KENYA RURAL ROADS AUTHORITY

ROUTINE MAINTENANCE OF PINY OYIE-BIAMITI ROAD (C882)

BID DOCUMENT NO: KeRRA/011/MIG/SW/GOK/39/2019-2020/132

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SEPTEMBER, 2020

DIRECTOR GENERAL, **KENYA RURAL ROADS AUTHORITY** **P.O. Box 48158-00100** **NAIROBI.**	**DEPUTY DIRECTOR,** **KENYA RURAL ROADS AUTHORITY** **MIGORI REGION** **P.O. Box 164-40400** **SUNA-MIGORI.**

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SECTION 1: FORM OF TENDER

Pursuant to Sub-Clause 13.1 of the Conditions of Bid and Instruction to Bidders, all Bidders shall fill the attached Form of Tender

FORM OF TENDER

NAME OF CONTRACT: ROUTINE MAINTENANCE OF PINY OYIE-BIAMITI ROAD (C882)
CONTRACT NO: KeRRA/011/MIG/SW/GOK/39/2019-2020/132

(**NOTE:** Form of Tender forms part of the Bid. Bidders are required to fill all the blank spaces in this form of Bid and Appendix)

TO: The Deputy Director,
Kenya Rural Roads Authority,
P. O. Box 164,
Suna - Migori.

Sir,

Having examined the Conditions of Contract, Specifications, Bills of Quantities, and Drawings for the execution of the above-named works we, the undersigned, offer to construct and install such works and remedy any defects therein in conformity with the said Bills of Quantities, Conditions of Contract, Specifications and Drawings for the sum of

(Insert amount in words)
……..……

……

……

(Insert amount in figures)……

As specified in the Appendix to form of Bid or such other sums as may be ascertained in accordance with the said Conditions.

We undertake, if our bid is accepted, to commence the works within fourteen (14) days of receipt of the Engineer's order to commence, and to complete and deliver the whole of the works comprised in the Contract within the time stated in the Appendix to form of Bid.

If our bid is accepted we will, within 14 days of the written notice of acceptance (by the Director General, Kenya Rural Roads Authority, Migori Region) of our tender, execute the formal agreement.

We agree to abide by this bid for the period of one hundred and twenty (120) days from the date fixed for receiving the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We understand that you are not bound to accept the lowest or any bid you may receive.

On the basis of our previous experience we are fully experienced and competent in the type of work included in this BID and we have adequate financial resources to carry out the works described within the period for completion. We are in a position to fulfil the Contract for which we have Bided.

Dated this …….. Day of ……. 20 …….

Name……..…Signature……in the capacity of …….

Duly authorized to sign bids on behalf of (Name of Bidder) ……

……..…….

(Address of Bidder)……..……..

(Name of Witness)……

(Signature of Witness)……..……

(Address of Witness)……

(Occupation of Witness)…….…….

SECTION 2: APPENDIX TO FORM OF TENDER

APPENDIX TO FORM OF BID
(This appendix forms part of the bid)

CONDITIONS OF CONTRACT	CLAUSE	AMOUNT (Ksh)
Bid Security (Bank Guarantee Only)		N/A
Amount of Performance Security (Unconditional Bank Guarantee)	10.1	N/A
Program to be submitted	14.1	Not later than 21 (twenty one) days after issuance of Order to Commence
Cash flow estimate to be submitted	14.3	N/A
Minimum amount of Third Party Insurance	23..2	N/A
Period for commencement, from Engineer's order to commence	41.1	14 (Fourteen) days
Time for completion	43.1	3(three) Months
Amount of liquidated damages	47.1	N/A
Limit of liquidated damages	47.1	10% of the bid price
Defects Liability period	49.1	N/A
Percentage of Retention	60..3	N/A
Limit of Retention Money	60. 3	N/A
Minimum amount of Interim Certificates	60.2	50% of bid Sum
Time within which payment to be made after Interim Payment Certificate is signed by Engineer	60.10	30 (thirty) days
Time within which payment to be made after Final Payment Certificate signed by Engineer	60.10	30 (thirty days
Appointer of Arbitrator/Adjudicator	67..3	The Chairman, Chartered Institute of Arbitrators (Kenya)
Notice to Employer /Engineer	68..2	**The Employers** address is: Director General , Kenya Rural Roads Authority, P.O. Box 164-40400, **Migori.**

Signature of Bidder…… Date ……

SECTION 3: INSTRUCTIONS TO BIDDERS

SECTION 3: CONDITIONS OF BID AND INSTRUCTIONS TO BIDDERS

A. GENERAL

1 SCOPE OF BID

1.1 The Employer, as defined in the Conditions of Contract Part II hereinafter "the Employer" wishes to receive bids for the construction of works as described in Section 1, Clause 102 of the Special Specifications –"Location and extent of the Works"

1.2 The successful bidder will be expected to complete the Works within the period stated in the Appendix to form of Tender from the date of commencement of the Works.

1.3 Throughout these bidding documents, the terms bid and BIDDER and their derivatives (bidder/Bidder, bid/Bided, bidding/Bidding etc. are synonymous, and day means calendar day. Singular also means plural.

2 SOURCE OF FUNDS

2.1 The source of funding is the GOK DEVELOPMENT.

2.2 The E.E for this contract is ksh. 5,500,000.00

3 CORRUPT PRACTICES

3.1 The Government requires that the bidders, suppliers, sub-Contractors and supervisors observe the highest standard of ethics during the procurement and execution of such Contracts. In this pursuit of this policy, the Government;

(a) Defines for the purposes of this provision, the terms set forth below as follows:
   (i) "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in the execution, and
   (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the Employer, and includes collusive practices among bidders (prior to or after bid submission) designed to establish bid prices at artificial, non-competitive levels and to deprive the Employer of the benefits of free and open competition

(b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract, and

(c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a Government Contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a Government financed Contract.

4 ELIGIBLE BIDDERS

4.1 This invitation to bid is open to all Bidders who are legally registered or incorporated in the Republic of Kenya as of the time of bid submission. Registered with the NCA as a Contractor in category 8 or above. Registered/Prequalified by KeRRA Migori, in the respective constituencies.

4.2 Bidders shall not have any conflict of interest. Bidders shall be considered to have conflict of interest, if they participated as consultant in the preparation of the design, documentation or technical specifications of the works that are the subject of this bidding other than as far as required by the Employer.

4.3 A firm that is under a declaration of ineligibility by the Employer in accordance with Clause 3, at the date of submission of the bid or thereafter, shall be disqualified.

4.4 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.

5 QUALIFICATION OF THE BIDDER

Tenderers shall include the following information and documents with their tenders, unless otherwise stated:

(a) Copy of Certified certificate of Incorporation.
(b) Experience in works of a similar nature and size for each for at least the last two years,
(c) Major items of construction equipment owned or leased;
(d) Qualifications and experience of key site management and technical personnel proposed for the Contract;
(e) Authority to seek references from the Tenderer's bankers.
(f) Registration with National Construction Authority (NCA 1 to NCA 8) and practicing licence to be verified through NCA web site
(g) Certified PIN/VAT Registration Certificate
(h) Valid current Tax compliance certificate to be confirmed through KRA TCC checker
(i) Bank statements for the last three Months from date of advert. Please note that the proceeds of the contract will be credited into the account number that is reflected in these bank statements.
(j) Attach current (within 12 months before date of opening) Certified CR12 Certificate from the Registrar of Companies. This should be provided with Identification Documents of Directors.
(k) All pages of the submitted document to be Serialized/paginated (i.e 1,2,3,4,5..... etc to the last page.
(l) Current single business licence
(m) Attach a Dully signed, filled and stamped Confidential business questionnaire (CBQ)
(n) Form of Tender shall be filled, signed and stamped.
(o) Registered by KeRRA Migori, in the respective constituencies.
(p) For AGPO tenders, provide copy of registration.
(q) Audited accounts for previous three(3) years (certifies copies)
(r) Bidders shall provide a tender security in form of unconditional bank guarantee from a reputable bank in Kenya or insurance firms approved. As shown in page 1.
(s) For AGPO tenders, fill, sign and stamp Tender Security Declaration Form

6 ONE BID PER BIDDER

6.1 Each bidder shall submit only one bid per project. A bidder who submits two or more documents per project will be disqualified.

7 COST OF BIDDING

7.1 The bidder shall bear all costs associated with the preparation and submission of his bid and the Employer will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

8 SITE VISIT

8.1 The bidder is informed that the pre-BID site visit is mandatory and he/she shall examine the Site of Works and its surroundings and obtain for himself all information that may be necessary for preparing the bid and entering into a Contract for construction of the Works. The costs of visiting the site shall be at the bidder's own expense.

8.2 The bidder and any of his/her personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such inspection, but only on the express condition that the bidder, its personnel and agents, will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, 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.

8.3 The Employer will conduct a Site Visit concurrently with the pre-bid meeting referred to in Clause 18, attendance for which is mandatory for all bidders. Failure to attend the site visit by any bidder will lead to disqualification of his /her bid.

NOTE: Refer To The Site Visit Attendance Faliliarizatiom Form For Details

B. BIDDING DOCUMENTS

9 CONTENTS OF BIDDING DOCUMENTS

9.1 The set of documents comprising the BID includes the following together with any addenda issued in accordance with Clause 11:

(a) Instructions to bidders
(b) Qualification Criteria
(c) Conditions of Contract - Part II
(d) Conditions of Contract - Part I
(e) Special Specifications
(f) Form of Bid, Appendix to Form of Bid Bills of Quantities
(g) Form of Contract Agreement
(h) Drawings
(i) BID addenda (BID notices)

9.2 The Bidder is expected to examine carefully all instructions, conditions, forms, terms, specifications and drawings in the bidding documents. Failure to comply with the requirements of bid submission

will be at the bidder's own risk. Bids that are not substantially responsive to the requirements of the bidding documents will be rejected.

10 CLARIFICATION OF BIDDING DOCUMENTS

10.1 The prospective bidder requiring any clarification of the bidding documents may notify the Employer in writing or by cable (hereinafter the term cable is deemed to include telex and facsimile) at the Employer's mailing address indicated in the Bidding Data.

10.2 The Employer will respond in writing to any request for clarification that he receives earlier than 7 days prior to the deadline for the submission of bids. Copies of the Employer's response to queries raised by bidders (including an explanation of the query but without identifying the sources of the inquiry) will be sent to all prospective bidders who will have purchased the bidding documents.

11 AMENDMENT OF BIDDING DOCUMENTS

11.1 At any time prior to the deadline for submission of bids, the Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing subsequent Addenda/Notice.

11.2 The Addendum thus issued shall be part of the bidding documents pursuant to Sub-Clause 10.1 and shall be communicated in writing or cable to all purchasers of the bidding documents. Prospective bidders shall promptly acknowledge receipt of each Addendum in writing or by cable to the Employer.

11.3 In order to afford prospective bidders reasonable time in which to take an Addendum into account in preparing their bids, the Employer may, at his discretion, extend the deadline for the submission of bids in accordance with Clause 21.

C. PREPARATION OF BIDS

12 LANGUAGE OF BID

12.1 The bid prepared by the bidder and all correspondences and documents relating to the bid exchanged by the bidder and the Employer shall be written in English Language. Supporting documents and printed literature furnished by the bidder 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 bid, the English language shall prevail.

13 DOCUMENTS COMPRISING THE BID

13.1 The bid to be prepared by the bidder shall comprise:

(a) Duly filled Form of Tender
(b) Priced Bills of Quantities;
(c) Schedules of information
(d) Qualification Criteria

(e) Any other materials required to be completed and submitted in accordance with the Instructions to Bidders embodied in these bidding documents.

13.2 These Forms, Bills of Quantities and Schedules provided in these bidding documents shall be used without exception (subject to extensions of the Schedules in the same format).

14 BID PRICES

14.1 Unless explicitly stated otherwise in the bidding documents, the Contract shall be for the whole works as described in Sub-Clause 1.1, based on the basic unit rates and prices in the Bill of Quantities submitted by the bidder.

14.2 The bidder shall fill in rates and prices for all items of Works described in the Bills of Quantities, whether quantities are stated or not.

14.3 All duties, taxes (including VAT) and other levies payable by the Contractor under the Contract, or for any other cause as of the date 14 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the bidder.

14.1 Unless otherwise provided in the Bidding Data and Conditions of Particular Application the rates and prices quoted by the bidder are not subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 70 of the Conditions of Contract.

