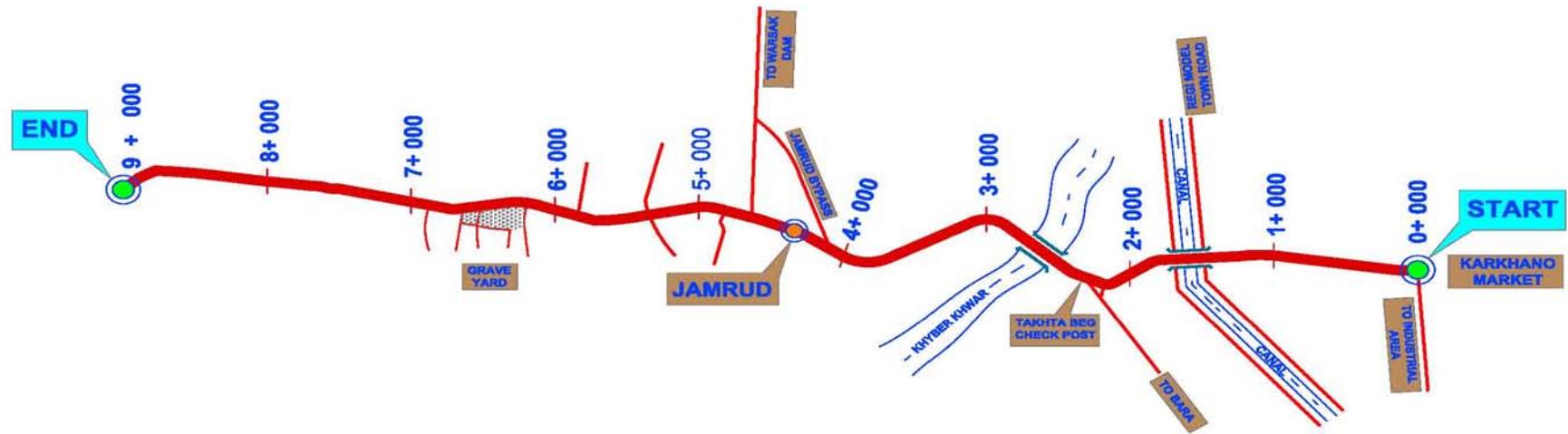
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LOCATION MAP



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



EXECUTIVE SUMMARY

Peshawar – Torkham road is part of the overall Contract that includes Construction Monitoring and Evaluation Services of 114 schools and 100-200 KM roads in Khyber Pakhtunkhwa Province. This road connects Pakistan with Afghanistan at Torkham border and plays an important role in the economic activities as well as in providing timely logistic support to the security agencies deployed in Khyber Agency. The project is funded with USAID grant and implemented by FATA Secretariat through FWO (Frontier Works Organization) as EPC (Engineer, Procure, and Construct) Contractor. FWO has retained the services of M/S NESPAK as the Project Consultants to design and supervise the construction work, while USAID has engaged M/S AGES as M&E Consultants to monitor and report on quality as well as progress of the project. The project is anticipated to be completed by December 31, 2014. To expedite construction activities, the 46 KM Peshawar – Torkham road has been divided in five sections and one package of bridges. Until now, PC-1 for section - I (KM 00 to KM 09) has been approved and construction started.

On October 15, 2012, FWO initiated construction work on section - I of Peshawar – Torkham Road. By January 31, 2013, the cumulative progress of work was 1.19%. During the month of February 2013, the progress of work was relatively better and resulted in a total progress of 3.84% by February 28, 2013. Major activities and accomplishments during February 2013 can be summarized as follow:

- Traffic Diversion extended for further 0.7 KM. So total Diversion is 5.26 KM
- One source for sub base material was identified near KM: 2 + 100
- Quality Control tests were conducted both by FWO as well as M&E Consultants
- Earthwork: 122.53 % (exceeds PC-I quantity for earthwork)
- Sub Base: 19.43 %
- Culverts: 22.6 %
- Survey: In the reporting month, no cross sectional survey was carried out beyond KM: 35 + 000; however, levels of the construction work were checked jointly by FWO/NESPAK and M&E Consultants surveyors
- The environmental compliance officer of M&E Consultants paid two visits to the site
- FWO/NESPAK enhanced their manpower and machinery / other resources. NESPAK mobilized a Chief Resident Engineer for the project
- M&E Consultants paid daily visits to the site, and documented their observations
- A joint visit by senior engineers of M&E Consultants and USAID was conducted
- Security officer of M&E Consultants visited the site and met with FWO's security personnel.

RECOMMENDATIONS FOR WAY-FORWARD

During the course of project implementation, it has been realized that the coordination channel among different stakeholders need to be further improved in order to proceed smoothly with the construction activities. It is recommended that a joint meeting among USAID, FATA, FWO, NHA and AGES should be called to discuss this matter, establish the lines of communication and define the roles / responsibilities of each stakeholder. Following are a few concerns that need to be addressed by the FWO / NESPAK:

- **BAB-E-KHYBER MONUMENT**

The ongoing site activities of full width sub base construction near Bab-e-Khyber monument (between KM: 4 + 500 to KM: 4 + 700) reveals that the vertical clearance b/w the proposed finished road surface and soffit of the famous monument (KM: 4 + 365) will be insufficient for safe passage of Commercial vehicles. The design appears not to be in conformity with the site conditions and AASHTO standard of 5.1 M vertical clearance for National Highways. Insufficient vertical clearance at Bab-e-Khyber may result in severe incidents risking road users, damaging the Monument, and causing serious traffic congestion on this section of the road. Similarly, horizontal clearance between the two pillars of the Monument is insufficient to accommodate the proposed carriageway. FWO / NESPAK should review the design at the above mentioned section, make necessary correction to the measurements and redesign the horizontal as well as vertical alignment.

- **TRAFFIC SAFETY**

According to standard engineering practices applicable to road construction projects, FWO is fully responsible to plan, construct and maintain a safer and efficient traffic corridor across the work zone for all road users (vehicular, pedestrians, cyclists, etc.) to travel during day & night time as well as all weather conditions. Presently, such good practices are not followed in the true spirit, thereby compromising the safety & security of project personnel, general public, road users and inhabitants of adjacent neighborhood. In this regard reference is made to detour at KM 2 + 611 (Lat 33; 59; 56.7, Lon 71; 23; 58) as shown in the Photographs attached, which is causing great inconvenience for the road users.

The stated issue can be resolved proficiently by incorporating an efficient traffic control plan (TCP) and deputing traffic maintenance / protection team (MPT) for regular monitoring of the safety / security aspects of the route travelled through and around the construction zone.

- **WORK PROGRAM**

Submission of detailed construction program encompassing the operational plan, scheduling, resource planning, physical / environmental / climatic constraints etc is still awaited from the

FWO side. Timely submission and review of the base line schedule is vital for successfully establishing and maintaining schedule control over the project.

Comments regarding the base line schedule submitted by FWO in January 2013 were shared with the appropriate forum. Reply from FWO/NESPAK is still awaited.

- **CONSTRUCTION METHODOLOGY**

In order to carry out the quality / quantity monitoring of construction activities in an acceptable manner, the FWO has to submit a detailed method statement for the works to be executed in compliance with the contractual obligation. This document will also help the M&E Consultants to effectively monitor compliance of the construction activities with the approved engineering design, technical specifications and sound engineering practices. Non provision of a detailed and comprehensive methodology statement for each construction activity results in frequent site disputes, work disruption etc.

- **CONSTRUCTION DOCUMENTS**

FWO is contractually bound to submit documents including design calculations, computer programs, construction drawings, specifications, manuals, models (shop drawings), traffic diversion plan, material testing reports, survey reports / level books and other technical documents for the purpose of monitoring and construction quality assurance. However compliance in the matter is still awaited. Besides, FWO / NESPAK have been unable to submit updated Construction Schedule and Quality Assurance Plan till this date. The M&E Consultants previously (on January 23rd, 2013) provided their comments on the draft QAP and Construction Schedule to the appropriate forum. Timely submission of the requisite technical documents will help in establishing an effective and proficient quality / quantity monitoring system for the project, which would otherwise results in quality slackness and construction disputes etc.

- **ENVIRONMENTAL COMPLIANCE**

According to the 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 drastic improvement, as the same has been frequently overlooked. It is also recommended that FWO should depute an environmental expert on the project site.

PROJECT

1.1 BACKGROUND:

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

Table: 1

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

1.2 DESCRIPTION:

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

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

1.3 M&E SERVICES:

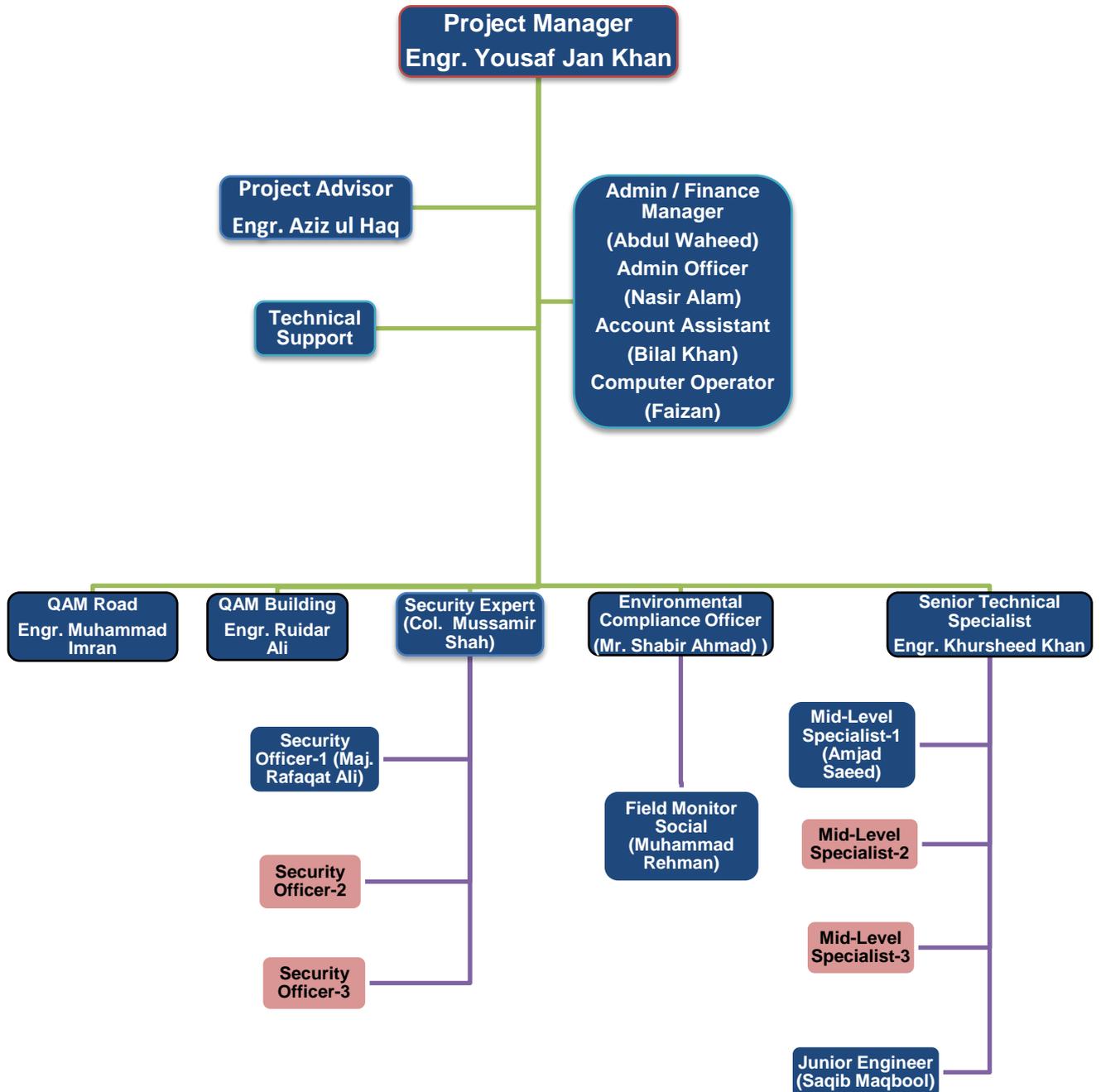
The Contract between USAID and AGES Consultants (called herein as M&E Consultants) for M&E services on the project was signed on September 30, 2012 following submission of proposal in response to RFP issued by USAID Contracting Officer. Mobilization of staff started on October 01, 2012.

