



**ROADS AND FLEET MANAGEMENT DEPARTMENT**

**TENDER NO. KWS/OT/R&F/40/2013-2014**

**ROUTINE MAINTENANCE OF**

**SALA- LANGO MBAYA ROAD (C103), & BACHUMA –SOBO ROAD (E683)**

**IN**

**TSAVO EAST NATIONAL PARK**

**Invitation to Tender  
Instruction to Tenderers  
Technical Evaluation Criteria  
Form of Tender  
Appendix to Form of Tender  
Form of Tender Security  
Registration and Compliances Documents  
Schedules of Supplementary Information  
Form of Agreement  
Form of Performance Security  
Conditions of Contract  
Drawings  
Specifications**

**NOVEMBER 2013**

**HEAD,ROADS AND FLEET MANAGEMENT,  
KENYA WILDLIFE SERVICE,  
P.O.BOX 40241,  
NAIROBI**

**DIRECTOR,  
KENYA WILDLIFE SERVICE,  
P.O.BOX 40241.  
NAIROBI**

**SECTION I**  
**INVITATION TO TENDER**

Ref: KWS/OT/R&F/40/2013-2014

Date: 5<sup>th</sup> November 2013

Dear Sir,

**INVITATION TO BID FOR ROUTINE MAINTENANCE WORKS FOR SALA- LANGO MBAYA ROAD (C103), & BACHUMA –SOBO ROAD (E683). TENDER NO. KWS/OT/R&F/40/2013-2014.**

Kenya Wildlife Service (KWS) has received funds from the Kenya Roads Board and intends to carry out routine maintenance on the above road in Tsavo East National Park. The scope of work is detailed in the tender document.

KWS now invites eligible contractors to bid for the Works. Eligible contractors are those registered as road works contractors by the National Construction Authority, **category NCA 7 and above**. Bidders will also be required to meet the mandatory eligibility requirements as listed in the instruction to bidders.

Tender documents with detailed information can be **downloaded for free** from the KWS Website: [www.kws.go.ke](http://www.kws.go.ke) through the link <http://www.kws.go.ke/info/tenders.html>. The documents can also be obtained from the Procurement Office after payment of a non-refundable fee of **Ksh.1, 000.00** payable at the cash office in KWS Headquarters which is open between 9.00am and 4.00pm during normal working days. Further information can be obtained from the procurement office, KWS Headquarters, Lang'ata Road, Tel: 0726610508/9, 0735663421, e-mail: hps@kws.go.ke.

Bidders are notified that there will be a **MANDATORY** organized pre-tender site visit on the dates and assembly venues indicated in the advertisement for invitation to tender at stated times.

Each bid should be accompanied with a bid security of **Ksh 150,000 in** the form cash, bank guarantee, insurance company guarantee from PPOA-approved insurance companies, letters of credit, and deposit taking microfinance institutions, SACCO societies, Youth Enterprise Development Fund or Women Enterprise Development Fund issued in a freely convertible currency and in the standard format provided herein the tender document.

Bidders can only submit up to a maximum of two bids which have to be in the same park. Bidders submitting more than one bid from different parks will be **disqualified**. Bidders having ongoing works with KWS that have not been substantially completed will not be considered for award.

The complete tenders enclosed in sealed envelopes clearly marked with the appropriate tender number and road name shall be submitted at KWS Headquarters, Langata Road, and deposited in the Tender Box located at the Main Reception on or before **12.00 noon on 20<sup>th</sup> November 2013**. Opening of the Tenders will take place immediately thereafter in the KWS Conference Room in the presence of bidders representatives who wish to attend.

Head- Supply Chain Management  
**FOR: DIRECTOR**

**SECTION II**  
**INSTRUCTIONS TO TENDERERS**

## **INSTRUCTION TO TENDERERS**

Note: The tenderer must comply with the following conditions and instructions and failure to do so is liable to result in rejection of the tender.

### **A GENERAL**

#### **1. Definitions**

- (a) “Tenderer” means any persons, partnership firm or company submitting a sum or sums in the Bills of Quantities in accordance with the Instructions to Tenderers, Conditions of Contract Parts I and II, Specifications, Drawings and Bills of Quantities for the work contemplated, acting directly or through a legally appointed representative.
- (b) “Approved tenderer” means the tenderer who is approved by the Employer
- (c) Any noun or adjective derived from the word “tender” shall be read and construed to mean the corresponding form of the noun or adjective “bid”. Any conjugation of the verb “tender” shall be read and construed to mean the corresponding form of the verb “bid.”
- (d) The “Employer” is the Director, Kenya Wildlife Service.

#### **2. Eligibility and Qualification Requirements**

##### **2.1 Eligibility requirements**

- a) The invitation to Tender is open to all eligible road contractors. Only Tenders from eligible and qualified Tenderers will be considered for award of Contract.
- b) Pursuant to clause 2.1 (a) above the following shall be provided.
  - i) Certified copies of Certificate of incorporation
  - ii) Certified copies of valid tax compliance certificate
  - iii) Certified copies of proof of registration with the National Construction Authority as a roads contractor under category NCA 7 and above.
  - iv) Signed Form of Bid
  - v) Completed Bills of Quantities
  - vi) Valid Bid Security
  - vii) Sworn affidavit on litigation history
  - viii) Properly bound, marked and Sealed document
  - ix) Completed Form of Power of Attorney
  - x) Signing of Attendance Register and Declaration of knowledge of site signed by the Bidder

- c) A firm debarred from participating in Public Procurement by the Public Procurement Directorate shall not be eligible to bid during the period of time determined.

## 2.2 Qualification Requirements

To be qualified for award of Contract, the tenderer shall provide evidence satisfactory to the Employer of their eligibility under Sub clause 2.1 above and of their capability and adequacy of resources to effectively carry out the subject Contract. To this end, the tenderer shall provide the following information among others as per the Schedule of Supplementary Information:-

- (a) Major items of construction plant and equipment proposed for use in carrying out the Contract. Only reliable plant in good working order and suitable for the work required of it shall be shown on this schedule. The tenderer will also indicate on this schedule when each item will be available on the Works. Included also should be the evidence that the contractor owns or can access the minimum equipment or comparable for the works.
- (b) The qualifications and experience of key personnel proposed for administration and execution of the contract, both on and off site.
  - i. Site Agent with at least Ordinary Diploma in Civil Engineering with minimum Five (5) years experience in road works. Attach certified copy of qualification certificate and a signed current CV.
  - ii. A foreman with at least Ordinary Diploma Civil Engineering/Building and Construction with minimum 3 years experience in road works. Attach certified copy of qualification certificate and a signed current CV.
  - iii. A supervisor with at least Road Construction Craft Course with minimum 3 years experience in road works. Attach certified copy of qualification certificate and a signed current CV.
- (c) Details of experience and past performance of the tenderer on the works of a similar nature and details of current work on hand and other contractual commitments as required.
  - i) Participation as a contractor, management contractor or subcontractor, in at least *two (2) contracts for the last three(3) Years , each with a minimum value at least Kshs 7.5 Million (Kenya Shillings Seven Million Five Hundred Thousand Only)*. The projects must have been successfully or substantially completed and that are similar in scope, physical size, complexity, methods/technology or other characteristics as described in in section IV of the bid documents.
  - ii) Minimum Construction Turnover. Minimum construction turnover of **KShs.50 Million**, calculated as total certified payments received for contracts in progress or completed, within the last Five [5] years in the role of contractor, subcontractor, or management contractor prior to the applications submission deadline
- (d) Details of financial capability i.e certified audited accounts for the last two (2) years, certified copies of last Six (6) month bank statement, and letter of line of credit. The bidder should demonstrate capacity to have,
  - i) Current financial soundness and bidder's long-term profitability.
  - ii) Cash flow at least Kshs 3 million or equivalent positive working capital, and
  - iii) Access to or availability of financial resources such as liquid assets, unencumbered real estate, and line of credit 3 Million. If a line of credit is provided the letter of line of credit must be current to the last **one (1)** month.
- (e) Details of Non-performance of contract and any current litigation or arbitration proceedings in which the tenderer is involved as one of the parties within the last Three (3) years prior to the dead line of the tender submission, based on all information on fully settled disputes or litigation. A sworn affidavit must be provided by the bidder

A fully settled dispute is one that has been resolved in accordance with the dispute resolution mechanism under the respective contract, and where all appeal instances available to the bidder. All pending litigation shall in total not represent more than fifty percent (50%) of the Applicant's net worth and shall be treated as resolved against the Applicant

### 2.3 Joint Ventures and Sub contracting

- (a) Joint ventures for the purpose of bidding will **NOT** be allowed
- (b) Sub –contracting of works will not be allowed

### 3. Cost of Tendering

- 3.1 The Tenderer shall bear all costs associated with the preparation and submission of his tender and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.
- 3.2 The price to be charged for the tender document shall be Kshs.1,000/= for tenders issued in hard copy and free for tenders downloaded from the website.
- 3.3 The procuring entity shall allow the tenderer to view the tender document free of charge before purchase.

### 4. Site Visit

- 4.1. There will be **MANDATORY** organized site visit as indicated in the invitation to bidders and a record of attendance must be signed by all participants. Each tenderer must dully complete a **Declaration of Tenderer's Knowledge of site**, which will be treated as the certificate of site visit.
- 4.2. The bidder may make further site visit on their own to the Park where he is bidding The tenderer and any of his personnel or agents will be granted permission by the Employer to enter upon premises and lands for the purpose of such inspection, but only upon the express condition that the tenderer, his personnel or agents, will release and indemnify the Employer from and against all liability in respect of, and will be responsible for personal injury (whether fatal or otherwise), loss of or damage to property and any other loss, damage, costs and expenses however caused, which but for the exercise of such permission, would not have arisen.
- 4.3. The costs of visiting the Site shall be the tenderer's own responsibility



## **B TENDER DOCUMENTS**

### **5 Tender Documents**

5.1 The Tender documents comprise the documents listed here below and should be read together with any Addenda issued in accordance with Clause 7 of these instructions to tenderers.

- a. Letter of Invitation for Tenders
- b. Instructions to Tenderers
- c. Form of Tender
- d. Appendix to Form of Tender
- e. Form of Tender Security
- g. Tender and Confidential Business Questionnaires
- i. Schedules of Supplementary Information
- j. Work Execution Programme
- k. General Conditions of Contract – Part I
- l. Conditions of Particular Application – Part II
- m. Specifications
- n. Bills of Quantities
- o. Drawings

5.2 The tenderer is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the tender documents. Failure to comply with the requirements for tender submission will be at the tenderer's own risk. Pursuant to clause 22 of Instructions to Tenderers, tenders which are not substantially responsive to the requirements of the tender documents will be rejected.

5.3 All recipients of the documents for the proposed Contract for the purpose of submitting a tender (whether they submit a tender or not) shall treat the details of the documents as "private and confidential".

### **6 Inquiries by tenderers**

6.1 A tenderer making an inquiry relating to the tender document may notify the Employer in writing or by telex, cable or facsimile at the Employer's mailing address indicated in the Invitation to Tender. This must be prior to the pre –bid conference date. Written copies of the Employer's response (including the query but without identifying the source of the inquiry) will be sent to all prospective tenderers who have purchased the tender documents.

6.2 The procuring entity shall reply to any clarifications sought by the tenderer within 7 days of receiving the request to enable the tenderer to make timely submission of its tender.

### **7 Amendment of Tender Documents**

7.1 At any time prior to the deadline for submission of tenders, the Employer may for any reason, whether at his own initiative or in response to a clarification requested by a prospective tenderer, modify the tender documents by issuing Addenda.

7.2 Any Addendum will be notified in writing or by cable, telex or facsimile to all prospective tenderers who have purchased the tender documents and will be binding upon them.

7.3 In order to allow prospective tenderers reasonable time in which to take the Addendum into account in preparing their tenders, the Employer may, at his discretion, extend the deadline for the submission of tenders.

**C PREPARATION OF TENDERS****8 Language of Tender**

- 8.1 The tender and all correspondences and documents relating to the tender exchanged between the tenderer and the Employer shall be written in the English language. Supporting documents and printed literature furnished by the tenderer with the tender may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation of the tender, the English language shall prevail.

**9 Documents Comprising the Tender**

- 9.1 The tender to be prepared by the tenderer shall comprise the documents listed in I.T.B clause 5.1 and any other materials required to be completed and submitted in accordance with the Instructions to Tenderers. The Forms, Bills of Quantities and Schedules provided in the tender documents shall be used without exception
- 9.2 The forms in the schedules of supplementary information MUST be filled without exception. Where necessary the bidder may make extra copies of the said forms. Supporting documents to the filled forms must be attached immediately after the forms. Any information provided in a different format such as company profiles and brochures shall not be considered in the evaluation of the bid.

**10 Tender Prices**

- 10.1 All the insertions made by the tenderer shall be made in INK and the tenderer shall clearly form the figures. The relevant space in the Form of Tender and Bills of Quantities shall be completed accordingly without interlineations or erasures except those necessary to correct errors made by the tenderer in which case the erasures and interlineations shall be initialled by the person or persons signing the tender.
- 10.2 A price or rate shall be inserted by the tenderer for every item in the Bills of Quantities whether the quantities are stated or not. Items against which no rate or price is entered by the tenderer will not be paid for by the Employer when executed and shall be deemed covered by the rates for other items and prices in the Bills of Quantities.

The prices and unit rates in the Bills of Quantities are to be the full [all-inclusive] value of the Work described under the items, including all costs and expenses which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the tender is based. All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause prior to the deadline for submission of tenders, shall be included in the rates and prices and the total Tender Price submitted by the tenderer.

Each price or unit rate inserted in the Bills of Quantities should be a realistic estimate for completing the activity or activities described under that particular item and the tenderer is advised against inserting a price or rate against any item contrary to this instruction.

Every rate entered in the Bills of Quantities, whether or not such rate be associated with a quantity, shall form part of the Contract. The Employer shall have the right to call for any item of work contained in the Bills of Quantities, and such items of work to be paid for at the rate entered by the tenderer and it is the intention of the Employer to take full advantage of unbalanced low rates.

- 10.3 The rates and prices quoted by the tenderer are fixed during the performance of the Contract

## 11 Currencies of Tender and Payment

11.1 Tenders shall be priced in Kenya Shillings and the tender sum shall be in Kenya Shillings.

## 12 Tender Validity

12.1 The tender shall remain valid and open for acceptance for **a period of Ninety (90) days from the specified date of tender opening** or from the extended date of tender opening (in accordance with clause 7.3 here above) whichever is the later.

12.2 In exceptional circumstances prior to expiry of the original tender validity period, the Employer may request the tenderer for a specified extension of the period of validity. The request and the responses thereto shall be made in writing or by cable, telex or facsimile. A tenderer may refuse the request without forfeiting his Tender Surety. A tenderer agreeing to the request will not be required nor permitted to modify his tender, but will be required to extend the validity of his Tender Surety correspondingly.

## 13 Tender Security

13.1 The tenderer shall furnish as part of his tender, a Tender Security in the form of a bankers cheque, bank guarantee or insurance bond from an approved company

13.2 The tender security shall be **Kshs 150,000** per tender

13.3 The Tender Security shall be valid **at least thirty (30) days beyond the tender validity** period.

13.4 Any tender not accompanied by an acceptable Tender Surety will be rejected by the Employer as non-responsive.

13.5 The Tender Sureties of unsuccessful tenderers will be returned as promptly as possible, but not later than twenty eight (28) days after expiration of the tender validity period. The Tender Surety of the successful tenderer will be returned upon the tenderer executing the Contract and furnishing the required Performance Security.

13.6 The Tender Surety may be forfeited:

- a) if a tenderer withdraws his tender during the period of tender validity: or
- b) in the case of a successful tenderer, if he fails, within the specified time limit
  - i. to sign the Agreement, or
  - ii. to furnish the necessary Performance Security
- c) if a tenderer does not accept the correction of his tender price pursuant to clause 23.

**14 No Alternative Offers**

- 14.1 The tenderer shall submit an offer which complies fully with the requirements of the tender documents unless otherwise provided for in the appendix.
- 14.2 The tenderer shall not attach any conditions of his own to his tender. The tender price must be based on the tender documents. The tenderer is not required to present alternative construction options and he shall use without exception, the Bills of Quantities as provided, with the amendments as notified in tender notices, if any, for the calculation of his tender price. Any tenderer who fails to comply with this clause will be disqualified.

**15 Format and Signing of Tenders**

- 15.1 The tenderer shall prepare his tender as outlined in the letter of invitation
- 15.2 The copy of the tender and Bills of Quantities shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the tenderer. All pages of the tender where amendments have been made shall be initialed by the person or persons signing the tender.
- 15.3 The complete tender shall be without alterations, interlineations or erasures, except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialed by the person or persons signing the tender.

## **D SUBMISSION OF TENDERS**

### **16 Sealing and Marking of Tenders**

- 16.1 The tenderer shall seal the **ORIGINAL** and a **COPY** of the tender in an envelope. The envelopes shall then be sealed in an outer separate envelope.
- 16.2 The inner and outer envelopes shall be addressed to the Employer at the address stated in the Appendix to Instructions to Tenderers and bear the name and identification of the Contract stated in the said Appendix with a warning not to open before the date and time for opening of tenders stated in the said Appendix.
- 16.3 The inner envelopes shall each indicate the name and address of the tenderer to enable the tender to be returned unopened in case it is declared “late”, while the outer envelope shall bear no mark indicating the identity of the tenderer.
- 16.4 If the outer envelope is not sealed and marked as instructed above, the Employer will assume no responsibility for the misplacement or premature opening of the tender. A tender opened prematurely for this cause will be rejected by the Employer and returned to the tenderer.
- 16.5 If the tender document is not properly bound together, the tender will be rejected by the Employer and the bid assumed to be nonresponsive.

### **17 Deadline for Submission of Tenders**

- 17.1 Tenders must be received by the Employer the date and time specified and the address specified the Letter of Invitation, subject to the provisions of clause 18.2 and 18.3.  
  
Tenders delivered by hand must be placed in the “tender box” provided in the office of the Employer.  
  
Proof of posting will not be accepted as proof of delivery and any tender delivered after the above stipulated time, from whatever cause arising will not be considered.
- 17.2 The Employer may, at his discretion, extend the deadline for the submission of tenders through the issue of an Addendum in accordance with clause 7, in which case all rights and obligations of the Employer and the tenderers previously subject to the original deadline shall thereafter be subject to the new deadline as extended.
- 17.3 Any tender received by the Employer after the prescribed deadline for submission of tender will be returned unopened to the tenderer.

### **18 Modification and Withdrawal of Tenders**

- 18.1 The tenderer may modify or withdraw his tender after tender submission, provided that written notice of the modification or withdrawal is received by the Employer prior to prescribed deadline for submission of tenders.
- 18.2 The tenderer’s modification or withdrawal notice shall be prepared, sealed, marked and dispatched in accordance with the provisions for the submission of tenders, with the inner and outer envelopes additionally marked “MODIFICATION” or “WITHDRAWAL” as appropriate.

- 18.3 No tender may be modified subsequent to the deadline for submission of tenders.
- 18.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the period of tender validity specified on the tender form. Withdrawal of a tender during this interval will result in the forfeiture of the Tender Surety.
- 18.5 Subsequent to the expiration of the period of tender validity prescribed by the Employer, and the tenderer having not been notified by the Employer of the award of the Contract or the tenderer does not intend to conform with the request of the Employer to extend the period of tender validity, the tenderer may withdraw his tender without risk of forfeiture of the Tender Surety.

## **E TENDER OPENING AND EVALUATION**

### **19 Tender Opening**

- 19.1 The Employer will open the tenders in the presence of the tenderers' representatives who choose to attend at the time and location indicated in the Letter of Invitation to Tender. The tenderers' representatives who are present shall sign a register evidencing their attendance.
- 19.2 Tenders for which an acceptable notice of withdrawal has been submitted, pursuant to clause 19, will not be opened. The Employer will examine the tenders to determine whether they are complete, whether the requisite Tender Sureties have been furnished, whether the documents have been properly signed and whether the tenders are generally in order.
- 19.3 At the tender opening, the Employer will announce the tenderer's names, total tender price, tender price modifications and tender withdrawals, if any, the presence of the requisite Tender Surety and such other details as the Employer, at his discretion, may consider appropriate. No tender shall be rejected at the tender opening except for late tenders.
- 19.4 The Employer shall prepare minutes of the tender opening including the information disclosed to those present.
- 19.5 Tenders not opened and read out at the tender opening shall not be considered further for evaluation, irrespective of the circumstances.

### **20 Process to be Confidential**

- 20.1 After the public opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations concerning the award of Contract shall not be disclosed to tenderers or other persons not officially concerned with such process until the award of Contract is announced.
- 20.2 Any effort by a tenderer to influence the Employer in the process of examination, evaluation and comparison of tenders and decisions concerning award of Contract may result in the rejection of the tenderer's tender.

### **21 Clarification of Tenders**

- 21.1 To assist in the examination, evaluation and comparison of tenders, the Employer may ask tenderers individually for clarification of their tenders, including breakdown of unit prices. The request for clarification and the response shall be in writing or by cable, facsimile or telex, but no change in the price or substance of the tender shall be sought, offered or permitted except as required to confirm the correction of arithmetical errors discovered by the employer during the evaluation of the tenders in accordance with clause 24.
- 21.2 No tenderer shall contact the Employer on any matter relating to his tender from the time of the tender opening to the time the Contract is awarded. If the tenderer wishes to bring additional information to the notice of the Employer, he shall do so in writing.

### **22 Determination of Responsiveness**

- 22.1 Prior to the detailed evaluation of tenders, the Employer will determine whether each tender is substantially responsive to the requirements of the tender documents as per the checklist in table

- 3.1 (qualification checklist for completeness and responsiveness). The procurement entity's determination of a bid's responsiveness is to be based on the contents of the tender itself. The procurement entity shall examine the technical aspects of the bid in accordance with the technical evaluation criteria as listed in Section III of this document
- 22.2 For the purpose of this clause, a substantially responsive tender is one which conforms to all the terms, conditions and specifications of the tender documents without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality, completion timing or administration of the Works to be undertaken by the tenderer under the Contract, or which limits in any substantial way, inconsistent with the tender documents, the Employer's rights or the tenderers obligations under the Contract and the rectification of which would affect unfairly the competitive position of other tenderers who have presented substantially responsive tenders.
- 22.3 Each price or unit rate inserted in the Bills of Quantities shall be a realistic estimate of the cost of completing the works described under the particular item including allowance for overheads and profits, labour and materials. Should a tender be seriously unbalanced in relation to the Employer's estimate of the works to be performed under any item or groups of items, the tender shall be deemed not responsive.
- 22.4 A tender determined to be not substantially responsive will be rejected by the Employer and may not subsequently be made responsive by the tenderer by correction of the non-conforming deviation or reservation.

