

Government of Montserrat



Banks Road Improvement, Shinnland

A CARIBBEAN DEVELOPMENT BANK BASIC NEEDS TRUST FUND PROJECT

TENDER DOCUMENTS

Bidders are asked to tick off the Sections tendering for.

Section: 2 Chainage 0+148 – 0+310.74 ☐

Section: 3 Chainage 0+115 – 0+310 ☐

Section: 4 Chainage 0+310 – 0+411.5 ☐

Project No: BNTF 8

Employer: Government of Montserrat

Issue Date: 26th July, 2016

Project Consultants

Engineering Solutions Inc.

Banks Montserrat

Tel: 664-491-7826

Cell: 664-492-1336

Email: en_sol@hotmail.com

Banks Road Improvement, Shinnland

INVITATION FOR BIDS

GOVERNMENT OF MONTSERRAT
BASIC NEEDS TRUST FUND PROGRAMME
INVITATION FOR BIDS

The Government of Montserrat (GOM) has received financing from the Caribbean Development Bank (CDB) in an amount equivalent to XCD 1,374,399.00 towards the cost of the Basic Need Trust Fund 8 Project (the BNTF Project) and intends to apply a portion of the proceeds of this financing to eligible payments under these contracts. Payments by CDB will be made only at the request of GOM and upon approval by CDB, and will be subject, in all respects, to the terms and conditions of the Financing Agreement. The Financing Agreement prohibits withdrawal from the financing account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of CDB, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than GOM shall derive any rights from the Financing Agreement or have any claim to the proceeds of the Financing.

The Project is being implemented by the BNTF Project through its Implementing Agency (IA). CDB has contracted a Consultant who will assist the BNTF office with delivering the Project. The Consultant has prepared designs and contract documentation and will assist in tender administration and evaluation and supervision of BNTF Project activities.

GOM now invites sealed bids from eligible bidders for the construction of **three** packages representing sections of the **Banks Road Improvement, Shinnland Sub-project**. The works include, but are not limited to the following:

- (a) Package 1 – Section: 2 Chainage 0+148 – 0+318.74 Construction of a measured length of reinforced concrete retaining wall.
- (b) Package 2 – Section: 3 Chainage 0+115 – 0+310 Rehabilitation of a measured length of road surface, construction of slipper and irish drains, driveways and finish with reinforced concrete pavement.
- (c) Package 3 – Section: 4 Chainage 0+310 – 0+411.5 Rehabilitation of a measured length of road surface, construction of U-drains, driveways and finish with reinforced concrete pavement.

Consideration will be limited to firms or joint ventures of firms, which are legally incorporated or otherwise, organised in, and have their principal place of business in an eligible country and are either:

- (a) more than 50% beneficially owned by a citizen or citizens and/or a bona fide resident or residents of an eligible country, or by a body corporate or bodies corporate meeting these requirements; or
- (b) owned or controlled by the Government of an eligible country provided that it is legally and financially autonomous and operated under the commercial law of an eligible country and otherwise meets the eligibility requirements of the CDB Guidelines for Procurement (2006).

Eligible countries are member countries of CDB.

Eligible bidders will be required to submit full qualification information with their bids establishing their eligibility to bid and qualification to perform the contract if the bid is accepted. Tender and qualification information are to be submitted in the English Language on the prescribed forms inserted in the Bid Documents. Submissions that do not provide the information required, or do not demonstrate the prospective contractor's ability to perform satisfactorily, will not qualify and will not be considered for further evaluation.

Qualification requirements include for any one package, inter alia:

- (a) an average annual turnover (defined as certified payments received for works in progress or completed) within the last 3 years of at least One Hundred and fifty Thousand Eastern Caribbean Dollars (XCD150,000.00); *How: submit account statements for the last three years or copies of payment certificates.*
- (b) a minimum demonstrable cash flow (including access to credit) of Seventy-Five Thousand Eastern Caribbean Dollars (XCD75,000.00); and *How letter of credit from a bank or a supplier*
- (c) experience as prime contractor in the construction of at least three (3) assignments of a nature, scope and complexity comparable to the proposed project activity within the last three (3) years (to comply with this requirement, works quoted should be at least 80 percent complete). *How: Copy of contract / Form of Agreement letter.*

Eligible bidders should register at the BNTF office prior to obtaining bidding documents. Bidding document can be obtained by eligible bidders from the Government of Montserrat Website at www.gov.ms or from first address below for a refundable fee of One Hundred Eastern Caribbean Dollars (XCD 100.00). Requests may also be made by written application. Written applications must be clearly marked: **"Request for Bidding Documents for the Banks Road Improvement, Shinnland Sub-Project"**, along with the name, address and contact information of the bidder for which Bidding Documents is being requested. Payment should be made by bank draft or bank guaranteed cheque submitted with the letter of request and made payable to: **Basic Needs Trust Fund.**

All bids shall be accompanied by a Bid Security of the equivalent of One Thousand Eastern Caribbean Dollars (XCD 1,000.00) for each sections tendering for.

Submissions in sealed envelopes clearly marked **“Bid for the Banks Road Improvement, Shinnland Sub-Project”**, must be received at the second address below not later than **2pm on Wednesday August 17th 2016**. Bid opening will take place immediately after the deadline for submission at the second address below in the presence of bidders representatives who choose to attend. Qualification information **only** must be simultaneously submitted to the third address below.

GOM/BNTF reserves the right to accept or reject any bid, and to annul the process and reject all bids, at any time prior to award of contract, without thereby incurring any liability to the affected prospective bidder(s) or any obligation to inform the affected prospective bidder(s) of the grounds for GOM/BNTF action. GOM/BNTF will not defray any costs incurred by any bidder in the preparation of bids.

1.	Address for Correspondence	2.	Address for Bid Submission and Bid Opening
	Mervin Browne BNTF Office Upper Floor Little Bay Public Market Little Bay Montserrat		The Chairman Public Procurement Board Ministry of Finance and Economic Management Government Headquarters Brades Montserrat
3.	Address for Completed Qualification Information Only		
	procurement@caribank.org		

Banks Road Improvement, Shinnland

INSTRUCTIONS TO TENDERERS

INSTRUCTIONS TO TENDERERS

The following instructions have been included for the advice and guidance of Tenderers. Care should be exercised that the conditions and clauses are adhered to, since failure to comply may result in the refusal of a tender.

1. Confidentiality Documents

All recipients of tender documents and drawings for the proposed contract (whether they submit a tender or not) shall treat the details of the documents and drawings as private and confidential. Failure to do so will result in disqualification from this and future tenders.

2. Dispatch of Tenders

The tender shall be delivered before the day and hour of tender closing stated in the Invitation to Tender. The Form of Tender shall be signed by an authorized officer of the Company.

The completed Tender shall be submitted using the Form of Tender, in the copy of the Tender Document provided.

The Tender and all supporting documents shall be enclosed in a sealed inner envelope bearing only the words **“Tender for Banks Road Improvement, Shinnland”** with the **name of the tenderer** and placed in an outer envelope bearing only the words **“Tender for Banks Road Improvement, Shinnland”** with no indication of the identity of the sender.

These envelopes must be addressed to:

The Chairman

Public Procurement Board
Ministry of Finance and Economic Management
Government Headquarters
Brades, Montserrat

The qualification information **Only** must be simultaneously submitted to email address: procurement@caribank.org

3. This Tender is based on the Drawings, Specifications, Conditions of Contract and Bills of Quantities hereinafter referred to as the Contract Documents.
4. No unauthorized alteration or addition should be made to the Form of Tender, to the Bills of Quantities or to any other component of the Tender Document. If any such alteration or addition is made or these instructions are not fully complied with, the Tender may be rejected. Should any further information be required, it will be supplied on request by the Project Consultant.
5. Any neglect or failure on the part of the tenders to obtain reliable information upon any matters affecting the cost, execution, construction, completion and maintenance of the Works and the Contract shall not relieve the persons whose Tender is accepted from any risks of liabilities for the

completion of the Works, nor will any claim for increase of the Contract be entertained as a result of such neglect or failure. Quantities contained within the Bills of Quantities do not necessarily indicate conclusively the amount or the extent of works to be performed. The Contractor must inform himself, as no claims for increases will be entertained on this basis.

6. Tenderers are required to visit the site of the works to obtain for themselves, on their own responsibility, any information they may require prior to submitting a tender and entering into a contract. Each Tenderer, in submitting a proposal, warrants that he has investigated and is acquainted with the requirements of the Contract. Submission of a tender shall be considered conclusive evidence that the Tenderer has made such examination and knows all the conditions that will affect the Works.
7. Tenders must be submitted on the Form provided. Prices shall be in Eastern Caribbean Dollars. Each form shall be completely filled out. Tender prices must be completed in ink. Erasures or other changes must be noted over the signature of the Tenderer.
8. Each Tender must contain the name, residence and place of business of the person or persons making the Tender and must be signed by the Tenderer with his usual signature. Tenders by partnership must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership or by an authorized representative followed by the signature and designation of the person signing. Tenders by corporation to be signed with the legal name of the corporation followed by the name of the State of incorporation and by the signature and designation of the President, Secretary or other persons authorized to bind it in the matter. Satisfactory evidence of the authority of the signer on behalf of the firm shall be furnished.
9. Award of Contract will be made, if at all, to the tenderer whose tender the Employer deems most advantageous to the Government of Montserrat. The Employer reserves the right to reject any or all tenders or to accept any tender should it be deemed in the interests of the Employer so to do, and, in particular, if only one tender is received, the Employer reserves the right to reject it.
10. The Tenderer to whom the award is made will be required to enter into an agreement with the Employer. This agreement will be of the same form as that in the Conditions of Contract.
11. Increases / Decreases in Cost of Labour and Materials.
 - i. Increases / decreases in the current cost of labour and certain materials subsequent to the date for closing of Tenders will not result in an adjustment to the Contract Price.
 - ii. Basic unit costs of labour and certain materials upon which the Tender is based and upon which day works and variations will be considered shall be listed in Schedule A, B,C and D of the Form of Tender. These Schedules shall be completed and submitted with the Tender. Failure to submit them may lead to disqualification of the Tender.

12. Should there be any doubt or obscurity as to the meaning of the Tender Documents, or as to anything to be done or not be done under the Contract or concerning these instructions, or any other matter or thing, Tenderers shall set forth in writing such doubts to obscurity and submit them to the Project Consultant not later than two weeks before the date for submission of Tenders. These and any other outstanding matters will be answered in writing within one week of the above date.
13. Tenderers are to fill in all blank spaces in the Form of tender including the appendix, except where specifically instructed otherwise.

14. Pricing

- i. Tenderers are to insert rates or prices against each item in the Bills of Quantities. Items against which no rate or price is entered by the Tenderer will be deemed to be covered by the rates of prices set against other items in the Bills.
- ii. Prices inserted shall be based on duty free imports from abroad of material and goods required specifically for this product and shall be deemed to include for the provision of all labour, materials and plant, for transport, for deliveries to Site (where not specifically mentioned in the description), for temporary storage of materials and return of empties, for the erection, maintenance and removal of scaffolding, temporary staging, plank ways, protection, etc and for all other things necessary for the completion of the Works in accordance with the Drawings, Specifications, Conditions of Contract and Schedule of Works.

