AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 23

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0001	03-Sep-2006		

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
AFGHANISTAN ENGINEER DISTRICT US ARMY CORPS OF ENGINEERS KABUL APO AE 09356	W917PM	See Item 6	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W917PM-06-R-0077
	X	9B. DATED (SEE ITEM 11) 21-Aug-2006
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [ ] is extended, [X] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

DESIGN/CONSTRUCTION OF ROAD FROM TERIN KOWT TO DIHRAWUD

SEE CONTINUATION PAGES

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 04-Sep-2006

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

The following have been added by full text:

SUMMARY OF CHANGES

SECTION 00010 SOLICITATION FORM BID SCHEDULE is hereby deleted in its entirety and replaced therefore with the attached revised 00010 SECTION anotation “Encl. 1, Amend No. 0002.

SECTION 00150 DESIGN BUILD PROCESS is hereby deleted in its entirety and replaced therefore with the attached SECTION 00150 DESIGN BUILD PROCESS BEARING THE NOTATION “Encl 2, Amend No. 0002

SECTION 01010 SCOPE OF WORK is hereby deleted in its entirety and replaced therefore with the attached SECTION 01010 SCOPE OF WORK bearing the notation "Encl. 3, Amend. No. 0002.

SECTION 01015 TECHNICAL REQUIREMENTS is hereby deleted in its entirety and replaced therefore with the attached SECTION 01015 TECHNICAL REQUIREMENTS bearing the notation "Encl. 4, Amend. No. 0002.

Map attached (TRIN KOWT TO DIHRAWUD)

REVISED

SECTION 00010
PRICING SCHEDULE

The Contractor shall provide a price for all items

CLIN	Description	Qty	Unit	Unit Price	Total Amount

BASE PROPOSAL

0001. Design and Construct approximately 86 km of aggregate surfaced road from Tirin Kowt (65.86776 E, 32.62540 N) towards Oshay and stopping at Kilometer 86.

		QTY	U/I	UNIT PRICE	AMOUNT
0001AA.	Survey	1	LS	XXX	$_____
0001AB.	Design	1	LS	XXX	$_____
0001AC.	Construction	86	Km	$_____	$_____

TOTAL BASE PROPOSAL ITEMS $_____
(total of all above costs - includes design and construction)

OPTIONS

Option1:

0002.	Design and Construct approximately 24 km of aggregate surfaced road from Kilometer 86 to Oshay (65.58937 E, 32.91646 N).				
0002AA.	Survey	1	LS	XXX	$
0002AB.	Design	1	LS	XXX	$
0002AC.	Construction	24	Km	$	$

Option 2:

0003.	Pave Kilometer 0 to Kilometer 20 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	20	KM	$	$

Option 3:

0004.	Pave Kilometer 20 to Kilometer 40 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	20	KM	$	$

Option 4:

0005.	Pave Kilometer 40 to Kilometer 60 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	20	KM	$	$

Option 5:

0006.	Pave Kilometer 60 to Kilometer 80 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	20	KM	$	$

Option 6:

0007.	Pave Kilometer 80 to Kilometer 100 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	20	KM	$	$

Option 7:

0008.	Pave Kilometer 100 to Kilometer 110 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N)	10	KM	$	$

TOTAL OPTION ITEMS $_____
(total of all above costs - includes design and construction)

TOTAL PROPOSAL $_____

PROPOSAL SCHEDULE NOTES

1. Offeror shall submit prices on all items.

2. Only one contract for the entire schedule will be awarded under this solicitation. This project will be awarded as a firm fixed price contract. This Proposal Schedule is an accounting tool for allocating funds to applicable budget.

   Costs associated with this project shall include design and construction costs for building and utility preparation.

3. DESIGN COSTS DEFINITION

   Design costs shall consist of preparation of designs, plans, drawings, and specifications.

4. NON-DESIGN COSTS DEFINITION

   Non-design costs shall include the following: initial site visits; field, topographic, property, boundary, utility, and right-of-way surveys; subsurface explorations and borings; feasibility, functional, and economic studies and other investigations; flow gauging and model testing; preparation or verification of as-built drawings; preparation of general and development criteria; preparation of general and feature design memoranda; services of consultants where not specifically applied to the preparation of working drawings or specifications; construction phase services; models, renderings, or photographs of completed designs; reproduction of designs for review purposes; and travel and per diem allowances in connection with the above excludable services.

5. SEPARATION OF WORK

   All work for Design and Construction shall be included in all Proposal Items.