1.4 M&E SERVICES OBJECTIVES:

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

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

1.5 ORGANIZATION CHART FOR CMEP OFFICE, PESHAWAR



LEGEND:

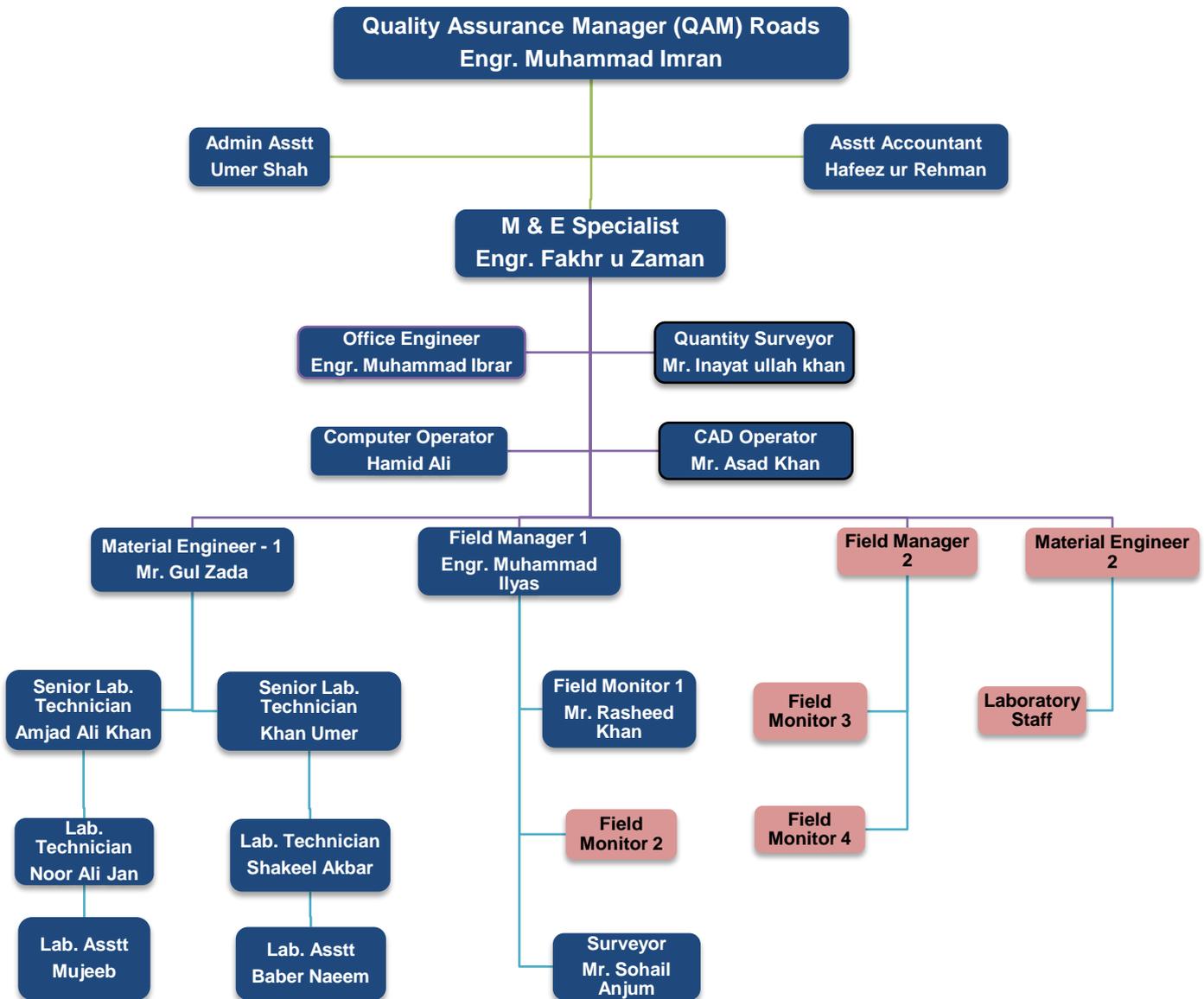


Mobilized



To be mobilized when work on other sections will start

1.6 ORGANIZATION CHART FOR ROAD COMPONENT OF CMEP PROJECT



LEGEND



Mobilized



To be mobilized when work on other sections will start

ROAD SECTION - I

2.1 INTRODUCTION

Location

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

Road Inventory

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

Existing Pavement Condition

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

Bridges

There is 01 No. newly constructed Major Bridge at CH: KM: 2 + 200 in section – I. This bridge needs minor repair works like Guard Rails, Flood Protection treatment, etc.

Culverts

The Existing cross drainage structures are either completely choked or have lost their hydraulic capacity significantly. As per PC-1, 14 Nos. of new Culverts will be constructed while 02 Nos. existing Culverts are to be rehabilitated appropriately. Similarly construction of 02 Nos. additional culverts has been included in the construction program as per site requirements.

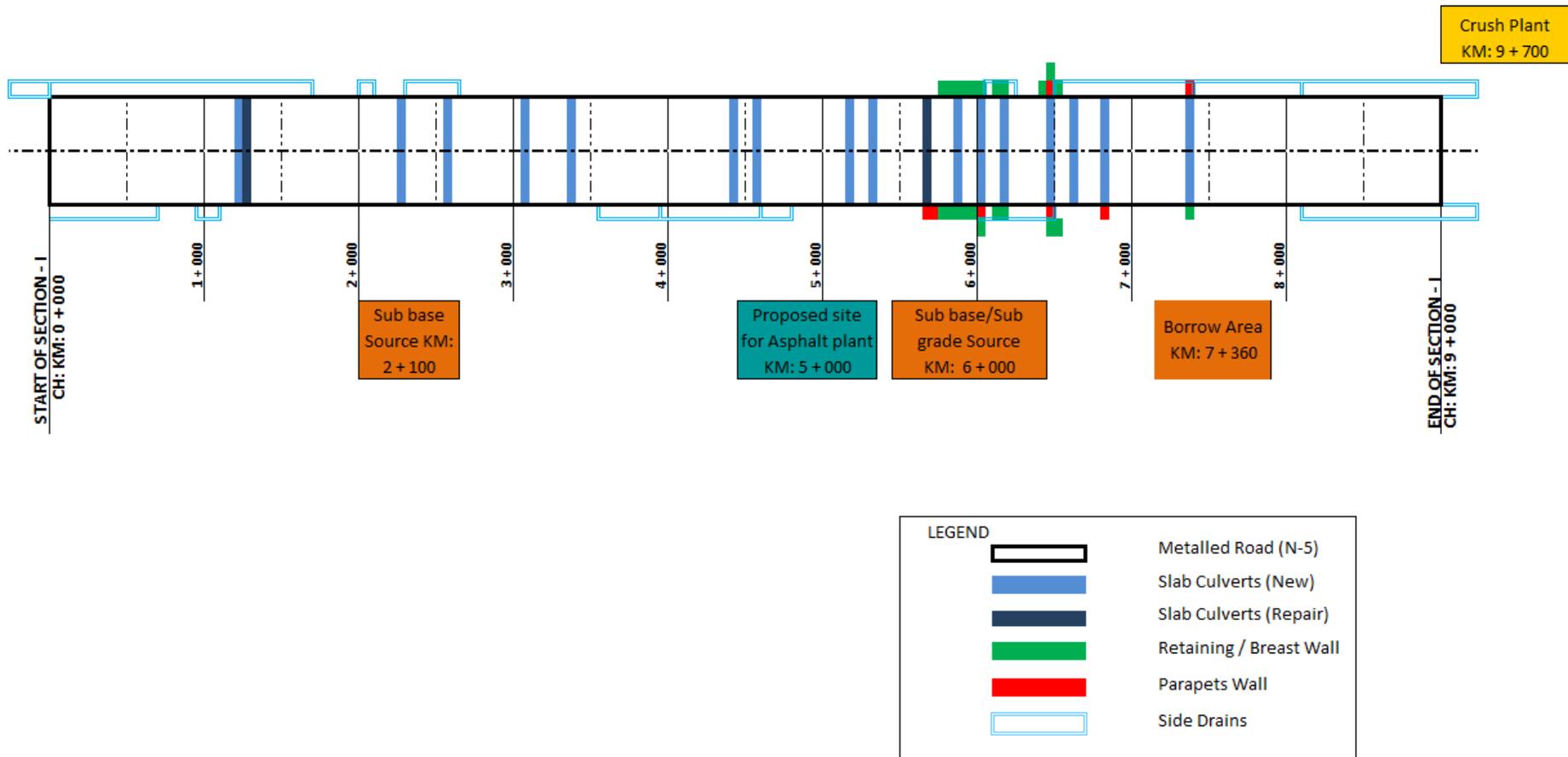
2.2 PROJECT DETAILS

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

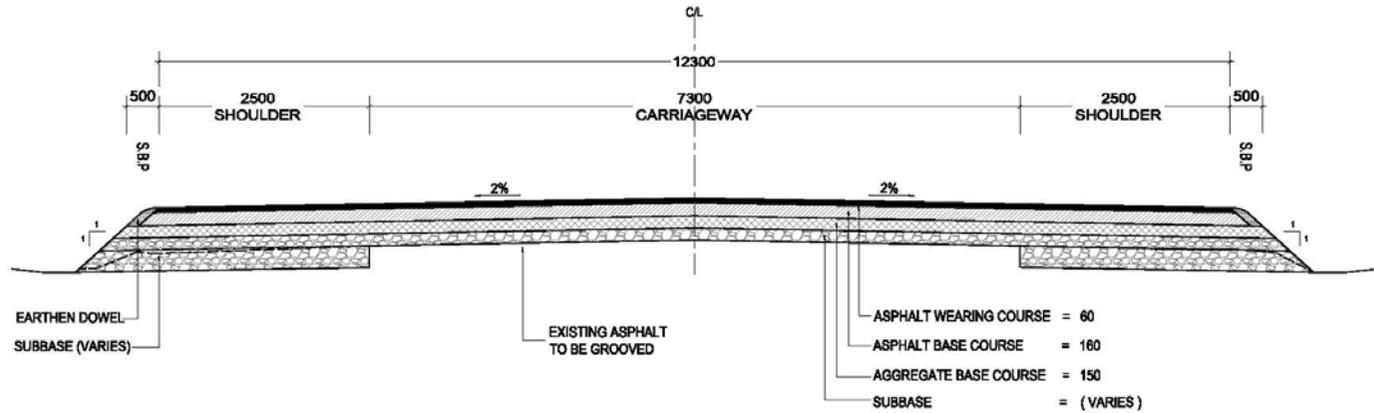
2.3 ENVIRONMENTAL COMPLIANCE

The environmental compliance officer of M&E consultants made two visits to the site during the month of February 2013, and compiled his observations in the form of Environmental Monitoring Reports. The two environmental monitoring reports (dated Feb 13 & 28, 2013) are attached with this document for ready reference.