15. Import Duty Concessions

- i. The Tenderer must ascertain from the responsible official of the Montserrat Customs and Revenue Services the allowable concessions at present in force in respect of duty on imported materials to be incorporated in the Works.
- ii. The Tenderer must familiarize himself with the workings of the Customs Department and shall allow for the costs of and shall accept responsibility for preparing and processing the necessary documents involved in the importation of materials, etc. to be incorporated in the Works.
- iii. The Tenderer must allow for all Wharfage dues, Package Tax, Importer's Licenses (where applicable), Stamp Duties, taxes and charge that may be required.
- iv. Special rules are in force in respect of the importation of plant, scaffolding, tools, equipment and consumable stores that are not incorporated in the Works. The Tenderers must allow for the result of licenses, bonds, taxes, stamp duties or any other charges that may be required.

16. Errors in Tenders

Errors discovered in the Contractor's Tender will be dealt with as follows:

The Contractor will be given details of such errors and afforded an opportunity of confirming or withdrawing his offer. If the Contractor withdraws, the tender of the second most advantageous Tenderer will be examined, and if necessary this Contractor will be given a similar opportunity.

17. Compliance with instructions:

- i. No tender will be considered unless it complies with the conditions set out in these instructions.
- ii. All Addenda issued by the Project Consultant prior to the date stated for the closing of Tenders shall be attached to and form part of the Tender.

18. The Employer will not be responsible for any expenses or losses that may be incurred by any Tenderer in the preparation of this Tender.

19. The Tenderer shall be bound by his Tender except as provided for in Paragraph 16 of these instructions.

20. Discrepancies in Specifications or Drawings

- i. Any ambiguity found in the drawings or specifications shall be called to the attention of the Project Consultant prior to tendering.
- ii. Ambiguities will be clarified by the Project Consultant by Addenda prior to accepting tenders, and one copy of each Addendum shall be submitted with the Tender. No consideration will be given to any claim by any Tenderer that an ambiguity or question was settled verbally prior to submitting his Tender.
- iii. All information given to bidders other than by means of the drawings and contract documents or by Addenda as described above, is given informally and shall not be used as the basis of a claim.
- iv. To receive consideration, such question shall be submitted in writing to the Project Consultant so as to be received at least ten days before the established date for receipt of tenders. If the question involves the quality or use of products or methods, it must be accompanied by drawings, specifications or other data in sufficient detail to enable the Project Consultant to determine the quality or suitability of the product or method. In general, the Project Consultant will neither approve nor disapprove particular products prior to the opening of the bids; such products will be considered when offered by the Contractor for incorporation into the works.

- v. Decisions rendered by the Project Consultant in response to questions received as above-provided will be arranged as Addenda and shall become a part of the Contract.
- vi. All information given on the drawings or in the contract documents relating to materials encountered, ground-water, sub-surface conditions, natural phenomena, and existing pipes and other structures is from the best source available to the Employer at present. All such information is furnished only for the information and convenience of tenderers.

21. Commencement of the Works

Tenderers are advised that the actual work of this Contract must not be started until a “Notice to Commence Work” has been issued by the Project Consultant. The Contractor shall, however, commence work no later than the date specified in the above Notification.

22. Acceptance of Tender

The Employer, Government of Montserrat, does not bind itself to accept the lowest or any tender nor to assign any reason for the rejection of any tender. Tenders may be declared void if the tender sum exceeds the funds available for the works.

23. Construction Programme

The Contractor shall submit with his tender a proposed programme or a summary thereof showing the sequence and timing of the principal parts of the Works based upon the Activity Schedule provide in the preliminary appendix. If the Contractor is awarded the Contract, he shall agree the details of his programme with the Consultant and shall produce four (4) copies of the agreed chart for the Consultant. The Contractor shall so programme the work as not to interfere with the free use of any existing buildings, roads, and other areas and or adjoining the site.

Banks Road Improvement, Shinnland

QUALIFICATION REQUIREMENTS

Banks Road Improvement, Shinnland

QUALIFICATION REQUIREMENTS

Issue Date: **Tuesday 26th July 2016**

Deadline: **Wednesday 17th August 2016 at 2:00 pm**

The following documents should be provided for a contractor's bid to be valid. Bidders are asked to supply and tick off the following information. Failure to provide any of the stated documents may result in the bid being considered noncompliant and rejected.

Signed Form of Tender (Including time for completion and notice period)	<input type="checkbox"/>
Completed Bill of Quantities	<input type="checkbox"/>
Construction Programme	<input type="checkbox"/>
Insurance Details	<input type="checkbox"/>
Details of work completed by the company of a similar nature and work of equal or greater value. Please state project name, brief description of work, client name and value of work completed. Supporting evidence must be included	<input type="checkbox"/>
Safety Plan including Traffic Management Plan	<input type="checkbox"/>
Tax Compliance Certificate	<input type="checkbox"/>
Types of Personnel to be employed for the contract	<input type="checkbox"/>
Plant/ Equipment Proposed / Available for the Execution of Works	<input type="checkbox"/>

Qualification requirements include for any one package, inter alia:

- (a) an average annual turnover (defined as certified payments received for works in progress or completed) within the last 3 years of at least One Hundred and fifty Thousand Eastern Caribbean Dollars (XCD150,000.00); *How: submit account statements for the last three years or copies of payment certificates.*
- (b) a demonstrable cash flow (including access to credit) of Seventy-Five Thousand Eastern Caribbean Dollars (XCD75,000); and
- (c) experience as prime contractor in the construction of at least three (3) assignments of a nature, scope and complexity comparable to the proposed project activity within the last three (3) years (to comply with this requirement, works quoted should be at least 80 percent complete). *How: Copy of contract / Form of Agreement letter.*

Labour

Labour Category	Unit/ Rate (XCD\$)
Charge hand / working Foreman if working with gang	
General Labourer	
Dozer Operator	
Tracked excavator Operator	
Wheeled Backhoe Operator	
Dumper / Tractor / Pick-up driver	
Roller Operator	
Truck Drivers	
Grader Operator	
Carpenter / Mason	
Water truck operator	

Day work Materials

Description	Unit	Unit Rate (XCDS)
Granular Base course	m ³	
Sand	m ³	
Aggregate	m ³	
Concrete C10/10	m ³	
Concrete C20/20	m ³	
Concrete C25/20	m ³	
Cement	kg	
High Yield Reinforcement	tonne	
BRC #66 welded mesh	m ³	
HDPE Pipes	m ²	
Concrete Curbs	m ²	
Forms	m ²	

Day work Plant

Plant Category/ Description	Unit Rate (XCD\$/hr.)
Dozer – D6 or similar	
Dozer – D8 or similar	
Front end loader 1 m ³	
Front end loader 2 m ³	
Wheeled Backhoe	
Grader	
Tracked Excavator 10 tonnes	
Tracked Excavator 15 tonnes	
Tracked Excavator 20 tonnes	
Tracked Excavator 25 tonnes	
Tipper Truck – circa 7.5 tonne GVW	
Tipper Truck – circa 14 tonne GVW	
Crane Truck	
Earth Compactor	
Pick-up truck	
Water truck	
Compressor complete with breaker and tools	
Dumper	
Mixer 1 cubic yard	
Bob Cat	

Banks Road Improvement, Shinnland

FORMS OF TENDERS

FORM OF TENDER

Section: 2 R.C Retaining Wall Chainage 0+148 - 0+310.74

To: **The Chairman**
Public Procurement Board
Ministry of Finance and Economic Management
Government Headquarters
Brades, Montserrat

Dear Sir,

Banks Road Improvement, Shinnland

Having examined the Drawings, Conditions of Contract, Specifications and Bills of Quantities for the construction of the above-named Works, we, the undersigned, offer to construct, complete and maintain the whole of the said Works in **Section: 2** for the sum of:

_____ (\$ _____)

Of such other sum as may be ascertained in accordance with the said conditions.

We undertake, if our tender is accepted, to commence the Works within _____ calendar days of receipt of the Project Consultant's order to commence, and to complete and deliver the whole of the Works comprised in the Contract within _____ calculated from the date of commencement.

We agree to abide by this tender for the period of _____ 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.

Unless and until a formal agreement is prepared and executed this tender, together with your written acceptance thereof, shall constitute a binding contract between us.

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

Dated this day of 2016.

Signature in the capacity of
duly authorised to sign tenders for and on the behalf of

(IN BLOCK CAPITALS)

Address.....
.....

FORM OF TENDER

Section: 3 Chainage 0+115 - 0+310

To: **The Chairman**
Public Procurement Board
Ministry of Finance and Economic Management
Government Headquarters
Brades, Montserrat

Dear Sir,

Banks Road Improvement, Shinnland

Having examined the Drawings, Conditions of Contract, Specifications and Bills of Quantities for the construction of the above-named Works, we, the undersigned, offer to construct, complete and maintain the whole of the said Works in **Section: 3** for the sum of:

_____ (\$ _____)

Of such other sum as may be ascertained in accordance with the said conditions.

We undertake, if our tender is accepted, to commence the Works within _____ calendar days of receipt of the Project Consultant's order to commence, and to complete and deliver the whole of the Works comprised in the Contract within _____ calculated from the date of commencement.

We agree to abide by this tender for the period of _____ 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.

Unless and until a formal agreement is prepared and executed this tender, together with your written acceptance thereof, shall constitute a binding contract between us.

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

Dated this day of 2016.

Signature in the capacity of
duly authorised to sign tenders for and on the behalf of

(IN BLOCK CAPITALS)

Address.....
.....

FORM OF TENDER

Section: 4 Chainage 0+310 - 0+411.5

To: **The Chairman**
Public Procurement Board
Ministry of Finance and Economic Management
Government Headquarters
Brades, Montserrat

Dear Sir,

Banks Road Improvement, Shinnland

Having examined the Drawings, Conditions of Contract, Specifications and Bills of Quantities for the construction of the above-named Works, we, the undersigned, offer to construct, complete and maintain the whole of the said Works in **Section: 4** for the sum of:

_____ (\$ _____)

Of such other sum as may be ascertained in accordance with the said conditions.

We undertake, if our tender is accepted, to commence the Works within _____ calendar days of receipt of the Project Consultant's order to commence, and to complete and deliver the whole of the Works comprised in the Contract within _____ calculated from the date of commencement.

We agree to abide by this tender for the period of _____ 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.

Unless and until a formal agreement is prepared and executed this tender, together with your written acceptance thereof, shall constitute a binding contract between us.

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

Dated this day of 2016.

Signature in the capacity of
duly authorised to sign tenders for and on the behalf of

(IN BLOCK CAPITALS)

Address.....
.....