6. EVALUATION OF OPTIONS

   The Government will evaluate offers for pricing purposes by the Base Proposal. In addition prior to receipt of offers, the Government will determine the amount of funds available for the project. The low offeror shall be the Offeror that offers the lowest aggregate amount for the base proposal. *The Government is not obligated to exercise the options.*

7. EXERCISE OF OPTIONAL BID ITEMS

   Optional bid items (if any) may, at the option of the Government, be added to the contract at any time within 90 calendar days after award of Base Proposal.

END OF SECTION

REVISED

SECTION 00150
THE DESIGN/BUILD PROCESS

PART 1 - GENERAL

1. DESIGN/BUILD (DB) PROCESS

The road shall be designed and built by a single design-build (DB) contractor. The DB contractor may be a single firm or a team of firms that includes registered Engineers either employed by or subcontracted to the DB contractor. Licensing jurisdiction of Engineers of record shall be verifiable. The DB contractor is the Architect/Engineer-of-Record, whether the DB contractor uses registered engineers employed by its firm or subcontracts with independent architectural and engineering firm(s). The DB contractor is solely liable for design errors and/or omissions and must be insured as the designer against design errors and omissions.

2. OUTLINE DESCRIPTION OF THE DB PHASE

No work can begin on any phase of the process until an authorization Letter to Proceed for that phase is issued.

2.1 PROPOSAL PHASE

The Proposal Phase includes the period from the time from the issuance of the Request for Proposals (RFP) through the selection process and the final award of the DB contract.

The proposals to be submitted include a Management/Technical Proposal, a Preliminary Design Proposal, and a Cost/Price Proposal. The contents and organization of the proposal is described in SECTION 00110 - PROPOSAL PREPARATION. The Government will evaluate and award the DB contract to a single Offeror based upon the criteria which are outlined in SECTION 00120 - PROPOSAL EVALUATION AND CONTRACT AWARD.

2.2 DESIGN PHASE

The successful DB contractor shall develop and submit for review three submittals, 35%, 95% and final. The DB contractor is encouraged to develop and submit multiple cost saving proposals for innovative design alternatives.

2.2.1 The Design Phase will consist of three parts as follows:

a. Part 1 will be the basic services required to develop the first submittal which represents: topographical survey, 35% complete drawings and specifications for site preparation work, drainage construction, and structural diaphragm of all work and all other required construction documents.

A Pre-design meeting will be conducted to finalize and clarify technical information, and clarify other necessary information.

b. Part 2 shall include all design services required to complete the second design submittal (65%). Part 2 design shall not begin until an approval of the Part 1 submittal is issued. Comments from the Part 1 design shall be incorporated into the 65% design.

c. Part 3 shall include all design services required to complete the second design submittal (100%). Part 3 design shall not begin until an approval of the Part 2 submittal is issued. Comments from the Part 2

design shall be incorporated into the 100% design.

3. BUILD PHASE

The Build Phase will be initiated by an authorization letter.

The authorization letter will be provided separately by the Contracting Officer for each phase of the work. The Government may give the DB Contractor authorization for the Build Phase for portions of the work following review and approval of the First Design Submittal.

Weekly coordination meetings will be held at which, as a minimum, the DB Contractor's Project Manager, a representative of the Designer, the site Superintendent, and the Contractor's Quality Control Manager shall be present.

4. PROJECT SCHEDULE:

The following is a suggested internal design schedule and is subject to modification by the Offeror to suit their particular method of operation. Overall time constraints are required and cannot be changed except by contract modification. Prospective offerors shall be required to submit a complete schedule for design and construction that meets or exceeds the overall time goals of the Government for this project.

Notice to Proceed	Following Award of Contract (upon written notification)
Design Phase, Part 1	Basic Services Pre-design Meeting within 7 days from Award of Contract
First Design Submittal Due ***(35% completion level)***	45 days following Award of Contract
Submittal Review Conference	Within 5 days after 35% ***(location TBD)*** submittal review is completed
Authorization to Commence Design Phase Part 2	Upon approval of first design submittal
Build Phase authorization to commence	Upon approval of corrected first design submittal site preparation, and drainage construction
Design Phase, Part 2 Second Design Submittal Due ***(65% completion level)***	30 days from Authorization for Design Phase, Part 2
Submittal Review Conference	7 days after 65% ***(location TBD)*** review submittal is completed
Submit 100% Design for Review and Approval	Within 30 days following 2nd review
Build Phase Authorization for	