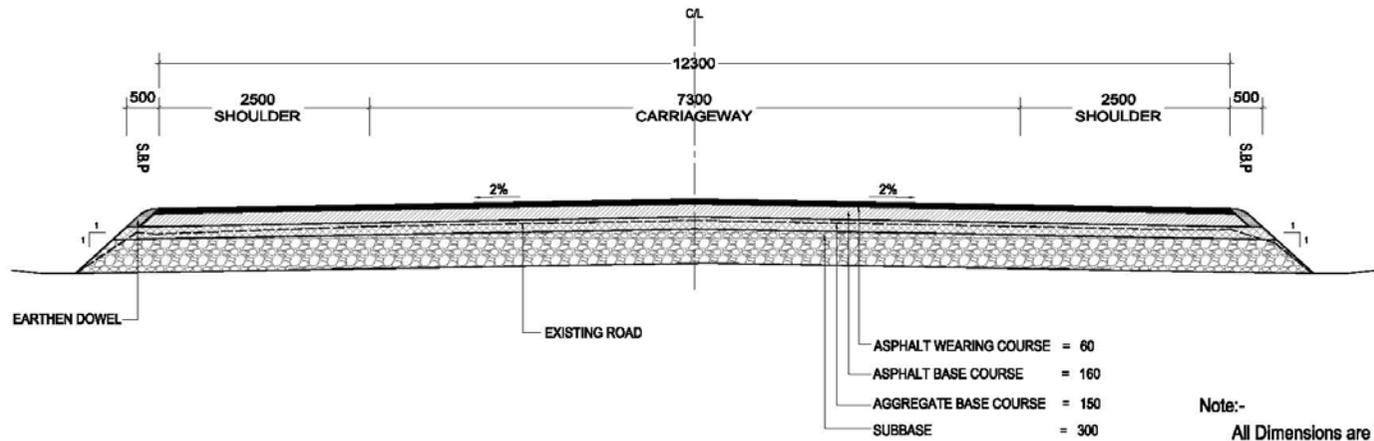
2.4 LINE SKETCH OF ALIGNMENT



2.5 TYPICAL CROSS SECTION OF ROAD



TYPICAL CROSS SECTION IN FILL

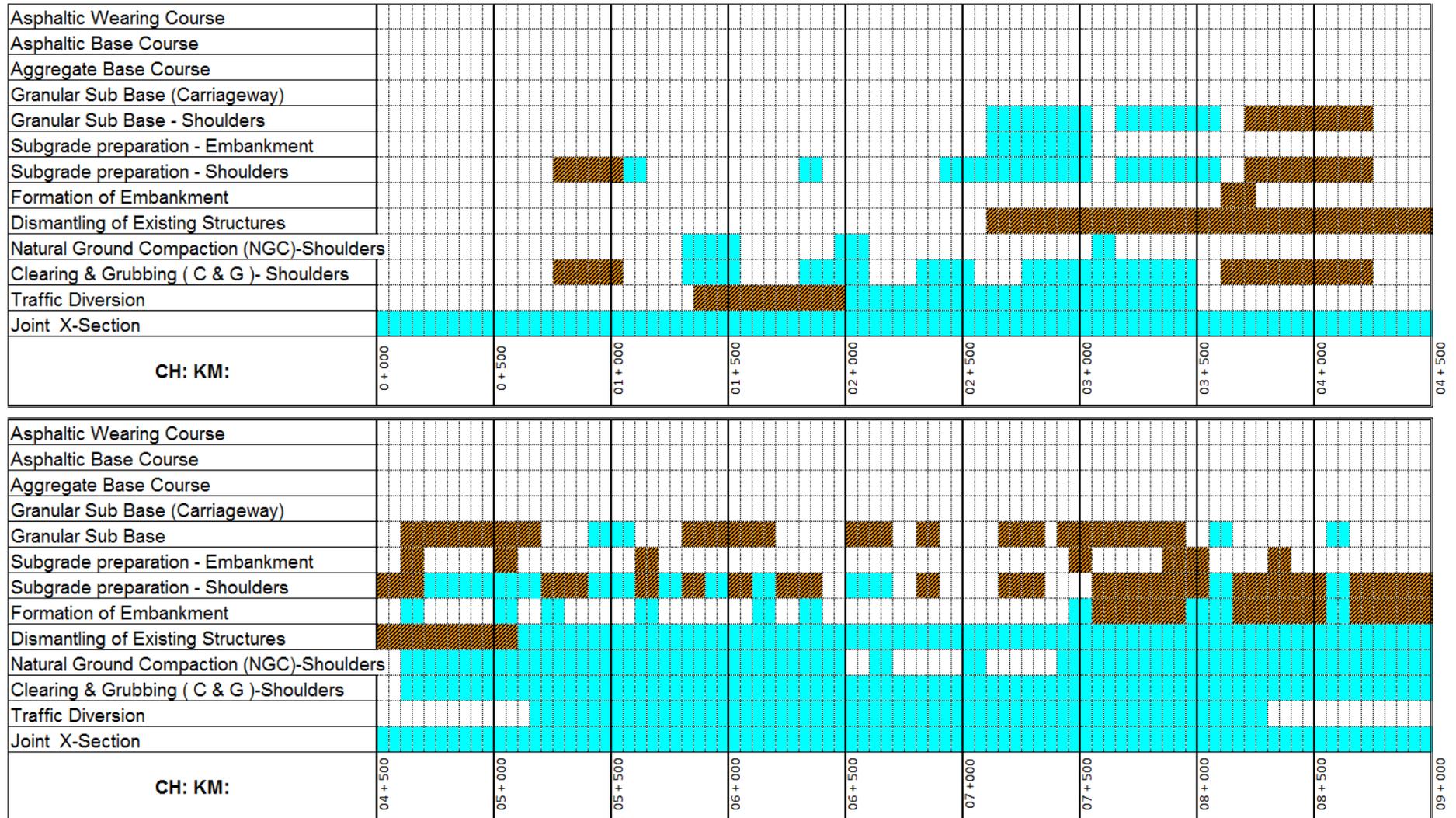


Note:-
 All Dimensions are in mm

TYPICAL CROSS SECTION IN CUT

WORK IN PROGRESS

3.1 PAVEMENT CONSTRUCTION PHYSICAL PROGRESS STATUS AS ON FEBRUARY 28, 2013



LEGEND



WORKS COMPLETED IN FEB: 2013

WORKS COMPLETED BEFORE FEB: 2013

3.2 CULVERTS PHYSICAL PROGRESS STATUS AS ON FEBRUARY 28, 2013.

| S. NO | CHAINAGE AS PER DRAWG: (KM) | CHAINAGE AS PER SITE (KM) | NO. OF SPAN | SIZE (M x M) | LENGTH AS PER DRAWG: (M) | LENGTH AS PER SITE (M) | DEMOLISHED | SLAB CULVERTS | | | | | | WING WALLS | | | | Revised Size (M x M) |
|-------|-----------------------------|---------------------------|-------------|--------------|--------------------------|------------------------|------------|------------------|-----------|-----------|-------|-----------|---------|------------|------|-------|-----------|----------------------|
| | | | | | | | | Strl: Excavation | Lean Cont | Abt: Wall | Floor | Top. Slab | Rip Rap | Lean Cont: | Wall | Floor | Back Fill | |
| 1 | 1+230 | | 1 | 2 x 1.5 | | | | | | | | | | | | | | |
| 2 | 2+290 | | 1 | 2 x 1.5 | | | | | | | | | | | | | | |
| 2.a | - | 2+611 | 1 | 2 x 1.5 | | 15.00 - 20°(Skew) | - | Δ | | | | | | | | | | |
| 2.b | - | 3+081 | 1 | 2 x 1.5 | | 15.00 - 20°(Skew) | - | Δ | | | | | | | | | | |
| 3 | 3+400 | | 1 | 2 x 1.5 | | | | | | | | | | | | | | |
| 4 | 4+460 | 4+480 | 1 | 3 x 1.5 | 14.1 | 15.00 - 20°(Skew) | ◆ | ◆ | ◆ | | | | | | | | | |
| 5 | 4+590 | | 1 | 3 x 1.5 | | | | | | | | | | | | | | |
| 6 | 5+180 | 5+202 | 1 | 2 x 1.5 | 14.1 | | ◆ | ◆ | ◆ | Δ | | | | | | | | |
| 7 | 5+335 | 5+354 | 1 | 3 x 1.5 | | | - | Δ | | | | | | | | | | |
| 8 | 5+882 | 5+905 | 1 | 2 x 1.5 | 14.1 | 15.60 (Normal) | ◆ | ◆ | ◆ | ◆ | | Δ | | ◆ | ◆ | | | 2 x 1.5 |
| 9 | 6+027 | 6+050 | 3 | 3 x 1.5 | | | Δ | Δ | | | | | | | | | | |
| 10 | 6+167 | 6+191 | 2 | 3 x 1.5 | 14.1 | 14.40 (Normal) | ◆ | ◆ | ◆ | ◆ | | | | ◆ | ◆ | | | 3 x 3 |
| 11 | 6+477 | 6+501 | 5 | 3 x 1.5 | 14.1 | 17.89 38°(Skew) | ◆ | ◆ | ◆ | Δ | | | | | | | | |
| 12 | 6+625 | 6+648 | 1 | 2 x 1.5 | 14.1 | 14.10 (Normal) | ◆ | ◆ | ◆ | Δ | | | | ◆ | Δ | | | 2 x 2 |
| 13 | 6+850 | 6+883 | 1 | 2 x 1.5 | 14.1 | | ◆ | ◆ | ◆ | Δ | | | | | Δ | | | |
| 14 | 7+360 | 7+384 | 2 | 3 x 1.5 | 14.1 | 18.14 39°(Skew) | ◆ | ◆ | ◆ | Δ | | | | ◆ | Δ | | | |

Legend:

| | |
|---|-------------|
| Δ | In Progress |
| ◆ | Completed |

PROGRESS IN PERCENTAGE

4.1 SUMMERY: BILL OF QUANTITIES

MONTH: February. 2013

| CONTRACT ITEMS | | | WORK DONE UPTO PREVIOUS MONTH | | WORK DONE THIS MONTH | | WORK DONE UPTO DATE | |
|--------------------------------------|---|-----------------------|-------------------------------|-------------|----------------------|-------------|----------------------|-------------|
| BILL NO | DESCRIPTION | AMOUNT (Rs.) | AMOUNT (Rs.) | PROGRESS % | AMOUNT (Rs.) | PROGRESS % | AMOUNT (Rs.) | PROGRESS % |
| 1 | EARTH WORK | 4,396,321.49 | 2,465,798.28 | 56.09 | 2,921,122.37 | 66.44 | 5,386,920.65 | 122.53 |
| 2 | SUB BASE AND BASE COURSE | 417,440,419.46 | 3,176,068.85 | 0.76 | 11,884,089.24 | 2.85 | 15,060,158.08 | 3.61 |
| 3 | SURFACE COURSES AND PAVEMENT | 148,248,125.37 | 424,422.00 | 0.29 | 162,279.00 | 0.11 | 586,701.00 | 0.40 |
| 4a | STRUCTURES (RETAINING WALL/BREAST WALL) | 2,990,459.56 | - | - | - | - | - | - |
| 4b | STRUCTURES (CULVERTS) | 34,156,831.05 | 2,573,831.19 | 7.54 | 5,149,342.63 | 15.08 | 7,723,173.82 | 22.61 |
| 5a | DRAINAGE & EROSION WORKS (ROAD SIDE DRAIN) | 146,629,248.32 | - | - | - | - | - | - |
| 5b | ROAD PROTECTION WORKS | 851,203.80 | - | - | - | - | - | - |
| 6 | ANCILLARY WORKS | 4,189,586.08 | - | - | - | - | - | - |
| 7 | DIVERSION | 9,000,000.00 | 527,500.00 | 5.86 | 263,750.00 | 2.93 | 791,250.00 | 8.79 |
| 8 | RELOCATION OF UTILITIES | 900,000.00 | - | - | - | - | - | - |
| Sub Total - Construction Cost | | 768,802,195.13 | 9,167,620.31 | 1.19 | 20,380,583.23 | 2.65 | 29,548,203.55 | 3.84 |
| INDIRECT COST | Contingencies @ 0.5% of Total Construction Cost | 3,844,010.98 | 45,838.10 | 1.19 | 101,902.92 | 2.65 | 147,741.02 | 3.84 |
| | EPC Turnkey Cost | - | - | - | - | - | - | - |
| | - Design , Consultancy & Supervision 6% | 46,128,131.71 | 550,057.22 | 1.19 | 1,222,834.99 | 2.65 | 1,772,892.21 | 3.84 |
| | - Risk of Quantity Variation @7% | 53,816,153.66 | 641,733.42 | 1.19 | 1,426,640.83 | 2.65 | 2,068,374.25 | 3.84 |
| | - Market Fluctuation @ 4.5% | 34,596,098.78 | 412,542.91 | 1.19 | 917,126.25 | 2.65 | 1,329,669.16 | 3.84 |
| | Sub Total EPC Turnkey Cost | 138,384,395.12 | 1,650,171.66 | 1.19 | 3,668,504.98 | 2.65 | 5,318,676.64 | 3.84 |
| | Security /Hard Area @ 4% | 30,752,087.81 | 366,704.81 | 1.19 | 815,223.33 | 2.65 | 1,181,928.14 | 3.84 |

4.2 BILL NO. 1 EARTH WORK

MONTH: February. 2013

| CONTRACT | | | | | WORK DONE UP TO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UP TO DATE | | | |
|--------------|---|------|----------|-----------|--------------------------------|-----------|---------------------|----------------------|-----------|---------------------|----------------------|-----------|---------------------|---------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (Rs) | AMOUNT (Rs) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % |
| 101 | Clearing & Grubbing | SM | 29,876 | 23.15 | 691,730.98 | 25,412.50 | 588,385.78 | 85.06 | 20,648.13 | 478,074.30 | 69.11 | 46,060.63 | 1,066,460.07 | 154.17 |
| 104 | Compaction of Natural Ground | SM | 29,876 | 23.58 | 704,502.97 | 28,184.50 | 664,615.88 | 94.34 | | - | 0.00 | 28,184.50 | 664,615.88 | 94.34 |
| 106a | Structure Excavation in Unsuitable Material | CM | 3,762 | 299.079 | 1,125,135.20 | - | - | - | - | - | 0.00 | - | - | 0.00 |
| 106bii | Excavate unsuitable Medium Rock Material | CM | - | 443.63 | - | - | - | - | - | - | - | - | - | - |
| 106biii | Excavate unsuitable Soft Rock Material | CM | - | 341.73 | - | - | - | - | - | - | - | - | - | - |
| 106c | Structure Excavation in Surplus Common Material | CM | - | 154.59 | - | - | - | - | - | - | - | - | - | - |
| 106dii | Excavate Surplus Medium rock Material | CM | - | 418.8 | - | - | - | - | - | - | - | - | - | - |
| 107a | Structure Excavation in Common Material | CM | - | 181.29 | - | - | - | - | - | - | - | - | - | - |
| 108a | Formation of Embankment From Road way Exavation in Common Material | CM | 4,000 | 398.64 | 1,594,540.80 | 1,434.73 | 571,931.89 | 35.87 | 2,189.50 | 872,812.68 | 54.74 | 3,624.23 | 1,444,744.57 | 90.61 |
| 108bii | Formation of Embankment From Road way Exavation in medium rock Material | CM | - | 542.46 | - | - | - | - | - | - | - | - | - | - |
| 108c | Formation of Embankment From Borrow excavation in Common Material | CM | - | 241.39 | - | - | - | - | - | - | - | - | - | - |
| 108d | Formation of Embankment From Borrow excavation in Medium Material | CM | - | 109.38 | - | - | - | - | - | - | - | - | - | - |
| 109a | Subgrade Preparation in Earth Cut | SM | 4,352 | 64.43 | 280,411.55 | 9,946.25 | 640,864.74 | 228.54 | 24,370.13 | 1,570,235.39 | 559.98 | 34,316.38 | 2,211,100.13 | 788.52 |
| 110 | Improved Subgrade | CM | - | 227.92 | - | - | - | - | - | - | - | - | - | - |
| Total | | | | | 4,396,321.49 | | 2,465,798.28 | 56.09 | | 2,921,122.37 | 66.44 | | 5,386,920.65 | 122.53 |