Banks Road Improvement, Shinnland

BILL Nrs. 2 - 4

Banks Road Improvement, Shinnland Bill of Quantities

Section: 2 Retaining Wall Chainage 0+148 – 0+318.74

Bill Nr. 2

Item	Description	Qty.	Unit	Rate	Amount EC\$
	<p>Quantities are used for evaluation purposes and are not a guarantee of the quantity of works to be completed</p> <p>This schedule of rates would form the basis of payment for the work carried out. These schedules do not comply with any standard of measurement and the contractor is deemed to have included for every item required to complete the works.</p> <p>All rates to be fully inclusive. No additional charges will be accepted unless a written notification of additional work is requested by the Consultant or given to the contractor.</p>				
1	Contractor Preliminary including mobilization of plant, materials, setting out of the works and EMP.		item		
2	Insurance of the works		item		
	Retaining Wall				
3	Excavation to foundation level below PWD excavated level to include for stepping foundation; dispose material off site.	170	m		
4	Construct reinforce concrete retaining wall as detailed on drawing No. C500 and C501. Provide expansion joint at 40' max. O.C, 3" dia. drain pipe at 4' O.C and foundation key at 20' max. O.C.	170	m		
	Ancillary Works				
5	Tidy site and remove all debris to appropriate tip site at New Windward		item		
	Concrete Testing				
6	Concrete cube test to be taken for every 20m length of in-situ concrete. 8 no.	8	P.Sum	1600	1600.00
7	Total				

Banks Road Improvement, Shinnland Bill of Quantities

Section: 3 Chainage 0+115 – 0+310

Bill Nr. 3

Item	Description	Qty.	Unit	Rate	Amount EC\$
1	Quantities are used for evaluation purposes and are not a guarantee of the quantity of works to be completed. This schedule of rates would form the basis of payment for the work carried out. These schedules do not comply with any standard of measurement and the contractor is deemed to have included for every item required to complete the works. All rates to be fully inclusive. No additional charges will be accepted unless a written notification of additional work is requested by the Consultant or given to the contractor.				
2	Contractor Preliminary including mobilization of plant, materials, setting out of the works and EMP.		item		
3	Insurance of the works		item		
	Drainage as detailed on Drawing No. C500 and C501				
4	Slipper Drain against retaining wall	143	m		
5	Irish Drain	40	m		
6	Curb	20	m		
7	Entrance Access Drain at Curb	4	m		
	Roads				
8	Construct reinforce Concrete Pavement as detailed on Drawing No. C500 and C501	200	m		
9	Construct Reinforce Concrete Access Pavement 12' wide. (CH 0+139.95 and 0+146.22)	23	m		
	Ancillary Works				
10	Construct driveway entrance 6.6' from edge of pavement into property with 10' turning radius. (CH 0+120 & 0+138.50)	3.66	m		
11	Saw cut and reinstate 2 No. Driveways 6' from edge of pavement into property with 10' turning radius.	4	m		
12	Tidy site and remove all debris to appropriate tip site at New Windward		item		
	Concrete Testing				
13	Concrete cube test to be taken for every 20m length of in-situ concrete. 10 no.	10	P.Sum	2000	2000.00
14	Total				

Banks Road Improvement, Shinnland Bill of Quantities

Section: 4 Chainage 0+310 – 0+411.5

Bill Nr. 4

Item	Description	Qty.	Unit	Rate	Amount EC\$
1	Quantities are used for evaluation purposes and are not a guarantee of the quantity of works to be completed. This schedule of rates would form the basis of payment for the work carried out. These schedules do not comply with any standard of measurement and the contractor is deemed to have included for every item required to complete the works. All rates to be fully inclusive. No additional charges will be accepted unless a written notification of additional work is requested by the Consultant or given to the contractor.				
2	Contractor Preliminary including mobilization of plant, materials, setting out of the works and EMP.		item		
3	Insurance of the works		item		
	Drainage 0+310 and 0+326.91 - 0+408.14				
4	Slipper Drain against retaining wall	4.3	m		
5	Excavation and demolition for u-drain below PWD excavated level; dispose material off site. Construct U-Drain as detailed on Drawing No. C500 & C501	88	m		
6	Replaced curb and slipper with U- Drain @ CH: 0+313.24 to existing Shinnland culvert	10	m		
7	3' long Cover slabs for u-drain at driveways as detailed on Drawing No. C500 and C501	16	ea		
	Roads				
8	Construct reinforce Concrete Pavement as detailed on Drawing No. C500 and C501	105	m		
	Ancillary Works				
9	Construct driveway entrance 6' from edge of pavement into property with 10' turning radius. (CH 0+312)	2	m		
10	Construct driveway entrance 7' from edge of U-Drain into property with 10' turning radius. Make good drain channel into u-drain(CH 0+333)	2.14	m		
11	Saw cut and reinstate existing driveway 8' from edge of U-Drain into property. (CH 0+360)	2.44	m		
12	Tidy site and remove all debris to appropriate tip site at New Windward		item		
	Concrete Testing				
13	Concrete cube test to be taken for every 20m length of in-situ concrete. 5 no.	5	P.Sum	1000	1000.00
14	Total				

Banks Road Improvement, Shinnland

FORM OF AGREEMENT

FORM OF AGREEMENT

THIS AGREEMENT made the..... day of 2016

Between the Basic Needs Trust Fund (hereinafter called "The Employer") of the one part and

-----of -----
-----hereinafter called

"The Contractor") of the other part.

WHEREAS the Employer is desirous that certain Works should be constructed, namely

Banks Road Improvement, Shinnland and has accepted a Tender from the Contractor for the construction, completion and maintenance of such Works. Now this agreement witnesses as follows:

1. In this agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement:
 - (a) The Tender
 - (b) The Bond (if required)
 - (c) The Drawings
 - (d) The Conditions of Contract
 - (e) The Specification
3. In consideration of the payments to be made by the Employer to the Contractor, the Contractor hereby covenants with the Employer to construct, complete and maintain the Works in conformity in all respects with the provisions of the Contract.
4. The Employer hereby covenants to pay the Contractor in consideration of the construction, completion and maintenance of the Works the Contract Price at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties have hereunto set their respective hands

SIGNED AND DELIVERED by the said.....

.....in the presence of

SIGNED AND DELIVERED by the said.....

.....in the presence of

Advance Payment Bond

- 1 THE parties to this Bond are:
(1)-----

whose registered office is at-----

-----('the Surety'), and
(2)-----

of-----

-----('the Employer').
- 2 The Employer and-----('the Contractor') have agreed to enter into a contract for building works 'the Works' at-----

-----('the Contract').
- 3 The Employer has agreed to pay the Contractor the Sum of \$----- as an advance payment of sums due to the Contractor under the Contract (the Advance Payment) for reimbursement by the Surety on the following terms:
 - (a) When the Surety receives a demand from the Employer in accordance with Clause 3(b) the Surety shall repay the Employer the sum demanded up to the amount of the Advance Payment.
 - (b) The Employer shall in making any demand provide to the Surety a completed notice of demand in the form of the **Schedule** attached hereto which shall be accepted as conclusive evidence for all purposes under this Bond. The signature on any such demand must be authenticated by the Employer's bankers
 - (c) The Surety shall within 5 Business Days after receiving the demand pay to Employer the sum so demanded. 'Business Day' means the day (other than a Saturday or a Sunday) on which commercial banks are open for business in Montserrat.
- 4 Payments due under this Bond shall be made notwithstanding any dispute between the Employer and the Contractor and whether or not the Employer and the Contractor are or might be under any liability one to the other. Payment by the Surety under this Bond shall be deemed a valid payment for all purposes of this bond and shall discharge the Surety from liability to the extent of such payment.
- 5 The Surety consents and agrees that the following actions by the Employer may be made and done without notice to or consent of the Surety and without in any way affecting changing or releasing the Surety from its obligations under this Bond and the liability of the Surety hereunder shall not in any way be affected hereby. The actions are:

- (a) waiver by the Employer of any of the terms, provisions, conditions, obligations and agreements of the Contractor or any failure to make demand upon or take action against the Contractor;
 - (b) any modification or changes to the Contract: and/or
 - (c) the granting of any extension of time to the Contractor without affecting the terms of clause 7-c below.
- 6 The Surety's maximum aggregate liability under this Bond which shall commence on payment of the advance by the Employer to the Contractor shall be the amount of which shall be reduced by the amount of any reimbursements made by the Contractor to the Employer as advised by the Employer in writing to the Surety.
- 7 The obligations of the Surety and under this Bond shall cease upon whichever is the earliest of:
- (a) the date on which the Advance Payment is reduced to nil as certified in writing to the Surety by the Employer;
 - (b) the date on which the Advance Payment or any balance thereof is repaid to the Employer by the Contractor (as certified in writing to the Surety by the Employer) or by the Surety; and
 - (c) (longstop date to be given),
- and any claims hereunder must be received by the Surety in writing on or before such earliest date.
- 8 This Bond is not transferable or assignable without the prior written consent of the Surety. Such written consent will not be unreasonably withheld.
- 9 This Bond shall be government and construed in accordance with the laws of Montserrat.

IN WITNESS hereof this Bond has been executed as a Deed by the Surety and delivered on the date below:

EXECUTED as a Deed by-----
for and on behalf of the Surety-----

-

EXECUTED as a Deed by-----
for and on behalf of the Surety-----

-

Date:-----

SCHEDULE A - LABOUR RATES

I (We) hereby certify that to the best of my (our) knowledge and belief the wages, hours of work, and conditions of labour of all work people proposed to be employed by me (us) on this project for which I (we) am (are) offering myself (ourselves) as a Contractor are fair and reasonable having regard to the statutory provisions regulating rates of wages as are in force in Montserrat on the date of this my (our) Tender and I (we) will accept responsibility for the observance of these regulations by sub-contractors employed by me (us) in the execution of the works.

The above mentioned wages and hours of work are as listed on the following pages:

The Tenderer shall list the labour, by classification, which he proposes to have on the site for performing all of the work, together with the applicable hourly rates. The rates stated shall include all fringe benefits, overhead and profit.

Class Of Work – Person	Rates Of Wages(*) \$ (EC)	Hours Of Work(**)
Foreman		
Mason		
Carpenter		
Steel bender/fixer		
Skilled Laborer		
Laborer		
Electrician		
Plumber		
Tiller		

I (We) shall pay times the above rates of wages for normal overtime work in excess of hours per work day and times the above rates of wages for work on Sunday and Statutory Holidays.

* per hour

** In a normal working day

Dated this day of 2016

..... (Signature)

(Name in Block Letters)

being an officer of, and duly authorized to sign on behalf of

.....

..... (Business Address)

.....
(Telephone)

.....

SCHEDULE B - CONSTRUCTION MATERIALS

On the following pages I (We) have listed to the best of my (our) knowledge all of the required construction materials to be incorporated into the Permanent Works, together with the names of my (our) proposed suppliers and the unit for each material including the country of origin thereof.

We have satisfied ourselves that the suppliers' delivery schedules are realistic and/or we have satisfied ourselves that materials are available in sufficient quantities to execute the works without delay, and that materials conform with all requirements of the Specification.

We understand that all materials will be subject to inspection and tests by the Architect/Contract Administrator.