Remainder of Work Upon approval of final submittal
See Section 01010 for Performance Periods

~~Total Design and Construction Period 365 calendar days (performance period includes design and construction phases)~~

All days are in calendar days.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION (NOT APPLICABLE)

--End of Section--

"Encl 2, Amend No. 0002

REVISED

SECTION 01010
SCOPE OF WORK

1. GENERAL

The scope of this project includes the design and construction of 110 km of road from Tirin Kowt (65.86776 E, 32.62540 N) through Dihrawud (65.45670 E, 32.60890 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Base Proposal:

Design and construct 86 km of aggregate surfaced road beginning at Tirin Kowt (65.86776 E, 32.62540 N) through Dihrawud (65.45670 E, 32.60890 N), continuing towards Oshay and stopping at Kilometer 86. See road alignment map. The final improved state for the road shall be 6m wide with 1m shoulders, surfaced with a minimum 100mm crushed aggregate surface course, compacted to 95% maximum proctor density.

Approximately 50 1-meter concrete box culverts and 40 2-meter concrete box culverts shall be installed at deep wadi crossings. Additional culverts shall be installed as needed for water drainage under raised road sections. Contractor shall design and construct one bridge, approximately 125m long. Approximately 75 at-grade concrete wadi crossings shall be constructed (approximately 2100 m total length plus approaches). **Contractor is responsible for verifying all quantities and locations and to provide complete design for drainage and road features**.

Option 1:

Design and construct 24 km of aggregate surfaced road from Kilometer 86, out of Tirin Kowt, to Oshay (65.58937 E, 32.91646 N). See road alignment map. The final improved state for the road shall be 6m wide with 1m shoulders, and surfaced with a minimum 100mm crushed aggregate surface course, compacted to 95% maximum proctor density.

Approximately 26 1-meter concrete box culverts and 20 2-meter concrete box culverts shall be installed at deep wadi crossings. Additional culverts shall be installed as needed for water drainage under raised road sections.

Approximately 30 at-grade concrete wadi crossings shall be constructed (approximately 900 m total length plus approaches). **Contractor is responsible for verifying all quantities and locations and to provide complete design for drainage and road features**.

Option 2:

Design asphalt cement road surfacing and pave Kilometer 0 to Kilometer 20 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Option 3:

Design asphalt cement road surfacing and pave Kilometer 20 to Kilometer 40 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Option 4:

Design asphalt cement road surfacing and pave Kilometer 40 to Kilometer 60 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Option 5:

Design asphalt cement road surfacing and pave Kilometer 60 to Kilometer 80 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Option 6:

Design asphalt cement road surfacing and pave Kilometer 80 to Kilometer 100 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

Option 7:

Design asphalt cement road surfacing and pave Kilometer 100 to Kilometer 110 from Tirin Kowt (65.86776 E, 32.62540 N) to Oshay (65.58937 E, 32.91646 N) in the Uruzgan Province of Afghanistan.

General:

The current condition of the road is a combination of gravel-surfaced road and unimproved and ranges from 2m to 6m in width. Most of the road alignment is across flat terrain (see photos in Appendix C) with some road alignment through rocky hills. Road embankment shall be built up a minimum ½ m above existing grade with clean, well graded fill material compacted to 90% maximum density. New road embankment shall be surfaced with 100mm well graded crushed aggregate surface course compacted to 95% maximum density. Asphalt paved road sections shall be 6m wide asphalt pavement wearing course (minimum 50mm thick) with 1m wide aggregate base course shoulders, compacted to 95% maximum density and shaped to drain. Road shall be realigned to straighten curves as much as possible and shall be constructed with good drainage and erosion protection. High erosion areas such as shallow drainage crossings and wadis shall be armored with a hard surfaced crossing such as an at-grade concrete crossing structure. Erosion structures shall be constructed in slide and flood areas to prevent road blockage and wash-out. Rock walls or guard rail shall be constructed at road edges with steep dropoffs and sharp curves for traffic safety. Several portions of the road follow a river bed or wadi and shall be re-aligned and constructed out of the river bed or wadi at an elevation that will not flood. Bridges, culverts, gabion crossings, concrete wadi crossings or other related structures shall be constructed as required over rivers and wadis that contain water and deep drainages that fill with water during rainy season. Existing bridges shall be armored with rock and gabion baskets around the piers. Additionally, gravel deposits that have collected under the bridges shall be excavated out of the wadi to allow clear water passage. Mountainous sections of road have steeper and longer grades and may require significant drainage and slope protection. Quantities provided are approximate.