15 CURRENCIES OF BID AND PAYMENT

15.1 Bids shall be priced in Kenya Shillings.

16 BID VALIDITY

16.1 The bid shall remain valid and open for acceptance for a period of 240 days from the specified date of bid opening specified in Clause 21.

16.2 In exceptional circumstances prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing or by cable. A bidder may refuse the request. A bidder agreeing to the request will not be required nor permitted to modify his bid.

17 NO ALTERNATIVE OFFERS

17.1 The bidder shall submit one offer, which complies fully with the requirements of the bidding documents.

17.2 The bid submitted shall be solely on behalf of the bidder. A bidder who submits more than one bid per project will be disqualified.

17.3 A price or rate shall be entered in indelible ink against every item in the Bills of Quantities with the exception of items which already have Prime Cost or Provisional sums affixed thereto. The bidders 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. Bidders who fail to comply will be disqualified.

18 PRE-BID MEETING /PRE-TENDER SITE VISIT

18.1 Subsequent to the Presidential directives issued on Covid-19 Pandemic there shall be no pre-tender site visit , bidders are advised to make their own personal arrangements to familiarize themselves with the site before submission of the bids . The bidders are also asked to fill, stamp and sign the sign visit familiarization form in the document.

18.2 The bidder is requested as far as possible to submit any questions in writing or by cable, to reach the Employer not later than one week before the meeting. It may not be practicable at the meeting to answer questions received late, but questions and responses will be transmitted in accordance with the Minutes of the meeting. The text of the questions raised and the responses given thereto, together with any responses prepared after the meeting, will be transmitted without delay to all purchasers of the bidding documents. Any modification of the bidding documents listed in Clause 9, which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause 11 or through the minutes of the pre-bid meeting.

18.3 Non-attendance at the pre-bid meeting by a Bidder will be a cause for disqualification of his BID.

19 FORMAT AND SIGNING OF BIDS

19.1 The bidder shall prepare one original of the documents comprising the bid as described in Clause 13 of these Instructions to Bidders, bound with the section containing the Form of Bid and Appendix to form of Bid,

19.2 The bid shall be without alterations, omissions or conditions except as necessary to correct errors made by the bidder, in which case such corrections shall be initialled by the person or persons signing the bid.

A. SUBMISSION OF BIDS

20 SEALING AND MARKING OF BIDS

20.1 The bidder shall seal the original of the bid in envelope. The envelopes shall then be sealed in an outer separate envelope.

20.2 The inner and outer envelopes shall be:

(a) Addressed to the Employer at the address provided in the Appendix to Form of Bid.

(b) Bear the name and identification number of the Contract. In addition to the identification required in Sub-Clause 20.2, the inner envelopes shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late” pursuant to Clause 22.1, and for matching purposes under Clause 23.

20.3 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 bid. If the outer envelope

discloses the bidder's identity the Employer will not guarantee the anonymity of the bid submission, but this shall not constitute grounds for rejection of the bid.

21 DEADLINE FOR SUBMISSION OF BIDS

21.1 Bids must be received by the Employer at the address specified in Sub Clause 20.2a not later than; **Date and time as specified in the advert.**

21.2 The Employer may, at his discretion, extend the deadline for the submission of bids through the issue of an Addendum in accordance with Clause 11 in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline shall thereafter be subject to the new deadline as extended.

22 LATE BIDS

22.1 Any bid received by the Employer after the deadline for submission of bids prescribed in Clause 21 will be returned unopened to the bidder.

23 MODIFICATION, SUBSTITUTION AND WITHDRAWAL OF BIDS

23.1 The bidder may modify, substitute or withdraw his bid after bid submission, provided that written notice of modification or withdrawal is received by the Employer prior to the prescribed deadline for submission of bids.

23.2 The bidder's modification, substitution or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause 20, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL" as appropriate.

23.3 No bid may be modified subsequent to the deadline for submission of bids, except in accordance with Sub-Clause 28.2.

23.4 Any withdrawal of a bid during the interval between the deadline for submission of bids and expiration of the period of bid validity specified in Clause **Error! Reference source not found.** may result in the forfeiture of the bid security pursuant to Sub-Clause **Error! Reference source not found.**.

B. BID OPENING AND EVALUATION

24 BID OPENING

24.1 The Employer will open the bids, including withdrawals and modifications made pursuant to Clause 23, in the presence of bidders' designated representatives who choose to attend, **(at the specified time)** on the date of submission of tenders as set out in Clause 22, **at the Deputy Director`s office (Migori).** The bidders' representatives who are present shall sign a register evidencing their attendance.

24.2 Envelopes marked "WITHDRAWAL" and "SUBSTITUTION" shall be opened first and the name of the bidder shall be read out. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause 23 shall not be opened.

24.3 The bidder's name, the Bid Prices, including any bid modifications and withdrawals, will be announced by the Employer at the opening. Subsequently, all envelopes marked "MODIFICATION" shall be opened and the submissions therein read out in appropriate detail. No bid shall be rejected at bid opening except for late bids pursuant to Clause 23.

24.4 The Employer shall prepare minutes of the bid opening, including the information disclosed to those present in accordance with Sub-Clause 25.1.

24.5 Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

25 PROCESS TO BE CONFIDENTIAL

25.1 Information relating to the examination, evaluation and comparison of bids, and recommendations for the award of Contract shall not be disclosed to bidders or any other persons not officially concerned with such process until the award to the successful bidder has been announced. Any effort by a bidder to influence the Employer's processing of bids or award decisions may result in the rejection of the bidder's bid.

26 CLARIFICATION OF BIDS AND CONTACTING OF THE EMPLOYER

26.1 To assist in the examination, evaluation, and comparison of bids, the Employer may, at its discretion, ask any bidder for clarification of its bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing or by cable, but no change in the price or substance of the bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause 29.

26.2 Subject to Sub-Clause 26.1, no bidder shall contact the Employer on any matter relating to its bid from the time of the bid opening to the time the Contract is awarded.

26.3 Any effort by the bidder to influence the Employer in the Employer's bid evaluation, bid comparison or Contract award decisions may result in the rejection of the bidder's bid.

27 EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS

27.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid (a) has been properly signed;; (b) is substantially responsive to the requirements of the bidding documents; and (c) provides any clarification and/or substantiation that the Employer may require to determine responsiveness pursuant to Sub-Clause 28.2.

27.2 A substantially responsive bid is one that conforms to all the terms, conditions, and specifications of the bidding documents without material deviation or reservation.. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the works; (b) which limits in any substantial way, inconsistent with the bidding documents, the Employer's rights or the bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

27.3 If a bid is not substantially responsive, it will be rejected by the Employer and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

28 CORRECTION OF ERRORS

28.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:

(a) Where there is a discrepancy between the amounts in figures and in words, the amount in words as indicated in the Form of Bid will govern; and

(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 line item total will govern and the unit rate will be adjusted accordingly in such a way that the BID Sum remains unaltered.

28.2

Any error by the Bidder in pricing or extending the Bills of Quantities or carrying forward to the summary or BID Sum, shall be corrected in such a way that the BID Sum remains unaltered and the Bidder shall within seven (7) days after issuance of the written notice by the Engineer, or such further time as the Engineer may allow, correct his BID in such a manner as may be agreed or directed by the Engineer failing which the BID may be absolutely rejected.

29 EVALUATION AND COMPARISON OF BIDS

29.1 The Employer will carry out evaluation of the details and information provided in accordance with the guidelines given in Section 5; Qualification Criteria and any Bidder who does not qualify shall not have his/her bid evaluated further.

29.2 The Employer will then evaluate and compare only the bids determined to be substantially responsive in accordance with Clauses 28 and 29.

29.3 the schedule of estimated Contract payments, the Employer may require that the amount of the Performance Security set forth in Clause 35 be increased at the expense of the bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful bidder under the Contract.

30 AWARD

30.1 Subject to Clause 32, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest Evaluated Bid Price pursuant to Clause 29, provided that such bidder has been determined to be (a) eligible in accordance with the provisions of Clause 4, (b) qualified in accordance with the provisions of Clause 5.

31 EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

31.1 The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.

32 NOTIFICATION OF AWARD

32.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing or by cable confirmed by registered letter that its bid has been accepted. This letter (hereinafter and in the Conditions of Contract called "Letter of Acceptance") shall specify the sum, which the Employer will pay the Contractor in consideration of the execution and completion of the works and the remedying of any defects therein by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called "the Contract Price").

32.2 At the same time that the Employer notifies the successful bidder that his bid has been accepted, the Employer shall notify the other bidders that their bids have been unsuccessful and that their bid security will be returned as promptly as possible, in accordance with Sub-Clause 17.4.

33 SIGNING OF AGREEMENT

33.1 After 21 days of receipt of the Notification, the successful bidder shall be invited to sign the Form of Agreement in the Deputy Director`s office, Kenya Rural Roads Authority, Migori.

SECTION 4: QUALIFICATION CRITERIA

This Section contains all the factors, methods and criteria that the Employer shall use to evaluate applications. The information to be provided in relation to each factor and the definitions of the corresponding terms are included in the respective Application Forms.

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Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
1. Eligibility							
1.1	Eligibility	Nationality in accordance with Sub-Clause 4.1	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.2	Conflict of Interest	No conflicts of interest in Sub-Clause 4.2.	Must meet requirement	Existing or intended JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.3	Employer Ineligibility	Not having been declared ineligible by the Employer, as described in Sub-Clause 4.3.	Must meet requirement	Existing JV must meet requirement	Must meet requirement	N / A	Section 7, Schedule 1
1.4	Certificate of Incorporation & Registration	Pursuant to Sub-Clause 4.1 the "conditions of Bid and instructions to bidders". following shall be provided; ▪ Certified Copy of Certificate of incorporation to show that the applicant is a registered company and legally authorised to do business in Kenya ▪ Certified copy of NCA 8 and above. ▪ Registered as a Contractor in KeRRA Migori.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Section 7, Schedule 1

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
2. Historical Contract Non-Performance							
2.1	History of Non-Performing Contracts	Non-performance of a Contract did not occur within the last three (3) years prior to the deadline for application submission based on all information on fully settled disputes or litigation. A fully settled dispute or litigation 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 applicant have been exhausted.	Must meet requirement by itself or as party to past or existing JV	N / A	Must meet requirement by itself or as party to past or existing JV	N / A	Section 7, Schedule 7
2.2	Pending Litigation	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.	Must meet requirement by itself or as party to past or existing JV	N / A	Must meet requirement by itself or as party to past or existing JV	N / A	Section 7, Schedule 11
3. Financial Situation							
3.1	Financial Performance	Submission of bank statement for the last three months from date of advert	Must meet requirement (a) Must meet requirement (b) N/A	Attach (a) N / A (b) N/A	Must meet requirement (a) Must meet requirement (b) N / A	Attach (a)N / A (b) N / A	Section 7, Schedule 10

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
4. Experience							
4.1	General Construction Experience	Experience under construction Contracts in the role of Contractor, Sub Contractor, or management Contractor for at least the last three [3] years prior to the applications submission deadline	Must meet requirement	N / A	Must meet requirement	N / A	Section 7, Schedule 7
4.2(a)	Specific Construction Experience	Participation as Contractor, management Contractor or Sub Contractor, in at least two (2) Contracts within the last three (3) years, each with a value of at least Kshs. 5 Million (five million) that have been successfully and substantially completed and that are similar to the proposed works.	Must meet requirement	Must meet requirement	Must meet requirement	Must meet requirement for one Contract	Section 7, Schedule 7
4.2(b)		b) For the above or other Contracts executed during the period stipulated in 4.2(a) above, a minimum construction experience in : a) Routine maintenance and spot gravelling b) Any other work of similar nature	Must meet requirements	Must meet requirement	Must meet requirement	Must meet requirement	Section 7, Schedule 7
5. Current Commitments							

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture			Submission Requirements
				All Parties Combined	Each Party	One Party	
5.1	On-going Contracts	The total value of outstanding works for the on-going Contracts must not exceed Kenya Shillings ten million (Kshs. 10 million).	Must meet requirements	Must meet requirements	Must meet ((100-50)/(n-1))% of the requirement where n= number of joint venture members		Section 7, Schedule 8
6. Equipment Holding							
6.1	Minimum number of Equipment		The bidder must indicate the minimum the core plant and equipment considered by the company to be necessary for undertaking the project together with proof of ownership		Must meet the requirement		Refer to standard form section 7
7. Site Staff							
		The site staff shall possess minimum levels set below;	Must meet requirements	Must meet requirements	N/A	N/A	Section 7, Schedule 12
	Site Agent	Qualification = Diploma in Civil Eng. General experience = 5Yrs Specific Experience = 5 Yrs.					
	Foremen	Qualification = Certificate in Civil Eng. General Experience = 5 yrs. Specific Experience = 5 yrs.					