4.3 BILL NO. 2 SUB BASE & BASE COURSE

MONTH: February. 2013

| CONTRACT | | | | | | WORK DONE UPTO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UPTO DATE | | |
|--------------|---|------|----------|-----------|-----------------------|-------------------------------|---------------------|-------------|----------------------|----------------------|-------------|---------------------|---------------------|-------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (RS) | AMOUNT (RS) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % |
| 201 | Granular Sub Base | CM | 45,569 | 1700.75 | 77,501,426.62 | 1,867.45 | 3,176,068.8 | 4.10 | 6,987.56250 | 11,884,089.24 | 15.33 | 8855.02 | 15060158.08 | 19.43 |
| 202 | Agregate Base Course | CM | 22,868 | 2232.15 | 51,044,771.90 | - | - | - | - | - | - | - | - | - |
| 203a | Asphaltic Base Course Plant Mix (Class-A) | CM | 17,805 | 16225.45 | 288,894,220.93 | - | - | - | - | - | - | - | - | - |
| TOTAL | | | | | 417,440,419.46 | - | 3,176,068.85 | 0.76 | 6,987.56250 | 11,884,089.24 | 2.85 | - | 15,060,158.1 | 3.61 |

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

4.4 BILL NO. 3 SURFACE COURSES AND PAVEMENT

| CONTRACT | | | | | | WORK DONE UPTO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UPTO DATE | | |
|--------------|--|------|----------|-----------|--------------------|-------------------------------|-------------------|-------------|----------------------|------------------|-------------|---------------------|-------------------|-------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (RS) | AMOUNT (RS) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % |
| 302a | Cut-Back Asphalt for Bituminous Prime Coat | SM | 126,444 | 84.34 | 10,663,933 | - | - | - | - | - | - | - | - | - |
| 303a | Cut-Back Asphalt for Bituminous Tack Coat | SM | 221,150 | 35.12 | 7,767,540 | - | - | - | - | - | - | - | - | - |
| 305b | Asphaltic Concrete for Wearing Course (Class "A") | CM | 6,602 | 19500.1 | 128,739,353 | - | - | - | - | - | - | - | - | - |
| NS | Grooving of existing asphalt layers at every 5M interval | SM | 63,000 | 17.10 | 1,077,300 | 24820.00 | 424,422.0 | 39.4 | 9,490.0 | 162,279 | 15.06 | 34310.00 | 586701.00 | 54.46 |
| TOTAL | | | | | 148,248,125 | - | 424,422.00 | 0.29 | - | 162,279.0 | 0.11 | - | 586,701.00 | 0.40 |

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

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

MONTH: February. 2013

| CONTRACT | | | | | | WORK DONE UP TO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UP TO DATE | | |
|--------------|--|------|----------|-----------|---------------------|--------------------------------|--------------|------------|----------------------|--------------|------------|----------------------|--------------|------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (RS) | AMOUNT (RS) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % |
| 107a | Structural Excavation in Common Material | CM | 283 | 181.29 | 51,305.07 | - | - | - | - | - | - | - | - | - |
| 107e | Common Back fill | CM | 96 | 116.64 | 11,197.44 | - | - | - | - | - | - | - | - | - |
| 401b | Concrete Class "B" | CM | 11 | 5842.23 | 64,264.53 | - | - | - | - | - | - | - | - | - |
| 401f | Lean Concrete | CM | 76 | 4120.90 | 313,188.40 | - | - | - | - | - | - | - | - | - |
| 411g | Roll pointing (Parapets over wall) | CM | 130 | 168.01 | 21,841.30 | - | - | - | - | - | - | - | - | - |
| 411b | Stone Masonry Random with Mortar | CM | 294 | 2450.42 | 720,423.48 | - | - | - | - | - | - | - | - | - |
| 412a | Stone Masonry Dressed Coursed With Mortar (Parapets over wall) | CM | 24 | 2909.01 | 69,816.24 | - | - | - | - | - | - | - | - | - |
| 412a | Stone Masonry Dressed Coursed With Mortar (Parapets over Existing wall) | CM | 108 | 2909.01 | 314,173.08 | - | - | - | - | - | - | - | - | - |
| 401b | Concrete Class "B" (Parapet over existing wall) | CM | 14 | 5842.23 | 81,791.22 | - | - | - | - | - | - | - | - | - |
| 411g | Roll pointing (Parapets over Existing wall) | CM | 600 | 168.01 | 100,806.00 | - | - | - | - | - | - | - | - | - |
| TOTAL | | | | | 1,748,806.76 | - | - | - | - | - | - | - | - | - |

4.6 BILL NO.4b STRUCTURES (Culverts)

| CONTRACT | | | | | | WORK DONE UP TO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UP TO DATE | | |
|--------------|---|------|----------|--------------|----------------------|--------------------------------|---------------------|-------------|----------------------|-------------------|--------------|----------------------|---------------------|--------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (RS) | AMOUNT (RS) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % |
| NS | Widening and repair of existing Culverts at RD 1+290 & 5+692 | No | 2 | 821,155.68 | 1,642,311.36 | - | - | - | - | - | - | - | - | - |
| NS | Construction of New Culverts No. of Span x Span Width x Height | | | | | | | | | | | | | |
| | 1 x 2 x 1.5 | No | 7 | 1,484,606.61 | 10,392,246.27 | 0.52 | 772,090.98 | 7.43 | 1.00 | 1,487,052.47 | 14.31 | 1.52 | 2,259,143.44 | 21.74 |
| | 1 x 3 x 1.5 | No | 3 | 1,941,952.95 | 5,825,858.85 | - | - | - | 0.09 | 178,857.57 | 3.07 | 0.09 | 178,857.57 | 3.07 |
| | 2 x 3 x 1.5 | No | 2 | 3,155,221.89 | 6,310,443.78 | 0.57 | 1,801,740.21 | 28.6 | 0.76 | 2,400,218.4 | 38.0 | 1.33 | 4,201,958.6 | 66.6 |
| | 3 x 3 x 1.5 | No | 1 | 4,206,699.18 | 4,206,699.18 | - | - | - | - | - | - | - | - | - |
| | 5 x 3 x 1.5 | No | 1 | 5,779,271.61 | 5,779,271.61 | - | - | - | 0.19 | 1,083,214.22 | 18.7 | 0.19 | 1,083,214.22 | 18.7 |
| TOTAL | | | | | 34,156,831.05 | - | 2,573,831.19 | 7.54 | - | 5149342.63 | 15.08 | - | 7,723,173.82 | 22.61 |

4.7 BILL NO.7 DIVERSIONS

MONTH: February. 2013

| CONTRACT | | | | | | WORK DONE UPTO PREVIOUS MONTH | | | WORK DONE THIS MONTH | | | WORK DONE UPTO DATE | | |
|--------------|--|------|----------|-----------|---------------------|-------------------------------|-------------------|-------------|----------------------|-------------------|-------------|---------------------|-------------------|-------------|
| ITEM NO | DESCRIPTION | UNIT | QUANTITY | RATE (RS) | AMOUNT (RS) | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTITY | AMOUNT (Rs.) | PROGRESS % | QUANTIT Y | AMOUNT (Rs.) | PROGRESS % |
| NS | Diversion for Traffic During Road Construction | KM | 9 | 1,000,000 | 9,000,000.00 | 0.528 | 527,500.00 | 5.86 | 0.264 | 263,750.00 | 2.93 | 0.791 | 791,250.00 | 8.79 |
| TOTAL | | | | | 9,000,000.00 | | 527,500.00 | 5.86 | | 263,750.00 | 2.93 | | 791,250.00 | 8.79 |

4.8 PHYSICAL AND FINANCIAL PROGRESS

General Details:

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

Project length

Section – I : KM 0+000 to KM 9+000

| Section | Bill No: | Items | Cost Breakup (Rs: Million) | Achieved progress %age | | |
|-------------|--------------------------------|---|----------------------------|------------------------|-------------|---------------|
| | | | | JAN-2013 | FEB-2013 | Total To-Date |
| Section – I | 01 | Earth Works | 4.396 | 56.09 | 66.44 | 122.53 |
| | 02 | Sub Base Course | 77.502 | 4.10 | 15.33 | 19.43 |
| | 02 | Aggregate Base Courses | 51.045 | | | |
| | 02 | Asphaltic Base Course | 288.894 | | | |
| | 03 | Surface Course and Pavement | 148.248 | 0.29 | 0.11 | 0.40 |
| | 04a | Structures (Retaining Walls & Breast Walls) | 2.991 | | | |
| | 04b | Structures (Culverts) | 34.157 | 7.54 | 15.07 | 22.61 |
| | 05a | Drainage & Erosion Works | 146.629 | | | |
| | 05b | Road Protection | 0.851 | | | |
| | 06 | Ancillary Works | 4.189 | | | |
| | 07&08 | Detours/Miscellaneous works | 9.900 | 5.86 | 2.93 | 8.79 |
| | Total Construction Cost | | | 768.802 | 1.19 | 2.65 |

| | |
|--|-------------------|
| Contract Duration (46 KM) | : 807 days |
| Time Elapsed up to 28 th Feb 2013 | : 137 days |
| Time Elapsed %age | : (16.97%) |

WORK INFORMATION FOR FEBRUARY 2013

5.1 HIGHWAY SECTION REPORT

1. Planning for the Month of February, 2013

- i. Clearing and Grubbing.
- ii. Common excavation for widening portion.
- iii. Compaction of Natural Ground.
- iv. Formation of embankment from road way excavation in common material.
- v. Formation of embankment from borrows excavation in common material.
- vi. Sub grade preparation in earth cut.
- vii. Laying of Granular sub base.
- viii. Grooving of existing asphalt Pavement at every 3 to 5 Meter interval.
- ix. Diversion for traffic during road construction.

2. Works Executed in February, 2013

- i. Common excavation with a total length of 2.475 KM for sub grade top was carried out throughout the month both in widening portion and in full width of the road.
- ii. Embankment construction both in full and half width with a total length of 0.787 KM was completed.
- iii. Sub grade top preparation for a length of 2.475 KM has been executed during the month both in widening portion and in full width of the road.
- iv. Granular Sub base laying with a total length of 2.436 KM were executed both in widening portion and in full width of the road.
- v. Road cutting in full width with a total length of 0.425 KM was carried out near railway crossings at two locations and for base course at three locations.
- vi. Grooving in the existing Pavement surface was executed with a total length of 4.95 KM.
- vii. Detour for traffic with a total length of 0.7 KM has been constructed during the month.

3. Work Planned for March, 2013

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

5.2 STRUCTURE SECTION REPORT

1. Planning for the Month of February, 2013

- i. Structural excavation in common material.
- ii. Compaction of Natural Ground.
- iii. Lean concrete.
- iv. Class "B" concrete.
- v. Class "A" concrete.
- vi. Stone masonry Random with mortar.
- vii. Common backfill.
- viii. RCC top slab for culverts

2. Works Executed in February, 2013

- i. Dismantling and excavation of existing structures (box culverts, pipe culverts, and brick masonry Arch type culverts).
- ii. Checking of layout and dimensions of structures.
- iii. Concrete batching and pouring operations and curing.
- iv. Stone masonry for Abutments, wing walls and central piers.
- v. Form work and reinforcement of structures.
- vi. Back filling of structures.

3. Work Planned for March, 2013

Structures (Culverts, Retaining wall/Breast wall, Road side Drains)

- i. Structural excavation in common material.
- ii. Compaction of Natural Ground.
- iii. Lean concrete.
- iv. Class "B" concrete.
- v. Class "A" concrete.
- vi. Stone masonry Random with mortar.
- vii. Common backfill.
- viii. RCC top slab for culverts.
- ix. Stone pitching inside the culvert.
- x. Stone masonry Dressed Coursed with mortar (parapet over wall)
- xi. Roll Pointing (parapets over wall)
- xii. Widening and repair of existing culverts at KM: 1+290 and KM: 5+692

5.3 MATERIAL ENGINEER REPORT

1. Main Works Executed during this Month (February 2013).

- i. Quality analysis of Borrow Material for Sub base, Sub grade, Embankment and NGC
- ii. Field Density Tests and slump test of lean concrete at site.
- iii. Laboratory test trials for Class-A Concrete mix design.
- iv. Steel Testing from UET Taxila.
- v. Cement Testing from UET Peshawar.