### **23 Correction of Errors**

Tenders determined to be substantially responsive shall be checked by the Employer for any arithmetic errors in the computations and summations. Errors will be corrected by the Employer as follows:

- (a) Where there is a discrepancy between the amount in figures and the amount in words, the amount in words will govern.
- (b) Where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will prevail, unless in the opinion of the Employer, there is an obvious typographical error, in which case adjustment will be made to the entry containing that error.
- (c) In the event of a discrepancy between the tender amount as stated in the Form of Tender and the corrected tender figure in the main summary of the Bills of Quantities, the amount as stated in the Form of Tender shall prevail.
- (d) The Error Correction Factor shall be computed by expressing the difference between the tender amount and the corrected tender sum as a percentage of the corrected builder's work (i.e. corrected tender sum less Prime Cost and Provisional Sums).
- (e) The Error Correction Factor shall be applied to all builder's work (as a rebate or addition as the case may be) for the purposes of valuations for Interim Certificates and valuations of variations.



- (f) The amount stated in the tender will be adjusted in accordance with the above procedure for the correction of errors and, with concurrence of the tenderer, shall be considered as binding upon the tenderer. If the tenderer does not accept the corrected amount, the tender may be rejected and the Tender Security may be forfeited in accordance with clause 13.

## **24 Evaluation and Comparison of Tenders**

- 24.1 The Employer will evaluate only tenders determined to be substantially responsive to the requirements of the tender documents in accordance with clause 23.
- 24.2 In evaluating tenders, the Employer will determine for each tender the evaluated tender price by adjusting the tender price as follows:
- (a) Making any correction for errors pursuant to clause 24.
  - (b) Excluding Provisional Sums and provision, if any, for Contingencies in the Bills of Quantities, but including Day works where priced competitively.
- 24.3 The Employer reserves the right to accept any variation, deviation or alternative offer. Variations, deviations, alternative offers and other factors which are in excess of the requirements of the tender Documents or otherwise result in the accrual of unsolicited benefits to the Employer shall not be taken into account in tender evaluation.
- 24.4 Price adjustment provisions in the Conditions of Contract applied over the period of execution of the Contract shall not be taken into account in tender evaluation.
- 24.5 If the lowest evaluated tender is seriously unbalanced or front loaded in relation to the Employer's estimate of the items of work to be performed under the Contract, the Employer may require the tenderer to produce detailed price analyses for any or all items of the Bills of Quantities, to demonstrate the relationship between those prices, proposed construction methods and schedules. After evaluation of the price analyses, the Employer may require that the amount of the Performance Security set forth in clause 29 be increased at the expense of the successful tenderer to a level sufficient to protect the Employer against financial loss in the event of subsequent default of the successful tenderer under the Contract.
- 24.6 Firms incorporated in Kenya where indigenous Kenyans own 51% or more of the share capital shall be allowed a 10% preferential bias provided that they do not sub-contract work valued at more than 50% of the Contract Price excluding provisional sums to a non-indigenous sub-contractor.
- 24.7 Preference where allowed in the evaluation of tenders shall not exceed 15%
- 24.8 The procuring entity may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.
- 24.9 The procuring entity shall give prompt notice of the termination to the tenderers and on request give its reasons for termination within 14 days of receiving the request from any tenderer.

- 24.10 A tenderer who gives false information in the tender document about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

**F AWARD OF CONTRACT****27 Award Criteria**

- 27.1 Subject to Sub-clause 27.2, the Employer will award the Contract to the tenderer whose tender is determined to be substantially responsive to the tender documents and who has offered the lowest evaluated tender price subject to possessing the capability and resources to effectively carry out the Contract Works as required in Sub-clause 2.1 and 2.2 here above.
- 27.2 The Employer reserves the right to accept or reject any tender, and to annul the tendering process and reject all tenders, at any time prior to award of Contract, without thereby incurring any liability to the affected tenderers or any obligation to inform the affected tenderers of the grounds for the Employer's action.
- 27.3 Bidders having ongoing works with KWS that have not been substantially completed will not be considered for award.

**28 Notification of Award**

- 28.1 Prior to the expiration of the period of tender validity prescribed by the Employer, the Employer will notify the successful tenderer by cable, telefax or telex and confirmed in writing by registered letter that his tender has been accepted. This letter (hereinafter and in all Contract documents called "Letter of Acceptance") shall name the sum (hereinafter and in all Contract documents called "the Contract Price") which the Employer will pay to the Contractor in consideration of the execution and completion of the Works as prescribed by the Contract.
- 28.2 At the same time that the Employer notifies the successful tenderer that his tender has been accepted, the Employer shall notify the other tenderers that the tenders have been unsuccessful.
- 28.3 Within fourteen [14] days of receipt of the Form of Contract Agreement from the Employer, the successful tenderer shall sign the form and return it to the Employer together with the required Performance Security.
- 28.4 The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.

**29 Performance Guarantee**

- 29.1 Within fourteen [14] days of receipt of the notification of award from the Employer, the successful tenderer shall furnish the Employer with a Performance Security in the amount stated in the Appendix to Instructions to Tenderers and in the format stipulated in the Conditions of Contract.

The Performance Security to be provided by the successful tenderer shall be an unconditional Bank Guarantee issued at the tenderer's option by a reputable Bank and located in the Republic of Kenya

- 29.2 Failure of the successful tenderer to lodge the required Performance Security shall constitute a breach of Contract and sufficient grounds for the annulment of the award and forfeiture of the

Tender Security and any other remedy under the Contract. The Employer may award the Contract to the next ranked tenderer.

**30 Advance Payment**

No advance payment, shall be made under the Contract

**31 Corrupt or fraudulent practices**

31.1 The procuring entity requires that tenderers observe the highest standard of ethics during the procurement process and execution of contracts. A tenderer shall sign a declaration that he has not and will not be involved in corrupt or fraudulent practices.

**SECTION III:  
TECHNICAL EVALUATION**

## **TECHNICAL EVALUATION CRITERIA**

This Section shall apply to tenderers whose bids have been determined to be responsive and have met all the Qualification Criteria as per the instruction to bidders.

It contains all the factors, methods and criteria that the Procurement Entity shall use for the technical evaluation. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective supplementary information Forms (Schedules).

The Technical Evaluation Committee shall examine tender documents and score them based on their validity, accuracy and quality. Where the bidder fails to meet the requirement, the bidder shall be disqualified.

**3.1 QUALIFICATION CHECKLIST FOR COMPLETENESS AND RESPONSIVENESS**

| S/No. | Completeness and responsiveness criteria                          | References                         | Required                                                                                              |
|-------|-------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------|
| 1     | Form of Bid                                                       | Section II                         | Amount must be indicated, Properly fill and sign                                                      |
| 2     | Appendix to Form of Bid                                           | Section III                        | Form properly sign                                                                                    |
| 3     | Bid Security                                                      | Section IV, ITT clause 16.         | Unconditional guarantee, in the format and conditions provided<br>Must be valid for 150days           |
| 4     | Eligibility                                                       | ITT clause 2.1                     | Copy of National ID or passport for all directors                                                     |
| 5     | Confidential Business Questionnaire                               | Section V, Schedule 1              | Properly fill and sign and Provide all information requested                                          |
| 6     | Conflict of Interest                                              | Section V, Schedule 1              | State explicitly                                                                                      |
| 7     | Tax Compliance Certificate                                        | ITT clause 2.1                     | Certified copies by commissioner of Oaths, Valid as at the date of Tender opening                     |
| 8     | Registration with National Construction Authority (NCA)           | ITT clause 2.1                     | NCA 7 and above, Certified copies by commissioner of Oaths                                            |
| 9     | Certificate of Incorporation                                      | ITT clause 2.1                     | Copy of Certificate certified by the commissioner of oaths                                            |
| 10    | Form of Power of Attorney                                         | Section V, Schedule 2              | Properly fill and sign                                                                                |
| 11    | Certificate of Tenderer site visit                                | Section V, Schedule 3              | Signing of Attendance Register, Declaration of knowledge of site signed by the Bidder                 |
| 12    | Schedule of Major Items of Plant                                  | Section V, Schedule 4              | Fill properly in the format given and sign                                                            |
| 13    | Schedule of Key Personnel                                         | Section V, Schedule 5              | Fill properly in the format given and sign                                                            |
| 14    | Road Works Completed Satisfactorily                               | Section V, Schedule 6              | Fill properly in the format given and sign                                                            |
| 15    | Schedule of ongoing Works                                         | Section V, Schedule 7              | Fill properly in the format given and sign                                                            |
| 16    | Schedule of other supplementary, information /Financial standings | Section V, Schedule 8, 9           | Fill properly in the format given and sign                                                            |
| 17    | Pending Litigation                                                | ITT clause 2.2                     | Fill properly in the format given and sign also attach sworn affidavit                                |
| 18    | Litigation History                                                | ITT clause 2.2                     | Fill properly in the format given and sign also attach sworn affidavit                                |
| 19    | History of None performance                                       | ITT clause 2.2                     | Fill properly in the format given and sign also attach sworn affidavit                                |
| 20    | Work Execution Programme                                          | Section V, Schedule 10 & Table 5.3 | Must be provided in the format given, brief and to the point                                          |
| 21    | Priced Bill of Quantities                                         | Section I, clause 10.1 & 10.2      | Fill all rates, prices and amounts                                                                    |
| 22    | Preparation of the Tenders                                        | Clause 9.2 of the ITT              | The Forms, BOQ and Schedules provided in the tender documents to be properly filled without exception |

**SECTION V-(B): TECHNICAL EVALUATION CRITERIA**

This Section shall apply to tenderer whose bids have been determined to be responsive and have met all the Qualification Criteria as per the instruction to bidders.

It contains all the factors, methods and criteria that the Procurement Entity shall use for the technical evaluation. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective supplementary information Forms (Schedules).

Bidders whose shall **score 85%** and above shall proceed to financial evaluation stage

| Qualification Criteria                                   |                |                                        | Submission Requirement                                                                                                                                                                                                                                                                                         | Compliance and Documentation  | Score     |
|----------------------------------------------------------|----------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------|
| Item                                                     | No.            | Subject                                |                                                                                                                                                                                                                                                                                                                |                               |           |
| Contractors Capability to supervise and perform the work | 7              | Equipment holding                      | Bidder to submit the following in accordance with Clause 5.1 (c) of ITT and section VII;<br>- Ownership list of required equipment and/or Authorization letter of hiring from M&T or reputable hiring company                                                                                                  | Section VII, Schedule 4       | 20        |
|                                                          | 6              | Key Personnel                          | Provide List of professional and technical staff and their resume in accordance with Clause 5.1 (b) of ITT and Section VII<br>- General Experience (CV),<br>- Certified Qualification Certificate,                                                                                                             | Section VII, Schedule 5       | 15        |
|                                                          | 4.1, 4.2 & 5.1 | Past relevant work Experience          | Bidder to submit the following in accordance with Clause 5.1 (a) of ITT and Section VII<br>- Completion certificate, Taking Over Certificate or Substantial Completion Certificate of relevant work in the previous 3 years<br>- Value of ongoing work must be < 50% of Working Capital                        | Section VII, Schedule 6 and 7 | 15        |
|                                                          | 2              | Contractual misconducts and litigation | Record of contractual misconduct in the previous 3 years Clause 5.1 (f) of ITT and Section VII<br>- Record of litigation in the previous 3 years. Attach affidavit                                                                                                                                             | Section VII, Schedule 9 (4)   | 5         |
|                                                          | 3              | Financial Capability                   | Bidder to submit the following in accordance with Clause 5.1 (d) of ITT section VII<br>- <i>Certified audited accounts for the last <b>Three [3] years</b></i><br>- <i>Cash flow Statement (Banks statement)</i><br>- <i>Line of Credit current the last one month</i><br>- <i>Current financial soundness</i> | Section VII, Schedule 8       | 15        |
| <b>Sub Total Score</b>                                   |                |                                        |                                                                                                                                                                                                                                                                                                                |                               | <b>70</b> |



| <b>TABLE 3.3: CONTRACTORS TECHNICAL PROPOSAL AND WORKS EXECUTION PROGRAMME</b> |            |                                           |                                                                                                                                                                                                                                                  |                               |              |
|--------------------------------------------------------------------------------|------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------|
| <b>Qualification Criteria</b>                                                  |            |                                           | <b>Submission Requirement</b>                                                                                                                                                                                                                    | <b>Compliance Requirement</b> | <b>Score</b> |
| <b>Item</b>                                                                    | <b>No.</b> | <b>Subject</b>                            |                                                                                                                                                                                                                                                  |                               |              |
| Technical Proposal and comments                                                | 4.3        | Mobilization Management plan              | Bidder to submit the following Proposals in accordance with Clause 5.1 (e) of ITT section VII<br>i) Site lay plan out and material mobilization<br>ii) - Site Organization Chart<br>iii) Equipment management plan<br>iv) Personnel mobilization | Section VII, Schedule 10      | 6            |
|                                                                                | 4.3        | Quality and Quantity Management           | Bidder to submit the following Proposals in accordance with Clause 5.1 (e) of ITT section VII<br>- Methodology<br>- Proposals on material testing<br>- Proposal on measurements<br>- Photograph plan                                             | Section VII, Schedule 10      | 10           |
|                                                                                | 4.3        | Working Schedule and Projected Cash flow. | Bidder to submit the following Proposals in accordance with Clause 5.1 (e) of ITT section VII<br>1. Signed work programme chart<br>2. Signed Cash flow plan during the contract period.                                                          | Section VII, Schedule 10      | 4            |
|                                                                                | 4.3        | Work safety management                    | Bidder to submit the following Proposals in accordance with Clause 5.1 (e) of ITT section VII<br>the following shall be provided;<br>- Proposals on traffic control<br>- workers safety &<br>- accident prevention                               | Section VII, Schedule 10      | 5            |
|                                                                                | 4.3        | Environmental and social management       | Bidder to submit the following Proposals in accordance with Clause 5.1 (e) of ITT section VII<br>;<br>- Proposal on environmental and social mitigation measures                                                                                 | Section VII, Schedule 10      | 5            |
| <b>Sub Total Score</b>                                                         |            |                                           |                                                                                                                                                                                                                                                  |                               | <b>30</b>    |
| <b>GRANT TOTAL TECHNICAL SCORE</b>                                             |            |                                           |                                                                                                                                                                                                                                                  |                               | <b>100</b>   |

**SECTION IV:**  
**FORM OF TENDER AND TENDER SECURITY**

**FORM OF TENDER**

Name of Contract:

The Director  
 Kenya Wildlife Service,  
 P.O Box 40241,  
 Nairobi

Dear Sir,

In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities/Schedule of Rates for the execution of the above named Works, we, the undersigned offer to construct, install and complete such Works and remedy any defects therein for the sum of Kshs.....[Amount in figures]

Kenya Shillings.....[Amount in words]

2. We undertake, if our tender is accepted, to commence the Works on the commencement date and to complete the whole of the Works comprised in the Contract within the time stated in the Appendix.
3. We agree to abide by this tender until .....[Insert date], and it shall remain binding upon us and may be accepted at any time before that date.
4. Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.
5. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this .....day of .....20.....

Signature .....in the capacity of.....

Duly authorized to sign tenders for and on behalf of

.....[Name of Tenderer] of

.....[Address of Tenderer]

Witness:

Name.....

Address.....

Signature.....

Date.....

**APPENDIX TO FORM OF TENDER**

This Appendix to Form of Tender forms part of the Agreement.

(Note: with the exception of the items for which the Employer's requirements have been inserted, the Contractor shall complete the following information before submitting his offer.)

| <b>Item</b>                                                     | <b>Sub-clause</b> | <b>Data</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Time for Completion                                             | 1.1.9             | 6 months                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Priority of Documents                                           | 1.3               | The documents forming the Contract shall be interpreted in the following order of priority: <ul style="list-style-type: none"> <li>• the Contract Agreement</li> <li>• the Letter of Award</li> <li>• the Form of Tender and Appendix thereto</li> <li>• the Condition of Contract, Part II - Conditions of Particular Application</li> <li>• the conditions of Contract, Part I - General Conditions of Contract</li> <li>• Special Provisions</li> <li>• the Specifications</li> <li>• the Drawings, and</li> <li>• the Priced Bill of Quantities</li> </ul> |
| Law of Contract                                                 | 1.4               | Laws of the Republic of Kenya                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Language                                                        | 1.5               | English                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Provision of Site                                               | 2.1               | On Commencement Date *                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Authorised Person                                               | 3.1               | Head –Roads and Fleet Management                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Performance Security                                            |                   | Required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Amount                                                          | 4.4               | 5% of sum stated in the contract sum.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Form                                                            |                   | Bank Guarantee                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Programme<br>⇒ Time of Submission                               | 7.2               | Within 14 days of commencement date<br>Work execution schedule, quality and quantity management plan, mobilization plan, safety and environmental management plan.                                                                                                                                                                                                                                                                                                                                                                                             |
| ⇒ Work Execution Programme                                      | 7.2               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| ⇒ Interval Updates                                              | 7.2.2             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Liquidated Damages<br>Amount payable due to failure to complete | 7.4               | 0.2% of Contract Sum per Day to a limit of 10% of Contract Sum.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Period of notifying defects                                     | 9.1 and 11.5      | 7 days calculated from the date stated in the notice under sub clause 8.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| <b>Item</b>                                                             | <b>Sub-clause</b> | <b>Data</b>                                                                                                   |
|-------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------|
| Percentage of Retention                                                 | 11.4 and 11.5     | 5% of the value of each interim certificate                                                                   |
| Amount of Advance Payment                                               | 11.3.1            | No advance payments shall be made on these projects                                                           |
| Valuation of Works<br>Application of single method of calculating offer | 11.1.3            | Remeasurements with Bill of Quantities                                                                        |
| Currency of Payment                                                     | 11.7              | Kenya Shilling                                                                                                |
| Rate of Interest                                                        | 11.8              | Simple Interest at a rate of 2% above mean Base Lending Rate as issued by the Central Bank of Kenya.          |
| Insurance                                                               | 14.1              | Required                                                                                                      |
| Insurance<br>⇒ The works, materials plants & fees                       | 14.1              | Amount of Cover<br>The Contract price stated in the Agreement +15%.                                           |
| ⇒ Contractor's Equipment                                                |                   | Full replacement cost                                                                                         |
| ⇒ Third party injury to                                                 |                   | 10% per third party with number of occurrences unlimited.                                                     |
| ⇒ persons and damage to property<br>⇒ Workers compensation              |                   | Contractor to indemnify employer against claims by those in employment of the contractor                      |
| Arbitration<br>⇒ Rules                                                  | 15.3              | CAP 49 of the Laws of Kenya<br>Chairman Chartered Institute of Arbitrators, Kenya Branch.<br>KWS Headquarters |
| ⇒ Appointing Authority                                                  | 15.3              |                                                                                                               |
| ⇒ Place of Arbitration                                                  | 15.3              |                                                                                                               |

## FORM OF TENDER SECURITY

(Note: The tenderer shall complete only this form of guarantee. No other Form of Tender Bond or any other forms of security will be accepted. Tenderers who fail to comply with this requirement will be disqualified).

WHEREAS [Name of tenderer].

.....

.....

(Hereinafter called “the Tenderer”) has submitted his tender dated .....

For the

.....

..... hereinaft

er called “the Bid”

KNOW ALL MEN by these presents that we [Name of Issuing Institution]

.....

.....

of (Name of Country) having our registered offices at

.....

(Hereinafter called the *Guarantor* (i.e. *Bank, Insurance, SACCO etc*) are bound unto **Kenya Wildlife Services**, (hereinafter called “the Procurement Entity”) in the sum of (in words) Kenya Shillings

.....

.....

(In figures) Kshs).....

for which payment will be well and truly made to the said Procurement Entity the (*Guarantor*) binds itself, its successors and assigns by these presents.

Signed for the said (*Guarantor*) this ..... day of ....., 2012

THE CONDITIONS of this obligation are:

- a) If the tenderer withdraws his Tender during the period of tender validity specified by the bidder on the Tender Form; or
- b) If the Tenderer refuses to accept the correction of errors in his bid; or
- c) If the Tenderer having been notified of the acceptance of his tender by the Procurement Entity during the period of Tender Validity
  - (i) Fails or refuses to execute the Form of Agreement in accordance with the Instructions to bidder when required or
  - (ii) Fails or refuses to furnish the Performance Security, in accordance with the Instructions to bidder.

We undertake to pay to the Procurement Entity up to the above amount upon receipt of his first written demand, without the Procurement Entity having to substantiate his demand, provided that in his demand the Procurement Entity will note that the amount claimed by him is due to him owing to the occurrence of any of the above conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the date of expiration of the tender validity, as stated in the Instructions to bidders.

**SIGNATURE AND SEAL OF THE BANK**

.....

**NAME OF THE SIGNATORY:**

.....DATE..... , .....

**TITLE OF THE SIGNATORY**

.....

**NAME OF THE WITNESS:**

.....

**SIGNATURE OF WITNESS**

.....DATE..... , .....

**ADDRESS OF THE WITNESS :**

**REGISTRATION, COMPLIANCE AND STATUTORY DOCUMENTS**

Please attach the following documents and any other requested in this schedule after this page

- i) Certified copy of Certificate of incorporation
- ii) Certified copy of valid tax compliance certificate
- iii) Certified copy of proof of registration with the National Construction Authority (NCA) Category NCA 7 and above as a roads contractor.



**SECTION V:  
SCHEDULES OF SUPPLEMENTARY INFORMATION**

**SCHEDULE 1: CONFIDENTIAL BUSINESS QUESTIONNAIRE****REPUBLIC OF KENYA****CONFIDENTIAL BUSINESS QUESTIONNAIRE**

This Confidential Business Questionnaire of the Government of Kenya shall be completed by the Bidder or by each member of a Joint venture if the Bidder is a Joint-venture.

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2(b) or 2(c) whichever applies to your type of business. You are also advised that it is a serious offence to give false information on this Form.

**Part 1 - General:**

*Business Name:* .....

*Location of Business Premises* .....

*Plot No.* .....*Street/Road* .....

*Postal Address*.....*Tel No.* .....

*Nature of Business*.....

*Current Trade License No.* .....*Expiring Date* .....

*Maximum value of Business which you can handle at any one time:*

*Kshs.* .....

*Name of your Bankers* .....

*Branch*.....

**Part 2(a) - Sole Proprietor:**

*Your Name in full*.....

*Age:* .....

*Nationality* .....*Country of Origin*.....

**\*Attach Copy of Citizenship (Compulsory).**

**Part 2(b) - Partnership:**

Give details of partners as follows:

| Name   | Nationality | Citizenship Details* | Shares |
|--------|-------------|----------------------|--------|
| 1..... | 1.....      | 1.....               | 1..... |
| 2..... | 2.....      | 2.....               | 2..... |
| 3..... | 3.....      | 3.....               | 3..... |

**Note: Attach proof of citizenship(Compulsory)****Part 2(c) – Registered Company**

Give details of partners as follows:

Private or Public.....