SECTION 5: CONDITIONS OF CONTRACT

SECTION 5A: CONDITIONS OF CONTRACT (GENERAL CONDITIONS OF PARTICULAR APPLICATION)

SUB-CLAUSE 1.1 – DEFINITIONS

Amend this sub-Clause as follows:

(a)

(i) The "Employer" is the Director General, Kenya Rural Roads Authority. Represented by the Deputy Director KeRRA Migori.

(ii) The "Engineer" is the Deputy Director KeRRA Migori.

SUB-CLAUSE 2.1 - ENGINEER'S DUTIES AND AUTHORITY.

With reference to Sub-Clause 2.1 (b), the following shall also apply: The Engineer shall obtain the specific approval of the Employer before:

(a) Consenting to the subletting of any part of the works under Clause 4;
(b) Certifying additional cost determined under Clause 12;
(c) Determining an extension of time under Clause 44;
(d) Issuing a variation under Clause 51;
(e) Fixing rates or prices under Clause 52.

SUB-CLAUSE 5.2 – PRIORITY OF CONTRACT DOCUMENTS

Delete the documents listed 1-6 and substitute:

(1) The Contract Agreement (if completed)
(2) The Letter Of Acceptance;
(3) Form of Bid and Appendix to form of Bid;
(4) The Conditions of Contract Part II;
(5) The Conditions of Contract Part I;
(6) The Special Specifications;
(7) The Standard Specification for Road and Bridge Construction, 1986;
(8) The Drawings;
(9) The priced Bills of Quantities
(10) Other documents as listed in the Appendix to form of Bid

SECTION 6: SCHEDULES OF SUPPLEMENTARY INFORMATION

SCHEDULE 1: CONFIDENTIAL BUSINESS QUESTIONAIRE

This Confidential Business Questionnaire of the Government of Kenya shall be completed by the Bidder.

REPUBLIC OF KENYA

CONFIDENTIAL BUSINESS QUESTIONNAIRE

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 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 Licence 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 .....

*Citizenship details .....

Part 2(b) - Partnership:

Give details of partners as follows:

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

Part 2(c) - Registered Company:

Private or public .....

State the nominal and issued capital of the company-

Nominal Kshs. .....

Issued Kshs. .....

Give details of all directors as follows:

Name	Nationality	Citizenship Details*	Shares
1	.....	.....	.....
2	.....	.....	.....
3	.....	.....	.....
4	.....	.....	.....

Part 2(d)- Interest in the Firm:
Is there any person / persons in the Kenya Rural Roads Authority & Public Works who has interest in this firm? Yes /No**

....
.Date Signature of Bidder

Attach proof of citizenship

(Compulsory)

SECOND SCHEDULE

Tender-Securing Declaration Form

(r.22)

[The Bidder shall complete in this Form in accordance with the instructions indicated]

Date: [insert date (as day, month and year) of Bid Submission] Tender No. [insert number of bidding process]

To: [insert complete name of Purchaser]

We, the undersigned, declare that:

1 We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

2 We accept that we will automatically be suspended from being eligible for bidding in any contract with the Purchaser for the period of time of [insert number of months or years] starting on [insert date], if we are in breach of our obligation(s) under the bid conditions, because we –

(a) have withdrawn our Bid during the period of bid validity specified by us in the Bidding Data Sheet; or

(b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity,

(i) fail or refuse to execute the Contract, if required, or

(ii) fail or refuse to furnish the Performance Security, in accordance with the ITT.

3 We understand that this Bid Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of

(i) our receipt of a copy of your notification of the name of the successful Bidder; or

(ii) twenty-eight days after the expiration of our Tender.

4 We understand that if we are a Joint Venture, the Bid Securing Declaration must be in the name of the Joint Venture that submits the bi, and the Joint Venture has not been legally constituted at the time of bidding, the Bid Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed: [insert signature of person whose name and capacity are shown] in the capacity of [insert legal capacity of person signing the Bid Securing Declaration]

Name: [insert complete name of person signing the Bid Securing Declaration]

Duly authorized to sign the bid for and on behalf of: [insert complete name of Bidder]

Dated on ..... day of ....., ... [insert date of signing]

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 Bid.

……..
(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 consisting of a joint venture.

ANTI-CORRUPTION PLEDGE FORM

This is to declare that

[*Bidders Name/ And Address*]…….

……..……

a) Have not been debarred from participating in public procurement.

b) Have not been involved in and will not be involved in corrupt and fraudulent practices regarding public procurement.

Signature of Contractor: …… Date: ……

Name of Signatory:……..…….

LITIGATION HISTORY

Information on current litigation in which the Tenderer is involved.

OTHER PARTY (IES)	CAUSE OF DISPUTE	AMOUNT INVOLVED (KSHS)

I certify that the above information is correct.

…… …… ……

Title Signature Date

KENYA RURAL ROADS AUTHORITY

VISIT SITE ATTENDANCE FAMILIALIZATION FORM

Subsequent to the Presidential directive issued on Covid-19 Pandemic, there shall be no Pre-tender site visit. Bidders are therefore advised to make personal arrangements for the site visit to familiarize themselves with the site before submission of the bids.

Name of the firm:……

Name…….....

Designation:.....

Signature:.....Date:.....

SECTION 7: FORM OF AGREEMENT

FORM OF AGREEMENT

THIS AGREEMENT is made on the ……day of …….. 20…. between the **Kenya Rural Roads Authority,** represented by the **Deputy Director, Kenya Rural Roads Authority (KeRRA), Migori Region of P.O. Box 164, SUNA - MIGORI,** or his representative **hereinafter** called the "**Employer** "on the one part and **M/S**----------hereinafter called the "**Contractor**" of the other part.

WHEREAS the Employer is desirous of Routine Maintenance and Spot improvement of the Road(s): ---------- ---------- and has accepted a tender a mounting to Kshs---------- by the contractor to execute the works on the road sections as defined

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

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

The following documents form part of this Agreement, viz.:

- Conditions of Contract; Parts I and II
- Specifications;
- Priced Bill of Quantities;
- Letter of Acceptance;
- Form of Tender
- Drawings;
- Appendix to the Form of Agreement
- Schedule Of Supplementary Information
- Other Documents/Materials/Conditions agreed and documented.

All aforesaid documents are hereinafter referred to as "**The Contract**".
In consideration of the payment to be made by the **Employer** to the **Contractor**, the Contractor covenants with the Employer to execute and complete the Works in conformity with the provisions of the Contract.

The Employer hereby covenants to pay the Contractor in consideration of the execution, completion and maintenance of the Works at the Contract Price or such other sum as may become payable under the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS WHEREOF the parties have caused this agreement to be executed the day and year first before written at RM'S Office, Migori Region, Kenya.

Signed and dated for and on behalf of the employer.

Signature:…….....…Date……

Eng. Joash .N. Michoma (Deputy Director, KeRRA - Migori)

In the presence of (Witness)

Signature:…….....Date.....

Peter C. Kamau (SSCMO, KeRRA) - Migori

By the said Contractor

Name……..

Signature……

Designation:…….Date…….

(For and on behalf of the said Contractor)

In the presence of (Witness)

Name……..……..….

Signature:.……

Address:.....

SECTION 08: SPECIFICATIONS

SECTION 08: SPECIFICATIONS

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SPECIFICATION

SECTION 1 - GENERAL

Specification General

1.00 Specification General

The Contract will be administered in accordance with the Standard Specifications for Road and Bridge Construction dated 1986 including any amendments there-on and in accordance with Special Specifications. The Special Specification is supplementary to the Standard Specification and the two must be read together. In any case, where there appears to be conflict between the Special Specification and the Standard Specification the Special Specification shall be held to take precedence.

1.01 Location of Works

The works are located a**long Piny Oyie-Biamiti Road (C882**) in Suna West Constituency of Migori County.

1.02 Work to be executed comprise of:

The works consist of but not limited to the following;

- Grading and gravelling works
- Any other works as instructed by the Engineer

1.02.1 Compliance with Specification

All material, plant, labour and workmanship in and connected with the execution of the works shall be the best of their respective kinds without regard to any trade terms.

The Contractor shall comply in these and all other respects with the relevant Clauses in the Specification and shall carry out the Contract in a proper and workmanship like manner and in strict accordance with Specifications, working drawings and instructions of the Engineer.

1.03 Contract Drawings

The drawings referred to in the General Conditions of Contract are listed here below and form Appendix 1 of this Contract Document.

1.04 Time for the Submission of programme of works

The Contractor shall supply the programme required under Clause 104 of the Standard Specifications to the Engineer within 14 days of receipt of the Engineer's order to commence work.

1.04.1 Contractor's Obligations

The Contractor shall carry out the Contract in accordance with the programme agreed with the Engineer but shall in no manner be relieved by the Engineer's approval of the programme, of his obligations to complete the works in the prescribed order and by the prescribed completion date and he shall from time to time review his progress and make such amendments to his rate of execution of the works as may be necessary to fulfil his obligations. The Contractor shall be deemed to have taken into account climatic, ground water and surface water Conditions to provide for the completion of the works in the order and within the time period specified therein.

1.05 Order of Work

The various operations pertaining to the works shall be carried out according to Clause 105 of the standard specification.

1.06 Submission to the Engineer

Whenever the Contractor is expected to submit to the Engineer any proposals, details, drawings etc. one shall do so according to Standard Specification Clause 106.

1.07 Certificate of Completion

Certificate of completion shall only be issued under Clause 48 of the Conditions of the Contract for the whole of the works.

1.08 Unit of Measurement

Unless otherwise stated, the unit of measurement shall be metric units as listed in Clause 110 of the Standard specification.

1.09 Time for completion

The time for completion of the whole Contract shall be 3 calendar months from the date of Engineer's order to commence.

1.10 Sign Boards

The Contractor shall provide and erect two signboards on the site as per the attached drawings.

1.11 MATERIALS AND TESTING OF MATERIALS

All materials testing shall be in accordance with Section 2 of the Standard Specifications.

1.12 PRELIMINARY AND GENERAL ITEMS

1.12.1 Mobilisation and Establishment of Site

The Contractor shall provide all equipment, tools, material and temporary stores required to carry out the required Works.

The Contractor shall ensure that all possible means of protection are given to the staff at all times. Such protection shall include provision of high visibility clothing or vests for the workforce, in potentially dangerous locations. The Contractor shall also maintain first aid kits with items included on the advice of the local Medical Officer, or as directed by the Engineer.

Measurement and Payment

No separate payment shall be made for this item. The Contractor shall include the costs in the other rates for other measured ite

1.12.2 **Clearance on Completion**

On Completion of the Works, all temporary stores, equipment, signs and tools shall be removed from the site, and the Site left in good order to the satisfaction of the Engineer.

Measurement and Payment

No separate payment shall be made for this item. The Contractor shall include the costs in the other rates for other measured items.

1.12.3 Publicity Sign Boards

The Contractor shall provide Sign Boards as specified on the Drawings or as directed by the Engineer. The Sign Boards shall be placed at the beginning and end of the road or road bill covered by this Contract.

Sign Boards shall be maintained for the duration of the Works.

Quality Control

The Engineer shall check that Sign Boards have been erected in accordance with Drawings and Specifications.

Measurement: Number

The unit of measurement shall be number of Sign Boards erected

Payment

The unit rate shall be the full compensation for labour, tools, materials and incidental costs required for carrying out the work.

Work Method: NA

SECTION 04 : SITE CLEARANCE

Scope

This section covers the clearance of bushes, shrubs, grasses, trees, stumps, boulders, stripping and grubbing of the topsoil, removal of anthills and other unsuitable materials for the specified widths of the road, quarry and borrow areas. The distinction between light and heavy bush shall be decided by the Engineer.

The minimum site clearing widths for each of the activities shall be as shown in Table 4.1

Table 4.1: Site Clearing Widths

Road Category	*Running Surface*	*Stripping and Grubbing*	*Trees, Stumps, Boulders*	*Bush Clearing*
A/B/C + Secondary Roads	6.0 m	10.6 m	10.6 m	14.0 m
D/E + Minor Roads	5.4 m	10.0 m	10.0 m	13.0 m
RAR Roads	4.5 m	7.9 m	8.0 m	11.0 m
Minor / RAR roads with insufficient widths or Temporary Sections	3.5 m	6.9 m	7.0 m	9.0 m

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 200mm 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 **Labou**r to carry out this item of work.