2. Earth Work Quality Test Report

| S.No | Location | Description | Classification | | | | | | MDD (g/cc) | OMC % | LA % | CBR % | Remarks | |
|-------------------|----------|-------------|----------------|-----|-----|------|------|----|------------|-------|------|-------|---------|-------|
| | | | #4 | #10 | #40 | #200 | LL | PL | | | | | | PI |
| 1 | 2+100 | Sub Base | 37.3 | 29 | 14 | 3.9 | 20.2 | 17 | 3.05 | 2.259 | 6.1 | 23.3 | 78 | A-1-a |
| 2 | | | 35.2 | 20 | 15 | 5 | - | - | - | 2.268 | 5.7 | | 74 | |
| 3 | | | 36.7 | 23 | 13 | 5.8 | - | - | - | 2.264 | 6 | | 72 | |
| Total No.of Tests | | | 3 | | | 1 | | | 3 | 3 | 1 | 3 | | |

3. Field Density Test

| Description | Total Nos. of test. | Pass | Failed | % Failed |
|-------------------|---------------------|------|--------|----------|
| NGC | 10 | 9 | 1 | 10% |
| EMBANKMENT | 6 | 6 | 0 | 0 |
| SUB GRADE | 45 | 44 | 1 | 2.22% |
| SUB BASE | 33 | 33 | 0 | 0 |
| Culvert Bed | 7 | 6 | 1 | 14.3 |
| Total No.of Tests | 101 | 98 | 3 | 3% |

Note: Around 30 % of the tests were conducted jointly with M&E Consultants.

4. Concrete Compressive Strength

| S.No | Concrete Grade | Casting Date | Location/ Element/ mile stone Description | Date of Testing | 7 days strength | | Average | | 28 days Strength | | Average | | Req. Strength | | Remarks | |
|------|----------------|--------------|---|-----------------|-----------------|--------------------|---------|--------------------|------------------|--------------------|---------|--------------------|---------------|--------------------|---------|--------------------------------------|
| | | | | | PSI | Kg/cm ² | PSI | Kg/cm ² | PSI | Kg/cm ² | PSI | Kg/cm ² | PSI | Kg/cm ² | | |
| 1 | Lean Concrete | 6/1/2013 | KM: 5+905 Culvert L/S Abutment | 3/2/2013 | | | | | 1846 | 130.0 | 1818.3 | 128 | 1500 | 100 | | |
| | | | | | | | | | 1813 | 127.7 | | | | | | |
| | | | | | | | | | 1796 | 126.5 | | | | | | |
| 2 | Lean Concrete | 6/1/2013 | KM: = 5+905 Culvert R/S Abutment | 3/2/2013 | | | | | 2179.7 | 153.5 | 2024 | 142.5 | 1500 | 100 | | |
| | | | | | | | | | 1790.6 | 126.1 | | | | | | |
| | | | | | | | | | 2101.6 | 148.0 | | | | | | |
| 3 | 21/Class "A" | 6/2/2013 | Lab/Design Trial Mix | 13/2/2013 | 2151 | 151.48 | 2294.3 | 161.57 | | | | | | | | Cement Factor =350 kg/m ³ |
| | | | | | 2323 | 163.59 | | | | | | | | | | |
| | | | | | 2409 | 169.65 | | | | | | | | | | |
| 4 | 21/Class "A" | 8/2/2013 | Lab/Design Trial Mix | 15/2/2013 | 1777 | 125.14 | 1787.7 | 125.89 | | | | | | | | Cement Factor =300 kg/m ³ |
| | | | | | 1731 | 121.9 | | | | | | | | | | |
| | | | | | 1855 | 130.63 | | | | | | | | | | |
| 5 | 21/Class "A" | 8/2/2013 | Lab/Design Trial Mix | 15/2/2013 | 3570 | 251.41 | 3598.7 | 253.43 | | | | | | | | Cement Factor =400 kg/m ³ |
| | | | | | 3586 | 252.54 | | | | | | | | | | |
| | | | | | 3640 | 256.34 | | | | | | | | | | |

5. Test Results from Commercial Laboratories

I. Sub Base material Collected from the Source at Km: 6+000

| | Test Description | Sub base |
|---|---|----------|
| 1 | Maximum Dry Density, MDD (lb/ft ³) Modified Proctor | 140.3 |
| 2 | Optimum Moisture Content, OMC (%) Modified Proctor | 5.7 |
| 3 | CBR at 95% Compaction | 37 |
| 4 | CBR at 98% Compaction | 54 |
| 5 | CBR at 100% Compaction | 100 |
| 6 | Los Angles Abrasion Test (AASHTO T-96) % | 20.07 |
| 7 | Liquid Limit (%) | 21.8 |
| 8 | Plastic Limit (%) | 15.4 |
| 9 | Plastic index (%) | 6.4 |

II. Sub grade material collected from the Source at Km: 7+400

| S.No | Test Description | Sub Grade |
|------|---|-----------|
| 1 | Maximum Dry Density, MDD (lb/ft ³) Modified Proctor | 134 |
| 2 | Optimum Moisture Content, OMC (%) Modified Proctor | 7.2 |
| 3 | CBR at 95% Compaction | 40.5 |
| 4 | CBR at 98% Compaction | 45.6 |
| 5 | CBR at 100% Compaction | 91.3 |
| 6 | Liquid Limit (%) | 26.3 |
| 7 | Plastic Limit (%) | 18.1 |
| 8 | Plastic index (%) | 8.2 |

III. Test Results of Steel Samples (ASTM-615/615A).

| S.No | Nominal Size (#) | Exact Dia (inch) | Weight (lb/ft) | Area (In ²) | Yield Strength (Psi) | Ultimate Strength (Psi) | Elongation (%) | Bend Test |
|------|------------------|------------------|----------------|-------------------------|----------------------|-------------------------|----------------|-----------|
| 1 | 3 | 0.375 | 0.376 | 0.110 | 61102 | 96745 | 14.06 | OK |
| 2 | 3 | 0.374 | 0.373 | 0.11 | 61519 | 97405 | 12.50 | |
| 3 | 4 | 0.503 | 0.678 | 0.199 | 62088 | 101598 | 12.50 | OK |
| 4 | 4 | 0.503 | 0.678 | 0.199 | 64345 | 101598 | 14.06 | |
| 5 | 5 | 0.613 | 1.005 | 0.295 | 76099 | 96445 | 12.50 | OK |
| 6 | 5 | 0.614 | 1.008 | 0.296 | 75883 | 94853 | 12.50 | |
| 7 | 6 | 0.757 | 1.531 | 0.450 | 83704 | 99945 | 15.50 | OK |
| 8 | 6 | 0.754 | 1.520 | 0.447 | 83029 | 100641 | 14.06 | |

6. Main Works Planned for March 2013

- i. Supervision of Sub base, Sub grade and Embankment formation at site.
- ii. Identification of Borrows for Aggregate base course, Asphaltic Base course and Wearing course.
- iii. Installation of crush plant and Asphalt plant.

Comments of Material Engineer

a) Material tested from Commercial Laboratories

i. Steel & Cement Tests Report.

The result received from commercial laboratories (UET Taxila & UET Peshawar) fulfills all the requirements of prescribed specifications.

ii. Sub base and Sub Grade material:

Sub base material collected from KM: 6+000 and Sub grade material collected from KM: 7+400 has been tested from University of Engineering and Technology Peshawar and the results were found satisfactory as per NHA General Specification.

b) Concrete Mix designs

The contractor has done Laboratory Trials for class "A" concrete mix design. Trial mixes for Class-B concrete will be conducted in the month of March 2013.

c) Oversize material in Sub base

The contractor (FWO) has good quality sources for sub base material at KM: 2+100 and at KM: 6+000 but there is no proper activity for screening at the site nor at the sources due to which quantity of oversize materials is not properly controlled. Although the contractor has installed a Screen at KM: 6+000, but the same is not being used for the specific purpose.

d) Crush plant and Asphalt plant

The contractor has started the Installation of crush plant for Aggregate Base Course production near KM: 9+700 and soon the crush plant will start production on trial basis. Similarly the contractor has started working on the foundation for installing Asphalt Plant in their camp area (KM: 5+000) but time frame for complete mobilization, installation, testing and commissioning of Asphalt Plant is yet awaited.

5.4 WEATHER RECORD

| Date | Temperature (°C) | | Humidity (%) | | Weather Condition | Rainfall – Last 24 hours in mm |
|-------------|--------------------|---------|----------------|---------|-------------------|--------------------------------|
| | Maximum | Minimum | Maximum | Minimum | | |
| 01- Feb-13 | 19 | 9 | 76 | 46 | Cloudy | 0 mm |
| 02- Feb -13 | 19 | 11 | 82 | 52 | Cloudy | 0 mm |
| 03- Feb -13 | 11 | 9 | 100 | 82 | Rainy | 80 mm |
| 04- Feb -13 | 10 | 8 | 100 | 76 | Rainy | 20 mm |
| 05- Feb -13 | 11 | 9 | 100 | 82 | Rainy | 37 mm |
| 06- Feb -13 | 17 | 7 | 93 | 65 | Sunny | 0 mm |
| 07- Feb -13 | 18 | 6 | 87 | 40 | Sunny | 0 mm |
| 08- Feb -13 | 21 | 6 | 93 | 35 | Sunny | 0 mm |
| 09- Feb -13 | 20 | 6 | 87 | 33 | Sunny | 0 mm |
| 10- Feb -13 | 21 | 6 | 87 | 35 | Sunny | 0 mm |
| 11- Feb -13 | 20 | 7 | 81 | 33 | Sunny | 0 mm |
| 12- Feb -13 | 21 | 8 | 76 | 38 | Sunny | 0 mm |
| 13- Feb -13 | 21 | 7 | 81 | 35 | Sunny | 0 mm |
| 14- Feb -13 | 17 | 9 | 77 | 63 | Cloudy | 0 mm |
| 15- Feb -13 | 14 | 12 | 82 | 77 | Cloudy | 0 mm |
| 16- Feb -13 | 22 | 10 | 88 | 41 | Cloudy | 0 mm |
| 17- Feb -13 | 19 | 9 | 87 | 49 | Sunny | 0 mm |
| 18- Feb -13 | 21 | 11 | 88 | 46 | Sunny | 0 mm |
| 19- Feb -13 | 20 | 10 | 82 | 52 | Sunny | 0 mm |
| 20- Feb -13 | 22 | 10 | 87 | 46 | Sunny | 0 mm |
| 21- Feb -13 | 17 | 12 | 88 | 63 | Cloudy/Rainy | 22 mm |
| 22- Feb -13 | 13 | 11 | 94 | 72 | Rainy | 22 mm |
| 23- Feb -13 | 21 | 10 | 88 | 49 | Sunny | 0 mm |
| 24- Feb -13 | 21 | 10 | 88 | 53 | Sunny/ Cloudy | 0 mm |
| 25- Feb -13 | 20 | 11 | 82 | 49 | Sunny /Cloudy | 0 mm |
| 26- Feb -13 | 17 | 11 | 82 | 72 | Cloudy/Rainy | 21 mm |
| 27- Feb -13 | 14 | 11 | 100 | 82 | Rainy | 21 mm |
| 28- Feb -13 | 18 | 8 | 93 | 49 | Sunny | 0 mm |

5.5 CONTRACTOR'S PLANT & EQUIPMENTS

| Date | Loader | Back Hoe | Motor Grader | Dozer | Vibratory Roller | Dumper | Water Tanker | Tractor | Remarks |
|-------------|--------------------------------------|----------|--------------|-------|------------------|--------|--------------|---------|---------|
| 01- Feb-13 | Holiday | | | | | | | | - |
| 02- Feb -13 | 1 | 4 | 4 | 2 | 3 | 8 | 4 | 1 | - |
| 03- Feb -13 | Work hampered due to heavy Rainfall | | | | | | | | - |
| 04- Feb -13 | Work hampered due to heavy Rainfall | | | | | | | | - |
| 05- Feb -13 | Work hampered due to heavy Rainfall | | | | | | | | - |
| 06- Feb -13 | - | 1 | 1 | - | - | - | - | - | - |
| 07- Feb -13 | - | 4 | 2 | - | 1 | - | 8 | - | - |
| 08- Feb -13 | Holiday | | | | | | | | - |
| 09- Feb -13 | 1 | 6 | 5 | 2 | 4 | 7 | 4 | 1 | - |
| 10- Feb -13 | 1 | 6 | 6 | 2 | 5 | 7 | 4 | - | - |
| 11- Feb -13 | 1 | 6 | 5 | 2 | 5 | 8 | 4 | - | - |
| 12- Feb -13 | 1 | 4 | 5 | 2 | 5 | 8 | 4 | - | - |
| 13- Feb -13 | 1 | 5 | 5 | 2 | 5 | 9 | 4 | 1 | - |
| 14- Feb -13 | 1 | 4 | 5 | 2 | 5 | 8 | 4 | 1 | - |
| 15- Feb -13 | Holiday | | | | | | | | - |
| 16- Feb -13 | 1 | 4 | 5 | 2 | 5 | 9 | 4 | 1 | - |
| 17- Feb -13 | 1 | 4 | 5 | 2 | 5 | 7 | 4 | 1 | - |
| 18- Feb -13 | 1 | 4 | 5 | 2 | 4 | 7 | 4 | 1 | - |
| 19- Feb -13 | No Site visit due to security reason | | | | | | | | - |
| 20- Feb -13 | 1 | 3 | 5 | 2 | 4 | 7 | 4 | 1 | - |
| 21- Feb -13 | 1 | 3 | 5 | 2 | 4 | 9 | 4 | 1 | - |
| 22- Feb -13 | Holiday | | | | | | | | - |
| 23- Feb -13 | 1 | 2 | 1 | - | - | - | - | - | - |
| 24- Feb -13 | 1 | 4 | 5 | - | 11 | 7 | - | - | - |
| 25- Feb -13 | - | 2 | 2 | 1 | 5 | 7 | - | - | - |
| 26- Feb -13 | Work hampered due to heavy Rainfall | | | | | | | | - |
| 27- Feb -13 | Work hampered due to heavy Rainfall | | | | | | | | - |
| 28- Feb -13 | 1 | 3 | 1 | 1 | - | 9 | - | - | - |

**ENVIRONMENTAL COMPLIANCE
MONITORING**

6.1 ENVIRONMENTAL COMPLIANCE REPORT # 01

1. **Date of visit:** 13th February, 2013
2. **Environmental Compliance Officer:** **Shabir Ahmad Khan**
3. **Road Section under Construction:** Section Km 0+000 to Km 9+000
4. **Road Section Completed:** Section From - to -
5. **Name of Sub contractor if any:** -----
6. **Persons Consulted at Site:**
- i. Mohammad Irfan Site Engineer FWO
 - ii. Zubair Site Engineer FWO RD 1+125
 - iii. Sarwar Din Surveyer RD 4+625
 - iv. Mohammad Asaf RD 5+354
 - v. Mohammad Fiyaz Naik RD 6+50

7. **Work Position:**

- Work Under way.
- Work Stopped
- Work Completed

8. **Quality of Environment Compliance:**

- ❖ Good
- ❖ Satisfactory
- ❖ Poor

9. **Issues:**

- a) No sprinkling of water on diversion of road and near the residential areas.
- b) Drainage problems at culvert's construction sites and quarry areas.
- c) No road's traffic signs and speed checking for the safety of locals.
- d) Damages to public infrastructure and social problems at some places.
- e) Non availability of Environment Specialist/ Expert on site from FWO / NESPAK side.