State the Nominal and Issued Capital of the Company

| Nominal Shares (Kshs) | Issued Shares (Kshs) |
|-----------------------|----------------------|
| .....                 | .....                |

Give details of all directors as follows:

| Name   | Nationality | Citizenship Details* | Shares |
|--------|-------------|----------------------|--------|
| 1..... | .....       | .....                | .....  |
| 2..... | .....       | .....                | .....  |
| 3..... | .....       | .....                | .....  |
| 4..... | .....       | .....                | .....  |
| 5..... | .....       | .....                | .....  |

**Note: Attach proof of citizenship (Compulsory)****Part 2 (d) Interest in the Firm:**

Are there any person / persons in Kenya Wildlife Service who has interest in this firm? Mark in the box alongside as necessary.

| Yes | No |
|-----|----|
|     |    |

Date:..... Signature of Tenderer.....

**SCHEDULE 2: FORM OF WRITTEN POWER OF ATTORNEY**

The Bidder shall state here below the name(s) and address of his representative(s) who is/are authorized to receive on his behalf correspondence in connection with the Tender.

.....  
(Name of Bidder's Representative in block letters)

.....  
(Address of Bidder's Representative)

.....  
(Signature of Bidder's Representative)

**Alternate:**

.....  
(Name of Bidder's Representative in block letters)

.....  
(Address of Bidder's Representative)

.....  
(Signature of Bidder's Representative)

\*To be filled by all Bidders.

**SCHEDULE 3: DECLARATION OF TENDERER’S KNOWLEDGE OF SITE**

1. This is to certify that

[Name/s].....

Being the authorized representative/Agent of [Name of Bidder]

.....

.....

has undertaken the inspection of site in accordance with the instruction to Bidders, for purposes of bidding for routine maintenance of

.....

.....

[name and location of the project] held on..... Day of.....20.....

2. Having studied the tender document, I carefully examined the site to make myself familiar with the local conditions likely to influence the works and cost thereof.

3. I further certify that I am satisfied with the description of the works and I understand perfectly the scope of the works as specified and implied in the performance of the contract

Signed and Stamped.....

(Bidder’s Representative)

**NOTE: This form Must be completed and duly signed.**

**SCHEDULE 4: MAJOR ITEMS OF CONSTRUCTION PLANT AND EQUIPMENT**

| <b>Item No.</b> | <b>Equipment Details</b>                                    | <b>Minimum Number Required for the Contract Execution</b> | <b>No. of equipment to be made available for the Contract by the Bidder</b> | <b>Date of Arrival on Project (Days after commencement)</b> |
|-----------------|-------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------------------|
| (i)             | Motor graders (93 - 205kW)                                  | 1                                                         |                                                                             |                                                             |
| (ii)            | Hydraulic crawler mounted Dozer (D6 and above or excavator) | 1                                                         |                                                                             |                                                             |
| (iii)           | Wheeled loader (2m <sup>3</sup> )                           | 1                                                         |                                                                             |                                                             |
| (iv)            | 6 X 4 tippers payload 16 – 20 tones (5m <sup>3</sup> )      | 2                                                         |                                                                             |                                                             |
| (v)             | Self propelled single drum vibrating (10 tons)              | 1                                                         |                                                                             |                                                             |
| (vi)            | Water tankers (8,000 – 16,000 lts. capacity)                | 1                                                         |                                                                             |                                                             |
| (vii)           | Mobile concrete mixers (0.3m <sup>3</sup> ) and vibrators   | 1                                                         |                                                                             |                                                             |

The bidder shall enter in this schedule all major items of plant and equipment which he proposes to bring to site. Only reliable plant in good working order, and suitable for the work, shall be shown on this Schedule.

The bidder should attached proof of ownership or authorized letter of hire.

I certify that the above information is correct.

Signature of Tenderer: ..... Date: .....

Name of Signatory: .....

**SCHEDULE 5: KEY PERSONNEL****i) Key Personnel proposed by Tenderer**

The Bidder shall list in this schedule the key professional and technical personnel he will employ, providing Proof of qualifications, experience, position held and nationality.

| Name of Key Staff | Designation | Required           |                                              |
|-------------------|-------------|--------------------|----------------------------------------------|
|                   | Site Agent  | Qualification      | Ordinary Dip in Civil Engineering/Equivalent |
|                   |             | General Experience | At least 5 yrs                               |
|                   | Foreman     | Qualification      | Ordinary Dip in Civil Engineering/Equivalent |
|                   |             | General Experience | At least 3 yrs                               |
|                   | Supervisor  | Qualification      | Roads Contractors Craft Course or Equivalent |
|                   |             | General Experience | At least 3 yrs                               |

**ii) Other Site Personnel**

The Bidder shall list in this schedule the qualified operators and skilled labourer he will from the Contractor's site office to direct and execute the work together with their qualifications, experience, position held, salary scale and condition of employment.

**a) Skilled Labour**

| Name of staff | Designation     | Required                  |                       |
|---------------|-----------------|---------------------------|-----------------------|
|               | Grader Operator | General Experience        | At least 3 yrs        |
|               |                 | Qualification Certificate | A copy of Certificate |
|               | Roller Operator | General Experience        | At least 3 yrs        |
|               |                 | Qualification Certificate | A copy of Certificate |

I certify that the above information is correct.

Signature of Tenderer: .....Date:.....

**Note**

The CV's for each of the proposed key should be presented in the format indicated in the next page. Certified copies of the resumes for each key staff must be attached.

b) **Format of Resume of Proposed Personnel** (use the same format for all other required staff)

| <b>Proposed Position</b>     |                                     |                                                                                                                                                                                                                          |
|------------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personnel information</b> | <b>Name of Personnel</b>            | <b>Date of birth</b>                                                                                                                                                                                                     |
|                              | <b>Professional qualifications</b>  |                                                                                                                                                                                                                          |
|                              | <b>Years of Experience</b>          | <b>Years with present employer</b>                                                                                                                                                                                       |
| <b>Present employment</b>    | <b>Present Employer's Name:</b>     |                                                                                                                                                                                                                          |
|                              | Job Title                           |                                                                                                                                                                                                                          |
|                              | Name of Contact person (Supervisor) | <i>Telephone No</i><br><i>E-mail</i>                                                                                                                                                                                     |
| <b>From</b>                  | <b>To</b>                           | <i>(Summarize professional experience, in reverse chronological order. Indicate particular technical and managerial experience relevant to the project)</i><br><br><b>Company / Project / Position / Role in project</b> |

Signature of Proposed Staff.....Date:.....

**Note:** Please attach **Certified Copies of Qualification Certificates**



**SCHEDULE 6: SCHEDULE OF ROADWORKS CARRIED OUT BY THE TENDERER IN THE LAST FIVE (5) YEARS**

| DESCRIPTION OF WORKS | CLIENT'S NAME | VALUE OF WORKS (KShs) * | YEAR COMPLETED AND/OR REMARKS |
|----------------------|---------------|-------------------------|-------------------------------|
|                      |               |                         |                               |
|                      |               |                         |                               |
|                      |               |                         |                               |
|                      |               |                         |                               |

I certify that the above works were successfully carried out (**Attach Completion Certificates /Substantial completion certificate** or as requested in **Table 4.4 in Section E: Technical Qualification Criteria**).

Signature of bidder: .....

Date: .....

**SCHEDULE 7: SCHEDULE OF ONGOING PROJECTS**

Bidders should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, or for which an unqualified, or full completion certificate has yet to be issued.

| Name of Contract | Procurement Entity's contact address/fax | Value of Works (Kshs) | Date of commencement (M/YR) | Date of completion ( ) | Physically completed up to date % |
|------------------|------------------------------------------|-----------------------|-----------------------------|------------------------|-----------------------------------|
|                  |                                          |                       |                             |                        |                                   |
|                  |                                          |                       |                             |                        |                                   |
|                  |                                          |                       |                             |                        |                                   |
|                  |                                          |                       |                             |                        |                                   |

**NOTE:** Provide the requested information as per the table above. Information presented in other format will be accepted ( you may use an extra page of this format)

I certify that the above works are being carried out by me and that the above information is correct.

Signature of bidder: .....Date: .....

**SCHEDULE 8: SCHEDULE OF LOCAL LABOUR BASIC RATES**

The rates inserted in this schedule will be those used in determining changes in cost of local labour market.

| <b>LABOUR CATEGORY</b> | <b>MONTH/SHIFT/HOUR</b> | <b>UNIT</b> | <b>RATE (KShs)</b> |
|------------------------|-------------------------|-------------|--------------------|
| Skilled Labour         |                         |             |                    |
| Semi-Skilled Labour    |                         |             |                    |

NOTE: Categories to be generally in accordance with those used by the Kenya Building Construction Engineering and Allied Trade Workers Union and Ministry of labour

I certify that the above information is correct.

Signature of bidder: ..... Date:.....

**SCHEDULE 9: FINANCIAL INFORMATION/CURRENT COMMITMENTS**

1. Submit copies of audited profit and loss statements and balance sheet for the last three calendar years and estimated projection for the next two years with certified English translation where appropriate.
2. Give turnover figures for each of the last Five (5) financial years. Quote in millions and decimal thereof.

| Type of \Work                 | Year  | Year  | Year  | Year  | Year  |
|-------------------------------|-------|-------|-------|-------|-------|
|                               | Kshs. | Kshs. | Kshs. | Kshs. | Kshs. |
| Road works                    |       |       |       |       |       |
| Other civil engineering works |       |       |       |       |       |
| Other (specify)               |       |       |       |       |       |
| Total                         |       |       |       |       |       |

**SUMMARY OF ASSETS AND LIABILITIES OF THE AUDITED FINANCIAL STATEMENTS OF THE LAST THREE (3) FINANCIAL YEARS.**

|                            | Year  | Year  | Year  |
|----------------------------|-------|-------|-------|
|                            | Kshs. | Kshs. | Kshs. |
| 1. Total Assets            |       |       |       |
| 2. Current Assets          |       |       |       |
| 3. Bank credit Line Value  |       |       |       |
| 4. Total Liabilities       |       |       |       |
| 5. Current Liabilities     |       |       |       |
| 6. Net worth (1-4)         |       |       |       |
| 7. Working capital (2+3-4) |       |       |       |

**Note:** Provide information in the specified format

- (a) Name/Address of Commercial Bank providing credit line

.....  
 .....

Total amount of credit line Kshs. ....

(Attach a certified copy of the current Letter of Line of credit from the Bank.)

- (b) Attach certified copies of financial bank statements of the last six months.

3. Name, address, telephone, telex, fax numbers of the Tenders' Bankers who may provide reference if contacted by the Contracting Authority.

.....  
 .....  
 .....

4. Information on History of Non performing contract and current Litigation in which the Tenderer is involved.

a) Provide Information on History of Non performing contract

| OTHER PARTY (IES) | CAUSE OF DISPUTE | AMOUNT INVOLVED (KShs) |
|-------------------|------------------|------------------------|
|                   |                  |                        |

b) Provide Information on current Litigation involved.

| OTHER PARTY (IES) | CAUSE OF DISPUTE | AMOUNT INVOLVED (KShs) |
|-------------------|------------------|------------------------|
|                   |                  |                        |

*Note: (Provide a sworn affidavit for both (a) and (b) ).*

I certify that the above information is correct

Signature of bidder:..... Date:.....

## **SCHEDULE 10: WORK EXECUTION PROGRAMME**

Give a brief description of how you plan to carry out the works within the contract period. The Works execution programme should include all relevant information to the project. The information given should be clear, not flawed description and compliance to standard and special specification.

Note Works Execution programme is different from form “programme of works referred in FIDIC and Standard Specification for Roads and Bridge Construction. The said “programme of works” is but part of Works Execution Programme (WEP).

The Contents of Works Execution Programme shall include:

### **ii. General information**

#### **a) Project data**

- Project name,
- financier,
- employer,
- implementing agency
- contract period,
- date of completion,
- defects liability period,
- date of submission of works execution programme,

#### **b) Scopes of works**

A brief description of the project which includes major work items

### **iii. Mobilization Management Plan**

- The Plan should show, the location of site office and site organization chart,
- Personnel management plan (Head Office and Site Office staff)

Deployment plan and schedule of key personnel together with their qualification, and experience statements are shown in WEP. The information in this part includes; name, address, ID, phone number, assigned work types, Subcontractor’s information and wage payment plan are also to be included if necessary.

- Equipment management plan

List of the equipments: Name, type, manufacturer, usage, number, schedule. The bidder shall prepare the maintenance and repair plan for all the equipments.

### **iv. Work execution schedule**

- a) Signed Programme of works
- b) Signed cash flow plan during the contract period

It is desirable that work execution schedule includes time frame of each activity such as in bar chart format.

**v. Quality and Quantity Management**

- Method statement

This includes Work procedures, order and methods for execution.

- Proposal on material testing.

Material and structural test methods, test laboratory, test frequency, standard values. The relevant clause on quality in SSRBC should also be incorporated.

- Proposal on measurements
- Photograph plan

The bidder shall provide a photograph plan to record the progress and proof of quality control, measurement and any event that may arise. Type of works, filming item description, filming frequency and filming location mapping should be incorporated in the plan.

**vi. Safety management plan**

This includes but not limited compliance with safety rules and regulation, traffic control and detour plans, emergency contact list

For quick actions during emergency, emergency contact list should be in WEP and shared with staff in the Authority.

**vii. Environmental and social management plan**

When the negative impacts on third parties during the execution are predicted, the management and mitigation plans should be included in WEP. For example, if earthwork likely cause dust problem around the working site, the contractor needs to make a plan for water spraying; how often and what time water is sprayed, how many water-spraying vehicles are mobilized, and how many workers are assigned. The following issues are also necessary to be considered in the plan.

- ✓ Soil erosion on slopes and sedimentation deposition on the drainage works.
- ✓ Preservation of trees and shrubbery
- ✓ Entrance and accidental spillage of solid matters, debris, pollutants and waste into water sources.
- ✓ Disposal of waste material
- ✓ HIV prevention

**Note:**

Works Execution Programme to be submitted by the bidder shall not be less than five (5) pages covering all the above stated items.

**SECTION VII:**  
**FORM OF AGREEMENT AND PERFORMANCE GUARANTEE**



## FORM OF AGREEMENT

THIS AGREEMENT is made on the.....day of .....between the **Kenya Wildlife Service** of P. O. Box 40241-00100, Nairobi, Kenya hereinafter called "the Procurement Entity" of the one part And

.....  
of.....  
hereinafter called "the Contractor" of the other part.

WHEREAS the Employer is desirous that certain works should be executed, viz **Routine Maintenance works in section of Road**.....in

.....National Park.

to.....

and has accepted a BID by the Contractor for the execution completion and maintenance of such works on the road sections as defined hereafter.

### **NOW THIS AGREEMENT WITNESSETHES as follows:**

In this agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

- ❖ The Contract Agreement;
- ❖ The Letter of award by the Procurement Entity
- ❖ The Letter of Acceptance by the Contractor;
- ❖ The Form of Contract and Appendix to the Form of Contract;
- ❖ The Conditions of Contract Part I;
- ❖ The Conditions of Contract Part II;
- ❖ The Standard Specification for Road and Bridge Construction, 1986;
- ❖ The Special Specifications;
- ❖ The Drawings;
- ❖ The priced Bill of quantities;
- ❖ Conditions to the Contract and instructions to the Contractor;

All aforesaid documents are hereinafter referred to as "The Contract".

In consideration of the payment to be made by the Procurement Entity to the Contractor, the Contractor hereby covenants with the Procurement Entity to execute, complete and maintain the works in conformity in all respects with the provisions of the Contract.

The Procurement Entity hereby covenants to pay the Contractor in consideration of the execution, completion and maintenance of the works for the Contract Price at the times and in the manner prescribed by the Contract.

IN WITNESS HEREOF the parties that have caused this Agreement to be executed this .....day of .....

*SEALED with the Common Seal of Kenya Wildlife Services (KWS).*

By the said Employer: .....  
(Director, Kenya Wildlife Service)  
For and on behalf of the said Employer

In the presence of: .....  
(Name and Designation of Witness)  
.....  
(Signature of Witness)  
.....  
(Address of witness)

SEALED with the Common Seal of .....  
**(Insert the Name of Tender)**

By the said Contractor: .....  
(Managing Director)

In the presence of: .....  
(Name and Designation of Witness)  
.....  
(Signature of Witness)  
.....  
(Address of witness)

**Adjudicator’s Agreement**

Identification of Project:

.....  
(the “Project”)

Name and address of the Employer:

.....  
(the “Employer”)

Name and address of the Contractor:

.....  
(the “Contractor”)

Name and address of the Adjudicator:

.....  
(the “Adjudicator”)

**Whereas** the Employer and the Contractor have entered into a contract (“the Contract”) for the execution of the Project and wish to appoint the Adjudicator to act as adjudicator in accordance with the Rules for Adjudication [“the Rules”].

**The Employer, Contractor and Adjudicator agree as follows:**

1. The Rules and dispute provisions of the Contract shall form part of this Agreement.
2. The Adjudicator shall be paid:

A retainer fee of .....per calendar month  
(where applicable)

A daily fee of .....

Expenses (including the cost of telephone calls, courier charges, faxes and telexes incurred in connection with his duties; all reasonable and necessary travel expenses, hotel accommodation and subsistence and other direct travel expenses).  
Receipts will be required for all expenses.

- 3. The Adjudicator agrees to act as adjudicator in accordance with the Rules and has disclosed to the Parties any previous or existing relationship with the Parties or others concerned with the Project.
- 4. This Agreement shall be governed by the law of .....
- 5. The Language of this Agreement shall be .....

SIGNED BY .....

For and on behalf of the Employer in the presence of

Witness .....

Name .....

Address .....

Date .....

SIGNED BY .....

For and on behalf of the Contractor in the presence of

Witness .....

Name .....

Address .....

Date .....

SIGNED BY .....

For and on behalf of the Adjudicator in the presence of

Witness .....

Name .....

Address .....

Date .....

**FORM OF PERFORMANCE BANK GUARANTEE (UNCONDITIONAL)**

To:

**Kenya Wildlife Service (KWS)**

P. O. Box 40241-00100,

Nairobi,

Kenya

1. WHEREAS .....  
(hereinafter called the Contractor) has undertaken in pursuance of contract No. RD: .....  
.....dated.....to execute the  
.....(hereinafter called the "Contract")

2 AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized bank for the sum specified in the Appendix to Form of Tender as security for compliance with his obligations in accordance with the Contract;

3. AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

5. NOW THEREFORE we (name of Bank) .....

(hereinafter called "the Bank") hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor up to a total of Kshs.....

Amount in words.....and we undertake to pay to you, upon your first written demand and without cavil or argument, any sum or sums within and up to the limits as aforesaid without your needing to prove or show grounds or reasons for the sum specified therein.

We hereby waive the necessity of you demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract Documents which may be made between you and the Contractor shall in any way release us from any liability under this Guarantee and we hereby waive notice of any such change, addition or modification

This Guarantee shall be valid until 28 days after issuing of the Defects Liability Certificate.

AUTHORISED SIGNATORY FOR THE BANK.....

Name of bank.....

Address.....

Date .....

**SECTION III:  
CONDITIONS OF CONTRACT**

**PART I: GENERAL CONDITIONS OF CONTRACT**

The General Conditions of Contract of this contract are the FIDIC Short Form of Contract, First Edition, 1999, published by the International Federation of Consulting Engineers (FIDIC).

The General Conditions of Contract are linked with the Conditions of Particular Application, referred to as Part II, by the consecutive numbering of the Clauses, so that Part I and II together comprise the conditions governing the rights and obligations of the parties. In case of any inconsistency between the conditions contained in Part I and those in Part II, the conditions contained in Part II shall prevail over those of Part I.

The Tenderer is deemed to have read and fully complied with the General Conditions of Contract. A copy of General Conditions of Contract is available at the offices of the Employer's Representative for perusal.

## PART II: CONDITIONS OF PARTICULAR APPLICATION

The following Conditions of Particular Application amplify or modify the FIDIC Short Form of Contract in certain respects.

### 1 GENERAL PROVISIONS

#### 1.1 Definitions

Add new Paragraph to sub-clause 1.1.8

1.1.8 (a) **“Week”** means a period of seven (7) consecutive days

1.1.8 (b) **“Month”** means calendar month

Add new paragraph to sub-clause 1.1.20 to 1.1.25

1.1.20 **“Appendix”** as referred to the General Conditions of Contract means Appendix to Form of Tender.

1.1.21 **“Labour and Equipment Based Methods”** means work methods in which most of the activities are carried out using labour and appropriate equipment is only used when it is more cost effective to execute the works.

1.1.22 **“Piece Work”** means the fixed quantity of work to be done by an individual worker to earn a fixed sum.

1.1.23 **“Task ”** means the amount of work to be done by one individual worker or a gang in order to earn one day’s wage.

1.1.24 **“Young Person”** means an individual male or female, who has attained the age of 16 years but has not attained the age of eighteen years.

1.1.25 **“2000 Strategy”** means an initiative by the Government of Kenya to improve the maintenance of the country’s Road Network by giving priority to maintenance through network approach, using appropriate technology, labour-based methods, local resources and increased usage of small-scale entrepreneurs.

#### 1.2 Interpretation

Add sub-clause 1.2.1 as follows

##### 1.2.1 Words having the same meaning

In the Contract Documents different words and expressions having the same meaning and value may be used. Such expressions are:

|                           |   |                   |
|---------------------------|---|-------------------|
| Bid                       | = | Tender            |
| Priced Bill of Quantities | = | Schedule of Rates |
| Letter of Acceptance      | = | Letter of Award   |
| Authorized person         | = | Engineer          |



## **4 THE CONTRACTOR**

### **4.1 General Obligations**

#### **4.1.1 Employment of Young Persons and Children**

Contractor's attention is drawn to the Employment Act Chapter CAP 226 concerning the Employment of Young Persons and Children.

#### **4.1.2 Conditions of Employment of Labour**

The Contractor shall observe and fulfil the following conditions in respect of all persons employed by him in the execution of the Contract: -

- a) Where possible, employ labour on a daily task basis. The size of the daily task shall be what can reasonably be expected of a worker during a normal working day (8 hours).
- b) The Contractor shall pay wage rates and observe hours and conditions of employment of labour as established by Kenyan Laws and by agreement between Employers or other recognized authorities and trade unions for similar trades or industries in the District where this Contract work is to be carried out.
- c) The Contractor shall recognize the freedom of his employees to be members of trade unions. The Contractor's attention is drawn to the requirements of the Trade Unions Act (CAP 233). The Contractor should note that if at least 25% of his employees are members of a particular Trade Union Organisation, then he will be legally bound to recognise and negotiate with the organisation.

#### **4.1.3 Reporting Requirements**

The Contractor shall, if required by the Employer, submit a return in detail in such form and at intervals prescribed showing the staff and the number of several classes of labour employed by the Contractor.

#### **4.1.4 Contract with Employees**

##### **(i) Working days**

The Contractor shall recognize gazetted non-working days and allow in his programme of works for these days, which he/she is not, expected to work.

##### **(ii) Safety and Health**

- a) The Contractor shall be responsible for the safety of all workers. In collaboration with, and to the requirements of the local health authorities, the contractor shall ensure that first aid equipment and stores are available on the Site at all times throughout the period of the Contract.