Quality Control

The road width for grass cutting shall be measured at 50-m intervals and shall be free of grass after the operation.

Measurement: m^2

The measurement shall be area of grass cut, based on the standard width and measured length of clearing.

Payment

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

04-50- 003 Bush Clearing (Heavy)

Where the Engineer designates an area as Heavy Bush (based on the undergrowth density) the Contractor shall clear all vegetation including small trees, shrubs and undergrowth, and their root systems, and shall salvage any re-useable timber or other material by cutting into logs and stacking. Other cleared material shall be collected and disposed of off-site as directed by the Engineer.

Work Method

The Contractor shall use **Labour** methods for this item

Quality Control

The Engineer shall check the cleared widths at 50 metre intervals

Measurement Unit: m^2

The measurement shall be the area cleared to the specified width over the length as instructed by the Engineer.

Payment:

The unit rate shall be the full compensation for all labour, tools and incidental costs required to complete the work.

04-50- 004 Bush Clearing (Light)

The Contractor shall clear all vegetation including small trees, and shrubs with their root systems. Grasses and any undergrowth shall be cut to a height of not more than 100mm. The cleared material shall be collected and disposed of away from the side drains and in a manner that causes no visibility obstruction to traffic.

Work Method

The Contractor shall use **Labour** methods for this item

Quality Control

The Engineer shall check the cleared widths at 50 metre intervals.

Measurement Unit: m^2

The measurement shall be the area cleared to the specified width over the length as instructed by the Engineer.

Payment:

The unit rate shall be the full compensation for all labour, tools and incidental costs required to complete the work.

04-50-005 Pruning Tree Branches

Where instructed by the Engineer the Contractor shall trim tree branches to improve visibility. Cut material shall be collected and disposed of as directed by the Engineer and burning of waste material shall not be permitted.

Work Method

The Contractor shall use **Labour** for this item.

Quality Control

The Engineer shall check for visibility improvement.

Measurement and Payment

A Provisional Sum shall be allowed for this item, which shall be paid under Dayworks.

04-50- 006 Trees and Stumps Removal (200-450mm girth)

Trees and Stumps outside the construction width but within the road reserve having a trunk girth of between 200-450mm at a point 600mm above the ground shall only be removed on the instruction of the Engineer.

The Contractor shall excavate around any trees to be removed to a depth not less than 0.5 m before cutting the roots. Existing stumps shall be uprooted in the same manner. All holes left by the removal of trees and stumps shall be back-filled with approved material and compacted to existing ground level. Cut material and stumps shall be collected and disposed of as directed by the Engineer. Burning of waste material shall not be permitted.

Work Method

The Contractor shall use **Labour** methods for this item.

Quality Control

The Engineer shall approve the removal, backfilling and satisfactory disposal of all waste material.

Measurement Unit: No

The measurement shall be the number of trees and stumps removed.

Payment

The unit rate shall be the full compensation for all labour, tools and incidental costs required to complete this item.

04-50-007 Trees and Stump Removal (>450mm girth)

All the requirements of item 04-003 shall apply for trees and stumps greater than 450mm girth. In addition any re-useable timber from trees removed shall be cut into logs not more than 1.5 metres long and stacked as directed by the Engineer.

Work Method

The Contractor shall use **Labour** methods, with appropriate sawing tools and equipment for this item.

Quality Control

The Engineer shall approve the removal, backfilling and satisfactory disposal of all waste material.
Measurement Unit: No

Measurement shall be the number of trees and stumps removed

Payment:

The unit rate shall be the full compensation for all labour, tools, equipment and incidental costs required to complete this item.

04 -50-009 Rock/Boulder Removal

The Contractor shall remove in a manner agreed by the Engineer, rocks and boulders greater than 1.5 m girth using labour and appropriate equipment as necessary. Boulders shall be disposed of outside the road area.

Work Method

The Contractor shall use approved equipment for this item.

Quality Control

The Engineer shall approve the removal and satisfactory disposal of the boulders.

Measurement Unit: Machine Hours

Payment:

Payment shall be made on the number of Machine Hours worked by approved Equipment.

04-50-010 Stripping and Grubbing

The Contractor shall remove, over the widths shown in Table 4.1, topsoil including anthills, loose boulders up to 1.5m girth and other unsuitable material and deposit the debris outside the cleared area as directed by the Engineer.

Work Method

The Contractor shall use **Labour** methods for this item

Quality Control

The Engineer shall approve the stripped and grubbed area and the satisfactory disposal of waste material.

Measurement Unit m^2

The measurement shall be the area cleared as directed by the Engineer

Payment

The unit rate shall be the full compensation for all labour, tools and incidental expenses required to complete this item.

SECTION O5 : EARTHWORKS

SECTION 08: CULVERT AND DRAINAGE WORKS

Scope

This section covers all Works in connection with the installation of concrete pipe culverts; inlet and outlet structures; drifts and drainage protection Works; and the construction of Scour Checks

8.01 Culvert Cleaning (partially blocked)

8.01.1 600mm dia
8.02.2 900mm dia

This activity involves the cleaning of culverts of specified sizes including pipe barrels, 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 as directed by the Engineer

Partially blocked culverts shall be those with less 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 not less than 2 %.

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

This activity shall be carried out before the rains, or as directed by the Engineer.

Work Method

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

Quality Control

The culverts shall be checked as free of debris to the satisfaction of the Engineer.

Measurement Unit: **m**

The measurement shall be the length of culvert, including the outlet drain, cleaned

Payment

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

SECTION 08: CULVERT AND DRAINAGE WORKS

Scope

This section covers all Works in connection with the installation of concrete pipe culverts; inlet and outlet structures; drifts and drainage protection Works; and the construction of Scour Checks

08- 50-002: Ditch Cleaning (Manual)

i. Partially silted

Partially silted drains are those that are less than half silted and require only cleaning.

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

The side drains, mitre drains and catchwater drains shall be cleaned before the onset of the rains or as directed by the Engineer.

Work Method

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

Quality Control

- Appropriate drain templates shall be used to check and control the dimensions of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, to ensure free flow.

Measurement Unit: m

The measurement shall be the length of drain desilted or cleaned to the specified cross-section.

Payment

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

ii. Fully silted

Fully silted drains shall be those that are greater than half-silted and require re-excavation or reshaping.

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

The side drains shall be desilted or re-excavated before the onset of the rains, or as directed by the Engineer.

Work Method

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

Quality Control

- Appropriate drain templates shall be used to check and control the dimensions of the drains.
- The longitudinal profile of the drains shall be checked using boning rods, to ensure free flow.

Measurement Unit: m

The measurement shall be the length of drain re-excavated or re-shaped to the specified cross-section.

Payment

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

08-60-001/005: Culvert Cleaning (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	1200 mm dia

This activity involves the cleaning of culverts of specified sizes including pipe barrels, 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 as directed by the Engineer

Partially blocked culverts shall be those with less 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 not less than 2 %.

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

This activity shall be carried out before the rains, or as directed by the Engineer.

Work Method

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

Quality Control

The culverts shall be checked as free of debris to the satisfaction of the Engineer.

Measurement Unit: m

The measurement shall be the length of culvert, including the outlet drain, cleaned

Payment

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

08- 60 - 006/7/8/9/10 : Culvert Cleaning (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 sizes including pipe barrels, 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 as directed by the Engineer

Fully blocked culvert shall be those 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 not less than 2 %.

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

This activity should be carried out before the onset of the rains, or as directed by the Engineer.

Work Method
The Contractor shall use **Labour** to carry out this item of work.

Quality Control

The culverts shall be checked as free from debris, to the satisfaction of the Engineer.

Measurement Unit: m

The measurement shall be the length of culvert, including the outlet drain cleaned.

Payment

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

08-60-016/035 Concrete Pipe Culverts

08-60-016	300	mm	haunched	(Type II)
08-60-017	300	mm	unhaunched	(Type 1)
08-60-018	450	mm	haunched	(Type II)
08-60-019	450	mm	unhaunched	(Type 1)
08-60-020	600	mm	haunched	(Type II)
08-60-021	600	mm	unhaunched	(Type I)
08-60-022	900	mm	haunched	(Type II)
08-60-023	900	mm	unhaunched	(Type I)
08-60-024	1200	mm	haunched	(Type II)
08-60-025	1200	mm	unhaunched	(Type I)
08-60-026	300	mm	semi-surround	(Type III)
08-60-027	300	mm	surround	(Type IV)
08-60-028	450	mm	semi-surround	(Type III)
08-60-029	450	mm	surround	(Type IV)
08-60-030	600	mm	semi-surround	(Type III)
08-60-031	600	mm	surround	(Type IV)
08-60-032	900	mm	semi-surround	(Type III)
08-60-033	900	mm	surround	(Type IV)
08-60-034	1200	mm	semi-surround	(Type III)
08-60-035	1200	mm	surround	(Type IV)

The Contractor shall supply, lay and joint concrete pipes to form culverts, including the concrete bedding; haunching or surrounds; and backfilling, in accordance with the Drawings for the Type and diameter specified in the Contract or directed by the Engineer.

The pipes shall be of Class 20/20 concrete, at least 28 days cured, and manufactured on site or procured from a supplier approved by the Engineer. The pipes shall be laid on a bedding of Class 15/20 concrete of dimensions as shown on the Drawings and jointed with cement mortar 1:4.

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

The pipes shall be haunched or surrounded, according to the Type specified, with Class 15/20 concrete to the dimensions shown on the Drawings or as directed by the Engineer.

Backfilling shall be carried with approved material and compacted in layers not exceeding 150 mm loose depth and placed evenly on each side of the pipe. Ramps shall be shaped to achieve a minimum overfill of 75% of the pipe diameter, and shall be tapered back on the carriageway to provide a gradual approach, as directed by the Engineer.

If the Contractor wishes to construct culverts in-site, using inflatable or collapsible forms the Engineer's approval shall first be sought for the proposed working method.

On completion the inside of the culvert shall be smooth, without displaced joints or other obstructions and true to line and level.

Work Method

The Contractor shall use **Labour** and appropriate **Equipment** to carry out this item work

Quality Control

- Concrete quality shall be checked for cracks, honey combing, and other defects.
- Before the pipes are laid, the gradient of the concrete bedding shall be checked and shall not be less than 2%
- The joints shall be checked to see that they have been properly made.

Measurement Unit: m

The measurement shall be in linear metres of the installed Type and size of culvert specified, measured net according to the Drawings.

Payment

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

08- 70- 001 Head Wall Repair - Masonry

This activity involves the repairs to damaged head walls and wing walls built in masonry.

Where directed by the Engineer, the masonry walls shall be inspected and loose or missing stone re-secured or replaced. Damaged pointing shall be repaired with cement mortar 1:4 and finished flush with the stonework.

Work Method

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

Quality Control

- The stability of the walls and the pointing shall be to the satisfaction of the Engineer.

Measurement Unit: No

The measurement shall be the number of walls repaired as directed by the Engineer.

Payment

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

08-70-002 Headwall Repair - Concrete

The activity involves the repairs to damaged concrete headwalls and wingwalls, and to inlet/outlet concrete aprons. Concrete walls shall be inspected and repair works carried out as instructed by the Engineer to include breaking out and replacement of damaged concrete with similar material, and the rendering of open texture areas with cement mortar 1:4. Broken wall sections shall be re-built in 20/20 (1:2:4) concrete within formwork erected on the correct lines and levels in accordance with the Standard Drawings. Areas of new concrete and mortar shall be protected from direct sunlight and kept moist for 3 days.

Quality Control

The work shall be carried out to the satisfaction of the Engineer.

Measurement Unit: No

The measurement shall be the number of walls/aprons repaired.

Payment

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

Minor Drainage Structures - Masonry

08-70-003 Type I
08-70-016 Type 2
08-70-017 Type 3(a)
08-70-018 Type 3(b)
08-70-019 Type 4

The Contractor shall construct inlet and outlet structures for culverts including headwalls, wingwalls in stone masonry or concrete block, and aprons in concrete to the dimensions and levels shown on the Drawings or as directed by the Engineer. The walls shall be built on foundations of class 15/20 concrete and jointed with cement mortar 1:4. The aprons shall be in Class 20/20 concrete and after laying the surface shall be kept moist for 3 days.

Work Method

The Contractor shall use **Labour** to carry out this item.

Quality Control

- The dimensions of the structures shall have a tolerance of + / - 10mm
- The levels shall have a tolerance of + / - 10mm
- The mortar joints shall be finished flush with the face of the walls.