10. **Recommendation/Instructions:** Please see advices and directions in detail at attached "Environmental Monitoring Check List".

Environmental Monitoring Check List for the Site

| Activity | Mitigation Measures | Monitoring indicators | Observations |
|-------------------------------|--|--|--|
| Construction Phase | | | |
| Use of heavy equipment | <ul style="list-style-type: none"> a. Minimize use of heavy machinery. b. Set protocols for vehicle Maintenance. c. Monitoring and cross checking of fuel level deliveries and use. d. Checking pipes and joints for leaks. e. Tightening generator and fuel lines. f. Preventing over filling of main storage and vehicle tanks. g. Heavy equipment should not be parked under the tree to avoid soil compaction and damage to the roots of the trees. | Soil contaminations, stability and erosion | Usually heavy machinery is used for carrying material from quarry area, therefore, advised FWO staff to always follow the compacted routes. FWO Machinery normally gets its maintenance inside the camps. FWO staff and site supervisors always maintain the machinery in good condition. Heavy machinery is parked in fenced area near the main camp at Jamrud. As this area has no vegetation/trees, therefore, no vegetation damage has occurred. |
| Flood protection | <ul style="list-style-type: none"> a. Culverts should be provided to control flood damages and provision of safety of Embankments. b. Road protection work along the river side. c. Construction of retaining wall d. New causeways for the smooth flow of water during rainy seasons and flooding. | Site inspection | <p>The road construction work has started and works on different types of flood protection measures have also been started like culverts, retaining walls for smooth flow of water during rainy season and sewerage disposal.</p> <p>But it was noticed during site visit that no temporary arrangements have been made for disposal of flood and sewerage water nor any protection measures have been adopted for safety of other infrastructure like telephone cables etc This kind of instruction is repeatedly advised for the last one and a half month.(RD 2+600, 4+625, 5+905, RD 6+191, RD 6+850, RD 7+384)</p> <p>Please see photos(1),(2),(3)</p> |
| Handling and | <ul style="list-style-type: none"> a. Prevent dumping of hazardous materials especially near villages | Soil Contamination | No action is required at present stage. |

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

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| | <ul style="list-style-type: none"> h. Provide adequate quantities and good quality food and cooking fuel. i. If the water is stored for drinking water should meet the WHO standards and if it is used for construction purpose then it should be clearly demarcated. j. No domestic pets or livestock are allowed on the site. | | <p><u>diagnosis at site observed.</u> FWO staff is educated and follow strict guidelines from their senior to interact with locals. <u>The guidelines for removal of trees have not been provided to be followed as standard procedure. Trees cutting (removal) was noticed earlier and the removed trees were then carried to camps.</u></p> <p>FWO provides good quality food and setting environment for its staff. Domestic livestock can be seen at site off and on, but the camps are away and are protected, so no entrance was seen during site visit.</p> <p>Please see Photos-(4),(5)</p> |
| Material handling use and storage | <ul style="list-style-type: none"> a. Material should be appropriately secured to ensure safe passage b/w the destinations during transportation. Loads shall have proper cover to prevent spillage and contractor is responsible for any clean up resulting from failure. b. Materials from borrow site should be directly transported and deposited to the site where it has to be used. Stockpiles should be positioned and sloped to create less visual impact. No foreign materials generated or deposited should remain on the site after completion of the activity and the areas affected by stockpiling should be reinstated. c. Over spray of bitumen products outside the road surface on the road, vegetation should be preventing. d. Concrete mixing on the ground shall not be allowed. e. Pre-wet gravel when not available during the dry season and store gravel in a way that will keep it wet, for instance, covered with plastic sheeting. f. Avoid using sensitive areas or sites that drain directly into a | <p>Dust pollution</p> | <p><u>FWO staffs have been advised for safe passage of dumpers which usually carry materials.</u> No concrete batching plant is present nor any water storage observed at site. All the Environmental protocols are fully followed at site.</p> |

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| | <p>sensitive area.</p> <p>g. All runoff from batching plant should be strictly controlled and cement contaminated water should be collected, stored and disposed of at the designated site.</p> <p>h. Used empty cement bags should be collected and stored to deliver these to recycling plant.</p> <p>i. Contaminated water storage facilities should not be allowed to over flow and appropriate protection from rain should be implemented.</p> | | |
| 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><u>FWO officials are not sharing and providing their logging, quarrying and borrowings plans nor any relevant photos.</u> No dangerous terrain was observed during site visit. However, FWO staff advised to follow safety protocol while working. Material extraction process is in progress near site RD 6+50, but no photos have been taken before extraction. So far Safety protocols are concerned, apparently no risk of falling rocks or debris at this site was observed. The rest of the protocols will be examined during the period when work will stop at this site. Quarry site in charge, Naik Fiazof FWO was asked to <u>evel and refill adjacent previous quarry sites for sustainable use.</u> <u>Moreover, it was also advised to make drainage ways where ever applicable.</u> The local inhabitants of the area were asked for better use of these quarry areas. During site visit, It was also noticed that no safety protocols followed by FWO.</p> |

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| | | | Please see Photo.(6) |
| 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 continuing at the shoulders of the existing road which is already cleared.</p> <p><u>It was observed during site visit that no safety protocols had been followed.</u></p> <p>At village Havaladarai near FC Choki along the road side new plantation had been done by forest department. This practice should be continued along the whole Jamrud-Torkham road. In this respect FWO should coordinate and facilitate forest department. Plants which have been planted in this area are Eucalyptus, Bottle Brush etc.</p> <p>Please see Photo.(7)</p> |
| 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-engineered drainage. f. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create | Soil erosion and stability and surface water contamination | <p>The excavation is only done at the shoulders of the existing road in shallow depth of about one foot. Others mitigation measures are either appropriate or not required.</p> <p><u>At RD 5+630 excavated materials have been placed at graveyard.</u> To avoid local conflict, advised FWO site Engineer to shift the excavated material to some other suitable place.</p> <p><u>During excavation process at culverts sites on RD 6+50, RD 6+191, RD 6+648, RD 6+825 require fence around and a well engineering drainage for flow line of watershed,</u> proper dumping of</p> |

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| | <p>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>excavated material and sprinkling of water. At RD 2+600 where excavation of road shoulder is in process, main drain along the road is blocked near Total patrol pump. Excavation of culvert at RD 4+625, in the mid of Jamrud bazaar, has stopped drain passage due to which sewerage water is standing along the road. Mr. Sarwar Din FWO surveyor was asked on spot to provide temporary arrangement for drainage of water and to please further direct the Subcontractor to achieve early completion of the culvert to minimize the hardships of the people of Jamrud bazar.</p> <p>Please see photo-(8), (9),(10),(11)</p> |
| Traffic Control | <p>a. Efforts should be made to accommodate the traffic along the road as far as practically possible.</p> <p>b. Provision of sign boards directing the drivers about the diversions.</p> <p>c. Contractor staff could 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>g. Conduct work that requires road closure at times when traffic volume is low</p> <p>h. Schedule truck sand deliveries for periods of low traffic</p> | <p>Health and Safety for the local population and workers.</p> | <p>As far Traffic control is concerned, it can flow along the road or on the same road or at diversions. FWO has arranged diversions as well as existing kacha tracks along the road for traffic management but saw <u>no proper signboard at any such location</u>. Therefore, asked FWO official to clearly mark all diversion by installing temporary sign boards (<u>having light reflecting materials for night time</u>) for driver's guidance. At diversion near RD 6+875 to 9+00 huge dust observed on the day of visit due to not sprinkling of water. Advised FWO staff for arrangement of <u>water sprinkling and speed breakers</u>. Moreover, contractor's personnel at construction sites also help in traffic control. Heavy machinery speed was not checked on spot but due to activities</p> |

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| | | | under way, heavy machinery cannot move faster. |
| Blasting | <ul style="list-style-type: none"> a. Minimize blasting. b. Take safety precautions to protect workers and others from being injured by flying or falling rocks and avalanches and c. Provide Person protection equipments to the workforce. | Noise pollution and occupational safety | There is no blasting at present stage or likely to be needed; therefore, no action is required. |
| Source of building materials | <ul style="list-style-type: none"> a. Develop logging, quarrying and borrowing plans that take into account cumulative effects b. Monitor adherence to plans and impacts of extraction practices. Modify as necessary 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 | <p>At material extraction site near RD 6+50, the area has not been restored and leveled. Asked Mr Fiaz Naik FWO at site for <u>leveling and refilling the adjacent previous quarry sites for sustainable use and for making drainage ways, where applicable.</u></p> <p>The local inhabitants of the area were asked for better use of these quarry are as. During site visit, It was also noticed that no safety protocols being followed.</p> <p>Please see photo.(6)</p> |
| Dust | <ul style="list-style-type: none"> a. Water spraying b. trucks should be covered with tarpaulins | Nuisance to the public, undermining the air quality and water contamination | <p>Water spraying at diversion near RD 4+ 00 to RD 8+300 was not appropriate on the date of visit. Advised FWO staff for <u>regular sprinkling of water at diversion roads</u> and along all the kacha tracks, especially at residential areas like <u>Takhat Baig, Hawaldaraichoki and Sur Kamar.</u></p> <p>Please see Photo.(12)</p> |
| 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 | There were no activities at site regarding borrow area use. Moreover, borrow areas are still to be identified, if required. |

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| | | land. | |
| Damages of existing infrastructure | <ul style="list-style-type: none"> a. Locate different infrastructure on opposite side of road b. Determine locations of water pipes, electricity pylons etc. and design scheme to avoid damages. | Facilities to the locals | <p>PTCL telephone cable was damaged due to excavation for culvert near RD 5+354. A team from PTCL arrived at site. The officials of PTCL and FWO were asked to repair the damaged cable. It was also advised to Site Engineer on spot that in future PTCL Department must be informed before starting excavation activities.</p> <p>Please see Photo. (13)</p> |
| Health & Safety of the workers | <ul style="list-style-type: none"> a. Prepare and implement a site Health and Safety Plan. b. Exclude the public from site; c. Ensure that workers use Personal Protective Equipment d. Provide Health & Safety Training (including process of transmission of HIV/AIDS) for all personnel; e. Follow documented procedures for all site activities; f. Keep accident reports and records | Workers and the public are at risk from accidents on site | The contractor FWO generally follows Health and Safety requirements but does not keep H&S guidelines. Therefore, asked FWO officials to prepare H&S plan. |
| Local Employment | Contractor' should employ at least 50% of workforce from communities in vicinity of work site | Economic benefits of local people | Being an Army organization, the contractor FWO has regular employees. In case of subcontract/sublet of any small component to local contractor, local labor is hired. |
| Others like Resettlement Concerns etc | <ul style="list-style-type: none"> a. Resettlement if any b. Access roads or pedestrian of local peoples c. Infrastructure like telephone line, sewerage, water supply disturbance etc d. Social Conflict with locals | Social and Resettlement Management | <p>The Peshawar Torkham road construction is continuing on existing road corridor, therefore, no resettlement issue is involved. Infrastructure like access roads of local people, sewerage, telephone line etc requires proper care and management.</p> <p>At culvert site near RD 4+625 at Jamrud bazaar, the people are in great trouble due to road closer, especially at the time of emergency. Therefore, advised <u>FWO staff to construct culvert as soon as</u></p> |