Road alignment shall be determined by contractor and shall be designed to straighten curves and provide good drainage and erosion protection. Drainage ditching is required on both sides of the road and ditches shall terminate

in areas where water can drain away from road structure. Hydrology of the region shall be used to determine drainage ditch and structure sizes.

2. LOCATION

The road project is located in the Uruzgan Province of Afghanistan, as shown on attached map.

3. MINES CLEARING AND UNEXPLODED ORDNANCE (UXO)

It is not expected that mines or UXO are present in this area. It is the Contractor's responsibility to de-mine and obtain certificates of UXO clearance prior to bringing workers and or equipment on to the project site. If, during construction activities, UXO is unexpectedly discovered or uncovered, or suspected to be present, all operations shall cease immediately until item is removed. If at any time during contract performance, the Contractor becomes aware of or encounters UXO or potential UXO, the Contractor shall immediately safely remove the item. The Contractor assumes the risk of any and all personal injury, property damage or other liability, arising out of and resulting from any Contractor action hereunder.

4. SUMMARY OF WORK

4.1 Contractor Requirements

The work within this contract shall meet and be constructed in accordance Ministry of Public Works, Standard Road Design, safety and security standards within a design-construct contract and shall be in accordance with the requirements stated in Section 01015: TECHNICAL REQUIREMENTS and others sections herein. Refer to Section 01015 for further direction.

Contractor shall report to the Contracting Officer updated progress of the project in weekly progress reports that include, but are not limited to, work being performed, quantity of blasting and excavation, current location of ongoing construction, photographs, climate data, equipment on site, safety issues, security issues, number of workers and type of work being performed.

The contractor is encouraged to use Afghan labor and subcontractors to the maximum extent possible commensurate with technical, security or other requirements or necessary considerations.

4.1.1 Design Charrette

The Contractor awarded this contract shall schedule a one-day (minimum) design Charrette, at approximately 10% design, with the Corps of Engineers and other stakeholders identified by the Contracting Officer. The charrette shall ensure the fine points of the road alignment, road design, structures and drainage design are finalized and agreed on by all parties before going to 100% design and construction documents. The design team shall consider local and innovative methods of design, planning and construction to ensure best value and best application for the reconstructed roads.

4.1.2 Roads and Pavements

Road design and construction shall be in accordance with the Ministry of Rural Rehabilitation and Development and Ministry of Public Works Standards, latest edition, and based upon criteria included in Section 01015. Contractor is responsible for all required soil testing and surveying for pavement, surfacing and road design. The design requires a comprehensive topographic survey.

4.1.3 Construction

Construction specifications shall be submitted to the Government for approval and shall be in accordance with technical references in this contract. The Contractor shall submit a plan for maintaining traffic flow during road construction.

4.1.4 Security

Contractor is responsible to provide security protection during construction to safeguard his employees and equipment.

5. COMPLETION OF WORK

Liquidated damages in the amount of $350 for every calendar day of delay shall be assessed and charged to the Contractor.

6. PERFORMANCE PERIOD: Performance period for the subject project is as follows. Option item durations are in addition to the base proposal duration. All durations begin at receipt of Notice to Proceed:

Base: 650 calendar days

Option 1: 70 calendar days

Option 2: 0 calendar days

Option 3: 0 calendar days

Option 4: 0 calendar days

Option 5: 0 calendar days

Option 6: 0 calendar days

Option 7: 0 calendar days

Total performance period with all awarded options is 720 days.

7. WARRANTY

Contractor shall warranty all work for a period of one year after final acceptance of the project. Warranty work shall include grading, repairing and upgrading eroded areas, structures and drainages as necessary to bring the road back to 100% serviceability.

8. REFERENCES

Refer to Section 01015 for required references.

End of Section – Encl. 3, Amend. No. 0002

REVISED

SECTION 01015
TECHNICAL REQUIREMENTS

1. GENERAL

1.1 The Contractor's design and construction must comply with technical requirements contained herein. The Contractor shall provide design and construction using the best blend of cost, construction efficiency, system durability, ease of maintenance and environmental compatibility.

1.2 These design and product requirements are minimum requirements. The Contractor is encouraged to propose alternate design or products (equipment and material) that are more commonly used in the region; will be equally or more cost effective or allow for more timely completion, but furnish the same system durability, ease of maintenance and environmental compatibility. The Contractor will be required to submit information as requested by the Contracting Officer to make a comparison of the proposed alternate. All variations must be approved by the Contracting Officer.