Measurement Unit: m^3

The measurement shall be the volume of the structures constructed, in whichever material, measured net according to the Drawings.

Payment

The unit rate shall be the full compensation for labour, tools, materials and any other incidentals that may be required in carrying out the work.

Minor Drainage Structures – Concrete

08-70-004 Type I
08-70-021 Type 3(a)
08-70-022 Type 3(b)
08-70-023 Type 4

The Contractor shall construct inlet and outlet structures for culverts in concrete to the dimensions and levels shown on the Drawings or as directed by the Engineer.

Concrete shall be Class 20/20 unless otherwise specified. The formwork for the walls shall be erected on the concrete foundations, to the correct dimensions, and shall be approved by the Engineer before concrete is poured. Concrete shall be poured in a single lift and the top surface shall be kept moist for 3 days. Formwork may be struck after 2 days or as directed by the Engineer.

The Contractor shall use a concrete vibrator or other means approved by the Engineer to ensure full compaction of the concrete.

Work Method

The Contractor shall use both **Labour** and appropriate **Equipment** to carry out this item.

Quality Control

- The dimensions of the structures 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 slump limit as directed by the Engineer. The frequency of testing shall be determined by the Engineer
- The concrete shall be checked for cracks, honey combing and other defects at the time of striking the formwork.

Measurement Unit: m^3

The measurement shall be the volume of concrete in the completed structure, measured net in accordance with the Drawings.

Payment

The unit rate shall be the full compensation for labour, tools, materials, formwork, equipment and other incidentals that may be required in carrying out the work.

08–70- 005 Scour Checks (Concrete)

08-70-006 Scour Checks (Masonry)

08-70-007 Scour Checks (Wooden Stakes)

The Contractor shall construct scour checks using either stones, stakes, or concrete as instructed by the Engineer.

Construction of concrete scour checks shall be in class 20/20 concrete, unless otherwise specified, and to the details shown in the Drawings.

Spacing for scour checks shall be as shown in Table 8.1, or as directed by the Engineer.

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.

Quality Control

The spacing of the scour checks shall have a tolerance of + / - 0.5m
The sizes of the stakes and stones used shall be in accordance with the Drawings
The shape of the scour check shall be checked using the scour check template.

Measurement Unit: No.

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

Payment

The unit rate shall be full compensation, for labour, tools, materials and incidental costs required for carrying out the work.

08 - 70 - 010: Scour Check Repair - concrete

This activity involves the repair of Scour Checks using stones or wooden stakes or concrete. The construction details shall be shown in the Drawings or as instructed by the Engineer.

Scour checks shall be inspected and the repairs carried out as directed by the Engineer, which shall include replacement of missing or broken stonework and stakes; and the repair of damaged concrete, to the original lines, levels, and Specifications.

Work Method

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

Quality Control

The sizes of the stakes and stones used shall be as the original construction.
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 repaired.

Payment

The unit rate shall be full compensation, for labour, tools, materials, and incidental costs required for carrying out the work.

08- 70- 011 : Stone Pitching Repair

This activity involves the repair of stone pitching on slopes, in inlet/outlet aprons and access drifts. The stone pitching shall be inspected and repairs carried out as directed by the Engineer, including the replacement and re-bedding of missing or loose stones; the repair of mortar jointing: and the cleaning out of weepholes, as required. All work shall be to the lines and levels of the original construction with new stonework and mortar being flush with the adjacent materials.

Work Method

The Contractor shall use **Labour** to carry out this work

Quality Control

The work shall be carried out to the satisfaction of the Engineer.

Measurement Unit: **m^2**

The measurement shall be the net surface area of the repairs.

Payment

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

08-70- 016 : Stone Pitching

The Contractor shall lay stone pitching at locations shown on the Drawings or as directed by the Engineer, which shall include levelling the area to be covered with stone pitching, collecting stones, laying stones, applying mortar to the joints and constructing weep holes, if required.

The area to be covered with stone pitching shall be trimmed to the level and slope shown on the Drawings or as directed by the Engineer. The prepared surface shall be firm and well compacted, with hand rammers.

The stones shall have minimum dimensions of 150mm and maximum 300mm and shall be set on the flat side and securely bedded, with the largest dimensions at right angles to the flow of water, in an interlocking pattern so as to leave only a minimum of voids between the stones which shall be filled 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 cement mortar 1:4 with a minimum thickness of 100 mm. The mortar shall be worked into the pitching so that the voids between the stones are filled to the full depth of the pitching. The mortar shall be finished flush with the surface of the stones.

Weep holes shall be provided to stone pitching on slopes as directed by the Engineer.

The surface of the stone pitching shall be protected from direct sunshine and kept moist for 2 days.

Work Method

The Contractor use **Labour** to carry out this item.

Quality Control
EA

- The quality of pitching shall be checked for gaps and voids.
- The dimensions of the area of stone pitching shall have a tolerance of + / - 100mm

Measurement Unit: m^2

The measurement shall be the total area of pitching calculated as the net area, measured on the slope.

Payment

The unit rate shall be full compensation, for labour, tools, materials, and incidental costs required for carrying out the work.

08-80- 002 : Gabions

The Contractor shall provide and install Gabions as retaining walls and anti-erosion structures at locations shown on the Drawings or as directed by the Engineer.

Gabions shall include mattresses and boxes and for purposes of construction, measurement and payment, no distinction shall be made between them.

Gabions shall be 'Maccaferi" boxes or 'Reno' matresses or equivalent approved by the Engineer.

The surfaces on which the Gabions are to be laid prior to being filled with rock shall be levelled to the depths and dimensions shown on the Drawings or as directed by the Engineer.

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.

Quality Control

The placing and tying of the Gabions shall be approved by the Engineer before filling commences.

Measurement Unit: No

The measurement shall be the number 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 work.

08-80-003 : Rockfill to Gabions

The Contractor shall provide selected rock, crushed if necessary, and carry out the packing and compacting of the rock inside the Gabion boxes.

The boxes shall be filled in layers from the sides towards the middle in an interlocking stone matrix to prevent deformation and bulging. The interior and top layers of the boxes shall be hand packed with smaller stone to form a tightly compact structure and rammed in place. Care shall be taken to ensure that each layer of boxes is filled evenly and to a level surface before the next course of boxes is placed.

Work method

The Contractor shall use **Labour** to carry out this activity.

Quality Control

The filling and compaction of the stones in the Gabion boxes shall be approved by the Engineer.

Measurement Unit m^3

Rockfill to Gabions shall be the volume of Gabions filled.

Payment

The unit rate shall be the full compensation for labour, tools, materials and incidental costs required for carrying out the work.

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, or as directed by the Engineer.

Work Method

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

Quality Control

The work shall be carried out to the satisfaction of the Engineer.

Measurement Unit: m^3

The measurement shall be the volume of debris or silt removed calculated as the product of length , width and measured depth of the affected section of drift.

Payment

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

08-80-005 Drift Repairs – Concrete

This activity involves the repair of concrete drifts, including the removal of loose or broken concrete, cutting back damaged areas to sound surfaces and repairing with concrete of similar Class to the original.

The drift shall be inspected and necessary repairs shall be instructed by the Engineer. Holes and voids shall be cleared of debris, loose material and dust, and shall be well watered before the new concrete is placed. The new concrete shall be firmly rammed against the existing surfaces and finished flush with the surrounding materials. The surface of the repair shall be protected from direct sunlight and kept moist for 3 days. Concrete shall be Class 20/20 unless otherwise directed by the Engineer.

Quality Control

The work shall be carried out to the satisfaction of the Engineer.

Measurement Unit: m^3

The measurement shall be the volume of concrete used for the repair.

Payment:

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

08- 80-006 Drifts (Stone Pitching)

08-80-007 Drifts (Concrete)

The Contractor shall construct Access drifts in grouted stone pitching and watercourse drifts in concrete at locations, and to the dimensions, shown on the Drawings or as directed by the Engineer. This shall include the provision of stone and the levelling of the areas to be covered.

The stone pitching for Access drifts shall comply with the requirement of 08–70-016 with the addition of masonry toes at each end of the drift as shown on the Drawings.

Concrete drifts shall be constructed in Class 20/20 concrete to the lines and dimensions shown on the Drawings or as directed by the Engineer.

The area to be covered shall be trimmed to the line and slope shown on the Drawings or as directed by the Engineer, and the prepared surface compacted with hand rammers or appropriate equipment. The concrete shall be poured in bays of half road width and of length 10-15 metres, between construction joints, with steel mesh reinforcement mats laid 50mm below the finished surface level.

Contraction joints if required shall correspond with the construction joints where directed by the Engineer expansion joints shall be installed at positions and to the details given by the Engineer.

The grouted stone pitching and the concrete shall be covered with wet sacking or other approved cover for not less than 4 days after laying and shall not be subject to loading until adequate strength has been developed as instructed by the Engineer.

Work Method

The Contractor shall use **Labour** and appropriate **Equipment** to carry out this item.

Quality Control

i) Stone pitching quality shall be as for 08-70-016
ii) Concrete shall be checked by slump test to the standard as directed by the Engineer.

Measurement Unit m^3

The measurement shall be the volume of stone pitching or concrete laid, measured net according to the Drawings.

Payment

The unit rate shall be full compensation for labour, tools, materials, equipment and incidental costs required for carrying out the work.

08-80-008 At-level Scour Checks

The Contractor shall select and place flat stones of minimum dimensions 0.10-0.15m in gently sloping channels. The stones shall be placed in a manner to ensure minimum voids within the structure. A trench 0.2m deep by 0.2m wide shall be excavated in the invert of the channel and extended 0.2m into the slopes. Stones shall be laid up to the level of the invert with the middle section lower than the sides to form a spill way. The spacing of the checks shall be 1-4 metres, as directed by the Engineer.

Work Method

The Contractor shall use **Labour** to carry out this item.

Quality Control

The construction and spacing of the scour checks shall be checked by the Engineer.

Measurement Unit: No

The measurement shall be the number of scour checks constructed.

Payment

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

08-80-009/010 Gully-head Protection

08-80-009 Stone Chute Stabilisation
08-80-010 Stone and Post Chute Stabilisation

The Contractor shall construct gully-head protection works as directed by the Engineer to the dimensions and details shown on the Drawings.

The dimensions of the stones shall not be less than 200mm and the volume not less than 0.01m^3 for the smaller stones and pebbles to be used as the transition layer between the stone structure and the ground. No rounded stones shall be used. Posts shall be durable hardwood minimum 900mm in length and 15mm diameter.

The gully head shall be excavated as shown on the Drawings to form a firm base for the stone layers. The initial layer shall be the small stones and gravel to a depth of 150mm after which the larger stone shall be carefully placed to form a compact matrix. Posts shall be driven a minimum of 600mm into the ground at a spacing as directed by the Engineer.

Work Method

The Contractor shall use **Labour** to carry out this item

Quality Control

The stone dimensions and construction shall be checked by the Engineer.

Measurement Unit: No

The measurement shall be number of units constructed

Payment

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

08-80-011/012 Check Dams

08-80-011 Stone Dams
08-80-012 Stone and Post Dams

The Contractor shall construct check dams in erosion gullies to the dimensions and details shown on the Drawings and as directed by the Engineer.

The dimensions of the stones in the main structure shall not be less than 200mm and the volume not less than 0.01 m^3 for the stones and pebbles for the transition layer between the stone structure and the ground. No rounded stones shall be used.

Posts shall be durable treated hardwood of minimum diameter 0.10m, of minimum length 1.6m, driven at least 600mm into the ground. Stones shall be carefully hand-packed to provide a stable structure with a minimum of voids.

The spacing of the check dams shall be as shown in the table below:

Check Dam Spacing					
Gradient	**Height of dam spill way (m)**				
%	**0.15**	**0.25**	**0.50**	**0.75**	**1.00**
5	15.0	25.0			
7	5.0	8.7	17.5	25	35
10	2.5	4.2	8.4	12.6	16.8
15	1.4	2.3	4.6	6.9	9.2
20	0.9	1.6	3.2	4.8	6.4
25		1.3	2.5	3.8	5.0
30		1.0	2.0	3.0	4.0
40			1.6	2.4	3.2
50			1.2	1.8	2.0

Work Method

The Contractor shall use **Labour** to carry out this item

Quality Control

The Engineer shall check the workmanship and spacing of the check dams.