- (b) The Contractor shall be responsible for provision of potable water for the workers on site.
- (c) In the event of any outbreak of illness of an epidemic nature the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

(iii) Contractor to Preserve Peace

The Contractor shall ensure that all his personnel on site comply with the Statutes, Ordinances, Laws, Regulations and By-Laws in force in Kenya and to prevent accidents or any riotous or unlawful behaviour by or amongst all those employed on or in connection with the works, and for the preservation of the peace.

4.1.5 Water for the Works

The supply of water shall be the responsibility of the Contractor.

4.1.6 Environment

The Contractor shall take all reasonable steps to protect the environment on the Site and avoid damage or nuisance to property. In particular, the Contractor shall carry out all activities in a manner that ensures:-

- a) Minimum erosion and sedimentation deposition on the drainage works;
- b) Maximum preservation of trees and shrubbery;
- c) No entrance or accidental spillage of solid matters, debris and other pollutants and waste into streams;
- d) Utmost safety of all activities on site.

**4.4 Performance Security**

Add the following at the end of this clause.

The performance security shall be valid until a date 14 days after the end of the period for notifying defects. The Employer shall return the security to the Contractor within 14 days of its expiration.

## **7 TIME FOR COMPLETION**

### **7.1 Execution of the Works**

Add new sub-clause to 7.1.1:

#### **7.1.1 Progress Review Meetings**

Regular progress review meetings between the Employer and the Contractor shall be held at least once a month. The Employer will decide the time for each of these meetings.

### **7.2 Programme**

Add three new paragraphs under this Sub-Clause

7.2.1 On award the contractor with the assistance of the Civil Works superintendent shall prepare a Works Execution programme for approval by the Engineer. The programme shall take cognizance of the existing road condition, maintenance needs and the weather. The Engineer may adjust this programme to fit with the cash inflow from Kenya Roads Board.

#### **7.2.2 Intended Construction Procedures, Order and methods**

The Contractor shall show in the programme of works, the procedure, order and methods proposed in carrying out works with specific emphasis on the labour requirements, equipment utilisation and productivity.

#### **7.2.3 Works Execution Programme Updating**

Within the intervals stated in the Appendix, the contractor shall submit updated Works Execution Programme of the works.

## **10 CONTRACT PRICE AND PAYMENT**

### **10.1 Valuation of the Works**

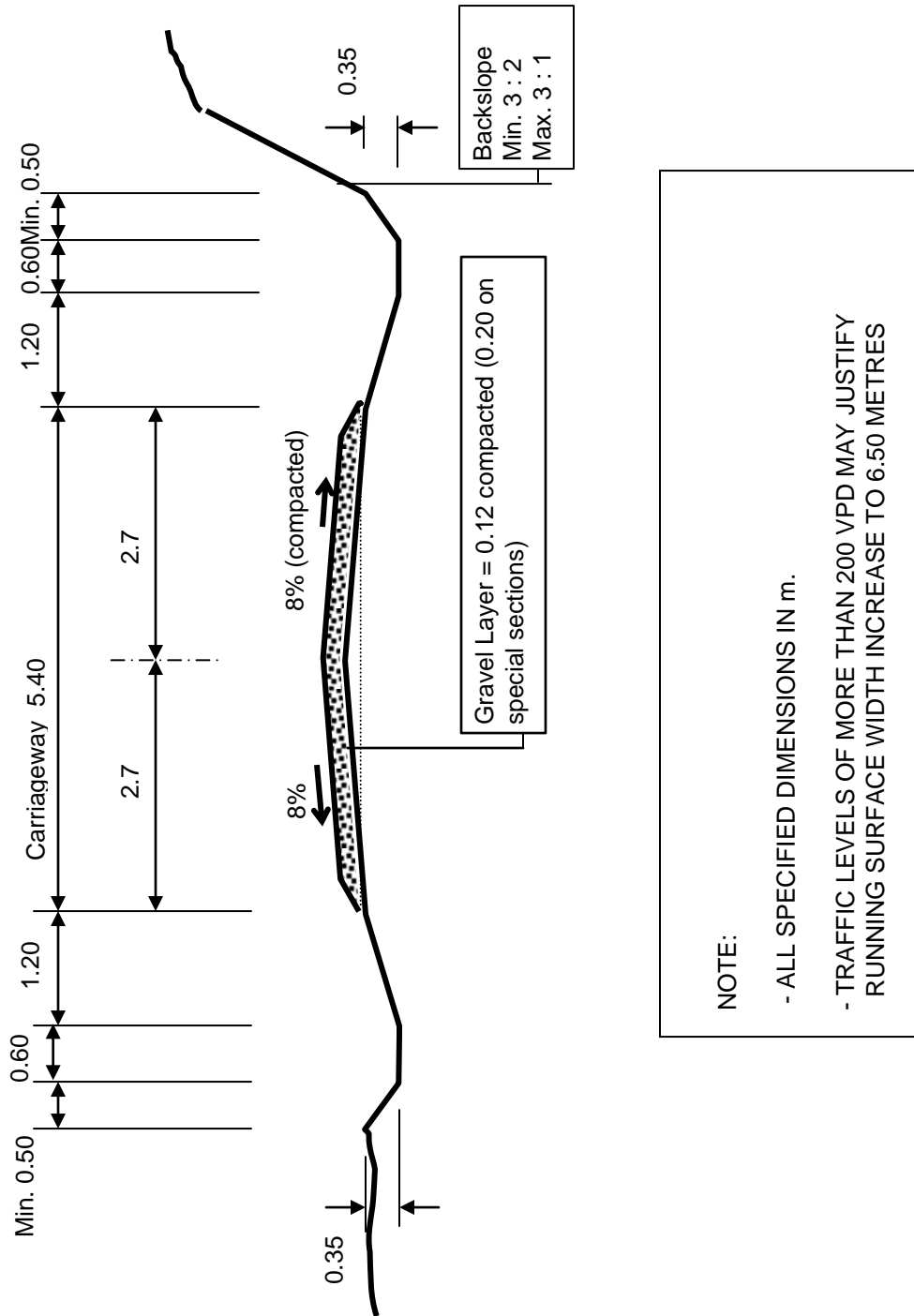
Add the following sub-clauses:

#### **10.1.2 Price Adjustment**

This is a firm contract and no price adjustment will be allowed as a result of changes in cost and legislation

**SECTION VIII:  
CONTRACT DRAWINGS**

FIGURE C.1 - CROSS SECTION A (MINOR STANDARD CROSS-SECTION)



**FIGURE C.2 - CROSS SECTION B (REDUCED CROSS-SECTION)**

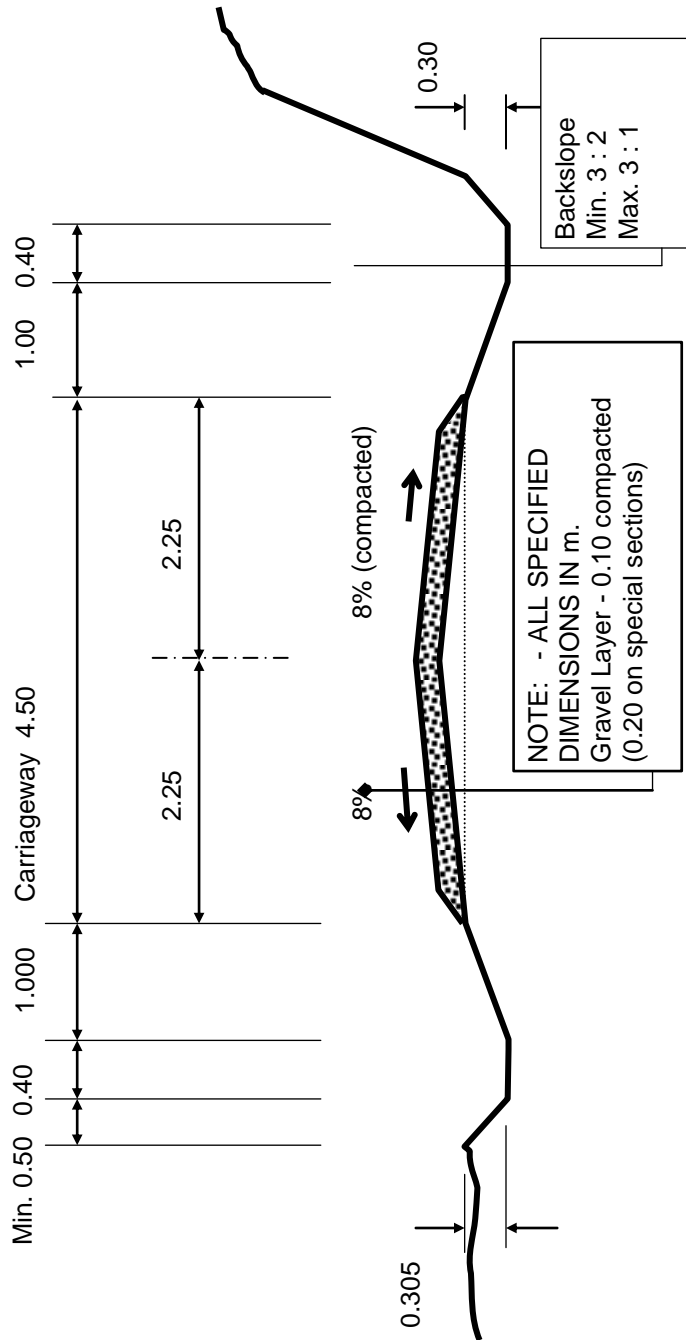


FIGURE C.3 - MITRE DRAINS

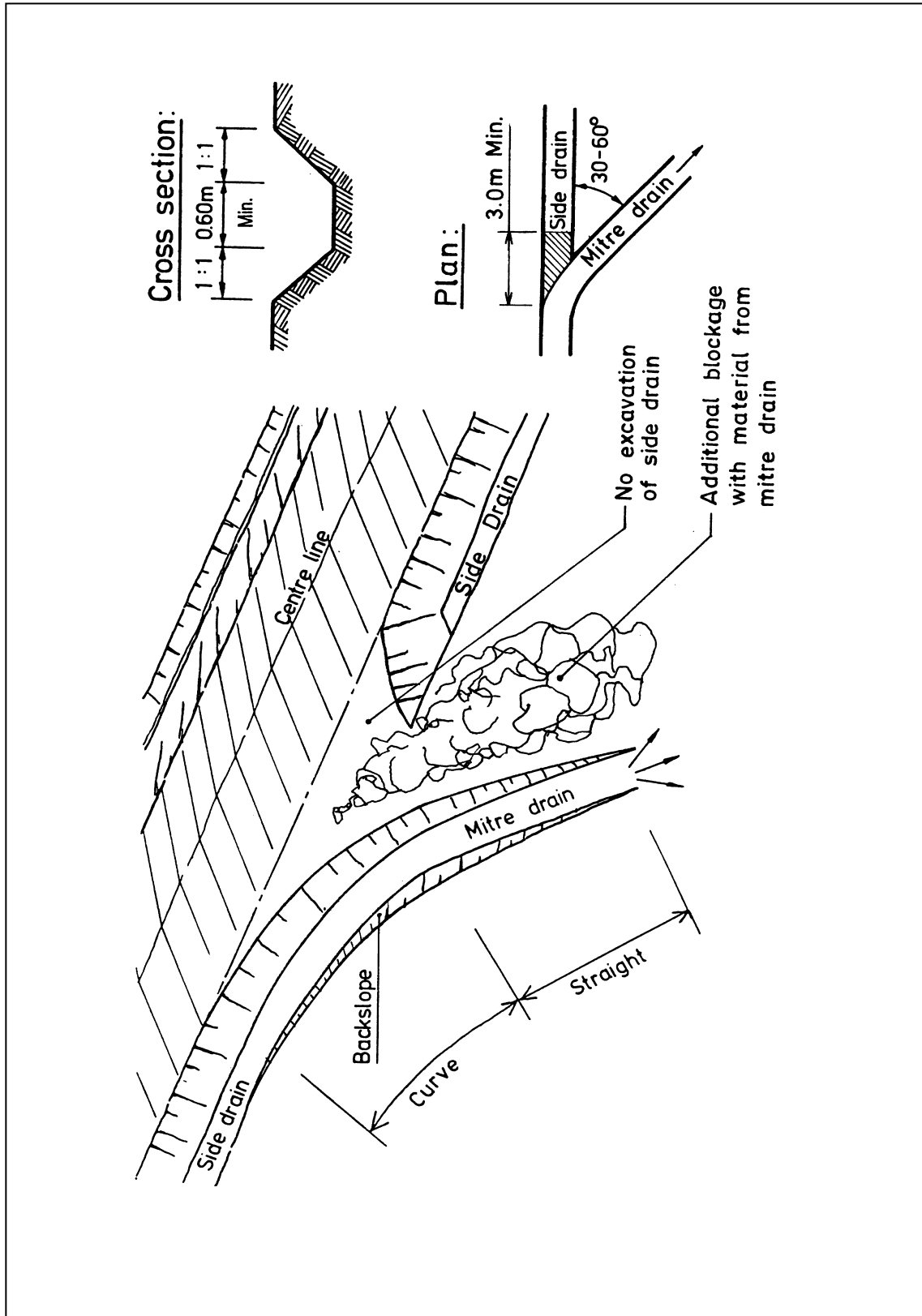


FIGURE C.4 - SCOUR CHECKS

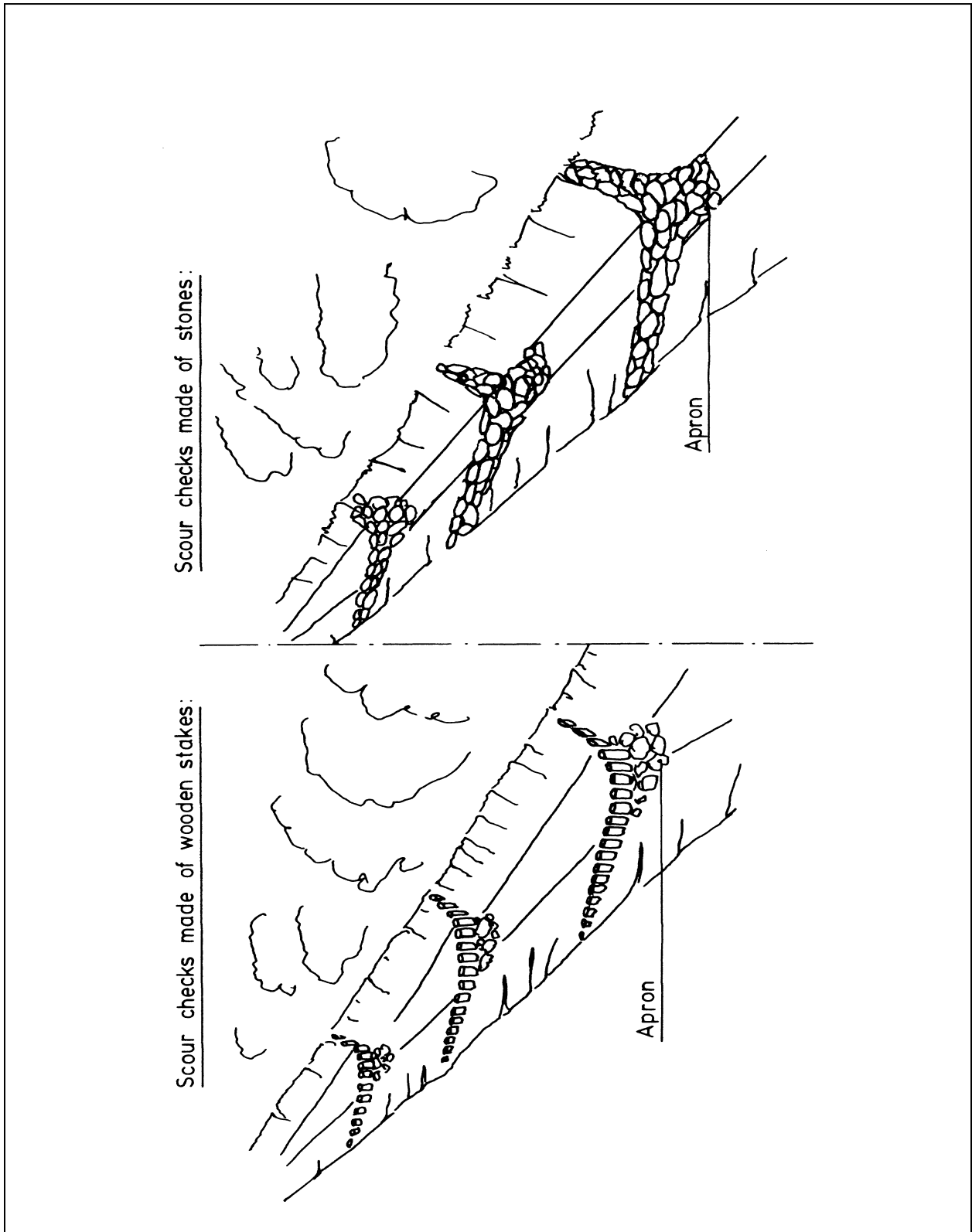
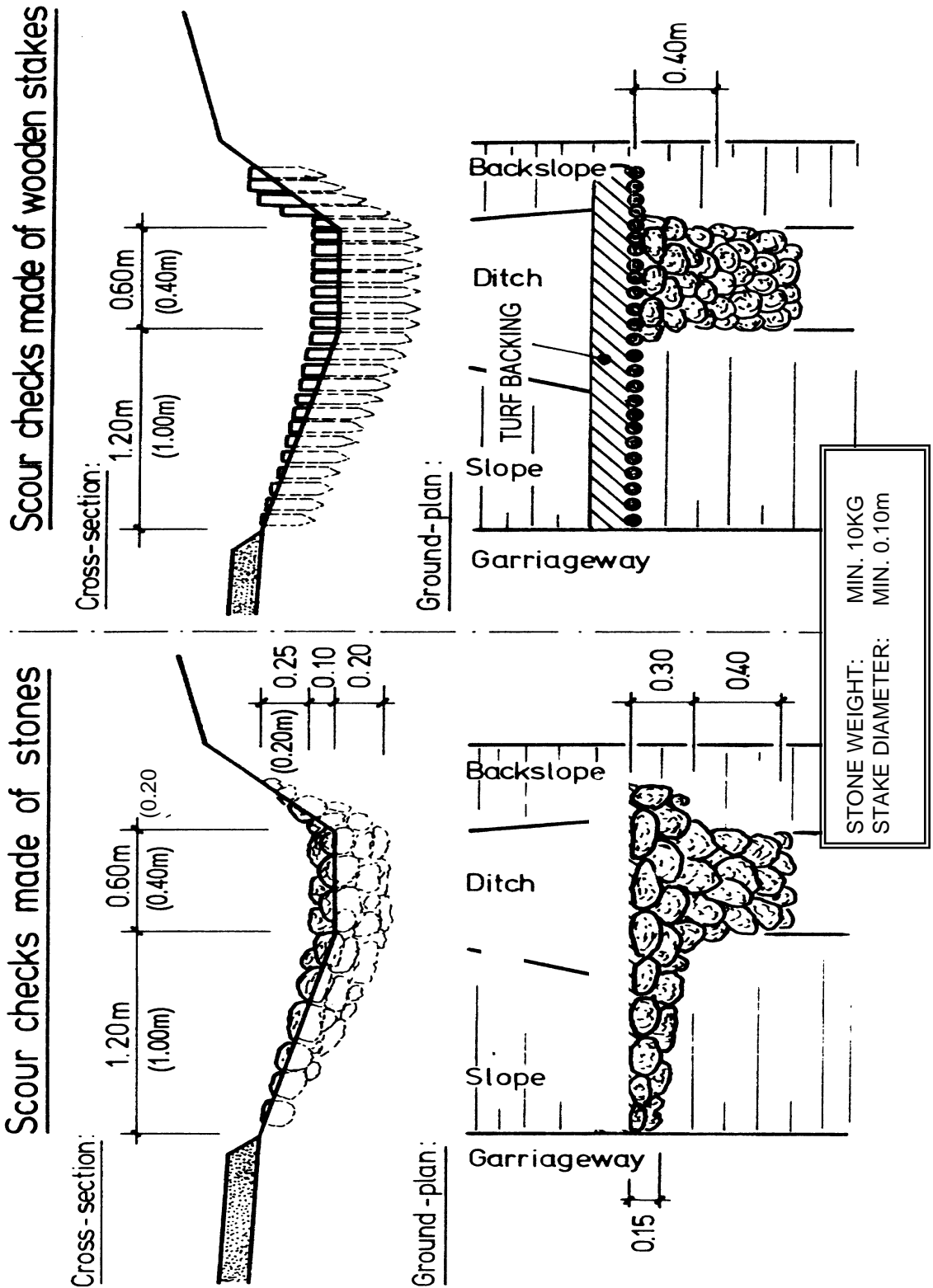
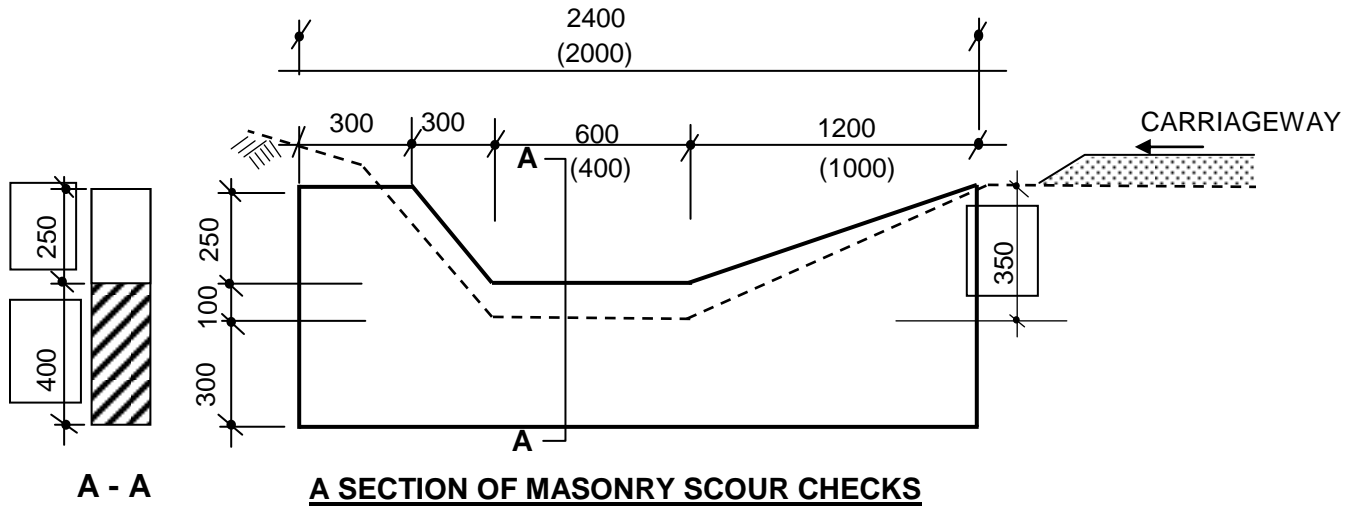