1.3 ASBESTOS CONTAINING MATERIALS

Asbestos containing material (ACM) shall not be used in the design and construction of this project. If no other material is available which will perform the required function or where the use of other material would be cost prohibitive, a waiver for the use of asbestos containing materials must be obtained from the Contracting Officer.

1.4 SAFETY

1.4.1. Unexploded Ordnance (UXO) Safety Support During Construction

It is not expected that mines or UXO are present on the project site. It is the responsibility of the Contractor to obtain certificates of UXO area clearance prior to bringing workers and or equipment on to a construction site. This does not relieve the contractor from continued responsibility of the Contractor to be aware of the risk of encountering UXO and to take all actions necessary to assure a safe work area to perform the requirements of this contract. If at any time during contract performance, the Contractor becomes aware of or encounters UXO or potential UXO, the Contractor shall immediately stop work at the site of the encounter, move to a safe location, notify the Contracting Officer and safely remove the item. Contractor shall mitigate any delays to scheduled or unscheduled contract work. The Contractor assumes the risk of any and all personal injury, property damage or other liability, arising out of and resulting from any Contractor action hereunder.

1.4.2 Explosives Safety

1.4.2.1 General Safety Considerations

General safety considerations applicable to personnel, both essential and non-essential, at project sites where UXO may be encountered include:

a. Do not carry fire or spark-producing devices.
b. Do not conduct explosive or explosive-related operations without approved procedures and proper supervision and UXO safety support.
c. Do not become careless by reason of familiarity with UXO or the reported probability level of UXO contamination.
d. Do not conduct explosive or potentially explosive operations during inclement weather.
e. Avoid contact with UXO except during UXO clearance operations.
f. Conduct UXO-related operations during daylight hours only.

g. Employ the "buddy system" at all times.

1.4.2.2 Activity Hazard Analysis (AHA) Briefings

a. Activity Hazard Analysis's shall be prepared in accordance with the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1.
b. Hazard analyses will be prepared and briefed by personnel that are knowledgeable in UXO and explosives safety standards and requirements. These personnel should understand the specific operational requirement and hazard analysis methodologies. A hazard analysis will be performed for each activity to determine the significance of any potential explosive-related hazards. Explosive residues may be discovered or exposed during UXO operations in the form of powder or various granular and powder based pellets. These contaminants can enter the body through the skin or by ingestion if proper personal hygiene practices are not followed. Explosive fillers such as white phosphorus are dangerously reactive in air and a fire hazard. Acute exposure can result in serious injury to the skin, eyes, and mucous membranes.

Safety requirements (or alternatives) that will either eliminate the identified hazards, mitigate or control them to reduce the associated risks to an acceptable level will be developed. The adequacy of the operational and support procedures that will be implemented to eliminate, control, or abate identified hazards or risks will then be evaluated and a second risk assessment completed to verify that a satisfactory safety level has been achieved.

1.4.3 Notification of Noncompliance

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall make no part of the time lost due to such stop orders the subject of claim for extension of time or for excess costs or damages.

1.5 LIMITATION OF WORKING SPACE

The Contractor shall confine his operations strictly within the boundaries of the site. Workmen will not be permitted to trespass on adjoining property. Any operations or use of space outside the boundaries of the site shall be by arrangement with all interested parties. It must be emphasized that the Contractor must take all practical steps to prevent his workmen from entering adjoining property and in the event of trespass occurring the Contractor will be held entirely responsible.

1.6 TEMPORARY STRUCTURES

The Contractor shall erect suitable temporary fences, lighting, and necessary structures to safeguard his equipment, materials and plant against damage or theft and for the protection of the general public and shall adequately maintain the same throughout the course of the contract.

1.7 SUBCONTRACTORS

Compliance with the provisions of this section by subcontractors will be the responsibility of the contractor.

1.8 List of Codes and Technical Criteria:

The following codes and technical criteria and those referenced therein shall be required for this project. ***References within each reference below shall be required and adhered to.*** This list is not exhaustive and is not necessarily complete.