Measurement Unit: No

The measurement shall be the number of check dams constructed

Payment

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

SECTION 10: GRADING AND GRAVELLING

Scope:

Grading covers the work of the reinstating of the road carriageway to the correct camber by removing the high points and filling gullies, corrugations, and wheel ruts to restore a smooth running surface. Gravelling consists of the excavation, loading, hauling, dumping and spreading of gravel wearing course material on the formation

of the 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 quarries, borrow pits or excavation in cuttings as directed by the Engineer. Gravel material shall conform to the requirement given in Table 10.1

Table 10.1: Requirement for Gravel Wearing Course

GRADING REQUIREMENTS	
6.1 Sieve 6.2 (mm)	6.3 % 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

For "Quarry Waste" gravel stones of maximum dimension 80mm may be permitted

PLASTICITY INDEX REQUIREMENTS PI		
Zone	6.4 Min	Max
WET: Mean annual rainfall > 500mm	5	20
DRY: Mean annual rainfall < 500mm	10	30

6.5

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

The Engineer shall approve quarries and the extent of their 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 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 approval of the Engineer and at no extra cost to the Employer. The Contractor is deemed to have included in his rates for the provision of the gravel material.

10.01 Grading – Heavy Grading

The Contractor shall scarify the existing carriageway surface, cutting high spots and moving materials to fill potholes, corrugations and wheel ruts and reshape the surface to the specified camber, using a Motor grader unless otherwise directed by the Engineer. All loose rocks, roots and grasses shall be removed and disposed of well clear of the drains.

The material shall be bladed toward the centre of the road starting from both edges until the specified camber

is achieved. Suitable material from the side drains may be used as additional material. Any further material needed to achieve the correct camber shall be from an approved source. Compaction shall be carried out using appropriate equipment approved by the Engineer, from the carriageway edges to the centerline in overlapping passes.

No grading shall be carried out in dry conditions. Where additional moisture is required to achieve compaction it shall be added in an even manner without transverse or longitudinal flow.

Work Method

The Contractor shall use **Equipment** to carry out this item.

Quality Control

- The width of the carriageway shall be checked at every 50m intervals and have a tolerance of + 50mm or .20mm.

- The camber shall be checked with a camber board at 25m intervals and shall have a tolerance of +/- 1%

Measurement Unit: m^2

The measurement shall be the area of the road cross section graded, measured net according to the specified width and measured length graded.

Payment

The unit rate shall be the full compensation for labour, tools, equipment and incidental costs required for carrying out the work.

10.02 Carriageway Grading - Light Grading

The Contractor shall grade the carriageway to control roughness and corrugations using either a Towed or a Motor grader. The width of the carriageway shall be as specified for the Road Class.

The material shall be bladed toward the centre of the road, starting from both edges, to the specified camber. Where instructed by the Engineer, suitable materials from the side drains may be used to fill potholes and gullies in the carriageway. Any further material needed to re-form the camber shall be from an approved source. Compaction shall be achieved using the wheels of the equipment, tracked evenly over the full surface, or by other approved means. No grading shall be carried out in dry conditions.

Work Method

The Contractor shall use **Equipment** to carry out this item.

Measurement Unit: m^2

6.6 The measurement shall be area of the road cross section graded, measured net according to the specified width and measured length graded.

Payment

The unit rate shall be the full compensation for labour, tools, equipment and incidental costs required for carrying out the work.

10.03 spreading and Compaction of Gravel

The Contractor shall spread and compact gravel material, in a manner to ensure a uniform thickness of the layer across the full width of the carriageway and shaped to the specified camber. Spreading also includes the removal of any oversized stones or boulders, which cannot be broken down to the required size, to spoil dumps. Gravel shall be spread within 24 hours of off-loading.

Compaction of the gravel material shall be carried out from the carriageway edges to the centerline by overlapping passes of the compaction equipment. The number of passes shall be as directed by the Engineer dependent upon the equipment used and the material being compacted. Unless otherwise instructed the moisture content of the material shall be within $\pm$ 2% of optimum

Where additional moisture is required water shall be applied in an even manner and the rate of application shall be such that no transverse or longitudinal flows occur.

The Engineer may instruct the Contractor to carry out density tests on the compacted material to ensure that an acceptable standard has been achieved.

Work Method:

The Contractor shall use **Labour** and/or appropriate **Equipment** to carry out this item.

Quality Control:

- The gravel surface width shall be checked at 100m intervals and shall have a tolerance of + / - 50mm
- Trial holes shall be dug as directed by the Engineer to check the gravel thickness and shall have a tolerance of + 5mm / - 0mm
- The camber shall be checked at 50m intervals and the maximum tolerance shall be + / - 1 %
- The longitudinal profile shall be checked after the compaction of each load to ensure a smooth surface with no corrugations or depressions

Measurement Unit: m^3

The measurement shall be the volume of compacted gravel surfacing measured net according to the Drawings and shall include the excavation and the 1.5km 'free' haul distance

Payment

Contractor to include the cost in other activities (No separate payment)

.

10.05 Restoration of Quarries and Borrow Pits

The Contractor shall level the ground, return the topsoil from the stockpiles, and uniformly spread the material over the full excavation area.

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

Work Method

The Contractor shall use **Labour** and/or **Equipment** to carry out this item as agreed by the Engineer.

Quality Control

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

Measurement and Payment:

Contractor to include the cost in other activities (No separate payment)

SECTION 22: DAYWORKS

A Provisional Sum shall be included in the Bills of Quantities to cover the payment of equipment, labour and materials for work instructed by the Engineer on a Dayworks basis.

The Contractor shall include prices for all items in the Schedule of Rates, in the Dayworks Bill, and shall carry out work using these rates only if directed by the Engineer.

Measurement and Payment

a. Equipment:

Payment for equipment shall only be made for the time each item of equipment is working. Idle time due to breakdown or incompleteness of the equipment shall not be paid. 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. Fuels and lubricants
iv. Maintenance, spare parts and all costs of repairs
v. Depreciation, insurance, overheads and profits.

b. Labour

Payment shall only be made for the time each of worker working on the Dayworks as instructed by the Engineer. The rate for labour shall include the cost of,

i. All wages, allowances and other payments due to the worker
ii. Provision of small tools used on Dayworks activities by labourers and tradesmen.
iii. Insurance, overheads and profit.

c. Materials

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

Schedule of Dayworks

The Engineer shall compile a Schedule of the Equipment, Labour and Materials which may apply to Dayworks activities, to be included in the Dayworks Bill.

STANDARD DRAWINGS

APPENDIX 1

CROSS SECTION A (STANDARD CROSS-SECTION)

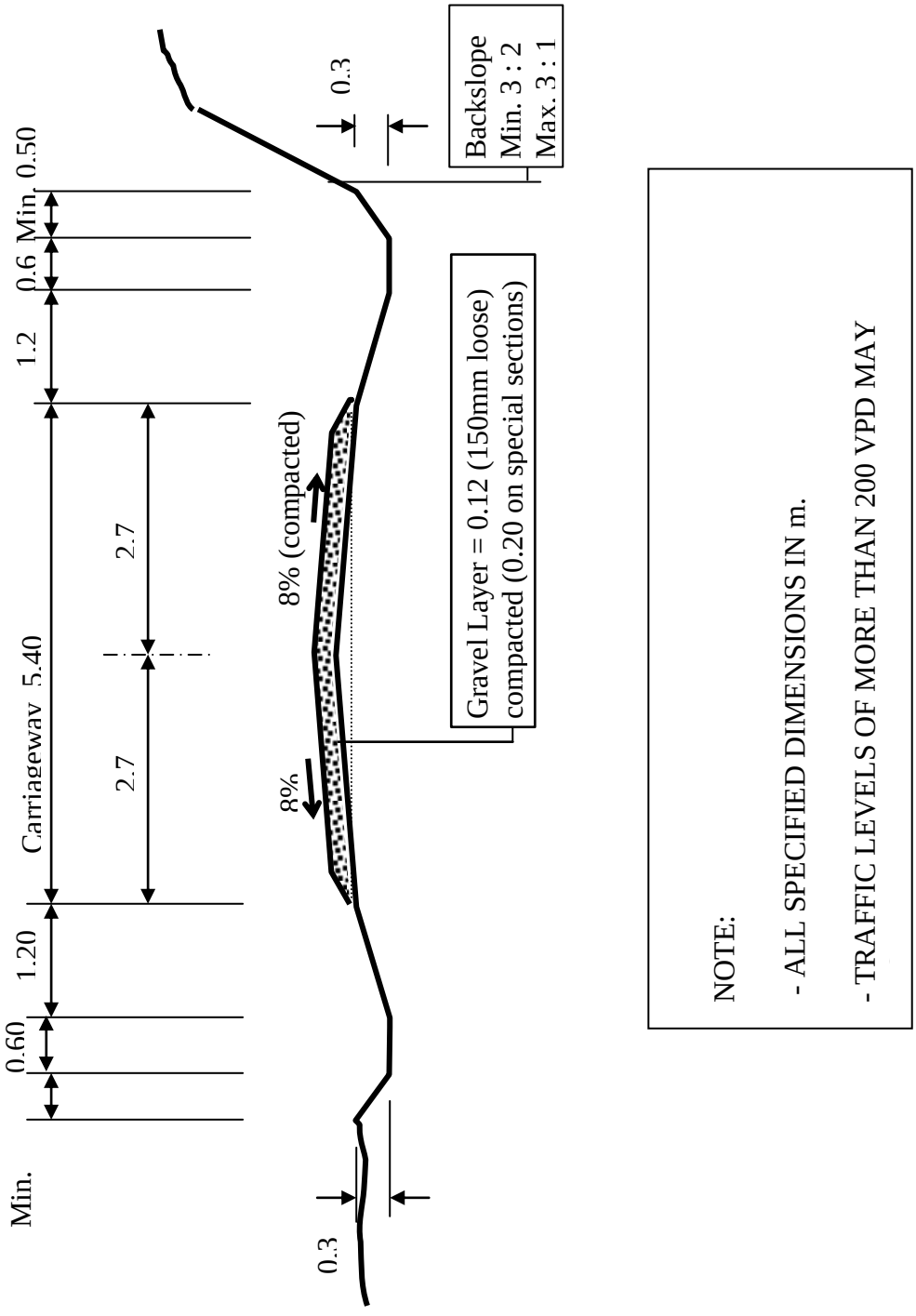


FIGURE C.2 - CROSS SECTION B (REDUCED CROSS-SECTION)

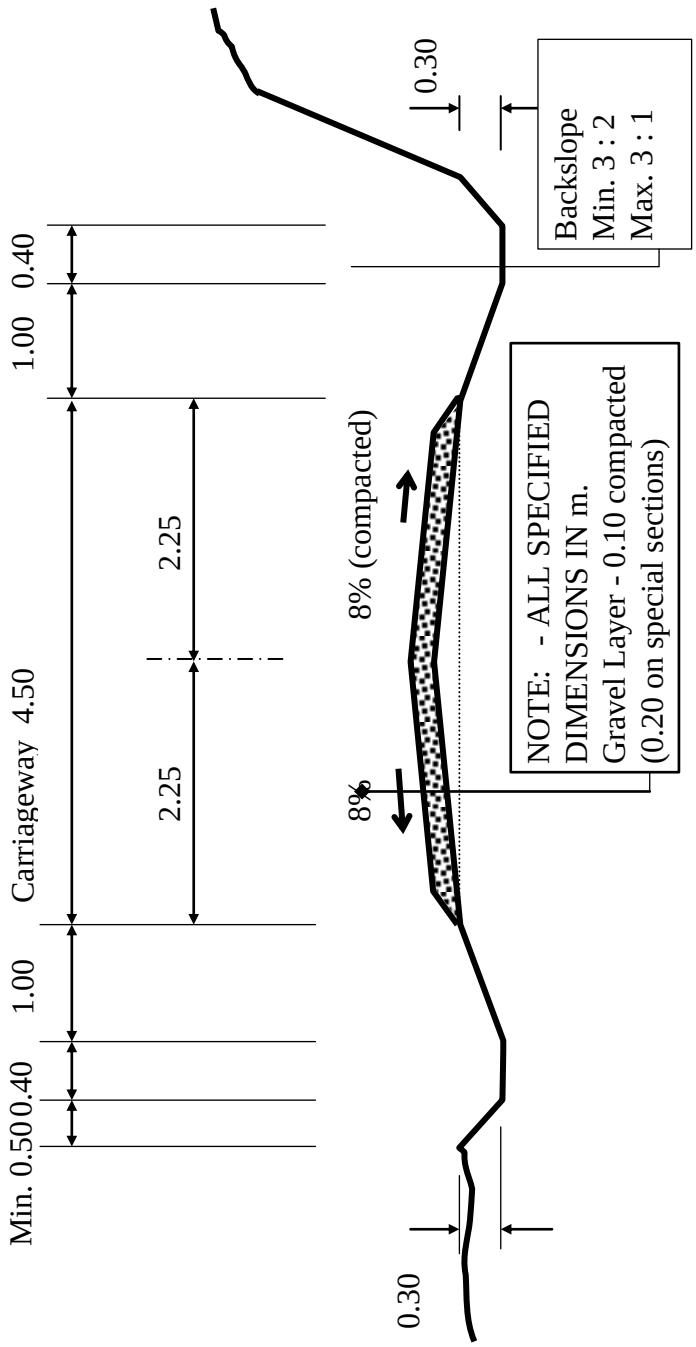
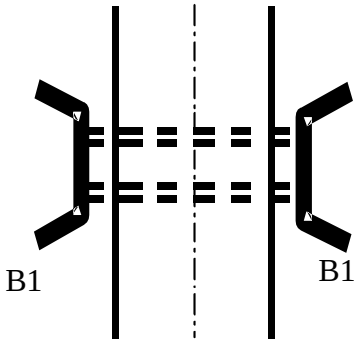
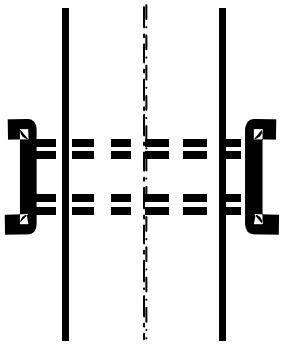