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| | | | <p><u>possible. Moreover, temporary arrangement for sewerage water disposal and access road for emergency may be arranged.</u></p> <p>At RD 6+648, where culvert is under construction, the surrounding population of the area demanded for <u>construction of stairs at both ends of the culvert, to provide safe under passage</u> to school children for crossing the road, as there is heavy traffic load and rush on this road.</p> <p>As at RD 6+825, the existing road passes very near to the residential area, therefore, the people of the area demanded for <u>construction of the road away from the residential area.</u></p> |
| Operation and Maintenance of newly constructed road | | | |
| Road maintenance | <ul style="list-style-type: none"> a. Monitor and Maintain drainage structures and ditches including culverts. Clean out culverts and side channels. b. Fill mud holes and pot holes with good quality gravels, removed downed trees and limbs obscuring road ways. c. Use water from settling basin and retention ponds for road maintenance. | Road Maintenance | No segment of the road construction has been completed. |
| Use and maintenance of equipment's | Install concrete pads, drains and oil/water separators in areas where vehicles and equipment maintenance and fueling will occur regularly. | Water and soil pollution | NA |
| Accidents of hazardous materials | <ul style="list-style-type: none"> a. In case of spill, there should be a relevant department dealing with it. in accordance with emergency plan ; b. A road administration department should be established after the completion of the project which will administer the hazardous substances | Accidents cases | NA |
| Vehicle management | <ul style="list-style-type: none"> a. Vehicle with excessive noise should be prohibited to travel on the road. b. Public should be educated about the noise and the air pollution and how to keep the road clean. | Visual inspection | NA |

6.2 ENVIRONMENTAL COMPLIANCE REPORT # 02

1. **Date of visit:** 28th February, 2013
2. **Visit No:** 5th
3. **Environmental Compliance Officer:** Shabir Ahmad Khan
4. **Filed Monitor Social :** Muhammad Rahman
5. **Road Section under Construction:** Section Km 0+000 to Km 9+000
6. **Road Section Completed:** Section From - to -
7. **Name of Sub contractor if any:** -----
8. **Persons Consulted at Site:**
 - i. Mr Mohammad Imran Site Supervisor FWO
 - ii. Mr. Mohammad Ali Inspector NESPAK
 - iii. Mr Zeshan Site Engineer FWO
 - iv. Mr. Farooq Supervisor FWO
 - v. Mr Abdul Razaq Naik FWO
 - vi. Mr. Zahid local shopkeeper (Wazir Dhand)
9. **Work Position:**

| | |
|-------------------|-------------------------------------|
| ➤ Work Under way. | <input checked="" type="checkbox"/> |
| ➤ Work Stopped | <input type="checkbox"/> |
| ➤ Work Completed | <input type="checkbox"/> |
10. **Quality of Environment Compliance:**

| | |
|----------------|-------------------------------------|
| ❖ Good | <input type="checkbox"/> |
| ❖ Satisfactory | <input type="checkbox"/> |
| ❖ Poor | <input checked="" type="checkbox"/> |
11. **Issues:**
 - (a) Non availability of Environment Specialist/ Expert on site from FWO / NESPAK side.
 - (b) No Health and Safety arrangement at working sites.
 - (c) Drainage problems at culvert's construction sites and quarry areas.
 - (d) No road's traffic signs and speed checking for the safety of people.
 - (e) Damages to public infrastructure.
 - (f) No sprinkling of water on road's diversion and near the residential areas.
 - (g) Land leveling and refilling of adjacent previous quarry sites for sustainable use.

- (h) No records of EHS (Environment, Health and Safety)
 - (i) Non availability of personal protective equipment
 - (j) Social problems and minor peoples demands at some places of road construction.
12. **Recommendation/Instructions:** Please see advices and directions in detail at attached “Environmental Monitoring Check List”

Environmental Monitoring Check List for the Site

| Activity | Mitigation Measures | Monitoring indicators | Observations |
|-------------------------------|--|--|--|
| Construction Phase | | | |
| Use of heavy equipment | a. Minimize use of heavy machinery. b. Set protocols for vehicle Maintenance. c. Monitoring and cross checking of fuel level deliveries and use. d. Checking pipes and joints for leaks. e. Tightening generator and fuel lines. f. Preventing over filling of main storage and vehicle tanks. g. Heavy equipment should not be parked under the tree to avoid soil compaction and damage to the roots of the trees. | Soil contaminations, stability and erosion | Usually heavy machinery is used for carrying material from quarry area, therefore, advised FWO staff to always follow the compacted routes. FWO Machinery normally gets its maintenance inside the camps. FWO staff and site supervisors always maintain the machinery in good condition. Heavy machinery is parked in fenced area near the main camp at Jamrud. As this area has no vegetation/trees, therefore, no vegetation damage has occurred. |
| Flood protection | a. Culverts should be provided to control flood damages and provision of safety of Embankments. b. Road protection work along the river side. c. Construction of retaining wall d. New causeways for the smooth flow of water during rainy seasons and flooding. | Site inspection | The road construction work has started and works on different types of flood protection measures have also been started like culverts, retaining walls for smooth flow of water during rainy season and sewerage disposal. But it was noticed during site visit that no temporary arrangements have been made for disposal of flood and sewerage water nor any protection measures have been adopted for safety of other infrastructure like telephone cables etc. Asked FWO staff for protection of public infrastructures. This kind of instruction is repeatedly given for last two months but no action so far. (Km 2+600, 3+850, 4+150, Km 4+300, Km 6+191, Km 6+645, Km 7+383) |
| | | | Please see photos(14),(15),(16),(17),(18) |

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| Handling and transportation of hazardous waste | <ul style="list-style-type: none"> a. Prevent dumping of hazardous materials especially near villages and water bodies. b. Burn waste oil that is not readily reusable. c. Recyclable material don't contain heavy metals 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. |
| 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><u>No waste segregation observed at construction site</u> nor any records regarding solid waste management had been shared till the time. The construction materials in the main store are generally stored in good condition to minimize the chance of damage to them. However the construction material at sites are not stored/places in proper form. Although mixing of refuse with construction material not found at site but at the same time <u>no special bins or collector have been seen to collect refuse systematically.</u> It has been advised, especially to the subcontractors having contracts of culverts to provide solid waste storage bin at their respective sites. No chemical waste has been seen in the project area.</p> |
| Construction crews and camps | <ul style="list-style-type: none"> k. Explore off – site accommodations for crew, keep camp size in containers or specific facilitated position. l. Avoid as much clearing of vegetation as possible. m. Provide temporary sanitation on site such as pit latrines (assuring the water table is enough and soil and geology of appropriate composition). n. Use local or regional labor. o. Screen potential crew members of HIV and | 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 recently renovated by the FWO for the labor camps. The quality of food provided is good. Others protocols like hygienic water etc are satisfactory. Sub-contractor and some |

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| | <p>tuberculosis.</p> <p>p. Provide education and enforce guidelines on contact with local residents.</p> <p>q. Set guidelines for prohibiting poaching and collection of plants.</p> <p>r. Provide adequate quantities and good quality food and cooking fuel.</p> <p>s. If the water is stored for drinking water should meet the WHO standards and if it is used for construction purpose then it should be clearly demarcated.</p> <p>t. No domestic pets or livestock are allowed on the site.</p> | | <p>workers are local inhabitants of the area. FWO staff is educated and follow strict guidelines from their senior to interact with locals. <u>The guidelines for removal of trees have not been provided to be followed as standard procedure.</u></p> <p>Domestic livestock can be seen at site off and on, but the camps are away and are protected, so no entrance was seen during site visit.</p> <p>Please see Photos-(4),(5)</p> |
| <p>Material handling use and storage</p> | <p>j. Material should be appropriately secured to ensure safe passage b/w the destinations during transportation. Loads shall have proper cover to prevent spillage and contractor is responsible for any clean up resulting from failure.</p> <p>k. Materials from borrow site should be directly transported and deposited to the site where it has to be used. Stockpiles should be positioned and sloped to create less visual impact. No foreign materials generated or deposited should remain on the site after completion of the activity and the areas affected by stockpiling should be reinstated.</p> <p>l. Over spray of bitumen products outside the road surface on the road, vegetation should be preventing.</p> <p>m. Concrete mixing on the ground shall not be allowed.</p> <p>n. Pre-wet gravel when not available during the dry season and store gravel in a way that will keep it wet, for instance, covered with plastic sheeting.</p> <p>o. Avoid using sensitive areas</p> | <p>Dust pollution</p> | <p><u>FWO staffs have been advised for safe passage of dumpers which usually carry materials.</u> No concrete batching plant is present nor any water storage observed at site.</p> <p><u>Loads have not proper cover to prevent spillage.</u></p> <p>The concrete mixing on the ground is not found at site. The batching plant is not found at site.</p> <p><u>The contaminated water disposals are not appropriate.</u></p> <p>All the Environmental protocols are fully followed at site.</p> |

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| | <p>or sites that drain directly into a sensitive area.</p> <p>p. All runoff from batching plant should be strictly controlled and cement contaminated water should be collected, stored and disposed of at the designated site.</p> <p>q. Used empty cement bags should be collected and stored to deliver these to recycling plant.</p> <p>r. Contaminated water storage facilities should not be allowed to over flow and appropriate protection from rain should be implemented.</p> | | |
| 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</p> | <p>Change in landscape & Creation of water ponds</p> | <p><u>FWO officials are not sharing and providing their logging, quarrying and borrowings plans nor any relevant photos.</u> No dangerous terrain was observed during site visit. <u>However, FWO staff does not care the safety protocols,</u> advised to follow safety protocol while working. Material extraction process is in progress near site Km 6+190, but no photos have been taken before extraction. So far Safety protocols are concerned, apparently no risk of falling rocks or debris at this site was observed. In previous visit, Quarry site in charge, Naik Fiaz of FWO was asked to level and refill adjacent previous quarry sites for sustainable use, but it was noticed during this site visit that quarry site is in the same position. Moreover, it was also advised to make drainage ways where ever applicable. But response in this regard is nil. The local inhabitants of the area are to be consulted for better use of these quarry areas, after completion.</p> <p>Please see Photo.(19)</p> |

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| | <p>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> | | |
| Site clearing or leveling | <p>a. Minimize disturbance of native flora during construction.</p> <p>b. Minimize the amount of clearing of small areas for active work one at a time.</p> <p>c. Avoid use of herbicides. Any use should follow health and safety procedures to protect people and the environment.</p> <p>d. Herbicide should be used according to the manufacturer specifications</p> <p>e. Clear without destroying large plants and turf where possible and preserve for replanting in temporaries nurseries.</p> <p>f. Move earth and vegetation only during dry periods, Store top soil for re-spreading if vegetation must remove during wet periods; disturb ground only just before the actual 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>Loss of vegetation, soil erosion and stability , surface water pollution and occupational health of workers and community</p> | <p>As the area is almost rugged and without vegetation, so there is no impact on vegetation at site. Moreover at present time, the excavation is continuing at the shoulders of the existing road which is already cleared. At village Havaladarai near FC Choki along the road side, new plantation had been done by forest department. Plants which have been planted in this area are Eucalyptus, Bottle Brush etc.</p> <p>This practice should be continued along the whole Jamrud-Torkham road. In this respect FWO should coordinate and facilitate forest department, as provision has already been made in Environment Management Plan, and the plant species are also indentified. In short we can say that destruction to plants and turf in large scale had not happened up to Km 9+00 because of very small amount of plants and turfs on ground.</p> |
| 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</p> | <p>Soil erosion and stability and surface water contamination</p> | <p>The excavation is only done at the shoulders of the existing road in shallow depth of about one foot. Others mitigation measures are either appropriate or not required.</p> <p><u>At Km 5+630, excavated materials had been placed at graveyard from very long time.</u> To avoid local conflict, advised FWO site Engineer time and again to shift the</p> |

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| | <p>them with procedures to follow if such objects are discovered. Provide incentives for recovery of objects and disincentives for their destruction.</p> <p>e. Ensure excavation is accompanied by well-engineered drainage.</p> <p>f. Don't fill the flow line of a watershed. Even in arid areas, occasional rains may create strong water flow in channels.</p> <p>g. Use good engineering practices, for instance don't use soil alone. First lay a bed of rock and gravel.</p> <p>h. Balance the cuts and fills whenever possible to minimize the earth work movement.</p> <p>i. Water sprinkling should be carried out at the temporary access road and all the areas prone to dust pollution.</p> | | <p>excavated material to some other suitable place. But no action has been taken till this site visit..</p> <p><u>At Km 2+600, where excavation of road shoulder is in process, main drain along the road is blocked near Total patrol pump since last month. Excavation of culvert at Km 4+600, in mid of Jamrud bazaar, has stopped drain passage due to which sewerage water is standing along the road.</u> Moreover, provision of temporary arrangement for drainage water and local access for community in case of emergency is very necessary. Therefore, time and again asked FWO staff to direct subcontractor for arrangements of these remedies to local people and also for early completion of this culvert to minimize the hardships of the people of Jamrud bazar.</p> <p><u>At construction of culvert on the west side of Jamrude Bazar at Km 4+650, the same difficulties were found.</u></p> <p><u>During excavation process at culverts sites on Km 5+905, Km 6+500, Km 6+191, Km 6+383 require fence around and a well engineering drainage for flow line of watershed.</u> proper dumping of excavated material and sprinkling of water.</p> <p>Please see photo-(20), (21),(22),(23), (24), (25),(16)</p> |
| Traffic Control | <p>a. Efforts should be made to accommodate the traffic along the road as far as practically possible.</p> <p>b. Provision of sign boards directing the drivers about the diversions.</p> <p>c. Contractor staff could be trained and put on the duty to manage the traffic during the construction activates</p> | <p>Health and Safety for the local population and workers.</p> | <p>As far Traffic control is concerned, it can flow along the road or on the same road or at diversions. FWO has arranged diversions as well as existing kacha tracks along the road for traffic management but saw <u>no proper signboard at any such location.</u> Therefore, asked FWO official to clearly mark</p> |