Ministry of Rural Rehabilitation and Development and Ministry of Public Works Standards, latest edition

AASHTO – American Association of State Highway and Transportation Officials
AASHTO – A Policy on Geometric Design of Highways and Streets, latest edition.
AASHTO – Manual on Uniform Traffic Control Devices, latest edition.
AASHTO – Model Drainage Manual
ASTM - American Society for Testing and Materials
International Mine Action Standards, latest edition; see http://www.mineactionstandards.org for copy of standards.

United Facilities Critieria:

UFC 3-230-17FA Design: Drainage for Areas Other than Airfields

UFC 3-230-18FA Design: General Provisions and Geometric Design for Roads, Streets, Walks, and Open Storage Areas

UFC 3-250-01FA Design: Pavement Design for Roads, Streets, Walks and Open Storage Areas

UFC 3-250-03 Design: Standard Practice Manual for Flexible Pavements

UFC 3-250-04FA Design: Standard Practice for Concrete Pavements

UFC 3-250-09FA Design: Aggregate Surfaced Roads and Airfields Areas

UFC 3-320-05FA Design: Structural Design Criteria for Structures Other than Buildings

EM 1110-3-136 Drainage and Erosion Control - Mobilization Construction

The publications to be taken into consideration shall be those of the most recent editions. Standards other than those mentioned above may be accepted if the standards chosen are internationally recognized and meet the minimum requirements of the specified standards. The Contractor shall be prepared to submit proof of this if requested by the Contracting Officer.

2. ROAD DEVELOPMENT:

2.1 GENERAL

The project includes furnishing all materials, equipment and labor for constructing roads, temporary detours, storm water drainage ditches, bridges, culverts, erosion control structures, and retaining structures, as applicable, and connecting to the existing road networks. Traffic control required to safely navigate traffic around the construction areas shall be the responsibility of the Contractor.

2.2 ENVIRONMENTAL PROTECTION

2.2.1 Applicable Regulations

The Contractor shall comply with all Host Nation laws, rules, regulations or standards concerning environmental pollution control and abatement with regard to discharge of liquid waste into natural streams or manmade channels. The contractor shall review host nation and U.S. Government environmental regulations with the contracting officer prior to design and discharge of any liquid wastes into natural streams or manmade channels.

2.2.2 Notification

The Contracting Officer will notify the Contractor in writing of any observed non-compliance with the foregoing provisions. The Contractor shall immediately take corrective action. If the Contractor fails or refuses to promptly take corrective action, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No extension of time or damages will be awarded to the Contractor unless it was later determined that the Contractor was in compliance.

2.2.3 Spillages

Measures shall be taken to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials from polluting the construction site and surrounding area.

2.2.4 Disposal

Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., shall be taken to a dumpsite off site and subject to the approval of the Contracting Officer.

2.3 CIVIL DESIGN DEVELOPMENT

The plan shall show road alignment, geometric design of the roads, including applicable dimensions and materials to be used for all pavements, utilities, retaining structures, erosion control structures, drainage, culverts, bridges, etc. Required facilities are described in the following sections of this specification.

2.3.2 Roads

~~Contractor shall provide design and construction necessary to 45 km of road from Tirin Kowt (65º 52' 3.93" E, 32º 37' 31.43" N) to Dihrawud (65º27'24.13" E, 32º36'32.04" N) in the Uruzgan Province of Afghanistan. The current condition of the road is a combination of gravel-surfaced road and unimproved and ranges from 2m to 6m in width.~~

The final improved state for the road shall consist of a smooth, compacted crushed aggregate surface 6m wide with 1m shoulders. Asphalt paved road sections shall be 6m wide asphalt pavement wearing course (minimum 50mm thick) with 1m wide aggregate base course shoulders, compacted to 95% maximum density. Road alignment shall be straightened as much as possible. The road shall be designed and constructed to support a minimum 7,000 kg vehicle with two axles. Road shall be built up above existing grade for storm water protection. Poor subgrade material shall be removed and replaced with clean, compactable, gravel. Portions of the road that follow a river bed or wadi shall be re-aligned, built up and constructed out of the river or wadi at an elevation that will not flood when the river is filled with water. The maximum road grade shall be 12%. A 12% grade may be sustained for a maximum distance of 100m. Contractor shall design road at an 8% grade or less as much as possible. Contractor shall eliminate curves, widen curves and straighten road alignment as much as possible. Switchback radii shall not be less than 20m. Switchback grades shall be reduced as much as possible and shall have wider road sections to allow vehicles to maneuver easily around the turns.

Speed bumps shall be designed and installed approaching highly populated areas where the local population and businesses are located immediately adjacent to the road. Speed bumps shall also be installed on the approach to police and ANA check points. Speed bumps on paved roads shall be marked with high visibility traffic paint.