FIGURE C.7 - CULVERT ENTRY / EXIT STRUCTURE TYPES

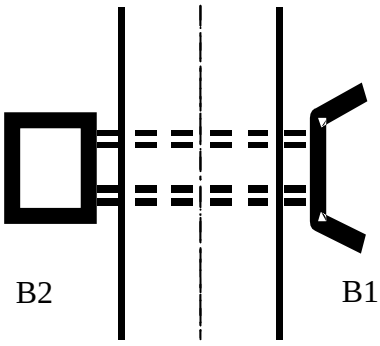
TYPE 1 (ENTRY AND EXIT)



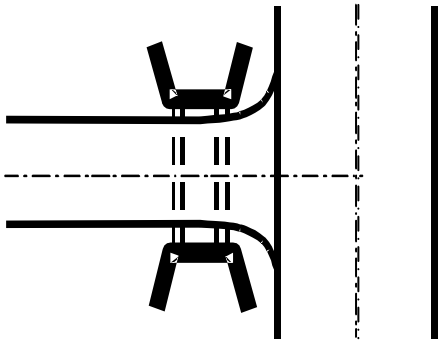
TYPE 3 (ENTRY AND EXIT)



TYPE 2 (ENTRY ONLY!)



TYPE 4 (ENTRY AND EXIT ON ACCESS)

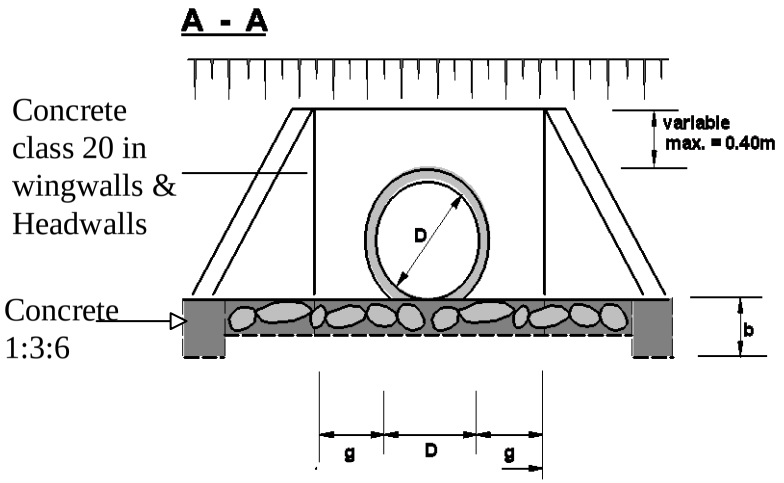


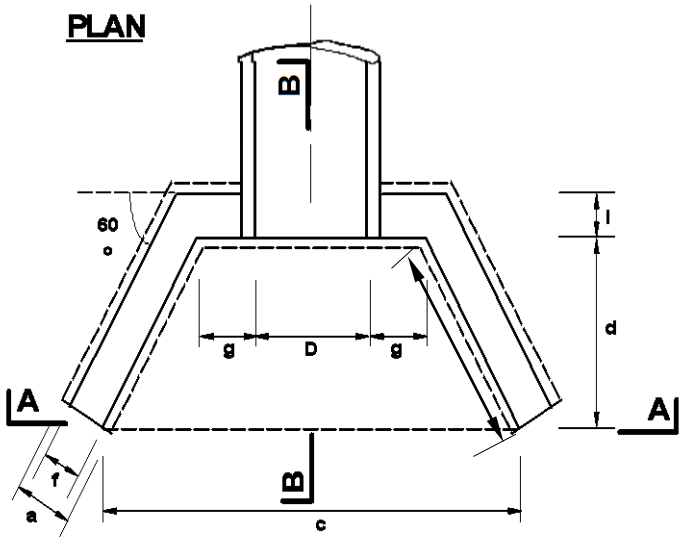
NOTE :

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.





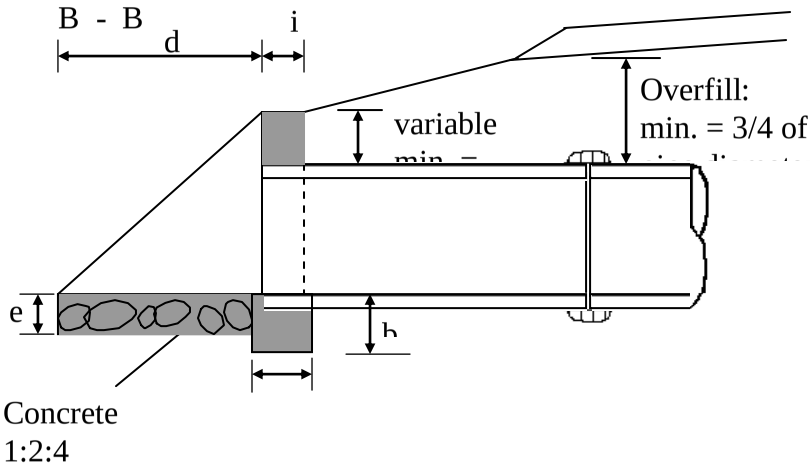
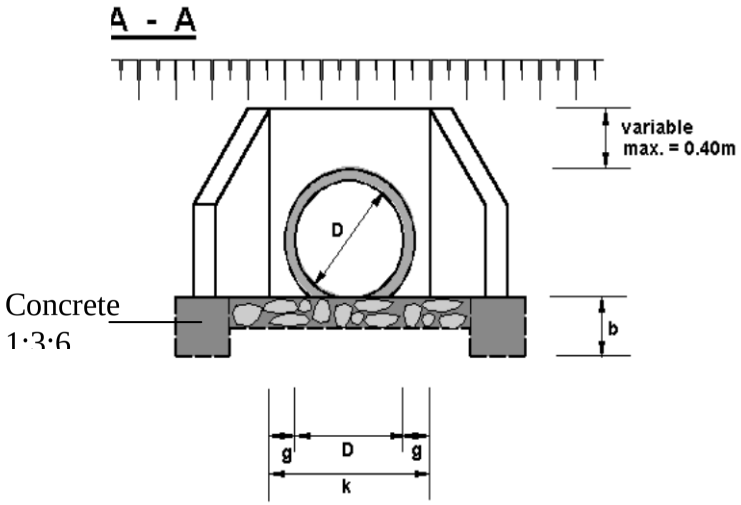


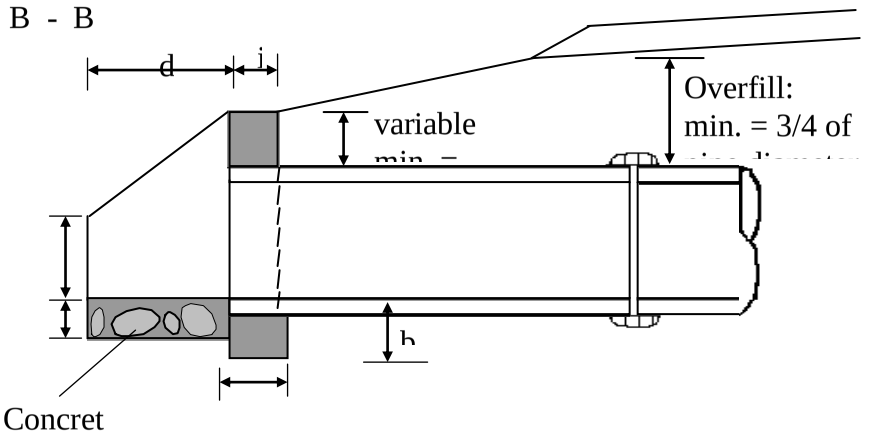
FIGURE C.8 - HEADWALL TYPE 1 (HEAD AND WINGWALLS)

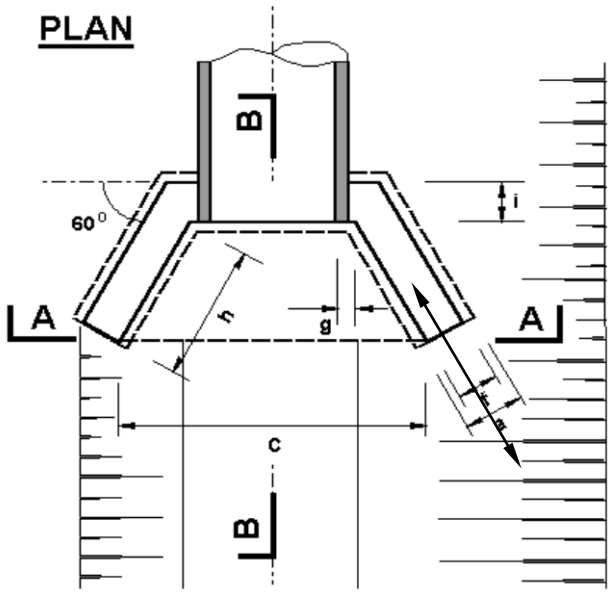
DIMENSIONS AND MATERIAL REQUIREMENTS

PIPE DIAMETER IN (M)			TYPE A (CONCRETE BLOCKS			TYPE B (STONE MASONRY)		
			450	600	900	450	600	900
	DIMENSION	UNIT						
a	FOUNDATION	m	0.30	0.30	0.30	0.40	0.40	0.60
b	FOUNDATION	m	0.30	0.30	0.40	0.30	0.30	0.40
c	FOUNDATION		2.20	2.35	2.89	2.20	2.35	2.89
d	APRON	m	1.00	1.00	1.20	1.00	1.00	1.20
e	APRON	m	0.20	0.20	0.20	0.20	0.20	0.20
f	WALL	m	0.20	0.20	0.20	0.40	0.40	0.40
g	WALL	m	0.30	0.30	0.30	0.30	0.30	0.30
h	WALL	m	1.15	1.15	1.39	1.15	1.15	1.39
I	WALL	m	0.20	0.20	0.20	0.40	0.40	0.40
k	APRON	m	1.05	1.20	1.50	1.05	1.20	1.50
	MATERIAL REQUIREMENT							
	FOUNDATION (Concrete)	m^3	0.3	0.32	0.51	0.4	0.42	1.03
	HEAD/WINGWALLS (Concrete/Masonry)	m^3	0.4	0.47	0.67	0.8	0.93	1.35
	APRON (Concrete)	m^3	0.33	0.36	0.53	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







DIMENSIONS AND MATERIAL REQUIREMENTS

PIPE DIAMETER IN (M)			TYPE A (CONCRETE BLOCKS			TYPE B (STONE MASONRY)		
			450	600	900	450	600	900
	DIMENSION	UNIT						
a	FOUNDATION	m	0.30	0.30		0.40	0.40	
b	FOUNDATION	m	0.30	0.30		0.30	0.30	
c	APRON		1.34	1.49		1.34	1.49	
d	APRON	m	0.60	0.60		0.60	0.60	
e	APRON	m	0.20	0.20		0.20	0.20	
f	WINGWALLS	m	0.20	0.20		0.40	0.40	
g	WINGWALLS	m	0.10	0.10		0.10	0.10	
h	HEADWALLS	m	0.69	0.69		0.69	0.69	
I	HEADWALLS	m	0.20	0.20		0.40	0.40	
k	HEADWALLS	m	0.65	0.80		0.65	0.80	
I	HEADWALLS	m	0.40	0.40		0.40	0.40	
	MATERIAL REQUIREMENT							
	FOUNDATION (Concrete 1:2:4, 1:3:6)	m^3	0.18	0.2		0.24	0.26	
	HEAD/WINGWALLS (Concrete/Masonry)	m^3	0.25	0.29		0.50	0.58	
	APRON (Concrete)	m^3	0.12	0.14		0.12	0.14	

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

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	0.46	0.52	0.78
f (min.)	0.15	0.15	0.15
g	0.15	0.15	0.15
h	0.81	1.02	1.38
i	0.28	0.35	0.45
Concrete	Volume in (m3/m)		
	0.37	0.61	0.92
Application	- Fair to poor subgrade Condition; - Overfill > ¾ Diameter; - Seasonal waterflow only.		
Remarks	- Use gravel material for back/ overfill.		