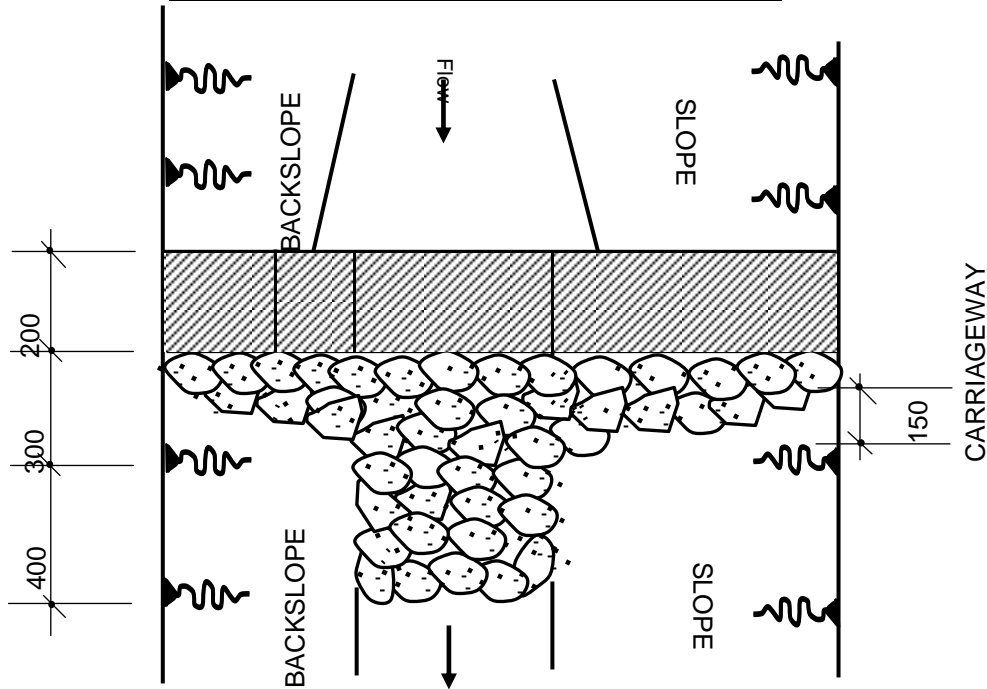
FIGURE C.5 - DIMENSIONS OF SCOUR CHECKS FOR STANDARD DRAIN



**FIGURE C.6 - MASONRY SCOUR CHECKS**



**A SECTION OF MASONRY SCOUR CHECKS**



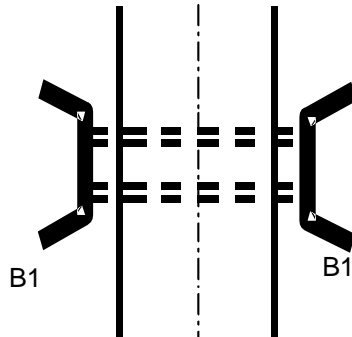
**PLAN OF DRAIN WITH EROSION CHECKS**

**QUANTITIES TABLE**

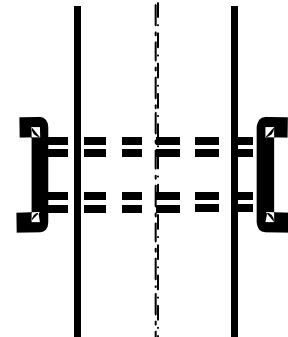
| Cross-Section | Sizes in mm |       |       | Excav. (m <sup>3</sup> ) | Stone masonry (m <sup>3</sup> ) | Apron stone pitching (m <sup>3</sup> ) |
|---------------|-------------|-------|-------|--------------------------|---------------------------------|----------------------------------------|
|               | Length      | Width | Depth |                          |                                 |                                        |
| A             | 2400        | 200   | 550   | 0.22                     | 0.25                            | 0.18                                   |
| B             | 2000        | 200   | 500   | 0.18                     | 0.2                             | 0.14                                   |

**FIGURE C.7 - CULVERT ENTRY / EXIT STRUCTURE TYPES**

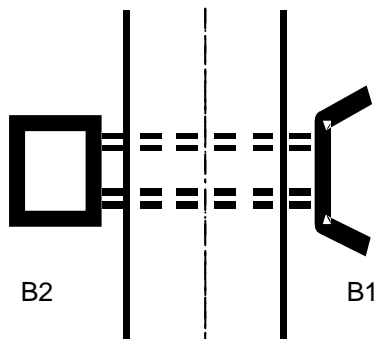
TYPE 1 (ENTRY AND EXIT)



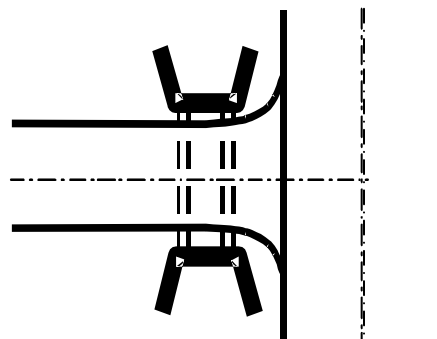
TYPE 3 (ENTRY AND EXIT)



TYPE 2 (ENTRY ONLY!)



TYPE 4 (ENTRY AND EXIT ON ACCESS)

**NOTE:**

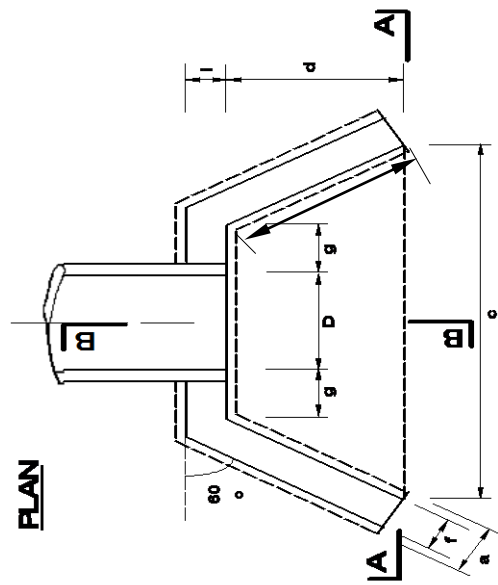
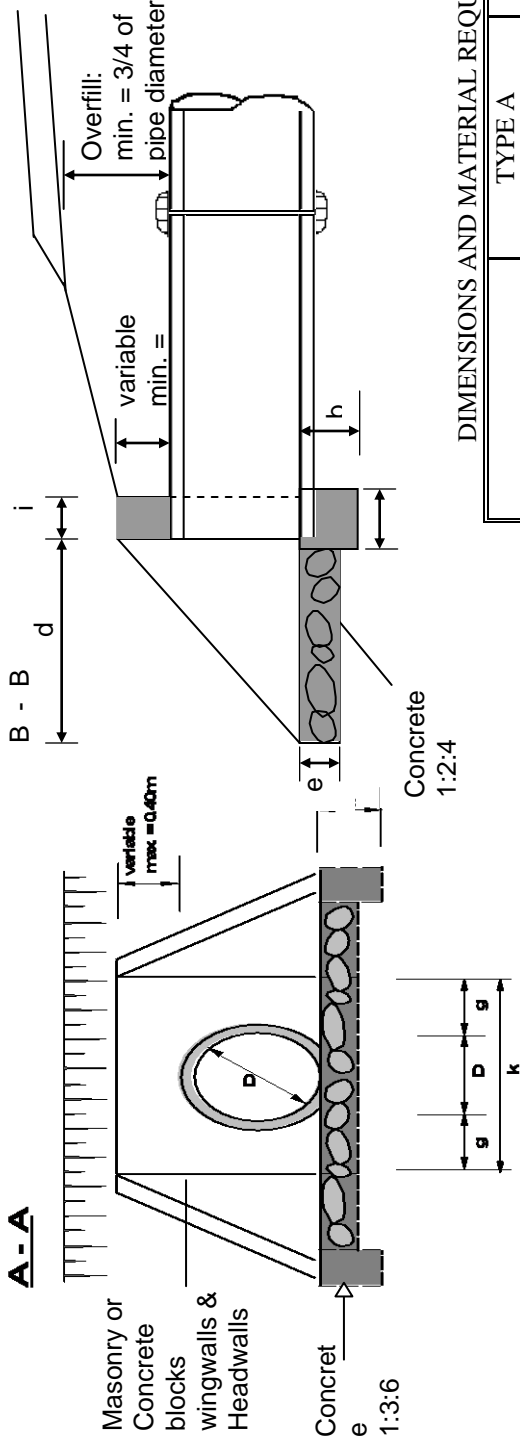
Coding system has been used in describing the standardised designs of the various culvert entry and exit structures. The code names consist of a number

to specify shape and function as elaborated in above while the used construction materials are identified through an alphabetic symbol as follows:

- A = Concrete block
- B = Stone masonry
- C = Dressed stones

An example code of "B2" would therefore stand for a drop inlet type structure to be built in stone masonry.

**FIGURE C.8 - HEADWALL TYPE 1 (HEAD AND WINGWALLS)**

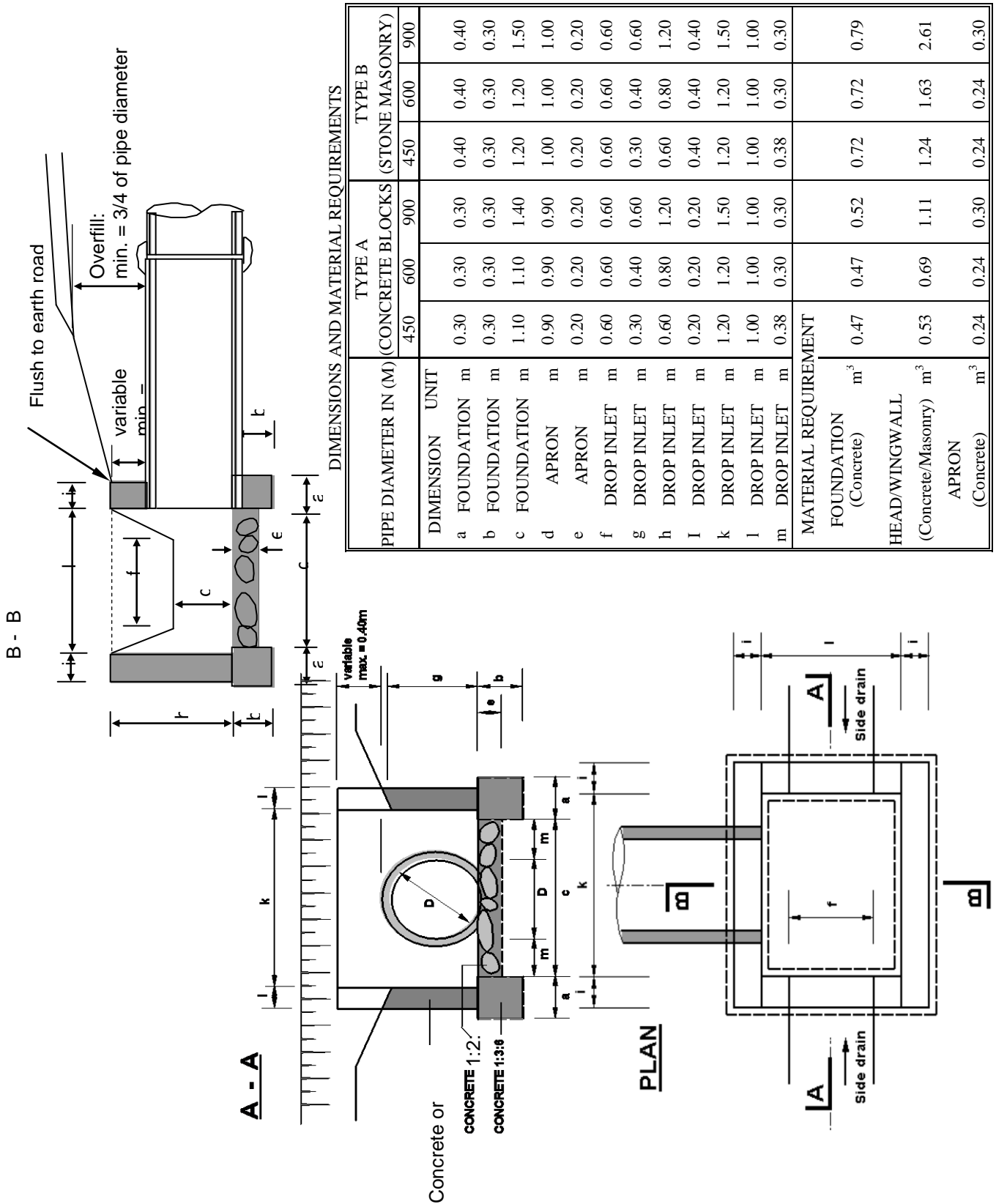


**DIMENSIONS AND MATERIAL REQUIREMENTS**

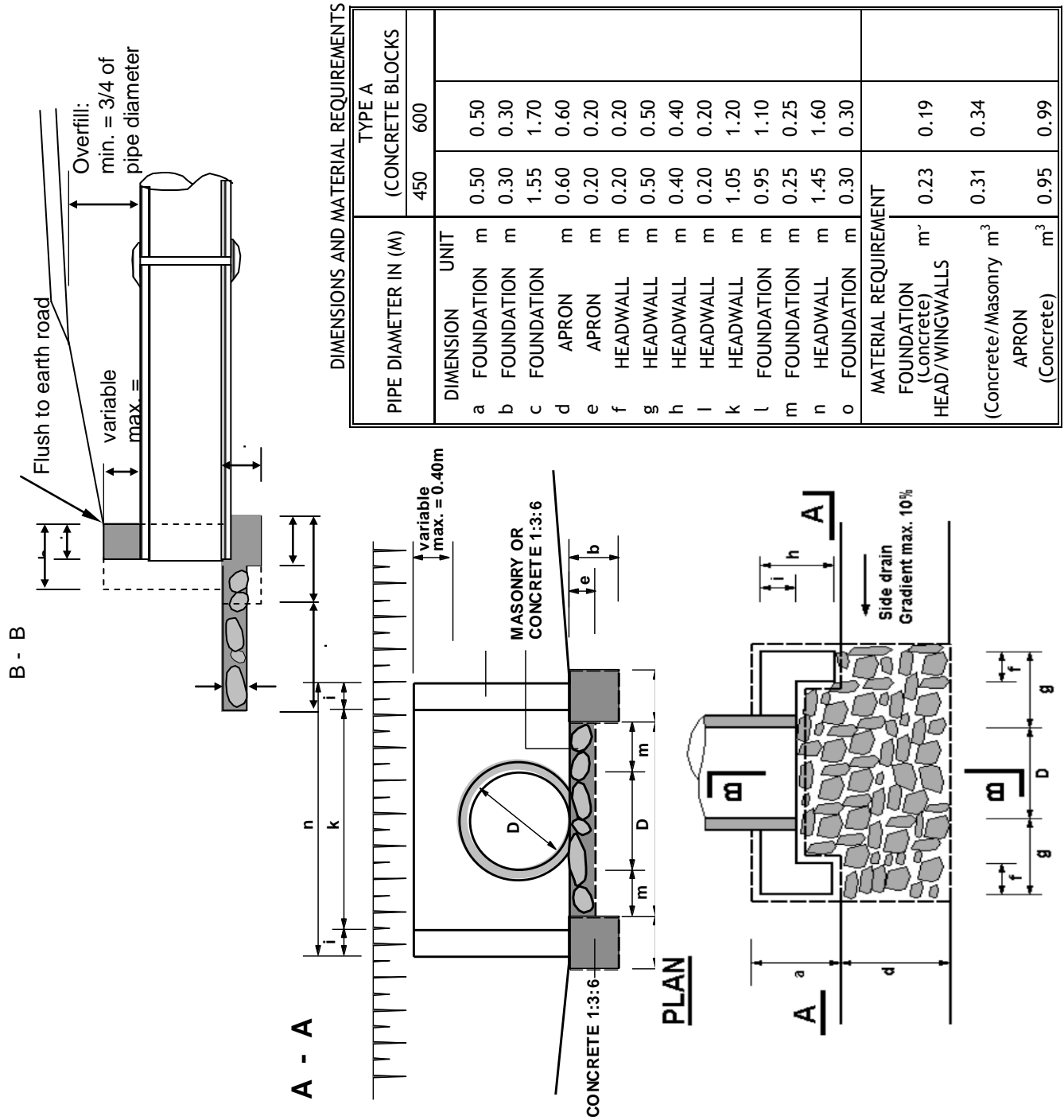
| (M)                              | TYPE A (CONCRETE BLOCKS) |      |      | TYPE B (STONE MASONRY) |      |      |      |
|----------------------------------|--------------------------|------|------|------------------------|------|------|------|
|                                  | 450                      | 600  | 900  | 450                    | 600  | 900  |      |
| <b>DIMENSION UNIT</b>            |                          |      |      |                        |      |      |      |
| a                                | 0.30                     | 0.30 | 0.30 | 0.40                   | 0.40 | 0.60 |      |
| b                                | 0.30                     | 0.30 | 0.40 | 0.30                   | 0.30 | 0.40 |      |
| c                                | 2.20                     | 2.35 | 2.89 | 2.20                   | 2.35 | 2.89 |      |
| d                                | 1.00                     | 1.00 | 1.20 | 1.00                   | 1.00 | 1.20 |      |
| e                                | 0.20                     | 0.20 | 0.20 | 0.20                   | 0.20 | 0.20 |      |
| f                                | 0.20                     | 0.20 | 0.20 | 0.40                   | 0.40 | 0.40 |      |
| g                                | 0.30                     | 0.30 | 0.30 | 0.30                   | 0.30 | 0.30 |      |
| h                                | 1.15                     | 1.15 | 1.39 | 1.15                   | 1.15 | 1.39 |      |
| I                                | 0.20                     | 0.20 | 0.20 | 0.40                   | 0.40 | 0.40 |      |
| k                                | 1.05                     | 1.20 | 1.50 | 1.05                   | 1.20 | 1.50 |      |
| <b>MATERIAL REQUIREMENT</b>      |                          |      |      |                        |      |      |      |
| FOUNDATION (Concrete)            | m <sup>3</sup>           | 0.3  |      |                        | 0.3  |      |      |
|                                  |                          | 0.52 | 0.51 | 0.4                    | 0.4  | 0.42 | 0.53 |
| HEAD/WINGWALL (Concrete/Masonry) | m <sup>3</sup>           | 0.4  |      |                        | 0.4  |      |      |
|                                  |                          | 0.47 | 0.67 | 0.8                    | 0.8  | 0.93 | 1.35 |
| APRON (Concrete)                 | m <sup>3</sup>           | 0.33 |      |                        | 0.33 |      |      |
|                                  |                          | 0.36 | 0.53 | 0.33                   | 0.33 | 0.36 | 0.53 |

| CULVERT PIPES   |              |
|-----------------|--------------|
| X-SECTION WIDTH | No. of Pipes |
| 4.50            | 6.00         |
| 5.50            | 7.00         |
| 6.50            | 8.00         |

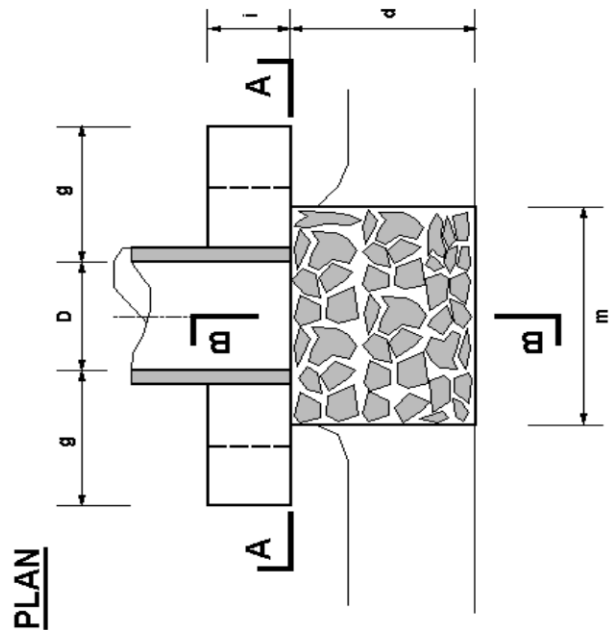
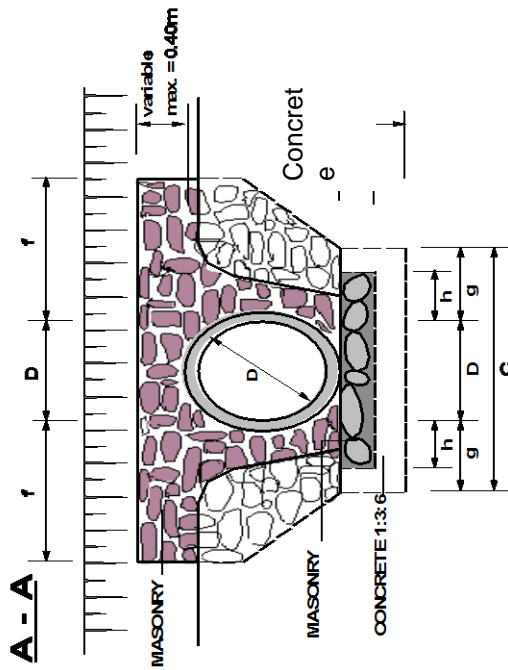
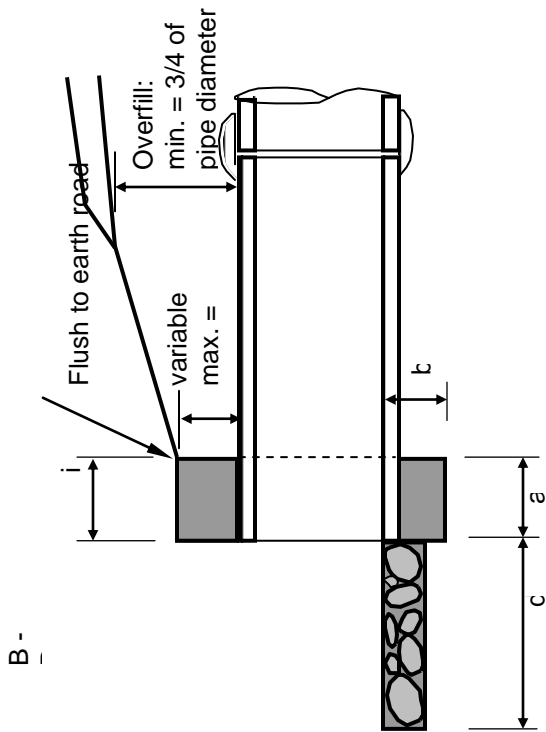
**FIGURE C.9 - HEADWALL TYPE 2 (DROP INLET)**