Guard rail, rock walls or large rocks shall be located at road edges with steep dropoffs and sharp curves to provide traffic safety without obstructing traffic travel area. Railings or guard rail shall be constructed on bridge structures.

2.3.3 Bridges, Drainage, Slope Protection and Site Grading Plan

The contractor shall provide all necessary hydrological data, drainage calculations, drainage design and grading to insure adequate drainage so that no areas will be flooded due to a rainfall of a 10-year frequency. Drainage of the area should be compatible with the existing terrain. A site grading plan shall be designed that provides positive drainage and minimizes the requirement for major structures in a cost effective manner.

Roads shall be constructed with a cross-slope or crown and drainage ditches along the edges to allow good drainage and surface protection. Water drainages in populated areas shall not interfere with access to buildings and roads. Storm drains in populated areas shall be buried pipes or gentle swales that can be crossed with a vehicle. Bridges, culverts, gabion crossings, at-grade concrete wadi crossings or other related structures shall be constructed as required over rivers and wadis that contain water and deep drainages that fill with water during rainy season. Road sections that cross wide drainages, flood areas or wadis shall be designed and constructed with additional water and erosion control measures to allow the road to be passable during rain and flood conditions. High erosion areas such as shallow drainage crossings and wadis shall be armored with a hard surfaced crossing such as a reinforced concrete crossing slab. Storm water culverts with wing walls shall be installed as needed. The use of culvert pipes less than 1000mm in diameter shall be avoided. Erosion structures shall be constructed in slide and flood areas to prevent road blockage and wash-out. Mountainous sections of road have steeper and longer grades and may require significant drainage and slope protection. High roadside embankments shall be cut and sloped back for stability (see attached excavation safety requirement). Embankments at approaches to curves and wadi crossings shall be cut and sloped to allow good sight distance. Blind corners shall be eliminated where oncoming traffic cannot be seen to allow sight distance for approaching traffic a minimum distance of 50m.
Asphalt paved roads that pass through built up populated areas where buildings are located within 7 meters of the road edge shall be paved out to the building edges and shall incorporate a gentle swale, covered storm drain or culvert pipe at the road edge to collect storm water and still allow vehicle access. Culverts shall be provided at all roadway and driveway crossings.

Both aggregate and asphalt paved roads shall be shouldered with well-graded crushed aggregate compacted to 95% maximum proctor density and shaped to drain.

Built up road sections (with rock or structures) shall be structurally sound to meet seismic requirements.

All site plans and master plans shall be drawn in the following projection and datum for incorporation into the U.S. Army Corps of Engineers GIS system: WGS 1984 UTM Zone 42 N

3. NOT USED

4. STRUCTURAL

4.1 GENERAL

The project may include erosion control structures, water diversion structures, box culverts, water crossing pavements, retaining walls or bridge structures.

4.2 DESIGN

Design shall be performed and design documents signed by a registered professional engineer. Calculations shall be in (SI (metric) units of measurements.

Design documents shall include, **at a minimum,** the following:

a. Complete topographic survey of existing road alignment out to 15m on both sides of the road centerline. Survey drawings shall show contours, elevations and road stationing as well as all facilities, utilities, buildings, drainages and any other features located in survey area. Contours shall be drawn at minimum 0.5m intervals. Stationing shall be set at intervals of no less than 50m. Road profile drawings shall also be provided.
b. Design layout drawings with stationing, road curves, drainage ditches, designed slopes adjacent to road, cut and fill areas, road transitions, drainage structures (size and location), erosion structures, crossing structures

and new road alignment. Dimensions and locations of all designed features and structures shall be shown. Design drawings shall show contours and stationing as well as all facilities, utilities, buildings, drainages and any other features located in the road project area. Contours shall be drawn at minimum 0.5m intervals. Centerline stationing shall be set at intervals of no less than 50m.