Material	Supplier (Including Country of Origin)	Unit Cost \$ (EC)
Blocks		
Sand		
Aggregate		
Cement		
Reinforcement – ½"		
Reinforcement – 3/8"		
Reinforcement – 5/8"		
Lumber – 2" x 4"		
Lumber – Form Ply ¾"		
Conduit		
Wiring per point		
Copper pipe		
Upvc pipe		
Concrete		

Dated this day of 2016

..... (Signature)

(Name in Block Letters)

being an officer of, and duly authorized to sign on behalf of

.....

..... (Business Address)

.....
(Telephone)

SCHEDULE C - CONSTRUCTION EQUIPMENT

I (We) propose to employ the following construction machinery and equipment for the execution of the Works and to the best of my (our) knowledge, the equipment listed is in sufficient capacity to construct all of the Works within the time specified for completion.

Note: Indicate (*) if equipment is to be rented or sub-contracted locally, and provide details. Also list the rate of hourly hire of all equipment for Day-work purposes. Do not list hand tools or normal tools required by trade persons.

Description of Equipment	Hourly Rate for Day-work \$ (EC)
Concrete Mixer (with hopper)	
Concrete Mixer (without hopper)	
Rough Rider	
Bobcat	
5 Ton Lorry	
3 Ton Lorry	
Excavator	
Backhoe	
Compressor	
Vibrator	
Tele-handler	
Crane	
Concrete mixer truck	

Dated this day of 2016

..... (Signature)

(Name in Block Letters)

being an officer of, and duly authorized to sign on behalf of

.....

.....(Business Address)

.....

(Telephone)

SCHEDULE - D - LIST OF PROPOSED ESTABLISH SUB-CONTRACTORS

I (We) propose to sub-contract the following parts of the Works to the sub-contractors listed below. I (We) agree not to make changes to this list without the written consent of the Project Manager.

In my (our) opinion, the sub-contractors named hereunder are reliable and competent to perform that part of the works for which each is listed and, in any case, I (we) understand that all proposed sub-contractors shall be subject to the Project Consultant written approval.

Name and Address of Sub-Contractor	Part of the works
	Steel Bender
	Electrician
	Plumbing
	Tiling
	Painter
	Landscaping

Dated this day of 2016

..... (Signature)

(Name in Block Letters)

being an officer of, and duly authorized to sign on behalf of

.....

..... (Business Address)

.....

(Telephone)

GOVERNMENT OF MONTSERRAT

TENDER SUBMISSION ANTI-COLLUSION CERTIFICATE

I/WE CERTIFY THAT THIS TENDER IS MADE IN GOOD FAITH, AND THAT WE HAVE NOT FIXED OR ADJUSTED THE AMOUNT OF THE TENDER BY OR UNDER OR IN ACCORDANCE WITH ANY AGREEMENT OR ARRANGEMENT WITH ANY OTHER PERSON. I/WE ALSO CERTIFY THAT WE HAVE NOT AND I/WE UNDERTAKE THAT WE WILL NOT BEFORE THE AWARD OF ANY CONTRACT FOR THE WORK:

DISCLOSE THE TENDER PRICE OR ANY OTHER FIGURES OR OTHER INFORMATION IN CONNECTION WITH THE TENDER TO ANY OTHER PARTY (INCLUDING ANY OTHER COMPANY OR PART OF A COMPANY FORMING PART OF A GROUP OF COMPANIES OF WHICH I AM/WE ARE A PART OF) NOR TO ANY SUB-CONTRACTOR (WHETHER NOMINATED OR DOMESTIC) NOR SUPPLIER (WHETHER NOMINATED OR DOMESTIC) OR ANY OTHER PERSON TO WHOM SUCH DISCLOSURE COULD HAVE THE EFFECT OF PREVENTING OR RESTRICTING FULL COMPETITION IN THIS TENDERING EXERCISE

ENTER INTO ANY AGREEMENT OR ARRANGEMENT WITH ANY PERSON THAT THEY SHALL REFRAIN FROM TENDERING, THAT THEY SHALL WITHDRAW ANY TENDER ONCE OFFERED OR VARY THE AMOUNT OF ANY TENDER TO BE SUBMITTED OR OTHERWISE COLLUDE WITH ANY PERSON WITH THE INTENT OF PREVENTING OR RESTRICTING FULL COMPETITION

PAY, GIVE OR OFFER PAY OR GIVE ANY SUM OF MONEY OR OTHER VALUABLE CONSIDERATION DIRECTLY OR INDIRECTLY TO ANY PERSON FOR DOING OR HAVING DONE OR CAUSING OR HAVING CAUSED TO BE DONE IN RELATION TO ANOTHER TENDER OR PROPOSED TENDER FOR THE WORK ANY ACT OR THING OF THE SORT DESCRIBED AT I), II) OR III) ABOVE.

I/WE FURTHER DECLARE THAT I/WE HAVE NO KNOWLEDGE EITHER OF ANY SUM QUOTED OR OF ANY OTHER PARTICULARS OF ANY OTHER TENDER FOR THIS CONTRACT BY ANY OTHER PARTY.

I/WE FURTHER CERTIFY THAT THE PRINCIPLES DESCRIBED ABOVE HAVE BEEN, OR WILL BE, BROUGHT TO THE ATTENTION OF ALL SUB-CONTRACTORS, SUPPLIERS AND ASSOCIATED COMPANIES PROVIDING SERVICES OR MATERIALS CONNECTED WITH THE TENDER AND ANY CONTRACT ENTERED INTO WITH SUCH SUB-CONTRACTORS, SUPPLIERS OR ASSOCIATED COMPANIES WILL BE MADE ON THE BASIS OF COMPLIANCE WITH THE ABOVE PRINCIPLES BY ALL PARTIES.

I/WE ACKNOWLEDGE THAT ANY BREACH OF THE FOREGOING PROVISIONS SHALL LEAD AUTOMATICALLY TO THIS TENDER BEING DISQUALIFIED AND MAY LEAD TO CRIMINAL OR CIVIL PROCEEDINGS. THE GOVERNMENT OF MONTSERRAT SHALL TREAT ANY TENDER RECEIVED IN CONFIDENCE BUT RESERVES THE RIGHT TO MAKE THE SAME AVAILABLE TO ANY OTHER FUNDING ORGANISATION OR STATUTORY REGULATORY AUTHORITY EITHER HAVING JURISDICTION OVER THE WORKS OR WHO MAY NOW OR AT ANY TIME IN THE FUTURE HAVE STATUTORY POWER TO REQUIRE DISCLOSURE OF THIS TENDER.

IN THIS CERTIFICATE, THE WORD 'PERSON' INCLUDES ANY PERSONS AND ANY BODY OR ASSOCIATION, INCORPORATED OR UNINCORPORATED; ANY AGREEMENT OR ARRANGEMENT INCLUDES ANY TRANSACTIONS, FORMAL OR INFORMAL AND WHETHER LEGALLY BINDING OR NOT; AND 'THE WORK' MEANS THE WORK IN RELATION TO WHICH THIS TENDER IS MADE.

SIGNATURE..... IN CAPACITY OF

DATE.....2016

DULY AUTHORISED TO SIGN TENDERS AND ACKNOWLEDGE THE CONTENTS OF THE ANTI-COLLUSION CERTIFICATE FOR AND ON BEHALF OF:

NAME OF FIRM.....

FULL POSTAL ADDRESS.....

TELEPHONE NO..... FAX NO

GENERAL CONDITIONS

OF

CONTRACT

Banks Road Improvement, Shinnland

GENERAL CONDITIONS

1 Definitions

- a) The “Contract” means these General Conditions together with the Specification drawings and includes the contract agreement
- b) The “Employer” means the Basic Needs Trust Fund (BNTF)
- c) The “Project Consultant” means a duly authorized representative of the Employer
- d) The “Contractor” means the company appointed to carry out the works
- e) The “colony” means the colony of Montserrat
- f) The “Site” means the lands and/or other places on under or through which Works are to be carried out
- g) The “Works” means the works to be executed in accordance with this Contract as described in the Specification
- h) The “language” of the Contract shall be English
- i) The “Law” applicable to the Contract, shall be the Laws of Montserrat

2 Contract Document - Priority

- 1) Contract Agreement
- 2) The Drawings
- 3) Specifications
- 4) Conditions of Contract
- 5) Any other document forming part of the Contract

3 Extent of Contract

The Contract comprises of the construction and completion of all Works described in the Specifications, Drawings and Bill of Quantities and to supply all necessary labor, plant and temporary works to complete the described works together with such materials as are required by the Specifications.

4 Power to Vary or Omit

- a) The Employer reserves the right to vary from time to time during the progress of the works, the Specifications or Drawings and shall in writing, notify the Contractor of such variation. If the instructions are given orally, they shall, within two days be confirmed in writing by the Project Consultant, in the event of any such variation involving an alteration in the cost, or in the period required for completion an agreed revision of contract price and/or time of completion may be made, any such alterations should be deemed part of the Contract.
- b) No variation, alteration or addition to the work indicated in the Specification and/or Drawing shall be made unless the written instruction of the employer has been obtained.

5 Assignment of Contract

- 1) The Contractor shall remain responsible to the Employer for workmanship and manner of workmanship defaults and neglects of any sub-contractor or agent or workman employed by him.

6 Supply Materials

- 1) The Contractor shall within the agreed contract price, supply such materials as required and detailed by the Specifications

7 Setting Out

- 1) The Contractor shall be responsible for setting out of the work as set out in the specifications, ***providing an experience surveyor*** for the task required.

8 Measurement

The quantities set out in the Bill of Quantities are the estimated quantities for the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfilment of his obligations under the Contract.

The Project Consultant shall, except as otherwise stated, ascertain and determine by measurement the value of the Works in accordance with the

Contract. The Project Consultant shall, when he requires any part of the Works to be measured, give reasonable notice to the Contractor, who shall:

(a) forthwith attend or send a qualified representative to assist the Project Consultant in making such measurement, and

(b) supply all particulars required by the Project Consultant. Should the Contractor not attend, or neglect or omit to send such representative, then the measurement made by the Project Consultant or approved by him shall be taken to be the correct measurement of such part of the Works. The Works shall be measured net, notwithstanding any general or local custom, except where otherwise provided for in the Contract.

9 Workmanship

- i. The Contractor shall at all times carry out his works in accordance with the laws of the Colony.
- ii. The Employer may from time during the course of the Contract inspect any completed or part-completed work of the Contractor. If the Employer is not satisfied with such work, he in writing, inform the Contractor of his dissatisfaction.
- iii. Notwithstanding any such progress inspection by the Employer the Contractor shall at all times carry out the Contract in a workman-like manner. On completion of the works, the Contractor shall satisfy the Employer as to the quality and fitness of the work.

10 Removal of Debris

The Contractor shall remove all debris caused by their work from time to time as it accumulates and shall leave the site clean on completion of the Contracted Works.

11 Supervision of Works and Skilled Workmen

- a) The Contractor shall provide all necessary superintendence during the execution of the works.
- b) The Contractor shall employ in and about the execution of the Works only such persons who are carefully skilled and experienced in their several trades.
- c) The Supervising Officer may (but not unreasonably or vexatiously) issue instructions requiring the exclusion from the Works of any person employed thereon.