PROFILE IV

(CONCRETE)

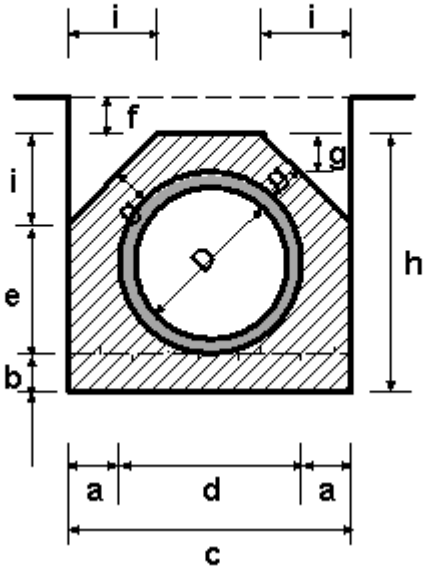
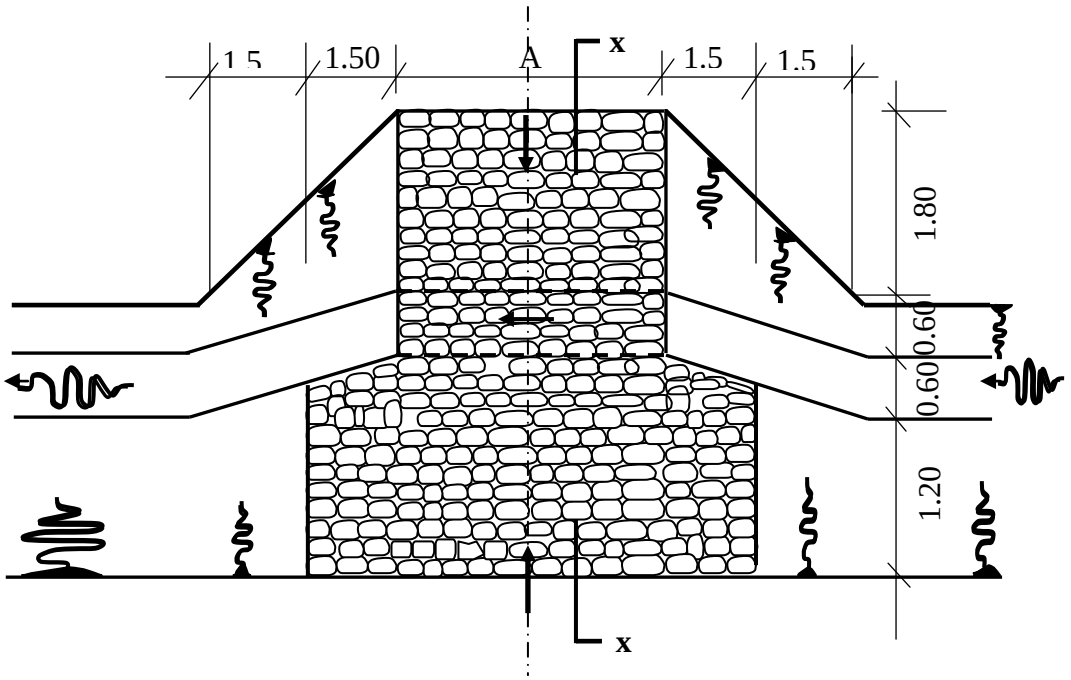
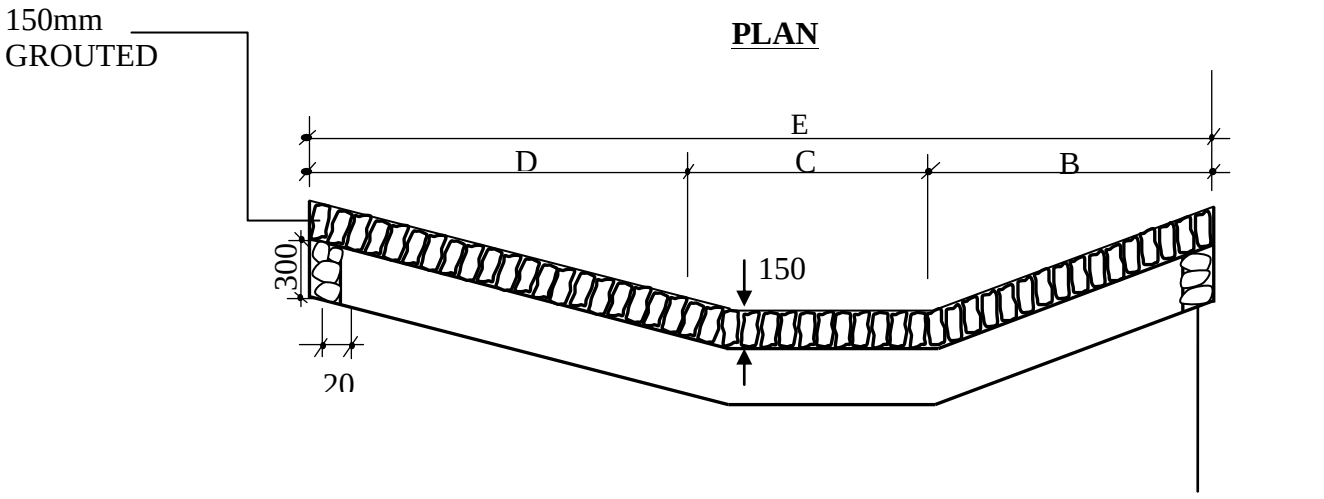


FIGURE C.15 ACCESS DRIFT



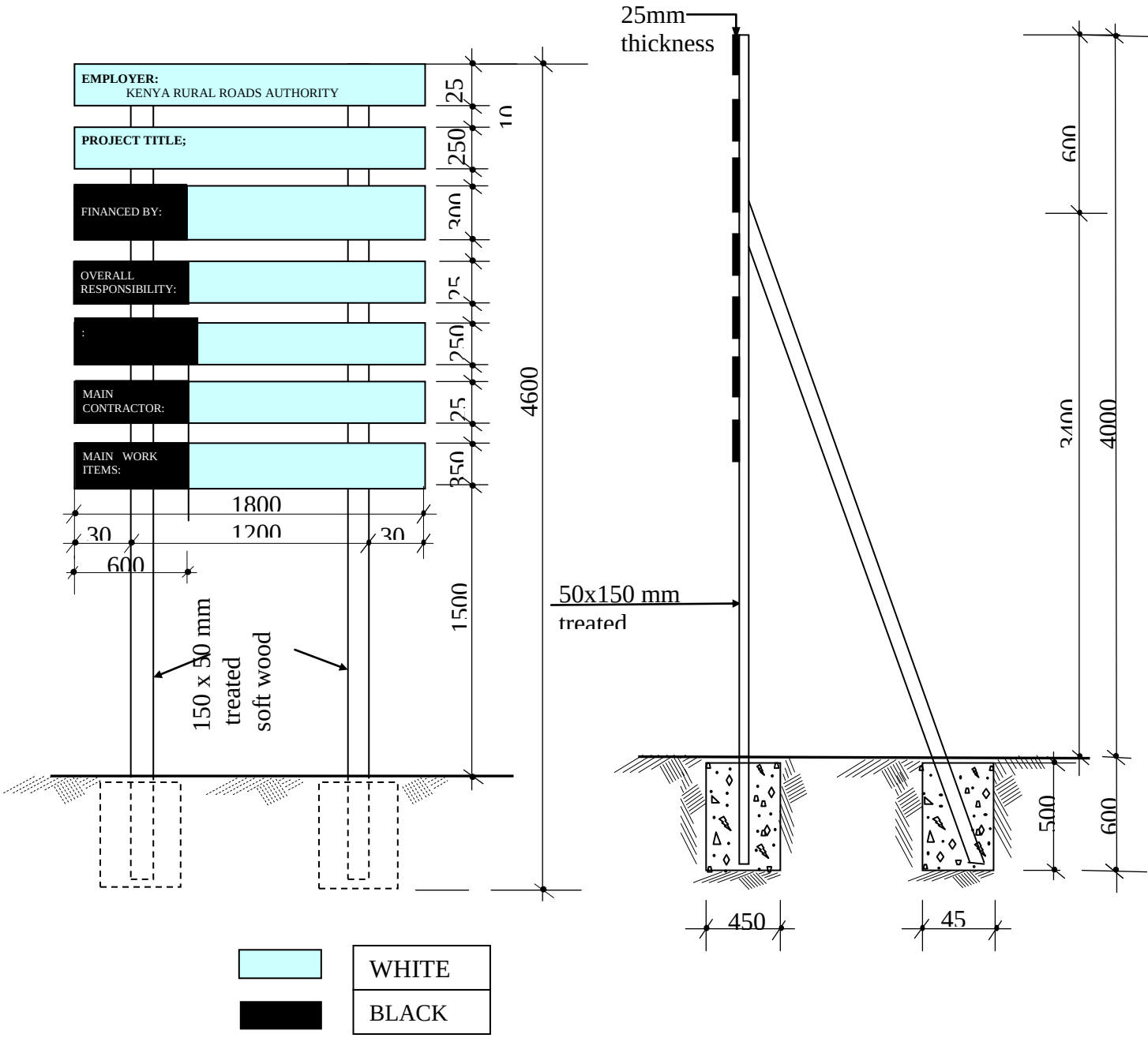
PLAN



X-SECTION X-X

QUANTITIES TABLE								
Cross section	DIMENSIONS					Excavation (m3)	Stone masonry (m^3)	150mm Grouted stone pitching (m3)
	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

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.

PREAMBLE TO BILLS OF QUANTITIES

1. The Bills of Quantities shall be read in conjunction with the Instruction to Tender, the Conditions of Contract, Specifications, Schedule of Activities and the Drawings.

2. The quantities given in the Bills of Quantities are estimates and provisional and are given to provide a common basis for tendering. The basis of payment will be the actual quantities of work ordered and carried out, as measured by the Contractor and verified by the Engineer and valued at rates and prices tendered in the priced Bill of Quantities as applicable.

3. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor has failed to enter a rate or price shall be deemed to be covered by the Contract Price.

4. The whole cost of complying with the provision of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items.

5. Provisional Sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer.

6. Day works rates are requested as a guide and are not reflected in the tender sum. The engineer therefore has the right to negotiate reasonable rates for the Contract.

7. All prices must be exclusive of VAT. The VAT component should be factored separately on the summary page of the bills of quantities. Failure to separate VAT from the rates shall render the tender unresponsive.

BILLS OF QUANTITIES

Bill of Quantities					Page: 1
Bill No.4	**SITE CLEARANCE**				**Project:**
Item No.	**Description**	**Units**	**Quantity**	**Unit Bid Rate(Ksh)**	**Amount KSh**
04-70-002	Heavy Bush Clearing	M^2	32400		
	Total Carried Forward to Summary:				

Bill of Quantities					Page: 2
Bill No.10	**GRADING AND GRAVELLING WORKS**				**Project:**
Item No.	**Description**	**Units**	**Quantity**	**Unit Bid Rate(Ksh)**	**Amount KSh**
10-50-003	Heavy grading with watering and compaction	M^2	45000		
10-50-002	Gravel Patching with watering and compaction	M^3	2460		
	Total Carried Forward to Summary:				

Bill of Quantities		Page: 3
	Summary	**Project:**
Item No.	**Description**	**Amount (KShs)**
4	SITE CLEARANCE	
10	GRADING AND GRAVELLING WORKS	
	Sub Total	
	Add 14% VAT	
	TOTAL	
	Carried to page on the form of Tender	