**FIGURE C.10 - HEADWALL TYPE 3A (CONCRETE BLOCK HEADWALLS)**

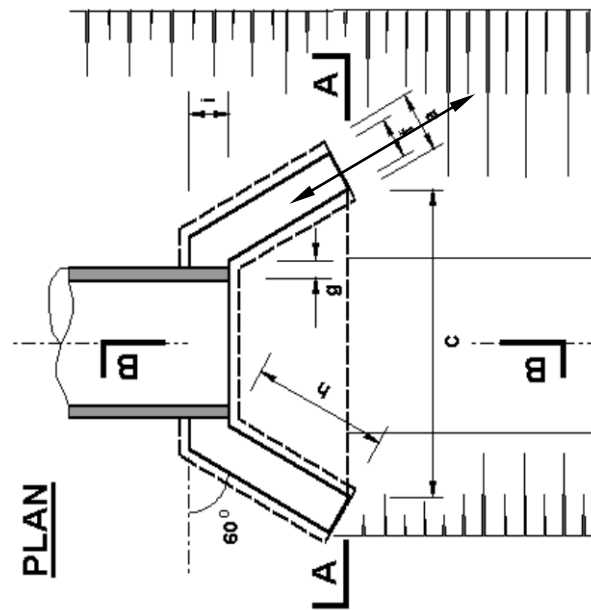
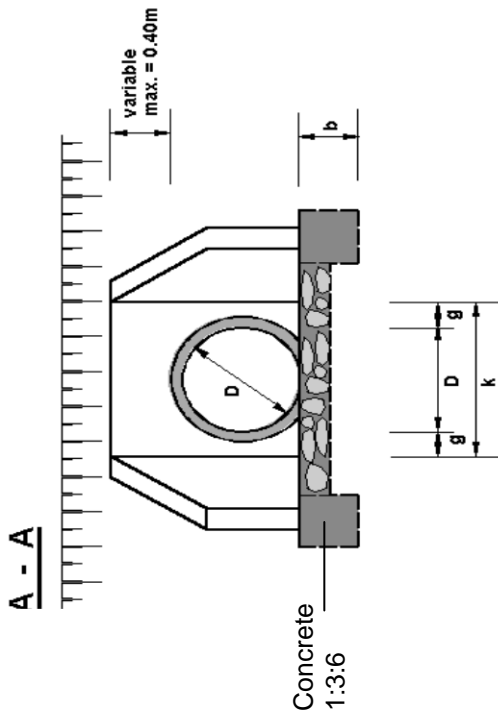
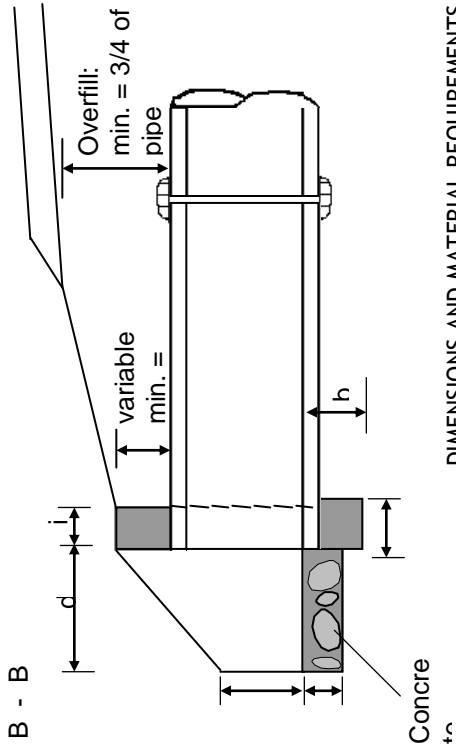


**FIGURE C.11 - HEADWALL TYPE 3B (STONE MASONRY HEADWALLS)**



| PIPE DIAMETER IN (M) | TYPE B<br>(CONC. BLOCKS) |     |                |      |
|----------------------|--------------------------|-----|----------------|------|
|                      | 450                      | 600 |                |      |
| DIMENSION            | UNIT                     |     |                |      |
| a                    | FOUNDATION               | m   | 0.40           | 0.40 |
| b                    | FOUNDATION               | m   | 0.30           | 0.30 |
| c                    | FOUNDATION               | m   | 1.55           | 1.70 |
| d                    | APRON                    | m   | 0.90           | 0.90 |
| e                    | APRON                    | m   | 0.20           | 0.20 |
| f                    | HEADWALL                 | m   | 0.75           | 0.75 |
| g                    | HEADWALL                 | m   | 0.50           | 0.50 |
| h                    | HEADWALL                 | m   | 0.30           | 0.30 |
| i                    | HEADWALL                 | m   | 0.40           | 0.40 |
| m                    | FOUNDATION               | m   | 1.05           | 1.20 |
| MATERIAL REQUIREMENT |                          |     |                |      |
| FOUNDATION           |                          |     |                |      |
| (Concrete 1:3:6)     |                          |     | m <sup>3</sup> | 0.19 |
| HEAD/WINGWALLS       |                          |     |                |      |
| (Concrete/Masonry)   |                          |     | m <sup>3</sup> | 0.62 |
| APRON                |                          |     |                |      |
| (Concrete 1:2:4)     |                          |     | m <sup>3</sup> | 0.19 |
|                      |                          |     |                | 0.22 |

FIGURE C.12 - HEADWALL TYPE 4 ( FOR ACCESS CULVERTS)

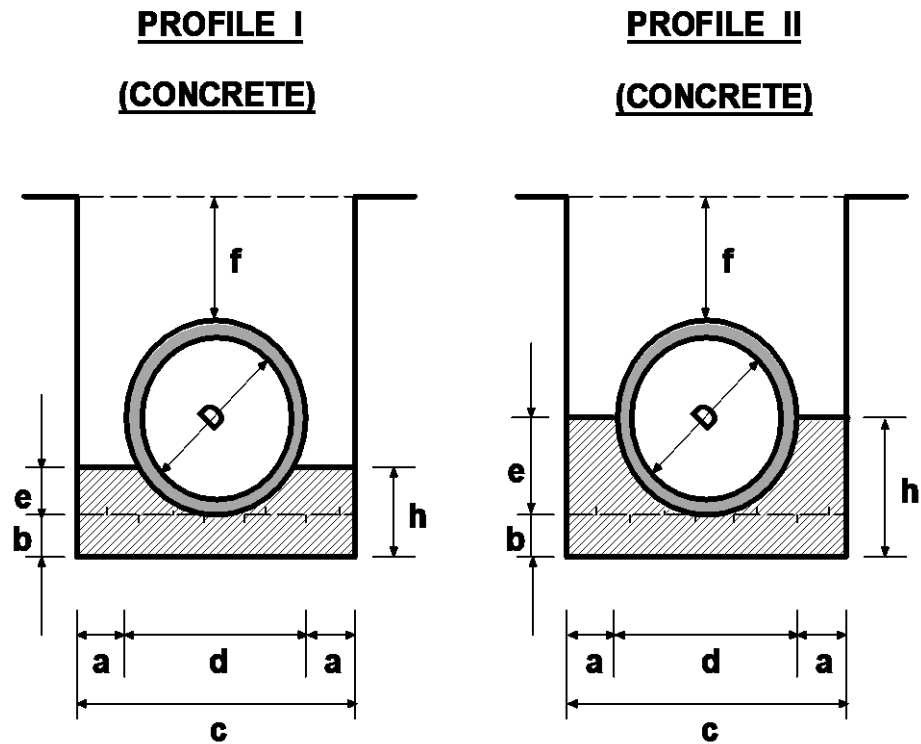


DIMENSIONS AND MATERIAL REQUIREMENTS

| PIPE DIAMETER IN (M)                     | TYPE A<br>(CONCRETE BLOCKS) |      |      | TYPE B<br>(STONE MASONRY) |      |      |
|------------------------------------------|-----------------------------|------|------|---------------------------|------|------|
|                                          | 450                         | 600  | 900  | 450                       | 600  | 900  |
| a                                        | 0.30                        | 0.30 | 0.40 | 0.40                      | 0.40 | 0.40 |
| b                                        | 0.30                        | 0.30 | 0.30 | 0.30                      | 0.30 | 0.30 |
| c                                        | 1.34                        | 1.49 | 1.34 | 1.34                      | 1.49 | 1.49 |
| d                                        | 0.60                        | 0.60 | 0.60 | 0.60                      | 0.60 | 0.60 |
| e                                        | 0.20                        | 0.20 | 0.20 | 0.20                      | 0.20 | 0.20 |
| f                                        | 0.20                        | 0.20 | 0.20 | 0.40                      | 0.40 | 0.40 |
| g                                        | 0.10                        | 0.10 | 0.10 | 0.10                      | 0.10 | 0.10 |
| h                                        | 0.69                        | 0.69 | 0.69 | 0.69                      | 0.69 | 0.69 |
| i                                        | 0.20                        | 0.20 | 0.20 | 0.40                      | 0.40 | 0.40 |
| k                                        | 0.65                        | 0.80 | 0.65 | 0.65                      | 0.80 | 0.80 |
| l                                        | 0.40                        | 0.40 | 0.40 | 0.40                      | 0.40 | 0.40 |
| MATERIAL REQUIREMENT                     |                             |      |      |                           |      |      |
| FOUNDATION<br>(Concrete 1:2:4,<br>1:3:6) | 0.18                        |      |      | 0.26                      |      |      |
| HEAD/WINGWALLS<br>(Concrete/Masonry)     | 0.25                        |      |      | 0.58                      |      |      |
| APRON<br>(Concrete)                      | 0.12                        |      |      | 0.14                      |      |      |



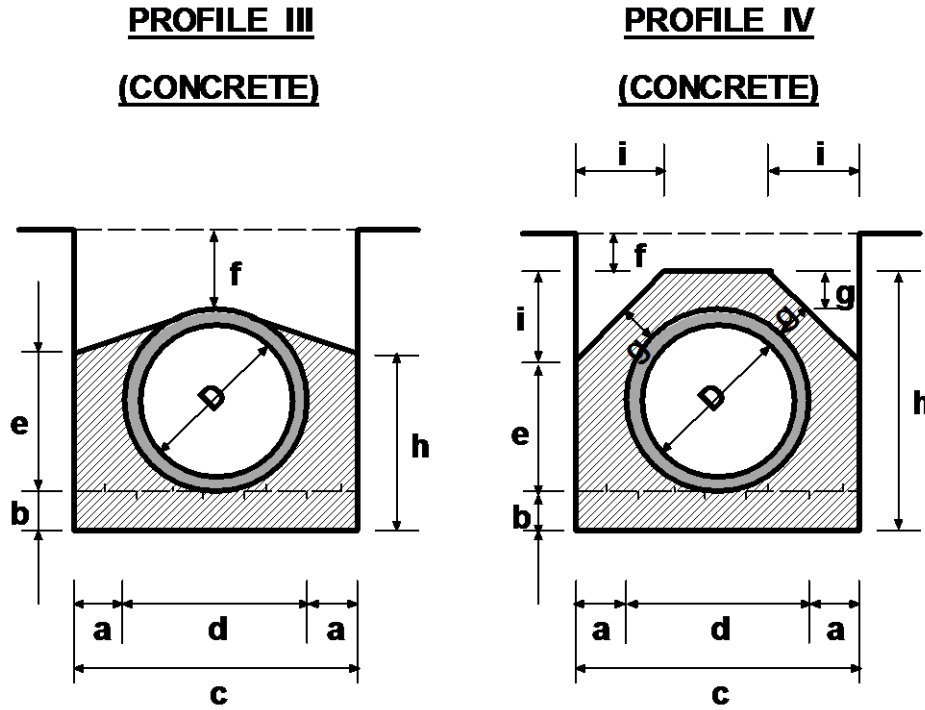
FIGURE C.13- BEDDING AND HAUNCH PROFILES TYPES I & II



| Diameter (D) | 450 (mm)                                                                             | 600 (mm) | 900 (mm) |
|--------------|--------------------------------------------------------------------------------------|----------|----------|
|              | Dimensions in (m)                                                                    |          |          |
| a            | 0.15                                                                                 | 0.2      | 0.2      |
| b            | 0.1                                                                                  | 0.15     | 0.15     |
| c            | 0.86                                                                                 | 1.12     | 1.48     |
| d            | 0.56                                                                                 | 0.72     | 1.08     |
| e            | 0.14                                                                                 | 0.18     | 0.27     |
| f (min.)     | 0.34                                                                                 | 0.45     | 0.68     |
| g            | -                                                                                    | -        | -        |
| h            | 0.24                                                                                 | 0.33     | 0.42     |
| i            | -                                                                                    | -        | -        |
| Concrete     | Volume in (m <sup>3</sup> /m)                                                        |          |          |
|              | 0.16                                                                                 | 0.3      | 0.48     |
| Application  | - Fair subgrade condition;<br>- Overfill > ¾ Diameter;<br>- Seasonal waterflow only. |          |          |
| Remarks      | - Use gravel material for back/overfill.                                             |          |          |

| Diameter (D) | 450 (mm)                                                                                     | 600 (mm) | 900 (mm) |
|--------------|----------------------------------------------------------------------------------------------|----------|----------|
|              | Dimensions in (m)                                                                            |          |          |
| a            | 0.15                                                                                         | 0.2      | 0.2      |
| b            | 0.1                                                                                          | 0.15     | 0.15     |
| c            | 0.86                                                                                         | 1.12     | 1.48     |
| d            | 0.56                                                                                         | 0.72     | 1.08     |
| e            | 0.28                                                                                         | 0.36     | 0.54     |
| f (min.)     | 0.34                                                                                         | 0.45     | 0.68     |
| g            | -                                                                                            | -        | -        |
| h            | 0.38                                                                                         | 0.51     | 0.69     |
| i            | -                                                                                            | -        | -        |
| Concrete     | Volume in (m <sup>3</sup> /m)                                                                |          |          |
|              | 0.2                                                                                          | 0.37     | 0.56     |
| Application  | - Fair to poor subgrade Condition;<br>- Overfill > ¾ Diameter;<br>- Seasonal waterflow only. |          |          |
| Remarks      | - Use gravel material for back/overfill.                                                     |          |          |

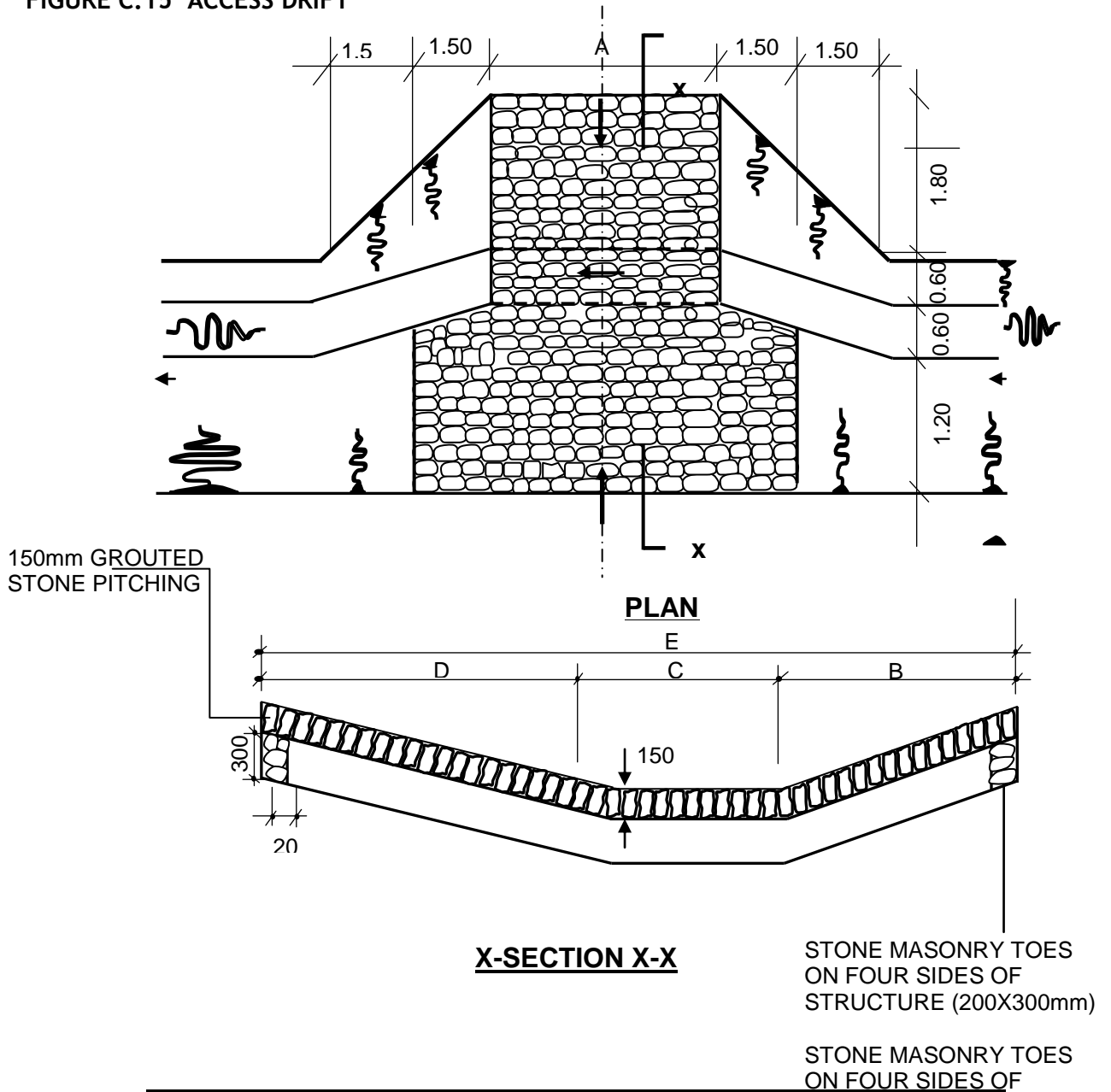
FIGURE C.14 - BEDDING AND HAUNCH PROFILES TYPES III & IV



| Diameter (D) | 450 (mm)                                                                             | 600 (mm) | 900 (mm) |
|--------------|--------------------------------------------------------------------------------------|----------|----------|
|              | Dimensions in (m)                                                                    |          |          |
| a            | 0.15                                                                                 | 0.2      | 0.2      |
| b            | 0.1                                                                                  | 0.15     | 0.15     |
| c            | 0.86                                                                                 | 1.12     | 1.48     |
| d            | 0.56                                                                                 | 0.72     | 1.08     |
| e            | 0.42                                                                                 | 0.54     | 0.81     |
| f (min.)     | 0.23                                                                                 | 0.3      | 0.45     |
| g            | -                                                                                    | -        | -        |
| h            | 0.52                                                                                 | 0.69     | 0.96     |
| i            | -                                                                                    | -        | -        |
| Concrete     | Volume in (m <sup>3</sup> /m)                                                        |          |          |
|              | 0.26                                                                                 | 0.47     | 0.71     |
| Application  | - Fair subgrade condition;<br>- Overfill > ¾ Diameter;<br>- Seasonal waterflow only. |          |          |
| Remarks      | - Use gravel material for back/ overfill.                                            |          |          |

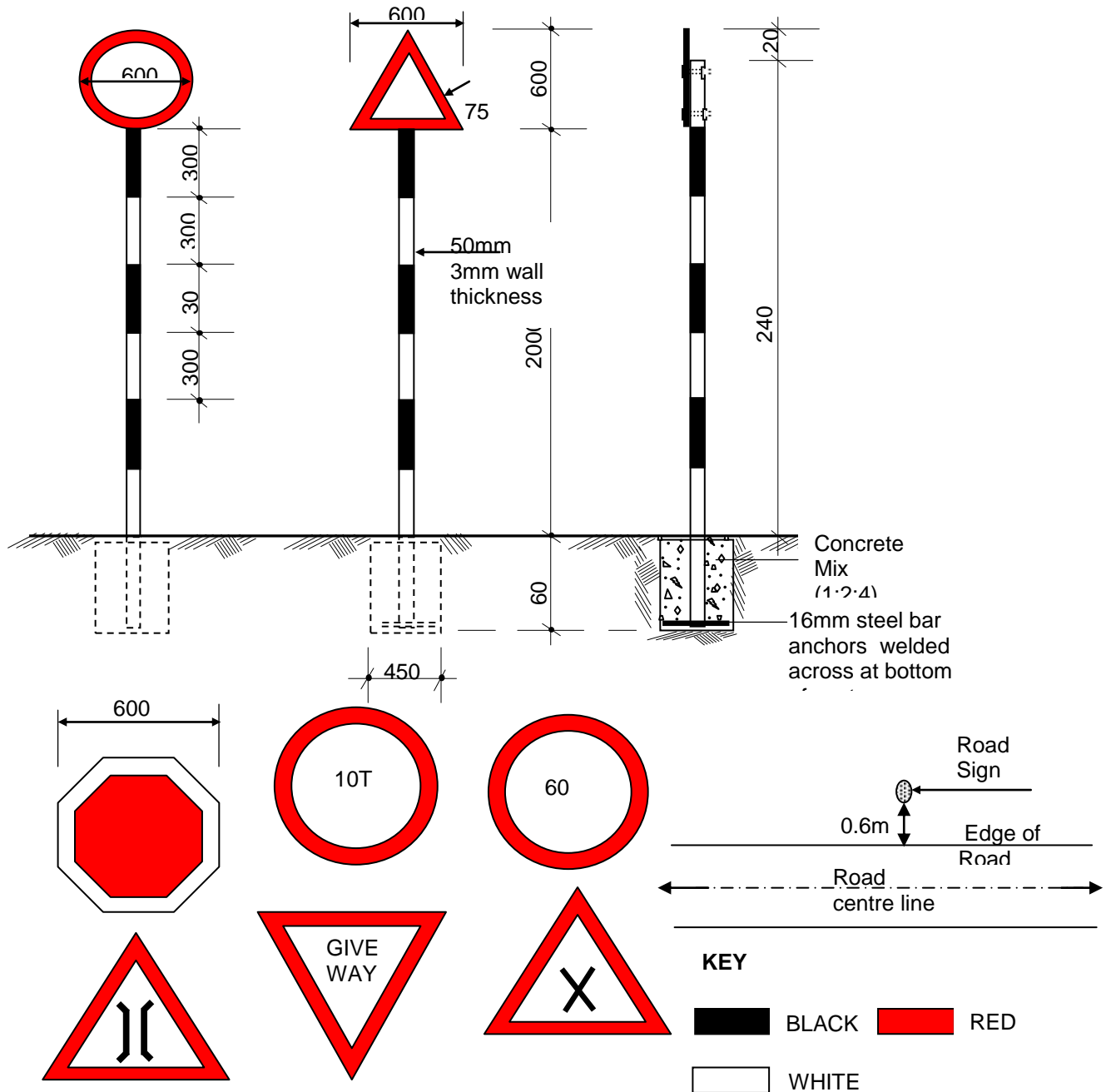
| 450 (mm) | 600 (mm)                                                                                     | 900 (mm) |
|----------|----------------------------------------------------------------------------------------------|----------|
|          | Dimensions in (m)                                                                            |          |
| 0.15     | 0.2                                                                                          | 0.2      |
| 0.1      | 0.15                                                                                         | 0.15     |
| 0.86     | 1.12                                                                                         | 1.48     |
| 0.56     | 0.72                                                                                         | 1.08     |
| 0.46     | 0.52                                                                                         | 0.78     |
| 0.15     | 0.15                                                                                         | 0.15     |
| 0.15     | 0.15                                                                                         | 0.15     |
| 0.81     | 1.02                                                                                         | 1.38     |
| 0.28     | 0.35                                                                                         | 0.45     |
|          | Volume in (m <sup>3</sup> /m)                                                                |          |
| 0.37     | 0.61                                                                                         | 0.92     |
|          | - Fair to poor subgrade Condition;<br>- Overfill > ¾ Diameter;<br>- Seasonal waterflow only. |          |
|          | - Use gravel material for back/ overfill.                                                    |          |