12 Contractor's Plant

The Contractor shall provide at their own cost all tools, and other plant necessary for the purpose of carrying out the specified Work in an organized and expeditious manner.

13 Payment Fees

The Contractor shall be responsible for the payment of all fees necessary for the completion of the Contract required by an Statutory Authority within or without the Colony.

14 Safety

- a) The Contractor is responsible for the safety of all persons employed by him.
- b) He shall in no way carry out any work that could be seen to endanger the life of any of his employees or of any member of the general public, including any other employee of the employer.

15 Injury to or death of a person

The Contractor shall be liable for and shall, indemnify the Employer against any expense, liability, loss, claim or proceedings whatsoever arising under any statute or at Common Law in respect of personal injury to or death of any person whomsoever arising out of or in the course of or caused by the carrying out of the Works.

16 Damage to Property

The Contractor shall be liable for and indemnify the Employer against any expense, liability, loss, claim or proceedings in respect of any damage whatsoever to any property real or personal insofar as such damage arises out of or in the course of or by reason of the carrying out of the Works and is due to any negligence, omission and default of the Contractor is responsible.

17 Evidence of Insurance

The Contractor shall produce such evidence as the Employer may reasonably require that the insurance's referred to herein have been taken out and are in force at all material times.

18 Traffic Control

Due to the nature of the Works it will be the responsibility of the Contractor to ensure that a system of traffic control is in operation, including no vehicular access, if necessary.

19 Certificates & Payment to the Contractor

Payment to the Contractor will be made after the issue of an Project Consultant's certificate based on the amount of work completed to date. A retention of 5% will be held from the value of each certificate up to a maximum of 3% of the contract sum. Such retention money will be released at the end of the warranty period provided that all works and repairs have been executed to the satisfaction of the employer.

20 Warranty Period

A warranty period of 12 months is part of the Contract agreement, during which time the Contractor bears the full responsibility for the execution of maintenance of the works and any repair or correction which might become necessary due to the failure and incorrect performance of the Contractor.

21 Handing Over Completed Works

The Contractor shall notify the Employer in writing of his completion of the contracted Works. Said work shall be subject to the satisfaction of the employer and the statutory body having jurisdiction that all the works is completed and in good order. The supervising Officer shall certify the date when in his opinion, the works have reached practical completion. This date shall be the date of commencement of the warranty period.

22 Failure to Meet Completion Date

Should the contractor fail to complete the contracted works within the agreed time he shall be subject to a fine of 1% of the contract price a day, for every day the completion is overdue.

23 Matters not Contained in the Contract

Any matter not explicitly provided for within this Contract shall be in the matter of a separate agreement between the Employer and Contractor. Any such agreement shall be part of his Contract.

24 Matter of Disagreement

If in the execution of this Contract any matter arises that cannot be agreed on by the Contractor and the Employer, the matter shall be referred to an arbitrator agreed on by both parties. Should both parties fail to agree on an arbitrator, the provisions of the arbitration act shall apply. Each party shall bear its own cost in arbitration proceedings.

25 Contracts Documents

- a) The Contractor shall receive two complete copies of Contract Documents
- b) Subsequent to the commencement of the Contract, the Contractor shall receive a copy of all additions to and amendments to the Specifications or drawings if required.

26 DETERMINATION OF THE CONTRACT

1) Default by the Contractor

If, before the date for practical completion, the Contractor shall make a default in any one or more of the following respects:

- a) Without reasonable cause he wholly or substantially suspends the carrying out of the works, or
- b) He fails to proceed regularly or diligently with the works, or
- c) He refuses or neglects to comply with a written instruction given by the Project Consultant and by such refusal or neglect the works are materially affected

The Project Consultant may give to the Contractor a notice specifying the default or defaults.

If the Contractor continues with the default for 14 days from the issue of the notice under the contract the Employer may by a further notice to the Contractor determine the employment of the Contractor under this Contract. Such determination shall take effect on the date of receipt of such further notice.

A notice of determination shall not be given unreasonably or vexatiously.

2) Consequences of determination under clause 26 1)

The Project Consultant shall determine the amount due to the Contractor which shall include loss, damage or expenses incurred by the Employer as a direct consequence of the determination. A final payment certificate will be prepared accordingly.

3) Determination by the Contractor or Employer

If, before the date of practical completion, the carrying out of the whole or substantially the whole of the uncompleted works is suspended by reason of one or more of the events stated below for a period of three months or more

a) Force majeure, or

b) The Project Consultants instruction

Then the Contractor or the Employer may upon expiry of the period of the Suspension give notice to the other that unless suspension is terminated within 7 days after the receipt of such notice.

The Employer shall pay to the Contractor, the total value of the work properly executed at the date of determination of the employment of the Contractor, such value ascertained in accordance with the conditions as if the employment of the Contractor had not been determined

A notice of determination shall not be given unreasonably or vexatiously.

27 SUSPENSION OF THE UNCOMPLETED WORKS

a) The Project Consultant may issue instructions in regard to the postponement of any or all the works to be executed under this contract.

Banks Road Improvement, Shinnland

TERMS AND CONDITIONS

SCHEDULE 1

Terms and Conditions

- I. **BNTF** may at any time by a written notice modify the deliverables in the Schedule and promptly upon receipt of such modification the **Contractor** shall within 7 days either advise that the change will not affect its costs or cause a delay in providing the deliverables, or furnish a breakdown of estimated changes in costs or delay in the deliverables attributable thereto. Upon receipt of the breakdown by **BNTF** any changes necessary to the other terms and conditions of the agreement shall promptly be negotiated by the parties and incorporated in an amendment to this contract. The **Contractor's** failure to advise of any such changes or delays shall constitute the **Contractor's** consent to the modification without adjustment to the other terms and conditions of this agreement.
- II. As full consideration for the services performed by the **CONTRACTOR** under the terms of this agreement the **BNTF** will pay the fees as outlined in the BoQ, payable against original invoices delivered to the **BNTF** at its headquarters by the **CONTRACTOR**, provided that **BNTF** may give notice of its intention not to pay such fee where:
 - a. the **CONTRACTOR** has failed to carry out services/provide the deliverables, or has defectively carried out services/provided deliverables required by this Agreement to be carried out and has not remedied such failure or defect within a reasonable time;
 - b. the **CONTRACTOR**, by act or omission has caused damage to personnel or property of the **BNTF** or any third party;
 - c. there is a breach of any other provision of this Agreement;
and upon giving such notice the **BNTF** may withhold payment accordingly.
- III. The **BNTF** shall have the right, at its expense, to have a representative of the **BNTF** inspect such records and invoices of the **CONTRACTOR** as are necessary to verify the **CONTRACTOR's** performance and all expenses submitted pursuant to this Agreement and the **CONTRACTOR** shall make such records and invoices available for inspection during normal business hours at the **BNTF** Headquarters.
- IV. All records related to this Agreement at any time in the possession of the **CONTRACTOR** shall be retained for a period of one (1) year after the termination of this Agreement. Records relating to any claim arising out of the performance of this Agreement, or costs and expenses of this Agreement to which exception has been taken by the **BNTF**, shall be retained by the **CONTRACTOR** until the claim has been resolved.
- V. The **CONTRACTOR** shall not remove any material, goods or equipment purchased by the **BNTF** and furnished to the **CONTRACTOR** to facilitate the performance of its obligations under this contract without the prior written consent of the Project Consultant.
- VI. The **CONTRACTOR** shall not at any time during or after the term of this Agreement divulge or allow to be divulged to any person any information which comes into its possession by virtue of its performance of this Agreement, which relates to the business and affairs of the **BNTF** except upon authorization by the **BNTF**. The **CONTRACTOR** shall not seek to acquire any such information outside of the performance of its/his duties under this Agreement.

- VII. (a) The **Contractor** shall not assign or sub-contract any of its rights or duties under this Agreement without the prior written consent of the **BNTF**, such consent not to be unreasonably withheld.
- (b) The **Contractor** retains full and complete responsibility for every aspect of the Works and deliverables including any aspect which might be sub-contracted or assigned to another person under clause
- VII (a), including the duty to ensure that any such part of the Works or deliverables are completed in a good and workmanlike manner, with sound materials and in conformity in all respects with the drawings, elevations and specifications and at all times and in every respect in compliance with the Building Codes of Montserrat and all the applicable laws.
- (c) The **Contractor** shall respond to any reasonable query from BNTF regarding the quality and quantity of materials procured by him/it for use in the Works and deliverables and shall provide **BNTF** with satisfactory evidence of his/its compliance with the agreed specifications periodically/monthly/quarterly during the construction of the Works and within Seven days of completion.
- (d) The **Contractor** shall procure and supply all resources required and described in the priced Bill of Quantities, specifications, tender circular, EMP and contract drawings and shall ensure that those resources are used in construction of the Works and provision of the deliverables.
- VIII. The **Contractor** agrees to undertake and complete excavation and construction as describe in the works described in the Specifications, drawings, the tender documents and all tender circulars and EMP.
- IX. The **Contractor** and **BNTF** agree that they will each have the respective obligations under this agreement as outlined in the **Schedule**.
- (a) The **Contractor** agrees to indemnify, and keep the **BNTF** indemnified, from and against any and all loss, damage, expense, liability, claim or proceedings (whether criminal or civil) suffered by **BNTF's** agents, servants or third parties, including any legal fees and costs incurred, resulting from a breach of this Agreement by the **Contractor** and/or arising in connection with the performance of this agreement by the **Contractor** or arising out of or in the course of or caused by the carrying out of the Works:
- (i) in respect of personal injury to or death of any person; or
- (ii) in respect of any damage whatsoever to any property real or personal due to any negligence, omission and default of the Contractor.
- (b) The **Contractor** agrees to indemnify **BNTF** in respect of claims from anyone suffering damage to their equipment or property, or accidents suffered by their employees, agents or third parties, resulting from the **Contractor's** actions.
- X. The Contractor shall produce such evidence as BNTF may reasonably require that the insurance's referred to in the form of tender have been taken out and are in force from commencement of works until project completion.