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| | <p>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>g. Conduct work that requires road closure at times when traffic volume is low</p> <p>h. Schedule truck sand deliveries for periods of low traffic</p> | | <p>all diversion by installing temporary sign boards (<u>having light reflecting materials for night time</u>) for driver's guidance. Advised FWO staff for arrangement of <u>water sprinkling and speed breakers at diversions and residential areas.</u></p> <p>The contractor's personnel at construction sites also help in traffic control. Heavy machinery speed was not checked on spot but due to activities under way, heavy machinery cannot move faster.</p> |
| Blasting | <p>a. Minimize blasting.</p> <p>b. Take safety precautions to protect workers and others from being injured by flying or falling rocks and avalanches and</p> <p>c. Provide Person protection equipments to the workforce.</p> | Noise pollution and occupational safety | There is no blasting at present stage or likely to be needed; therefore, no action is required. |
| Source of building materials | <p>a. Develop logging, quarrying and borrowing plans that take into account cumulative effects</p> <p>b. Monitor adherence to plans and impacts of extraction practices. Modify as necessary</p> <p>c. Fill in quarries and pits before abandoning</p> <p>d. Control runoff into pit</p> | Damage aquatic ecosystems erosion, siltation, Harm terrestrial ecosystems and vector-borne diseases | At material extraction site (Quarry) near Km 6+190, the area has not been restored and leveled. Asked FWO person at site for <u>leveling and refilling the adjacent previous quarry sites for sustainable use and for making drainage ways, where applicable.</u> The local inhabitants of the area should be contacted for better use of these quarry are. <u>During site visit, It was also noticed that no safety protocols being followed.</u> Please see photo.(19) |
| Dust | <p>a. Water spraying</p> <p>b. trucks should be covered with tarpaulins</p> | Nuisance to the public, undermining the air quality and water contamination | Water spraying at diversions sites and residential areas was not appropriate on the date of visit. Advised FWO staff for <u>regular sprinkling of water at diversion roads and along all the kacha tracks, especially at residential areas like Takhat Baig, Hawaldarai</u> |

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| | | | <u>choki and Sur Kamar.</u> Please see Photo.(26) |
| 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. |
| Damages of existing infrastructure | 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 care the cables at the time of excavation at sites, especially of culverts. It was also advised to FWO/NESPAK personals, that PTCL Department must be informed before starting excavation activities. |
| Health & Safety of the workers | 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 | The contractor FWO generally follows Health and Safety requirements in the camps but does not keep H&S requirements at sites where works are being carried out. Therefore, asked FWO officials to prepare H&S plan, care the H & S protocols at site also. Prepared documentation records about the accidents, illness and treatments etc. It is very necessary to provide H& S trainings to the workers and Ensure the personal protective equipments to all the workers including the sub contractor's labors. |
| Local Employment | Contractor' should employ at least 50% of workforce from communities in vicinity of work site | Economic benefits of local people | Being an Army organization, the contractor FWO has regular employees. In case of subcontract/sublet of any small component to local contractor, local labor is hired. |
| Others like | a. Resettlement if any | Social and | The Peshawar Torkham road |

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| Resettlement Concerns etc | <ul style="list-style-type: none"> b. Access roads or pedestrian of local peoples c. Infrastructure like telephone line, sewerage, water supply disturbance etc d. Social Conflict with locals | Resettlement Management | <p>construction is continuing on existing road corridor, therefore, no resettlement issue is involved. Infrastructure like access roads of local people, sewerage, telephone line etc requires proper care and management.</p> <p><u>At RD 1+575 Wazir Dhand Kelay, access to local housed has been blocked due to excavation, more over a large amount of solid waste is dumped in front of houses.</u> Mr Razak Niak FWO was requested to provide the access and remove the solid waste.</p> <p><u>At RD 4+300, near start of bypass place, the water was standing in large quantity, due to dumping of excavated material at road side and no water disposal was made.</u></p> <p>At culvert site near RD 4+625 at Jamrud bazaar, the people are in great trouble due to road closer, especially at the time of emergency. Therefore, advised <u>FWO staff to construct culvert as soon as possible.</u> Moreover, <u>temporary arrangement for sewerage water disposal and access road</u> for emergency may be arranged.</p> <p>At RD 6+648, where culvert is under construction, the surrounding population of the area demanded for <u>construction of stairs at both ends of the culvert, to provide safe under passage</u> to school children for crossing the road, as there is heavy traffic load and rush on this road. This type of demand is also from other sites. Therefore construction of stairs for passage of children's in the culverts places, near the residential areas may kindly be considered.</p> |
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| | | | <p>As at RD 6+825, the existing road passes very near to the residential area, therefore, the people of the area demanded for <u>construction of the road away from the residential area.</u></p> <p><u>At RD 9+00, a large amount was standing adjacent to the road in between the houses,</u> which may need disposal and other appropriate measures.</p> |
| Operation and Maintenance of newly constructed road | | | |
| Road maintenance | <ul style="list-style-type: none"> a. Monitor and Maintain drainage structures and ditches including culverts. Clean out culverts and side channels. b. Fill mud holes and pot holes with good quality gravels, removed downed trees and limbs obscuring road ways. c. Use water from settling basin and retention ponds for road maintenance. | Road Maintenance | No segment of the road construction has been completed. |
| Use and maintenance of equipment's | Install concrete pads, drains and oil/water separators in areas where vehicles and equipment maintenance and fueling will occur regularly. | Water and soil pollution | NA |
| Accidents of hazardous materials | <ul style="list-style-type: none"> c. In case of spill, there should be a relevant department dealing with it. in accordance with emergency plan ; d. A road administration department should be established after the completion of the project which will administer the hazardous substances | Accidents cases | NA |
| Vehicle management | <ul style="list-style-type: none"> c. Vehicle with excessive noise should be prohibited to travel on the road. d. Public should be educated about the noise and the air pollution and how to keep the road clean. | Visual inspection | NA |

PROJECT PHOTOGRAPHS

PAVEMENT STRUCTURE



Lat 33; 59; 57.7, Lon 71; 24; 46.1

KM: 0 + 750 To 0 + 800 (RHS shoulder) Sub grade top layer compaction is in progress



Lat 33; 59; 52.9, Lon 71; 24; 12.1

KM: 1 + 625 To 1 + 775 (RHS Shoulder) Sub grade top layer preparation is in progress



**Lat 33; 59; 56.7, Lon 71; 23; 58
KM: 2 + 611 (Detour)**



**Lat 34; 0; 2.7, Lon 71; 23; 42
KM: 2 + 900 To 3 + 000 (RHS Half Width) Sub base top layer compaction is in progress**



Lat 34; 0; 2.4, Lon 71; 23; 12.5

KM: 3 + 650 To 3 + 750 (Full Width) Sub grade grading is in progress



Lat 34; 0; 8.7, Lon 71; 22; 44

KM: 4 + 365 M&E Consultants & FWO are measuring clear height of Bab e Khyber



Lat 34; 0; 7, Lon 71; 22; 34.9

KM: 4 + 625 To 4 + 700 (Sub base 1st layer) M&E Consultants inquired about the field control exercised by FWO field staff



Lat 34; 0; 7, Lon 71; 22; 34.9

KM: 4 + 625 To 4 + 700 (Full Width) Dumping of material for sub base 1st layer is in progress



Lat 34; 0; 16.5, Lon 71; 20; 49

KM: 7 + 450 To 7 + 550 (Full width) Sub base 1st layer compaction is in progress



Lat 34; 0; 19.2, Lon 71; 20; 28.6

KM: 7 + 925 To 8 + 075 Dumping/grading of material for sub grade top layer is in progress



Lat 34; 0; 19.2, Lon 71; 20; 28.6
KM: 7 + 950 To 8 + 050 (Sub grade Top layer) Interaction between M&E Consultants and FWO field staff



Lat 34; 0; 18.8, Lon 71; 20; 28.4
KM: 8 + 125 To 8 + 225 (Full Width) Sub base 1st layer compaction is in progress

CULVERTS



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



Lat 34; 0; 0, Lon 71; 23; 33.7
KM: 3 + 081 (Culvert) Leveling of foundation bed is in progress



Lat 34; 0; 8.7, Lon 71; 22; 44
KM: 4 + 480 (Culvert) Form work for lean concrete of abutment 2 is in progress



Lat 34; 0; 6.3, Lon 71; 22; 15.7
KM: 5 + 202 (Culvert) Stone masonry construction at abutment 1 is in progress



Lat 34; 0; 7.9, Lon 71; 21; 49.2

KM: 5 + 905 (Culvert) Interaction between USAID representative & M&E Consultants staff



Lat 34; 0; 7.9, Lon 71; 21; 49.2

KM: 5 + 905 (Culvert) Inspection of culvert by USAID representative



Lat 34; 0; 7.9, Lon 71; 21; 49.2
KM: 5 + 905 (Culvert) View of form work for concrete pad at abutment 1 & 2



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



Lat 34; 0; 8.723, Lon 71; 21; 27.733
KM: 6 + 191 (Culvert) Stone masonry construction of abutment 1 is in progress



Lat 34; 0; 8.723, Lon 71; 21; 27.733
KM: 6 + 191 (Culvert) M&E Consultants are inspecting Stone Masonry Construction



Lat 34; 0; 10.876, Lon 71; 21; 25.325
KM: 6 + 501 (Culvert) Stone masonry construction of abutment 2 is in progress



Lat 34; 0; 11.441, Lon 71; 21; 20.862
KM: 6 + 648 (Culvert) Stone masonry construction of abutment 2 is in progress



**Lat 34; 0; 13.295, Lon 71; 21; 11.898
KM: 6 + 883 (Culvert) Stone masonry construction of abutment 1 is in progress**



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

FIELD TESTING



Lat 34; 0; 1.7, Lon 71; 19; 27.8
KM: 9 + 000 Left side; Material Engineer M&E Consultants inspecting crush plant



Lat 34; 0; 6.33, Lon 71; 22; 15.785
KM: 5 + 202 FDT Test for Culvert foundation is in progress in the presence of M & E Lab Staff



Lat 34; 0; 13.4, Lon 71; 20; 58.7

KM: 7 + 250 To 7 + 350 (Full Width) Inspection of Sub base material by Material Engineer and Field Monitor, M&E Consultants



Lat 34; 0; 8.7, Lon 71; 22; 44

KM: 4 + 480 (Culvert) Inspection of stone masonry by Material Engineer M&E Consultants

PHOTOGRAPHS OF ENVIRONMENTAL COMPLIANCE MONITORING



Photo (1): KM: 6+501 Construction of Culvert



Photo (2): KM: 4 + 600 Construction of Culvert in Jamrud Bazar



Photo (3): KM: 6 + 883 Construction of Culvert



Photo (4): Room inside view of FWO Contractor Labor Camp



Photo (5): View of labor Camp (FWO)



Photo (6): KM: 6 + 000 Quarry area



Photo (7): KM: 7 + 700 New Plantation done by Forest department



Photo (8): KM: 5 + 630 Excavated Material dumped in graveyard



Photo (9): KM: 4 + 600 Standing water and closer of road due to construction of Culvert at Jamrud Bazar



Photo (10): KM 3 + 200 View of excavated shoulder near Total Perol pump



Photo (11): KM: 5 + 905 Stagnant water near Culvert construction



Photo (12): KM: 8 + 900 View of Dust at village Sur Kamar



Photo (13): KM: 6 + 050 Damaged PTCL cables



Photo (14): KM 3+200: Construction of Culvert



Photo (15): KM 4+600 Construction of Culvert in Jamrud Bazar



Photo (16): Km 4+650 Construction of Culvert



Photo (17): KM 5+905 Construction of Culvert



Photo (18): KM 6+883 Construction of Culvert



Photo (19): KM 6+190 View of Quarry area



Photo (20): KM 5+630 Excavated Material dumped in graveyard



Photo(21): Km..4+600) Standing water and closer of road due to construction of Culvert at Jamrud Bazar



Photo(22): KM 3+200 View of drain blocked near Petrol pump



Photo(23): KM 5+905 Stagnant water near Culvert construction



Photo(24) KM 3+200 View of Culvert construction without fence



Photo(25) KM 6+883 View of Culvert construction without fence



Photo(26): KM: 8+900 View of Dust at village Sur Kamar