FIGURE C.15 ACCESS DRIFT



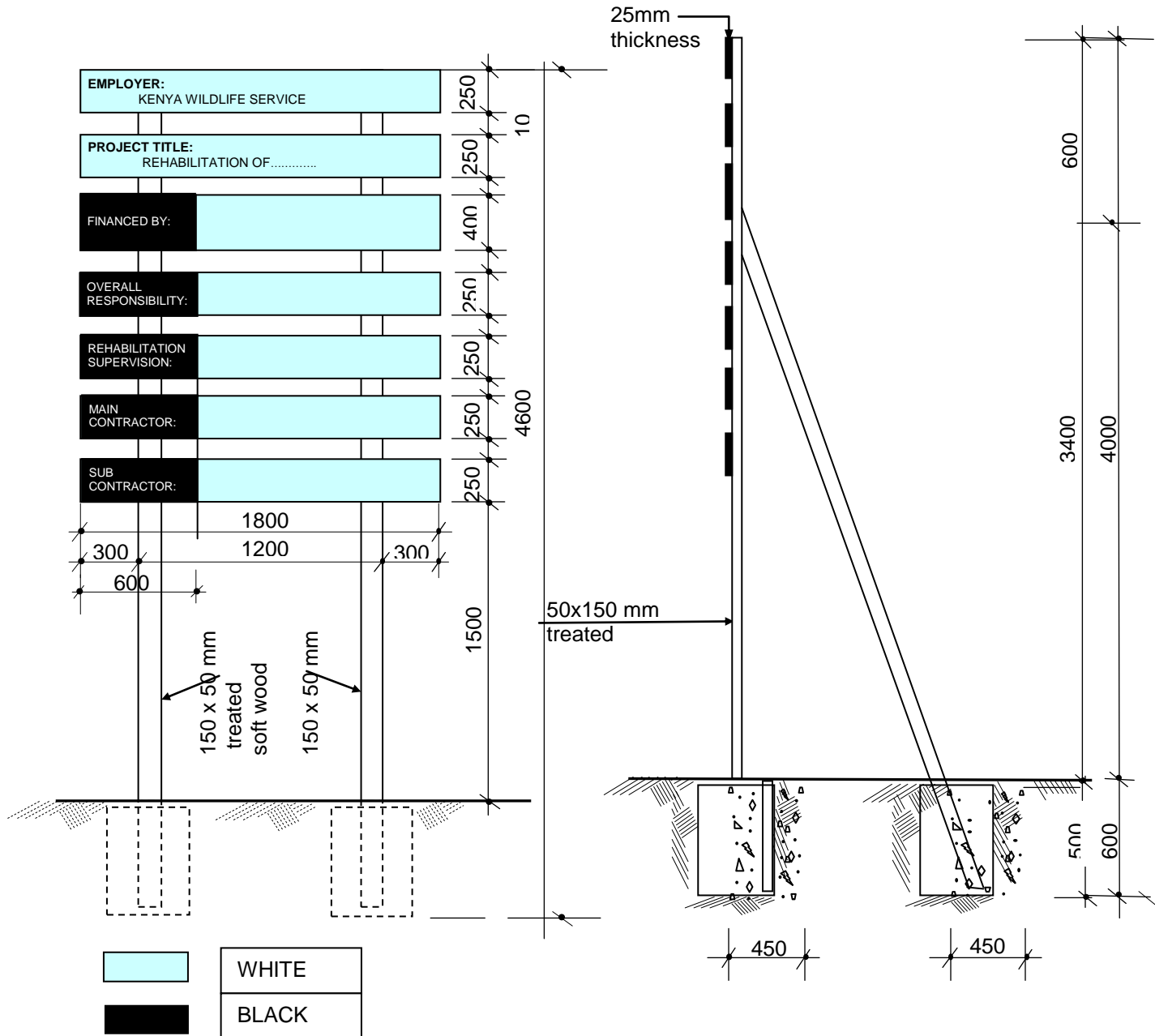
| QUANTITIES TABLE |            |      |     |      |      |                              |                                 |                                                |
|------------------|------------|------|-----|------|------|------------------------------|---------------------------------|------------------------------------------------|
| Cross section    | DIMENSIONS |      |     |      |      | Excavation (m <sup>3</sup> ) | Stone masonry (m <sup>3</sup> ) | 150mm Grouted stone pitching (m <sup>3</sup> ) |
|                  | A          | B    | C   | D    | E    |                              |                                 |                                                |
| A                | 4000       | 1800 | 600 | 1800 | 4200 | 7.50                         | 1.30                            | 21.75                                          |
|                  | 6000       | 1800 | 600 | 1800 | 4200 | 10.00                        | 1.60                            | 30.15                                          |
| B                | 4000       | 1400 | 400 | 1800 | 3600 | 7.00                         | 1.20                            | 18.30                                          |
|                  | 6000       | 1400 | 400 | 1800 | 3600 | 9.00                         | 1.50                            | 25.50                                          |

FIGURE C.16 - TRAFFIC SIGNS



1. The type of sign required and their location shall be as shown on the improvement plan and as directed by the Engineer
2. Sign plate to be 2 mm thick mild steel plate
3. Sign post to be 50 mm internal diameter steel pipe with wall thickness of 3 mm.
4. Sign plate to fixed to steel tube by 4 Nos M10 bolts and 2 Nos 50 mm f fixing clamps/brackets.
5. Sign paints shall be reflective.
6. The sign plate and post shall be treated by applying two coats of lead red oxide paint before applying priming and two finish coats of approved paints . Paints used shall have a hard, durable and glossy finish.

FIGURE C.17 - PUBLICITY SIGNBOARD



**NOTES**

1. The wording of the project signboard and the location to be installed to be as directed by the Engineer
2. Materials to be used for fabrication of signboard shall be pressure impregnated treated softwood timber sizes as indicated in the drawing
3. Wording boards to be nailed to the posts using nails.
4. Project board posts and struts to be embedded in concrete ratio 1:2:4

**SECTION IX:**

**SPECIFICATIONS FOR ROUTINE MAINTENANCE REHABILITATION AND SPOT  
IMPROVEMENT WORKS**

**Standard Specification**

Where required, material to be incorporated in the works shall comply with the relevant section of the Standard Specification for Roads and Bridge Construction, 1986 Edition published by the Ministry of Transport and Communication.

Whenever reference is made to “The Engineer” in the specification, it shall be construed to be synonymous with the term “Employer” or “Employer’s duly authorised Representative” respectively as referred to in the Conditions of Contract.

**SECTION 01 : PRELIMINARY AND GENERAL ITEMS****Scope:**

This section refers to those items that are needed at the start and end of the works or are provisional items related to the whole Project.

**01 - 001: Mobilisation, Establishment and Demobilisation from Site**

The Contractor shall be responsible for the provision of all equipment, tools, material, temporary stores and housing required to successfully carry out the required works.

The Contractor shall ensure that all possible means of protection is given to his/her own staff at all times. Such protection shall include provision of high visibility clothing or vests for the workforce. The contractor shall also maintain first aid kits with a minimum of the following items:-

- Non Stick wound dressing
- Selection of plaster/band aids
- Crepe bandages
- Gauze and cotton wool
- Antiseptic solution (washing wounds)
- Antiseptic cream – Betadine, Burnol
- Pain killers Panadol, Disprin
- Anti diarrhoea – Immodium, Diadis, Charcoal
- Anti histamine – Piriton, Triludan
- Anti nausea – Stemetil
- Antibiotic – Amoxil, Septrin
- Eye ointment
- Oral re-hydration sachets
- Surgical gloves

Warning signs, fences, barriers, detours, etc. shall be properly positioned well in advance so that all traffic has been well and safely accommodated before work is allowed to start.

Signs and traffic control shall be kept in good condition and be clear to all road users.

At the completion of the works, all such temporary housing, equipment, signs and tools shall be removed from the site.

**Measurement and Payment:**

No separate measurement and payment shall be made for this item. The Contractor shall be deemed to have included the cost for this item elsewhere in his rates.



## SECTION 04: ROADSIDE CLEARANCE

### Scope

This section covers all routine maintenance works within the road reserve and includes items such as bush clearing, pruning of tree branches, grass cutting, and removal of litter and any other debris.

### 04 – 50 – 002: Grass Cutting (Manual)

Grass shall be defined as any form of plant growth including small shrubs having a girth of not more than 100mm measured at height of 150mm above ground level.

The grass shall be cut to height of not more than 50 mm above the ground. The width limits shall be as instructed by the Engineer. All cut grass shall be removed from the carriageway, side drains, mitre drains and inlets and outlet drains of structures/culverts and deposited in approved spoil dumps

Burning of the grass shall not be allowed and care shall be taken not to damage roadside fixtures such as signs and marker posts.

This activity shall be carried out twice, each time before the rainy season or as shall be instructed by the Engineer.

### Work Method

The Contractor shall use **labour** to carry out this item of work.

### Quality Control

The road width for grass cutting shall be measured using tape measure at 50-m intervals and shall be visually checked to be free of grass after the operation.

Measurement: m<sup>2</sup>

The unit of measurement shall be square metres of grass cut.

### Payment

The unit rate shall be full compensation, for labour, materials, tools, equipment and any incidental costs required to carry out the prescribed works.

### 04 – 50 – 003: Bush Clearing

This activity involves removal of small trees, shrubs and bushes all including their root system so as to prevent re-growth. In addition, the Engineer may order the trimming of branches of large trees so as to improve visibility. The width limits shall be as instructed by the Engineer.

The cut down material shall be collected into heaps away from the side drains and where it shall not block or interfere with visibility problems.

Burning of cut bush and removed trees or branches shall not be allowed.

### Work Method

The contractor shall use **Labour** to carry out this item work

### Quality Control

The width for bush clearing shall be measured using a tape at 50-m intervals and shall be visually confirmed to be free of trees or bushes.

Measurement : \_\_\_\_\_ m<sup>2</sup>

The unit of measurement shall be the area in square metres.

### Payment

The unit rate shall be the full compensation, for labour, materials, tools, and any incidental costs required to carry out the prescribed works.

#### **04 – 50 – 008: Clearing of Obstructions**

This activity shall involve to the following tasks:-

- Inspection of the road section(s) included in the contract daily.
- Removal of all obstruction such as fallen trees/ branches, rock fall, landslides, broken signs, etc. away from the roadway road side drains, mitre drains and other drains, inlets and outlets of drifts, culverts and other structures and the safe disposal thereof outside the road formation width.
- Removal of dead animals' carcasses away from the carriageway and disposing them as directed by the Engineer. Liaison with the Police may be necessary.

### Work Method

The contractor shall use **labour** to carry out this item of work

### Quality Control

The road section shall be visually checked for any obstruction.

### Measurement

The unit of measurement for this item shall be **lump sum per Km** for the contract period.

### Payment

The unit rate shall be the full compensation for the provision of labour, and tools necessary to carry out the tasks listed above.

**SECTION 05: EARTHWORKS****05 – 50 - 014: Grassing (Repair of erosion on shoulders / planting of grass)**

This activity shall involve protection / repair of erosion on embankment slopes, cut faces, shoulders, side slopes by filling with suitable soils and compacting using appropriate tamping tools as instructed by the Engineer.

Contractor shall plant turf of approved indigenous ‘runner’ type grass. The Contractor shall care for and water the grass until it is firmly established.

Work Method

The contractor shall use **Labour** carry out this item work.

Quality Control

- The width of the slope shall be measured at 50m intervals and shall have maximum tolerances of + / - 100mm.
- The quality of grass and spacing of the sprigs shall be visually checked

Measurement: \_\_\_\_\_ m<sup>2</sup>

The unit of measurement shall be total area in square metre calculated as the net area, measured on the slope.

Payment

The unit rate shall be full compensation, for labour, materials, tools, and any incidental costs required to carry out the prescribed works

**05 – 007: Catch water drains**

The cross section details shall be provided in the drawings or shall be as directed by the Engineer. In steep gradient scour checks may be installed in the catch water drains and grass cover shall be encouraged to grow in the drain. The excavated material shall be deposited at the lower (valley) side of the drain.

The location of the drains shall be checked and approved by the Engineer before construction;

The cross section dimensions shall be checked using tape measure at 25 m intervals and tolerances shall be +/- 25mm

Work Method

The contractor shall use **Labour or Equipment to** carry out this item work.

Measurement: \_\_\_\_\_ m<sup>3</sup>

The unit of measurement shall be cubic metres of materials excavated.

Payment

The unit rate shall be full compensation for labour and any incidental costs required for carrying out the prescribed works

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**SECTION 07: EXCAVATION AND FILLING FOR STRUCTURES****Scope**

This section covers all excavation of cuttings, haulage, placing and compaction of material to form embankments.

**07.-.50.002 EXCAVATION OF FOUNDATIONS FOR STRUCTURES**

Unless otherwise instructed by the Engineer, all excavated surfaces in material other than hard material, on which foundations for structures shall be placed, shall be compacted to 100% MDD (AASHTO T.99) immediately before structures are constructed.

Paragraph 4, last line: - Replace "95%" with "100%".

**07.-.50.003 EXCAVATIONS FOR RIVER TRAINING AND NEW WATER COURSES**

Payments for river training and establishment of new watercourses shall only be made where such work constitute permanent works. Works done for road deviation or other temporary works shall not qualify for payment.

**07.-.50.003 BACKFILLING FOR STRUCTURES**

Unless otherwise instructed by the Engineer, all backfilling material shall be compacted to a minimum of 100% MDD (AASHTO T.99).

**07.-.50.003 BACKFILL BELOW STRUCTURES**

Where instructed this shall be carried out in compliance with the requirements of Clause 507 and 804 of the Standard Specification.

## SECTION 08: ROAD DRAINAGE AND STRUCTURES WORKS

### Scope:

This section covers all **routine maintenance works of the drainage system** and includes items such as cleaning or desilting of the side drains, mitre drains, catch water drains, culverts barrel plus inlets and outlets and scour checks.

### 08 – 50 – 002: Cleaning of the Side Drains / Catch water drains

#### Partially silted

Partially silted drain shall be that drain that is less than half silted and requires only cleaning.

All deposited material, debris, and vegetation shall be removed and the drain shaped to the original cross-sectional standard and shall be in a free-draining condition. Suitable material shall be used to fill depressions and potholes on the carriageway. All debris and other unsuitable material removed from the side drains shall be disposed well clear of the drainage system in approved spoil dumps where it cannot cause any obstruction or be washed back.

The side drains shall be cleaned before the onset of the rains. The Engineer may instruct the contractor to clean the side drains immediately after heavy downpours.

#### Work Method

The contractor shall use **labour and or equipment** to carry out this item work

#### Quality Control

- Appropriate drain templates shall be used to check and control the dimension of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, string and line-level.

Measurement: \_\_\_\_\_ m

Under this item the unit of measurement shall be linear metres of length of drain desilted or cleaned depending on the cross-section standard of the road.

#### Payment

The unit rate shall be full compensation, for labour, tools, and any incidental costs required to carry out the prescribed works

### 08 – 50 – 002: Desilting / Reshaping of the Side Drains / Catch water Drains

#### Fully silted

Fully silted Catch water or side drain shall be that drain that is greater than half-silted and requires re excavation

or reshaping

All deposited material, debris, and vegetation shall be removed and the drain shaped to the original cross-sectional standard and shall be in a free-draining condition. Suitable material shall be used to fill depressions and potholes on the carriageway. All debris and other unsuitable material removed from the side drains shall be disposed well clear of the drainage system in approved spoil dumps where it cannot cause any obstruction or be washed back.

The side drains shall be desilted or re-excavated before the onset of the rains and during grading

Work Method

The contractor shall use **Equipment and or Labour** as directed to carry out this item work. Reshaping of the side drain shall be done together with the carriage way.

Quality Control

- Appropriate drain templates shall be used to check and control the dimension of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, string and line-level.

Measurement for works on catch water drain: m<sup>3</sup>

Under this item the unit of measurement shall be the total volume in cubic metres of excavated material, excavated in its original position.

Measurement for works on side drain:

Under this item measurement shall be considered in the grading works except when the work is order by the Engineer where no grading or gravelling is required on the pavement. In such case the unit of measurement shall be the total volume in cubic metres (m<sup>3</sup>) of excavated material, excavated in its original position.

Payment

The unit rate shall be full compensation, for labour, tools, and any incidental costs required to carry out the prescribed works

**08 – 50 – 005:           Cleaning of Mitre drains****Partially silted**

Partially silted drain shall be that drain that is less than half silted and requires only cleaning

All silt, debris, and vegetation shall be removed and the drain shaped to the instructed cross-section and be in a free-draining condition. All debris and other material removed from the mitre drains shall be disposed away and clear of the drainage system in approved spoil dumps to prevent debris from being washed back.

The mitre drains shall be cleaned before the onset of the rains.

Work Method

The contractor shall use **Equipment and or Labour** as directed to carry out this item work.

Quality Control

- Appropriate drain templates shall be used to check and control the dimension of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, string and line-level.

Measurement:           m

Under this item the unit of measurement shall be the total length in linear metres of the drain cleaned

Payment

The unit rate shall be full compensation, for labour, tools, and any incidental costs required to carry out the prescribed works.

**08 – 50 – 005: Desilting of Mitre drains****Fully silted**

Fully silted drain shall be that drain that is greater than half-silted and requires re excavation or reshaping.

All silt, debris, and vegetation shall be removed and the drain shaped to the instructed cross-section and be in a free-draining condition. All debris and other material removed from the mitre drains shall be disposed away and clear of the drainage system to prevent debris from being washed back.

The mitre drains shall be cleaned before the onset of the rains.

Work Method

The contractor shall use **Equipment and or Labour** as directed to carry out this item work

## Quality Control

- Appropriate drain templates shall be used to check and control the dimension of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, string and line-level.
- Siltation/Obstructions must be less than 50mm in depth

Measurement: \_\_\_\_\_ m<sup>3</sup>

Under this item the unit of measurement shall be the total volume in cubic metres of excavated material, excavated in its original position.

Payment

The unit rate shall be full compensation, for labour, tools, and any incidental costs required to carry out the prescribed works.

**08 – 60 - 001/2/3/4/5: Cleaning Culverts / Structures, inlet/outlets (Partially blocked)**

08 - 60 - 001 300mm dia;

08 - 60 - 002 450mm dia;

08 - 60 - 003 600mm dia;

08 - 60 - 004 900mm dia;

08 - 60 - 005 1200mm dia

This activity shall involve the cleaning of culverts of specified size including pipe barrels and the outlet/inlet structures, and the outlet drains, keeping them free of all debris, weed, silt and any obstruction to ensure free passage of water at all times. The debris shall be deposited in approved spoil dumps directed by the Engineer

***Partially blocked culverts shall be considered as pipe culverts with less than half the barrel-blocked.***

Correct widths and slopes of the outlet drains shall be maintained. The gradient of the outlet drain shall be checked to ensure it is greater than 2 % using boning rods, line and level.

All broken culvert barrels discovered in the course carrying out this activity shall be reported to the Engineer.

This activity should be carried out before the rains.

**Work Method**

The contractor shall use **labour** to carry out this item of work

Quality Control

The workmanship shall be visually checked and shall be clean and free of obstacles

Measurement: **m**

The unit of measurement shall be linear metre of culvert line including outlet drain cleaned

Payment

The unit rate shall be full compensation for labour, tools, as required to carry out the prescribed works.

**08 – 60 - 006/7/8/9/10 : Desilting Culverts / Structures inlet/outlets (Fully blocked):**

|               |            |
|---------------|------------|
| 08 - 60 - 006 | 300mm dia; |
| 08 - 60 - 007 | 450mm dia; |
| 08 - 60 - 008 | 600mm dia; |
| 08 - 60 - 009 | 900mm dia; |
| 08 - 60 - 010 | 1200mm dia |

This activity involves the cleaning of culverts of specified size including pipe barrels and the outlet/inlet structures, and the outlet drains, keeping them free of all debris, weed, silt and any obstruction to ensure free passage of water at all times. The debris shall be deposited in approved spoil dumps directed by the Engineer

***Fully blocked culvert shall be considered as pipe culvert with greater than half-of the barrel blocked.***

Correct widths and slopes of the outlet drains shall be maintained. The gradient of the outlet drain shall be checked to ensure it is greater than 2 % using boning rods, line and level

All broken culvert barrels discovered in the course of carrying out this activity shall be reported to the Engineer.

Work Method

This activity should be carried out before the onset of the rains.

Quality Control

The workmanship shall be visually checked

Measurement                      m<sup>3</sup>

Under this item the unit of measurement shall be cubic metres of material, excavated. The workmanship shall be visually checked and shall be clean and free of obstacles

Payment

The unit rate shall be full compensation for labour, and tools required to carry out the prescribed works.

**08 –60. 20/ 22/24: Supply and installation concrete culvert pipes**

i. - 600mm dia; ii. – 900mm dia.           iii. – 1200mm

This activity consists of supplying the concrete pipe rings, laying and joining the rings, excavating and backfilling the trench and, constructing a ramp over the culvert.



The pipe rings shall be of Class 20 concrete, at least 28 days cured and, manufactured on site or procured from a supplier approved by the Engineer.

The culvert gradient including the outlet shall be minimum 2%.

Sealing of joints shall be done with mortar 1: 4

Pipe culverts shall be haunched using 150mm concrete Class 15/20 surround as per profile IV as indicated in the drawings. Headwalls/Wing walls, toe walls and aprons shall be constructed with class 20/20 concrete.

Backfilling shall be done with approved material and compacted layers not exceeding 150 mm loose. Ramps shall be shaped to achieve a minimum overfill of 3/4 of the pipe diameter.

#### Work Method

This Item consists of excavating trenches for culverts, foundations for head and wing walls and the construction of pipe culverts

The dimension of excavation shall be specified in the Drawings or shall be as directed by the Engineer.

The Engineer shall approve all excavation work before the contractor is allowed to proceed with other works.

The Contractor shall take all necessary precautions to safeguard the stability and safety of the excavations.

The contractor shall use **labour** to carry out this item work

#### Quality Control

- The dimensions of the trench shall be checked using tape measure and shall have a tolerance of + / - 50mm
- The invert level shall be checked using line and level and shall have a tolerance of + / - 50mm
- The trench bottom shall be checked using straight edge, spirit level and shall have a tolerance of + / - 10mm
- Culvert quality shall be checked visually for cracks, honey combing etc
- The length of each pipe shall be checked using tape measure and shall have a tolerance of + / - 10mm.
- Before the pipes are laid, the gradient of the culvert trench shall be checked using boning rods and line levels and shall have a tolerance of + / - 1%
- The joint shall be visually checked to have been properly made properly made

#### Measurement: m

The unit of measurement shall be in linear metres of installed size of culvert specified.