- XI. The Contractor shall ensure that suitable systems for controlling traffic and pedestrian movements are discussed with the Traffic Commissioner and implemented during its operations to minimize any delays to road users.
- XII. (a) BNTF will disburse each payment in respect of the deliverables only after receipt of certification issued by the Project Consultant that:
- (i) the respective phase of the Works or deliverable has been satisfactorily completed and complies with the drawings and building code;
 - (ii) the value of the work completed at that stage corresponds to or exceeds the sums previously disbursed.
- (b) **BNTF** shall retain 5% of each payment up to a maximum of 3% of the contract sum and release the accumulated total retention to the **Contractor** at the end of the warranty period provided that all works and repairs have been executed to **BNTF's** satisfaction.
- XIII. The parties agree that a warranty period of 12 months is part of the agreement, during which time the Contractor bears full responsibility for the execution of maintenance of the works and any repair or correction which becomes necessary due to the failure and incorrect performance of the Contractor.
- XIV. The **Contractor** shall notify **BNTF** in writing of his/its completion of the Works. The Project Consultant shall certify the date when in his opinion, the Works have reached practical completion. This date shall be the date of commencement of the warranty period.
- XV. The **Contractor** shall pay to **BNTF** a penalty of 1% of the contract price a day, for every day the completion of the Works is overdue.
- XVI. The parties agree that a dispute relating to the agreement shall be determined by a Mediator. Any party may request that a Mediator be appointed. The parties shall try to agree a single Mediator by whom the matter shall be determined. The Mediator once appointed shall specify a reasonable time and date for submissions, and information by each party. The parties shall cooperate with the Mediator and with such enquiries that he/she may deem necessary. No confidential information supplied to the Mediator shall be disclosed to any third party. The Mediator may set out his/her own procedure and be entitled to award financial damages or to order the performance or prohibition of any act as he/she deems fit.
- XVII. (a) The **Contractor** shall receive two complete originals of this agreement.
(b) Subsequent to the commencement of the agreement, the **Contractor** shall receive a copy of all additions to and amendments to the Specifications or drawings.
- XVIII. (a) If, before the date for practical completion, the **Contractor** shall make a default in any one or more of the following respects:
- (i) Without reasonable cause wholly or substantially suspends the carrying out of the Works, or
 - (ii) Fails to proceed regularly or diligently with the Works, or

- (iii) Refuses or neglects to comply with a written notice/instruction given by the Project Consultant and by such refusal or neglect the works are materially and adversely affected
The Project Consultant may give to the **Contractor** a notice specifying the default or defaults.
- (b) If the **Contractor** continues with the default for 14 days from the issue of the notice under the agreement **BNTF** may by a further notice to the **Contractor** terminate this agreement. Such termination shall take effect on the date of receipt of such further notice.
- (c) **BNTF** shall not issue a notice of termination unreasonably or vexatiously.
- (d) The Project Consultant shall determine the amount due to the **Contractor** which shall include loss, damage or expenses incurred by **BNTF** as a direct consequence of the termination. A final payment certificate will be prepared by the Project Consultant.
- (e) If, before the date of practical completion, the carrying out of the whole or substantially the whole of the uncompleted works is suspended by reason of one or more of the events stated below for a period of three months or more
 - (i) Force majeure, or
 - (ii) The Project Consultant's instruction

the **Contractor** or **BNTF** may upon expiry of the period of the suspension give notice to the other party that unless suspension is terminated within 7 days after the receipt of such notice, **BNTF** shall pay to the **Contractor** the total value of the Works properly executed at the date of termination of this agreement, such value ascertained in accordance with the conditions as if the agreement had not been terminated.
- (f) A party shall not issue a notice of termination unreasonably or vexatiously.
- XIX. The Project Consultant may issue instructions on behalf of **BNTF**, with regard to the postponement of any or all the Works to be executed under this contract.
- XX. The failure by either party to enforce at any time or for any period any one or more of the terms or conditions of this Agreement shall not be a waiver of them or of the right at any time subsequently to enforce all terms and conditions of this Agreement. No waiver of any default or non-performance by any party shall be considered a waiver of any subsequent default or non-performance.
- XXI. This Agreement supersedes any prior Agreement between the parties whether written or oral relating to the subject matter hereof, but without prejudice to any rights which have already accrued to either of the parties.
- XXII. This Agreement shall be governed by the laws of Montserrat in every particular and shall be deemed to be made in Montserrat.

XXIII. (a) Both parties shall be released from their respective obligations in the event of national emergency, natural disaster, war, prohibitive governmental regulation or if any other cause beyond the reasonable control of the parties or either of them renders the performance of this Agreement impossible whereupon all money due under this Agreement shall be paid immediately.

(b) A party that is delayed in meeting or that fails to perform its obligation under this agreement because of Force Majeure shall have no liability to the other for such delay or failure to perform. Both parties shall use reasonable endeavors to mitigate as far as possible, the effects of the Force Majeure event.

(c) If one party is prevented from or delayed in performing its obligations under this agreement as a result of Force Majeure, the other party shall be released to the equivalent extent from its obligation in relation to that particular Force Majeure event.

XXIV. The provisions relating to confidentiality, indemnities and limitation of liability shall survive any completion, rescission, expiration or termination of this agreement. In addition, all rights and restrictions relating to any perpetual licenses and all payment terms relating to any outstanding payments shall survive.

XXV. Any notice or other document required to be given under this agreement or any communication between the parties with respect to any of the provisions of this Agreement shall be in writing and may be sent by electronic mail to the correct email address, facsimile transmission to the correct number, post or hand delivery to the last known business address of the party upon whom it is being served. Notice shall be deemed to have been effected within 24 hours of the date of sending of the notice when sent by electronic mail or facsimile transmission, within 72 hours of the date of posting of the notice when sent by post and upon delivery when hand delivered.

(a) A notice shall be delivered as follows:

(i) if to **BNTF**, to:

Project Manager
Mervin Browne
BNTF Office
Upper Floor Little Bay Public Market
Little Bay
Montserrat
Tel: (664) 491-2673
Email: brownem@gov.ms

(ii) if to the **Contractor**, to:

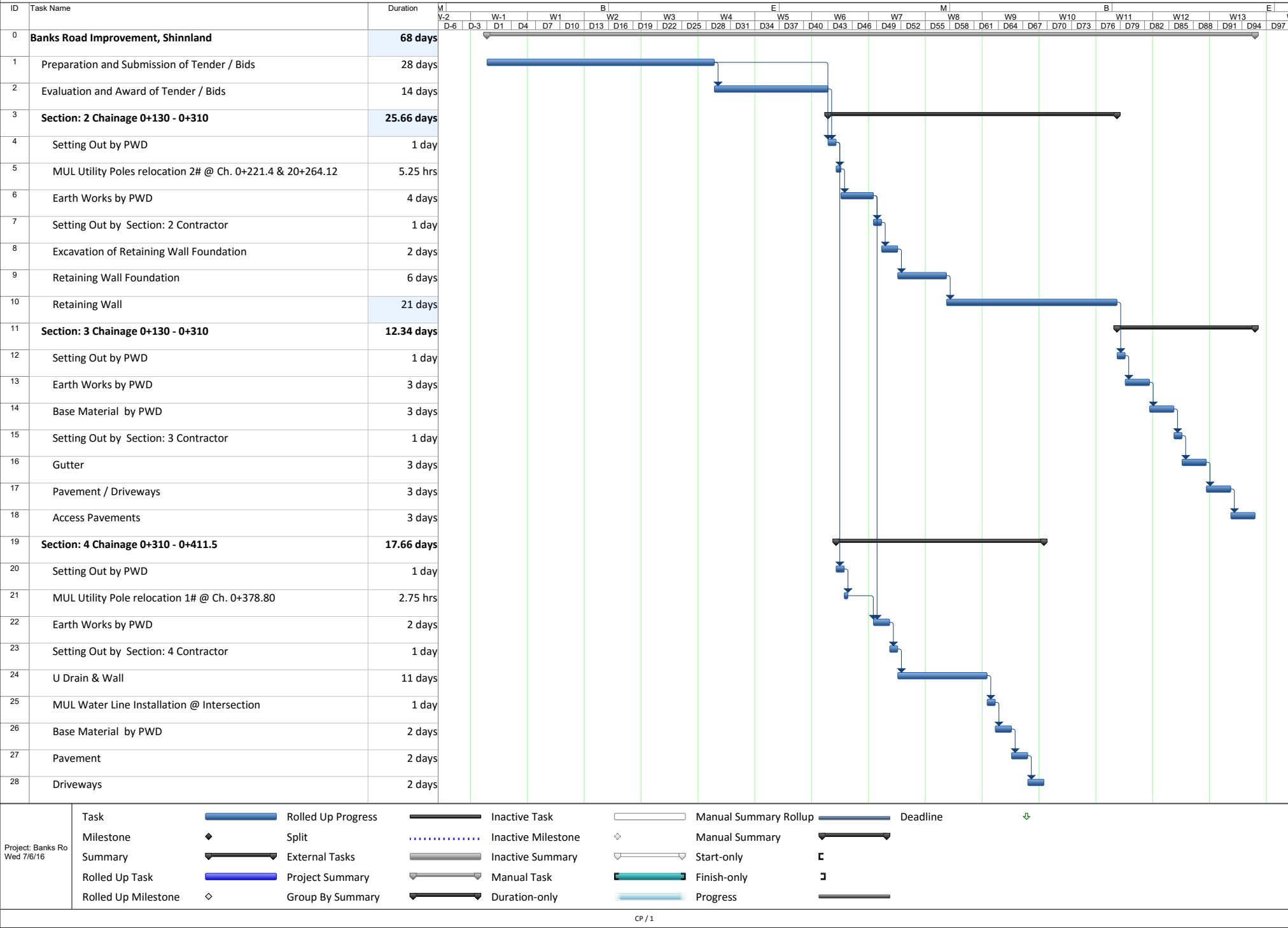
Address:
Email:

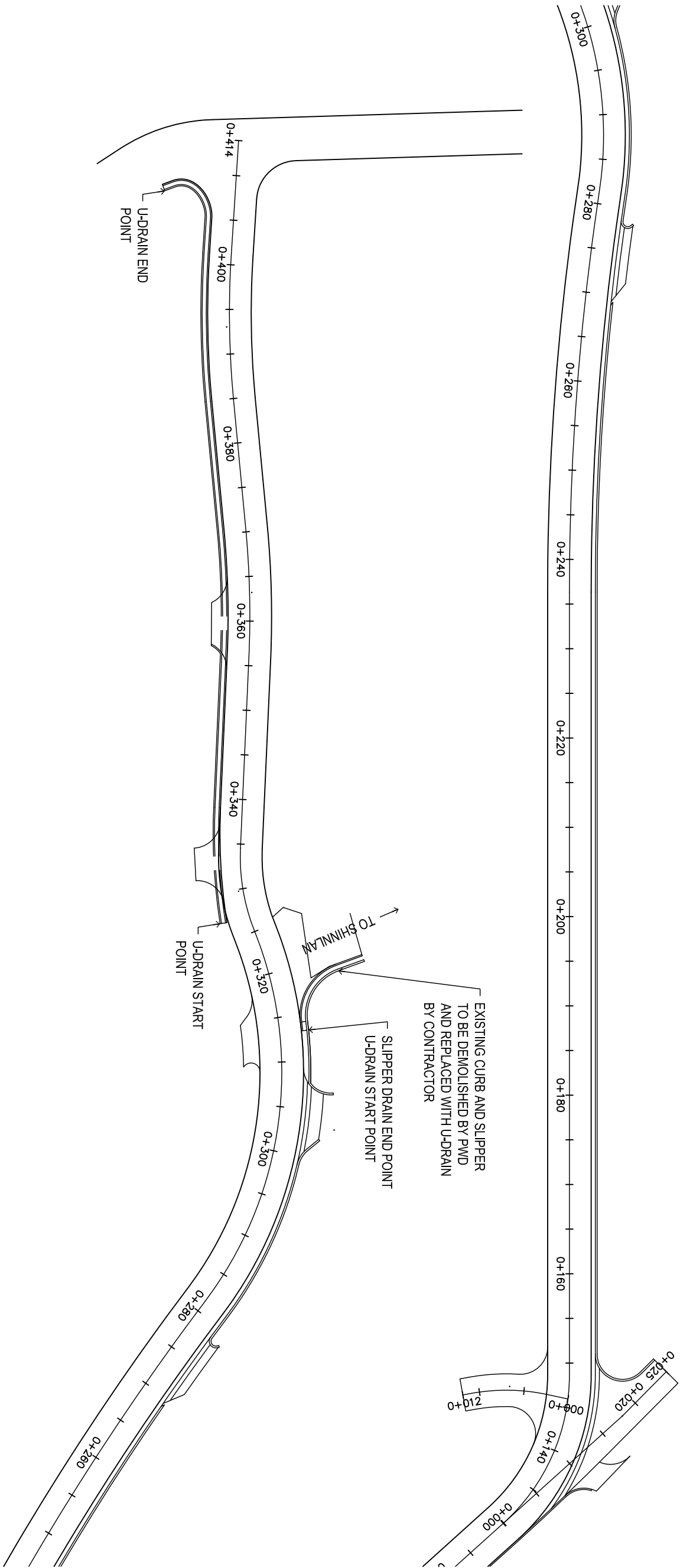
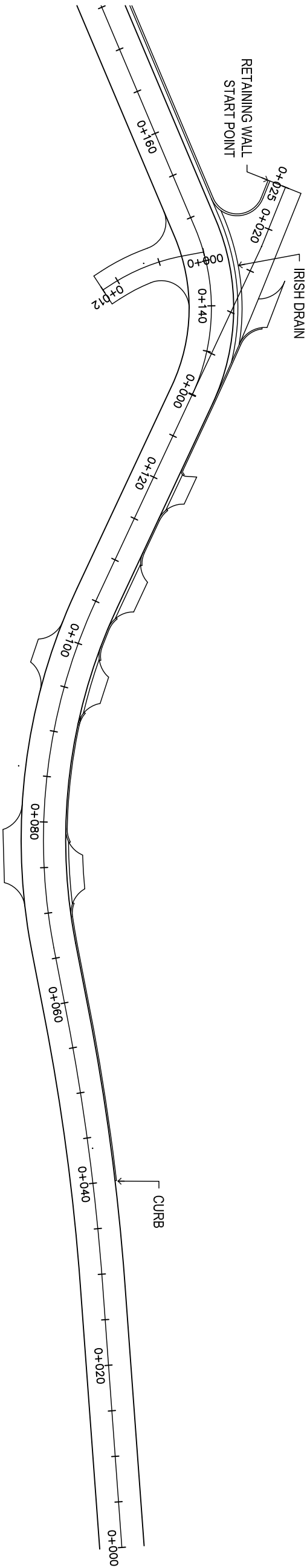
(iii) In proving the giving of a notice it shall be sufficient to prove respectively that the notice was left at the relevant party's address or that the envelope containing the notice was properly addressed and dispatched or dispatch of any electronic transmission used was confirmed.

Banks Road Improvement, Shinnland

PRELIMINARY APPENDIX

Banks Road Improvement, Shinnland Activity Schedule





Engineering Solutions
P.O. Box 474
Banks
Montserrat
West Indies
T: (664) 491-7826
F: (664) 491-7827
E: en_sol@hotmail.com

Revisions	

Δ	DD/MM/YY	Description

General Notes

1. Drawings are not to be scaled
2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

PROJECT
BANKS ROAD
IMPROVEMENT,
SHINMLAND

DRAWING
HORIZONTAL
ALIGNMENT

PROJECT NO:	BRIS-2016
DATE	27 May 2016
SCALE	1 : 500
DRAWN BY:	John P
CHECKED BY:	

DRAWING NO.
C100



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Revisions		

A	REV	DATE	DESCRIPTION

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 2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

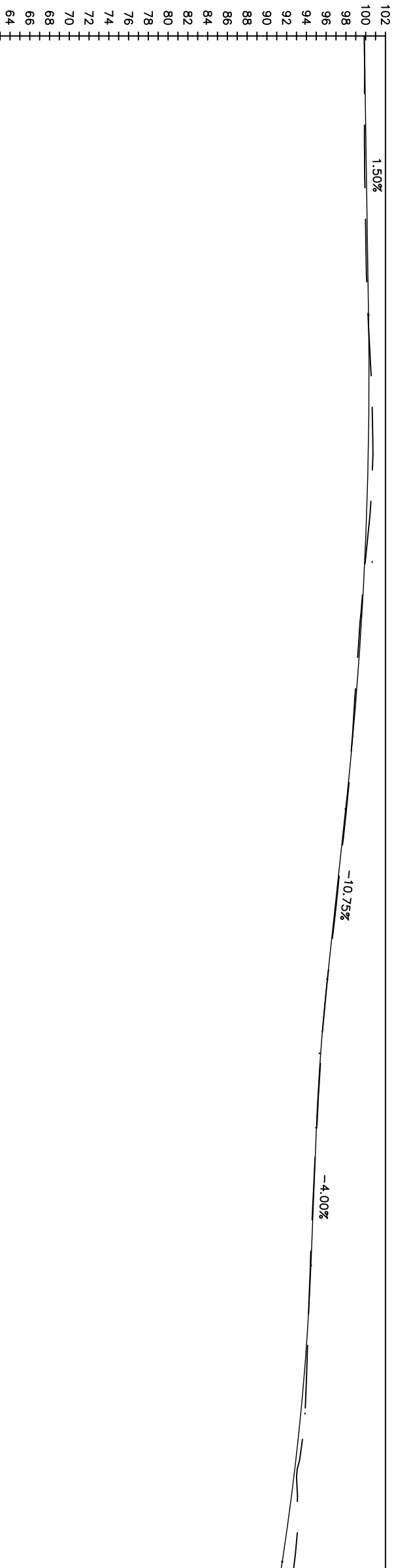
PROJECT
BANKS ROAD
IMPROVEMENT,
SHINLAND

DRAWING
ROAD PROFILE

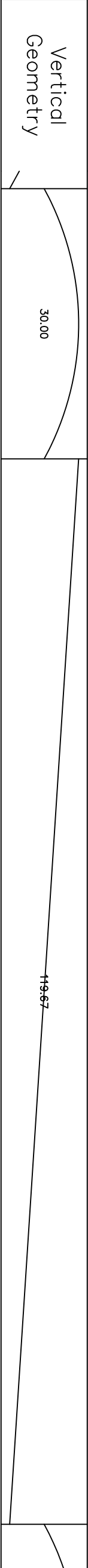
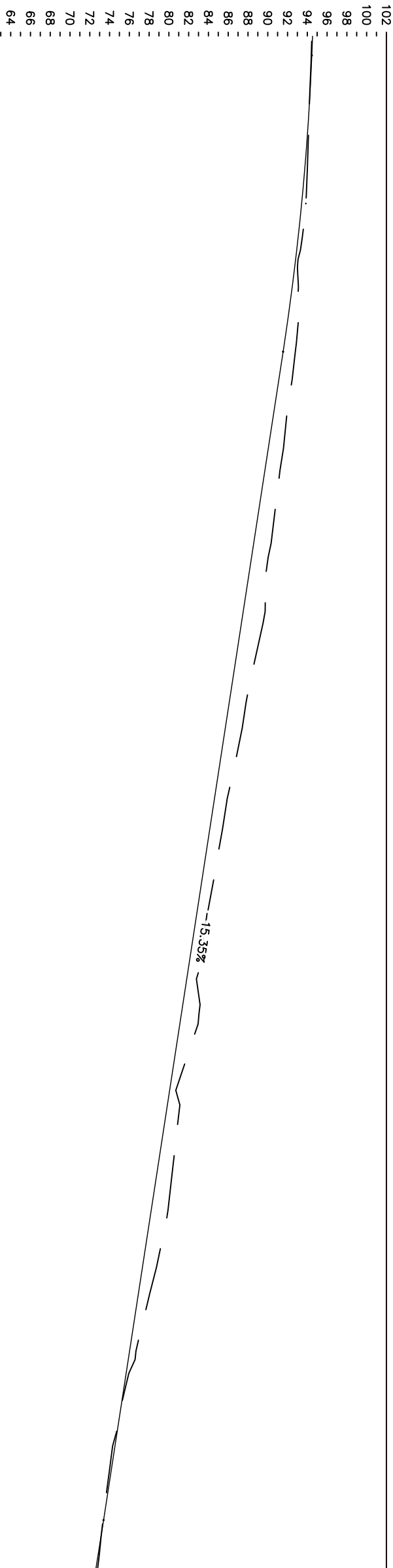
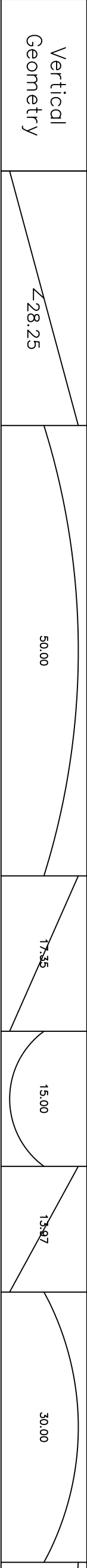
PROJECT NO:
BRS-2016

DATE
27 May 2016
SCALE
1 : 500 V&H
DRAWN BY:
John P.
CHECKED BY:

DRAWING NO.
C300



EXIST. ELEV. PROP. ELEV.	99.86	99.862
	99.88	99.937
	99.88	100.012
	99.92	100.087
	100.01	100.162
	100.11	100.237
	100.32	100.32
	100.309	100.331
	100.59	100.71
	100.331	100.293
	100.71	100.63
	100.293	100.194
	100.63	100.28
	100.194	100.033
	100.28	99.79
	100.033	99.811
	99.79	99.38
	99.811	99.527
	99.38	99.04
	99.527	99.183
	99.04	98.72
	99.183	98.777
	98.72	98.37
	98.777	98.310
	98.37	97.87
	98.310	97.785
	97.87	97.32
	97.785	97.248
	97.32	96.78
	97.248	96.710
	96.78	96.18
	96.710	96.173
	96.18	95.70
	96.173	95.681
	95.70	95.36
	95.681	95.301
	95.36	95.08
	95.301	95.033
	95.08	94.81
	95.033	94.833
	94.81	94.57
	94.833	94.633
	94.57	94.38
	94.633	94.432
	94.38	94.19
	94.432	94.175
	94.19	94.04
	94.175	93.823
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	93.79	93.08
	93.376	92.835
	93.08	92.98
	92.835	92.199
	92.98	92.72
	92.199	