c. Cross section drawings at each station and additional cross sections as needed to show specific road and drainage features. Cross sections shall provide design slope angles for road bed and road drainage and design slopes for areas adjacent to the road alignment.
d. Profile drawings of designed alignment.
e. Overall site key map that depicts project design area with respect to road system.
f. Legends and notes
g. Detail drawings for all structures, erosion control, drainage ditching, guard rail and any other facilities incorporated into the design. A typical section shall be included that describes the angle a slope must be laid back from the road based on the material type. Slopes shall be designed to be stable or shall be designed with retaining structures. Details of erosion structures and bridge structures shall include engineered foundations for anchoring and materials such as cement type and mix.
h. All components of the structures shall be designed and constructed to support safely all loads without exceeding the allowable stress for the materials of construction in the structural members and connections.
i. Design analysis with geotechnical information, identification of in-situ material, selection of road construction materials, type, analysis of structures and other road features. Design analysis shall include local hydrology calculations used to determine adequacy or upgrade of existing culverts and drainages, location of new drainage structures. Types of drainage structures to be used and size calculations to provide adequate capacity shall be included.
j. Complete specifications for materials, techniques and equipment to be used in constructing the road, including mortar mixes, road gravels, aggregates, etc.

4.3 DEAD AND LIVE LOADS

Dead loads consist of the weight of all materials of construction incorporated in the structures. Live loads used for design shall be in accordance with the American Society of Civil Engineers, ASCE STANDARD, and Minimum Design Loads for Buildings and Other Structures, ASCE 7, edition as referenced herein.

4.4 WIND LOADS

Wind loads shall be calculated in accordance with ASCE 7 using a "3-second gust" wind speed of 125 km/hr. All facilities shall be classified as a minimum of Category II in accordance with Table 1-1 in ASCE 7, referenced herein.

4.5 SEISMIC

Structures and all parts thereof shall be designed for Seismic Zone 4. The computation of seismic loads shall be based on International Building Code (2000), using Spectral Ordinates S_s = 1.65g & S_1 = .75g, Use Group I, Site Class D, Importance Factor I = 1.0.

4.6 CONSTRUCTION

Construction requirements include the following as a **minimum**:

a. Equipment shall be in good working order and shall be operated safely at all times. See Appendix B for additional safety requirements.
b. Crusher material shall be hard rock. Shale, sandstone, mudstone and soft rock shall not be used for crushed material product.
c. Cement and mortar mixes shall be mixed proportionally as designed with a cement mixer. If cement is hand mixed, it shall be measured carefully and kept segregated from the adjacent ground area to prevent contamination.
d. All rock structures shall be mortared completely between each rock. Mortar shall not be allowed to dry out during the construction process.

e. Dry-stacked rock construction is not acceptable. All erosion control walls and structural elements constructed with rock shall be fully mortared. Loose rip rap without mortar may be used only for river embankment stabilization.

f. Mortar shall be a mix, by volume, of 1 part cement to 3 parts of damp, loose mortar sand. Enough water shall be added to make the mortar a workable consistency that is not too dry. Dried out mortar shall be discarded and shall not be re-used.

g. Road embankments adjacent to rivers shall be armored to prevent erosion.

4.7 NOT USED

4.8 STRUCTURAL STEEL

Structural steel shall be designed and constructed in accordance with the provisions of American Institute of Steel Construction (AISC). Design of cold-formed steel structural members shall be in accordance with the provisions of American Iron and Steel Institute (AISI), Specifications for Design of Cold-Formed Steel Structural Members.

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4.9 NOT USED

4.10 NOT USED

4.11 NOT USED

5. GEOTECHNICAL

Existing geotechnical information is not available for the road sites included in the project. Any site-specific geotechnical data required to develop foundations, materials, earthwork, and other geotechnical related design and construction activities for this project shall be the Contractor's responsibility. The Contractor shall develop all pertinent geotechnical design and construction parameters by appropriate field and laboratory investigations and analyses.

END OF SECTION

"Encl. 4, Amend. No. 0002

Road
Dihrawud to Trin Kot

Dihrawud

65.45670 E
32.60890 N

Trin Kot

65.86776 E
32.62540 N

Nesh

Legend

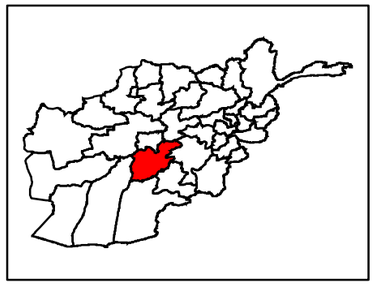
- Province Centers
- District Centers
- Settlements

Roads

- Primary
- Secondary
- Tertiary
- Dihrawud to Trin Kot
- Province Boundary
- District Boundary

N
W E
S

4,000 2,000 0 4,000 Meters



Afghanistan Engineer District
17 August, 2006 (KM)
Desktop/GIS Data/M.Zumstein_Roads