#### Payment

The unit rate shall be the full compensation for labour, material, equipment and any other incidentals that may be required in carrying out the work as prescribed.

**08 – 70 – 001/2: Provide material to reconstruct or repair headwall, and wing wall****. i. Stones, ii. Concrete blocks**

This activity shall include provision of all materials required and to carry out repairs to damaged head walls and wing walls as shown in the drawings and as instructed by the Engineer.

Work Method

The contractor shall use **Labour** to carry out this item of work

Quality Control

- The dimension of the headwalls shall be checked with tape measure and shall have maximum tolerances of + / - 50mm
- The levels shall be checked with line levels, straight edge and spirit levels and shall have maximum tolerance of + / - 20mm

Measurement \_\_\_\_\_ m<sup>2</sup>

The unit of measurement shall be square metres for masonry paid for on the basis of area of wall completed while the concrete works shall be cubic meters paid for on the basis of volume of concrete poured in the wall.

Payment

The unit rate shall be full compensation for labour, materials equipment, tools, material haulage and unloading as required to carry out the prescribed works

**08 – 70.003: Provide material to reconstruct headwall, wing wall****i. Stones, ii. Concrete blocks**

This item consists of provision of material and construction of masonry walls as detailed in the drawings..

Work Method

The contractor shall use both **labour** and equipment to carry out this item work

Quality Control

- The dimensions of the structure shall be checked using tape measure and shall have a tolerance of + / - 10mm
- The levels shall be checked using line and level, straight edge and spirit level and shall have a tolerance of + / - 10mm
- The quality of the mortar joints shall be checked visually

Measurement \_\_\_\_\_ m<sup>3</sup>

The unit of measurement shall be the total area in square metres of wall constructed.

Payment

The unit rate shall be the full compensation for labour, material, equipment and any other incidentals that may be required in carrying out the work as prescribed.

**08 – 70.004 : Provide material and construct headwall, wing wall and apron – Concrete**

This work consists of provision of all materials, and construction of the structures as detailed in the drawings. Aprons shall be constructed using concrete .Concrete shall be class 20/20 unless otherwise specified.

Work Method

The contractor shall use both **labour** and equipment to carry out this item work

Quality Control

- The dimensions of the structure shall be checked using tape measure and shall have a maximum tolerance of + 20mm / - 10mm
- The workability and mix of concrete shall be checked using the slump test and shall have a maximum tolerance of + / - 25mm of slump. The frequency of testing shall be determined by the Engineer
- The concrete shall be visually checked for any cracks or honey combing

Measurement m<sup>3</sup>

The unit of measurement shall be the total volume in cubic metres of concrete.

Payment

The unit rate shall be the full compensation for labour, material, equipment and any other incidentals that may be required in carrying out the work as prescribed.

**08 – 70.005-010: Provide and install or repair scour checks**

**i. –Stone;      ii. - Wooden stakes;      iii. - Concrete**

Scour checks shall be constructed or repaired using either stones or sticks, as instructed by the Engineer.

Construction of concrete scour checks shall be in class 20/20 concrete unless otherwise specified and as per the details shown in the drawings.

Spacing for scour checks depends on the gradient of the drain as given in the guidelines shown in Table 8.1

**Table 8.1 :      Scour checks spacing**

| Gradient of Drain | Scour Check Spacing | Gradient of Drain | Scour Check Spacing |
|-------------------|---------------------|-------------------|---------------------|
| 4% or less        | not required        | 8%                | 7.5m                |
| 5%                | 20m                 | 9%                | 6m                  |
| 6%                | 15m                 | 10%               | 5m                  |
| 7%                | 10m                 | >10%              | 4m                  |

Work method

The contractor shall use **labour** to carry out this item work.

Quality Control

The spacing of the scour checks shall be checked using tape measure and shall have a tolerance of + / - 0.5m

The sizes of the stakes and stones used shall be visually checked.

The shape of the scour check shall be checked using the scour check template.

Measurement: No.

The unit rate of measurement shall be the **number** of scour checks constructed.

Payment

The unit rate shall be full compensation, for labour, materials, equipment, haulage and any incidental costs required for carrying out the prescribed works.

**08- 70.011: Stone Pitching**

The activity consists of levelling the area to be covered with stone pitching, collecting stones, laying stones, applying mortar to the joints and constructing weep holes.

The area to be covered with stone pitching shall be trimmed to level and/slope indicated on the drawings and as directed by the Engineer. The prepared surface shall be firm and well compacted.

The stones shall be set on edge and securely bedded with the largest dimensions at right angles to the flow of water, fitted closely together so as to leave only a minimum of voids between the stones which shall be filled in with suitably shaped and tightly wedged spalls. The top of the pitching shall be finished flush with the adjacent material.

The stones shall be placed in full contact with the surface and bedded into mortar (grout) of mixture 1:4 and at a minimum thickness of 150 mm. The mortar shall be troweld off flush with the surface of the stones.

Weep holes shall be provided to stone pitching on slopes at an average frequency of one per square meter unless otherwise directed by the Engineer.

The surface of the stone pitching shall be protected from direct sunshine and kept moist for 7 days.

Work Method

The Contractor use **labour** to carry out this item of work

Quality Control

- The quality of stones shall be visually checked
- The dimensions of the area stone pitched shall be checked using tape measure and shall have a tolerance of + / - 50mm
- The quality of workmanship such as placing and grouting shall be visually checked.

Measurement:           m<sup>2</sup>

The unit of measurement shall be the total area in square metre calculated as the net area, measured on the slope.

Payment

The unit rate shall be full compensation, for labour, materials, equipment, haulage and any incidental costs required to carry out the prescribed works

**08 – 80.002 : Gabion Installation**Description

This activity involves provision and installation of the gabion. Gabion shall include gabion mattresses and gabion boxes and for purposes of construction and method of measurement and payment, no distinction shall be made between them.

Gabions shall be ‘Maccaferri’ boxes or ‘Reno’ mattresses or equivalent.

Gabion boxes shall be tied together with 3 mm galvanised binding wire securing all edges at 150mm intervals.

Work Method

The Contractor shall use **labour** to carry out this item of work.

Quality Control

The workmanship in terms of placing and tying shall be checked visually.

Measurement: **No.**

The unit of measurement shall be the total surface area of gabion boxes installed.

Payment

The unit rate shall be the full compensation for labour, materials, and any incidental item costs necessary to carry out the works as prescribed.

**08 – 80 - 003 : Rockfill to Gabion**

Description

This activity involves providing selected rock, crushed if necessary, packing and compacting inside the gabion boxes.

Rockfill shall comprise of broken rock of 150mm minimum dimension and 300mm maximum dimension. The sides shall be packed first in the form of a wall using the largest pieces, with majority placed as headers with broken joints to present a neat outside face. The interior of the gabion shall be hand packed with smaller pieces and the top layers shall be finished off with larger pieces. The whole interior and top layers shall be packed tight and hammered into place.

Work method

The contractor shall use a combination of **labour** and equipment to carry out this activity.

Quality Control

The workmanship in terms of filling and compaction of the stones in the gabion boxes shall be checked visually.

Measurement: **m<sup>3</sup>**

Rockfill to gabion boxes shall be measured by the cubic metre calculated as the volume of gabion boxes filled.

Payment

The unit rate shall be the full compensation for labour, materials, equipment, and any incidental item costs necessary to carry out the works as prescribed.

**08 – 80 – 004: Drift Maintenance – desilting**

This activity involves the removal of debris, silt and any vegetation from drifts and causeways. The debris shall be deposited away from the drift in approved spoil dumps.

This activity shall be carried before the rains.

Work Method

The contractor shall use **labour** to carry out this item of work

Quality Control

The workmanship shall be visually checked

Measurement: \_\_\_\_\_ m<sup>3</sup>

The unit of measurement shall be the total volume in cubic metres of debris or silt removed calculated as the product of length of the drift and width of the affected section drift up stream.

Payment

The unit rate shall be full compensation for labour, equipment, tools, haulage and unloading as required to carry out the prescribed works.

## SECTION 10: GRADING AND GRAVELLING

### Scope:

Grading covers the works involved in the reinstatement of the road carriageway to the camber by removing the high points and filling up gullies corrugations and wheel ruts to restore smooth running surface. Graveling consists of excavation, loading hauling and spreading of gravel wearing course material on the formation of road carriageway. Gravel shall include lateritic gravel, quartzitic gravel, calcareous gravel, decomposed rock, soft stone coral rag, clayey sand and crushed rock.

The material may be obtained from borrow pits or excavation in cuttings. Gravel material shall conform to the requirement given in Table 10.1

Table 10.1: Requirement for Gravel Wearing Course

| GRADING REQUIREMENTS AFTER COMPACTION |                     |
|---------------------------------------|---------------------|
| Sieve (mm)                            | % by Weight Passing |
| 40                                    | 100                 |
| 28                                    | 95 - 100            |
| 20                                    | 85 - 100            |
| 14                                    | 65 - 100            |
| 10                                    | 55 - 100            |
| 5                                     | 35 - 92             |
| 2                                     | 23 - 77             |
| 1                                     | 18 - 62             |
| 0.425                                 | 14 - 50             |
| 0.075                                 | 10 - 40             |

| PLASTICITY INDEX REQUIREMENTS PI |     |     |
|----------------------------------|-----|-----|
| Zone                             | Min | Max |
| WET                              | 5   | 20  |
| DRY                              | 10  | 30  |

| BEARING STRENGTH REQUIREMENTS                                                      |     |                        |
|------------------------------------------------------------------------------------|-----|------------------------|
| Traffic VPD                                                                        | CBR | DCP Equivalent mm/Blow |
| ≥ 15                                                                               | 20  | 11                     |
| ≤ 15                                                                               | 15  | 14                     |
| CBR at 95 % at MDD, Modified AASHTO and 4 days soak                                |     |                        |
| Lower quality material (CBR 15) may be accepted if no better material can be found |     |                        |

NB: Wet Zone - mean annual rainfall greater than 500 mm.

Dry zone - mean annual rainfall less than 500 mm.

The Engineer shall approve quarries and their extent of exploitation. The quarries shall be shown to the Contractor prior to commencement of the Works. The Contractor shall be responsible for the acquisition of the quarry rights and shall therefore conduct respective negotiations with landowners and affected communities.

Alternative sources of gravel material whose quality can be shown to be in compliance with the specification requirements may be used, with the proviso that the Employer is not to incur additional expenses in connection with its winning and haulage. Contractor is deemed to have included in his rates for the provision of the gravel material to have included the cost of complying with the testing requirements.

**10 –80. 002 : Removal of Overburden**

The Item consists of excavation of overburden including loading, hauling and stockpiling at the approved locations. The thickness of the overburden layer to be removed shall be determined from the depths of the trial pits dug at a 30m grid within the quarry area.

The overburden shall be removed and deposited neatly in order to use it again to reinstate the quarry at the end of improvement work.

Work Method:

The contractor shall use **labour** or **equipment** to carry out this item of work

Quality Control

- The location and manner of stock piling of the overburden for the reinstatement of the quarry shall be visually checked

Measurement : \_\_\_\_\_ m<sup>3</sup>

No payment shall be made for overburden removed.

**10 –70. 002 : Gravelling**

The unit rate shall include the cost of excavation, haulage watering and compacting the gravel wearing course to 95% MDD(AASHTO T180). The borrow pits to be used shall be shown to the contractor at the time of bidding. If not then the contractor shall source suitable gravel for the works

Quality Control:

- No haulage equipment shall be used unless its capacity has been ascertained the Engineer
- The quality of gravel dumped on the road shall be visually checked daily
- The quantity of material delivered in each load shall be checked before dumping is allowed
- The distance between the stacks shall be checked using tape measure

Measurement: \_\_\_\_\_ m<sup>3</sup>

The unit of measurement shall be the volume of material compacted. The volume shall be calculated as the product of the plan area and the average compacted fill, embankment, side drain material or gravel wearing course material thickness.

**10.-.50.004 Light grading**

Light grading shall only be undertaken where ordered by the Engineer.

Light grading is the restoration of the road profile and existing side drainage/mitre drains including the shaping of the formation, recompaction and, if applicable, the reshaping and recompaction of the gravel wearing course.

These operations shall be carried out using the following plant:

- a motor grader of at least 120 HP( for light grading alone)
- a roller, sufficient to achieve the required compaction(if compaction required it shall be included in the BOQ's)
- a water tanker to obtain the required moisture content for compaction. if watering required it shall be included in the BOQ's)



The works to be carried out under this item are as follows.

- (a) Removal of vegetation, topsoil and landslips from within the limits of the roadway and side drains, whatsoever the width.
- (b) The reshaping of the longitudinal profile of the roadway, including the removal of ruts, humps and windrow, and the filling of potholes.
- (c) The reshaping of the roadway and ditches to the specified cross-section template, as directed by the engineer, including the reinstatement of existing side ditches and mitre drains.
- (d) The clearing of all loose material from side slopes to fills and cuts.
- (e) The scarification, watering, mixing, shaping and compaction of the top 150mm of roadway materials to 95% MDD (AASHTO T99) if watering and compaction is specified. In the case that the Engineer should direct the contractor to mix in any additional material, then such material shall be paid for separately under the relevant pay item allowed in the Bill of Quantities.
- (f) In the case that there is an existing gravel wearing course: the Engineer may instruct that the Contractor blade aside and stockpile the wearing course material before commencing any of the works under this item. In that event the contractor shall take such care as to ensure that the stockpiled gravel is not contaminated with sub grade materials, topsoil or organic material. After carrying out the work defined in (a) to (d) above, the contractor shall compact the formation to 95% MDD (AASHTO T99). If necessary to achieve the desired compaction, the Contractor shall scarify the formation level to a depth of 150mm, water to obtain the required moisture content, reshape and finally recompact the material.

The gravel-wearing course shall then be bladed back over the formation to a constant thickness and recompact in accordance with the requirements given in Clause 1003 of the MOPWH Standard Specification.

Wherever the existing roadway width is less than specified in the document the contractor shall, if instructed by the Engineer, widen the roadway to obtain this minimum width, and excavate ditches to the template shown in the Drawings or as directed by the Engineer. Any widening works shall be paid for separately and in addition to the payment for Light Reshaping, under the appropriate earthwork item.

#### **10.-50.002 Heavy grading**

Heavy Grading shall only be undertaken when directed by the Engineer.

Heavy Grading is the restoration of the road profile, template and side ditches and involves operations similar to what is required for Light Grading. Heavy grading demands the following works in addition to the works specified above Light grading:

- (a) Correction of undulations, deep rutting, and gullies whatever their depth;
- (b) The drainage of quagmires; the removal and disposal of water logged material;
- (c) The clearance of landslips from the roadway and ditches;
- (d) Where directed by the Engineer, the widening of the roadway by either cutting or filling, or both.
- (e) The improvement of the longitudinal profile of the road by the excavation of humps and the filling of holes and depressions.

The following equipment shall be used in this works:

- a motor grader of a at least 120 HP
- a bulldozer of at least 150 HP
- a water tanker
- a self-propelled roller of at least 10 tonnes dead weight, or a vibrating roller of at least 3 tonnes dead weight.

Any fill required for the reshaping of the road profile, the elimination of ruts, gullies and holes and the replacement of waterlogged material shall be obtained from either within the road prism or from cut slopes and adjacent to the road, provided that the material conforms to the requirements of this Specification and meets with the approval of the Engineer.

Any excavation in Hard material will be deemed to be in addition to the work requirements for Heavy Reshaping and will be paid for separately under the appropriate earthworks item.

Where directed by the Engineer new gravel will be added to the existing gravel to have the required thickness of wearing course. Both new and existing gravel will be mixed and bladed back over the roadway, and recompacted in accordance to the requirements given in Clause 1003 of the MOPWH Standard Specification. In this case such gravel shall be paid for separately under the relevant pay item allowed in the Bill of Quantities.

Table 10.2: Overall widths ditch to ditch (Guidelines)

| <i>Road Category</i>                                             | <i>Carriageway width</i> | <i>Overall width to front of Ditches</i> |
|------------------------------------------------------------------|--------------------------|------------------------------------------|
| A/B/C + Secondary Roads                                          | 6.0 m                    | 8.4                                      |
| D/E + Minor Roads                                                | 5.4 m                    | 7.8 m                                    |
| RAR Roads                                                        | 4.5 m                    | 6.5 m                                    |
| Minor / RAR roads with insufficient widths or Temporary Sections | 3.5 m                    | 5.5 m                                    |

#### Work Method

The contractor shall use **equipment** to carry out this item work.

#### Quality Control

##### **Grading**

- Gradient of the ditch shall be checked at 20m interval using boning roads and shall drain to the natural drainage channels or mitre drains placed at regular intervals.
- The width of the carriageway (see table 10.2) shall be checked using tape measure at every 50m with tolerance of +50mm or -20mm
- The camber shall be checked using camber board at every 50m with and shall have a tolerance of +/- 1%

**Mitre drains**

- The longitudinal profiles mitre drains shall be checked using boning rods and shall have tolerances of +/- 25mm;
- The dimensions of the mitre drains shall be checked using template and tape measure and shall have tolerances of +20mm or -10mm;
- The location of the mitre drains shall be checked visually.

**Compaction**

Compaction of the reshaped or reformed road shall be by number of passes as directed by the Engineer depending on the compaction equipment used. Unless otherwise instructed, the moisture content at the time of compaction shall be within the range of +/- 2% of the optimum moisture content.

Where water needs to be added, it shall be applied in an even manner and the rate of application shall be such that no traverse or longitudinal flow occurs. The Contractor is required to provide all water for compaction and shall include this in his or her rates.

- Unsuitable material should not be used;
- Compaction shall be carried out using either dead weight or pedestrian rollers of approved weight and dimensions.
- The minimum passes of compaction to applied shall be that which no more roller imprint on the surface can be seen and to a minimum dry density as given in table 5.0 below;
- The camber shall be checked at 100m intervals using camber board and a line level and shall not be less than 5 % with a tolerances of +/- 1%
- Material for compaction shall be placed in layers of 200mm loose depth unless otherwise directed. The layers shall be parallel to the top of the subgrade level.

Table 10.3 : Minimum dry density

| <b>Layer location.</b>           | <b>Minimum compaction</b> |
|----------------------------------|---------------------------|
| Excavation to level platform     | 95% MDD (AASHTO T99)      |
| Road formation and fill material | 100% MDD (AASHTO T99)     |
| Gravel wearing course            | 95% MDD (AASHTO T180)     |

**Quality control**

- Unsuitable material should not be used;
- Compaction shall be carried out using either dead weight or pedestrian rollers of approved weight and dimensions.
- The minimum passes of compaction to applied shall be that which no more roller imprint on the surface can be seen and to a minimum dry density as given in table 5.0 below;
- The camber shall be checked at 100m intervals using camber board and a line level and shall not be less than 5 % with a tolerances of +/- 1%

- Material for compaction shall be placed in layers of 200mm loose depth unless otherwise directed. The layers shall be parallel to the top of the subgrade level.

Table 5.0 : Minimum dry density

| Layer location.                  | Minimum compaction    |
|----------------------------------|-----------------------|
| Excavation to level platform     | 95% MDD (AASHTO T99)  |
| Road formation and fill material | 100% MDD (AASHTO T99) |
| Gravel wearing course            | 95% MDD (AASHTO T180) |

Measurement:                      m<sup>2</sup>

The unit of measurement for mitre drains and compaction shall not be paid for separately and shall be deemed to be covered in his rates for grading

#### Payment

The unit rate compaction shall be the full compensation for labour, equipment and any incidental costs required for carrying out the works to the required specifications.

#### **10 –80. 007 : Restoration of Quarries and Borrow pits**

The ground shall be levelled, topsoil hauled back and uniformly spread over the entire exposed/excavation area.

Adequate drainage provisions shall be made to protect excavation areas. Where necessary appropriate protection measures may be taken to avoid erosion of the spread topsoil layer. Grass and trees may be replanted as directed by the Engineer.

#### Work Method

The Contractor may chose Labour, Equipment or a combination of both to carry out this Item depending on the degree of difficulty of the work.

#### Quality Control

The Engineer shall check that the required measures have been satisfactorily taken.

No payments shall be made for this and the contractor will be deemed to have included it in his rates for gravel wearing course.

**SECTION 22: DAYWORKS**

This section covers provisional items included in the Bills of Quantities to cover the payment of equipment, labour and materials for work instructed by the Engineer on a daywork basis.

**22- 001 : Dayworks**

Measurement and Payment

**a. Equipment:**

Payment for equipment shall only be made for the time each item of equipment is actually working. Idle time due to breakdown or incompleteness of the equipment shall not be paid for. The rate of equipment shall include for the cost of the following:-

- i) Transport of the equipment to the site
- ii) Operators , drivers and assistants including their overtime
- iii) Maintenance, spare parts and all costs of repairs
- iv) Depreciation insurance, overheads and profits.

**b. Labour**

Payment shall only be made for the time each of worker labour is actually working on the daywork instructed by the Engineer. The rate for labour shall include the cost of the following:-

- i) All salaries allowances and other payments required by the worker
- ii) Provision of small tools used on dayworks such as picks, shovels, pangas, jembes hammers chisels and all other tools used by tradesmen.
- iii) Insurance, overheads and profit.

**c. Materials**

Payment shall only be made for materials instructed by the Engineer for use in dayworks. The rate for materials shall include for the cost of provision of the material, transport to site and storage handling overheads and profits.

**Use of Dayworks**

The use of Dayworks shall be **only** sanctioned by the Authorized Person for extra and substituted works and at the rates approved by the client for the current period.

**SECTION X**  
**BILLS OF QUANTITIES**

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**PREAMBLE TO BILLS OF QUANTITIES**

1. The Bills of Quantities form part of the Contract Documents and are to be read in conjunction with the Conditions of Contract, Specifications and the Drawings.
2. The rates and prices inserted in the Bills of Quantities are to be the full inclusive costs of the works, described under the items, complete in place and in accordance with the specifications, including costs, expenses and profits which may be required in and for the construction of the works described, together with any temporary works and installations which may be necessary and all general risks, liabilities and obligations set forth or implied in the documents on which the contract
3. The quantities set forth in the Bills of Quantities are believed to represent the works to be carried out. There is no guarantee to the Contractor that he will be required to carry out the quantities of work indicated under any one particular item or groups of items in the Bills of Quantities. The basis of payment shall be the contractor's rates and the quantities of work actually done in fulfilment of his obligation under the contract.
4. The brief descriptions of items given in the Bills of Quantities are purely for the purpose of identification and in no way modify or supersede the detailed descriptions given in the Conditions of Contract, Standard or Special Specifications.
5. A price or rate shall be entered in ink against every item in the Bill of Quantities with the exception of items, which already have provisional sums, affixed thereto. The Tenderers are reminded that no "nil" or "included" rates or "lump-sum" discounts will be accepted. The rates for various items should include discounts if any. Tenderers who fail to comply will be disqualified.
6. Please note that all prices quoted should be inclusive of all Government taxes, duties and VAT.