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Revisions	

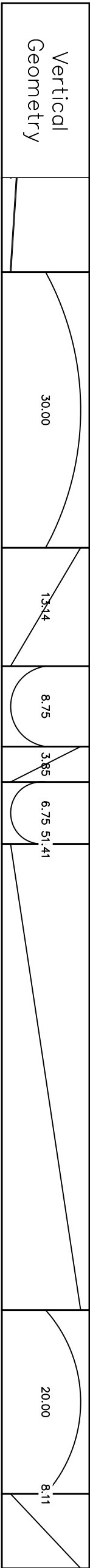
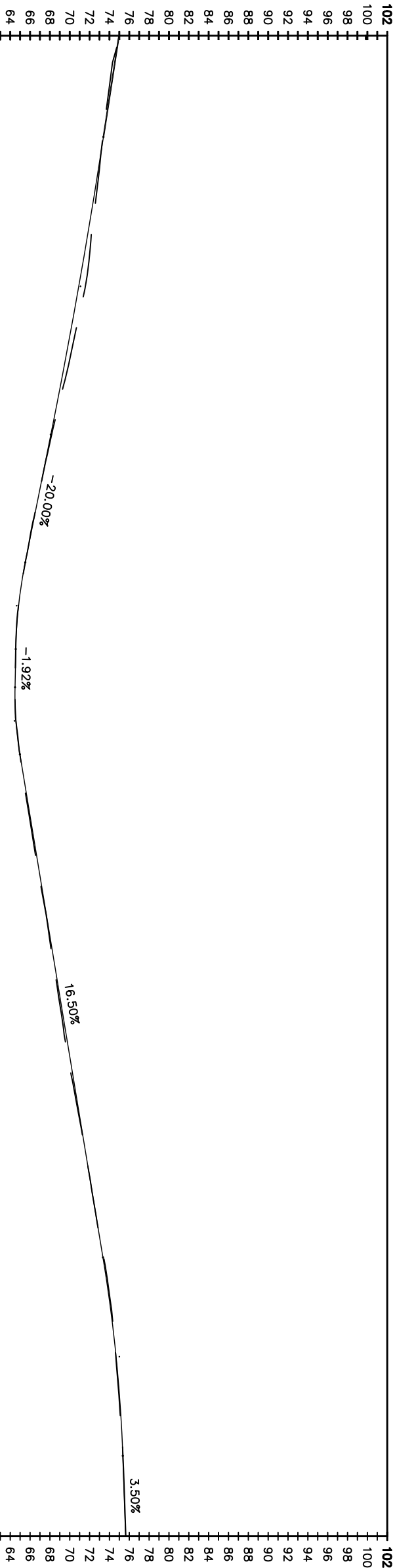
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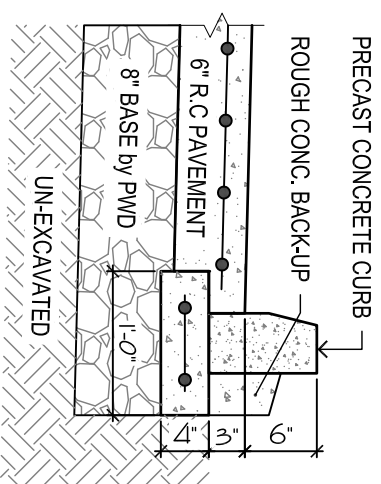
- General Notes
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PROJECT
BANKS ROAD
IMPROVEMENT,
SHINNLAND

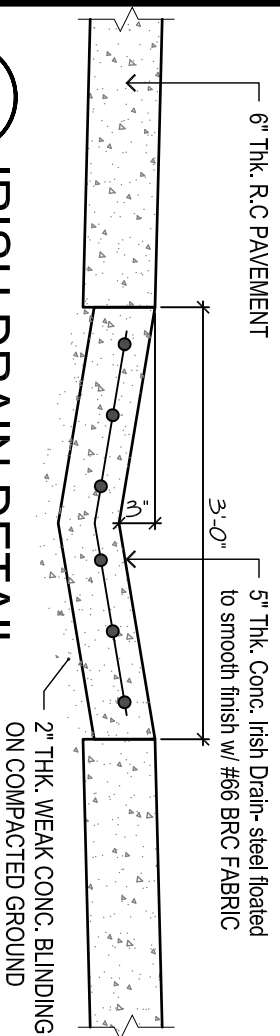
DRAWING
ROAD PROFILE

PROJECT NO: BRS-2016	
DATE 27 May 2016	
SCALE 1 : 500 V&H	DRAWING NO. C301
DRAWN BY: John P	
CHECKED BY:	

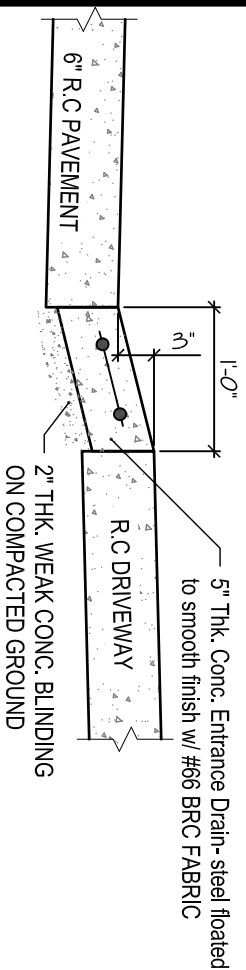




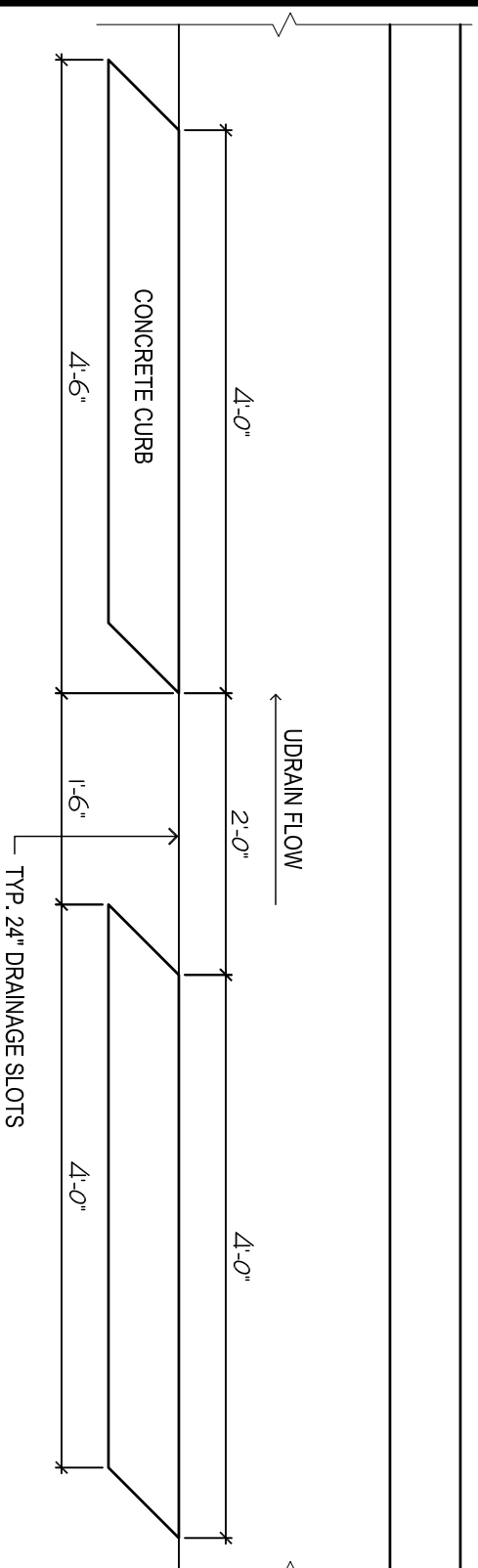
PAVEMENT @ CURB

$$\frac{3}{4}'' = 1'-0''$$


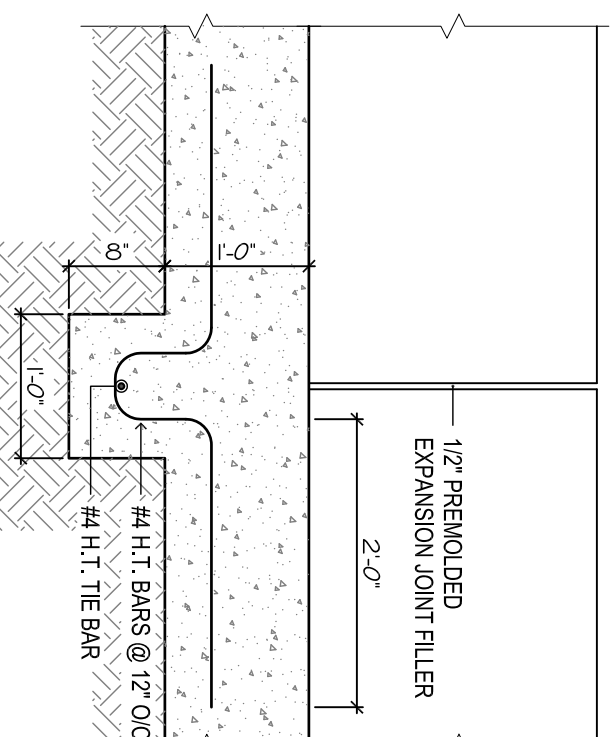
IRISH DRAIN DETAIL

$$\overline{3/4'' = 1'-0''}$$


ENTRANCE ACCESS @ CURB

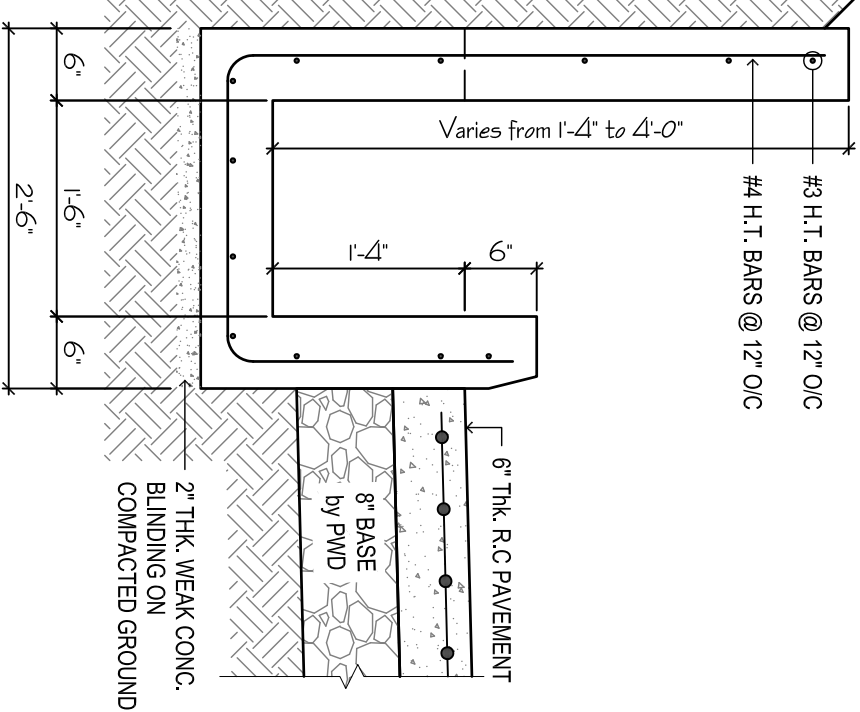
$$\begin{array}{r} 3 \\ 3/4" = 1'-0" \end{array}$$


PLAN OF DRAINAGE SLOTS @ UDRAIN

$$\frac{3/4" = 1'-0"}{4}$$


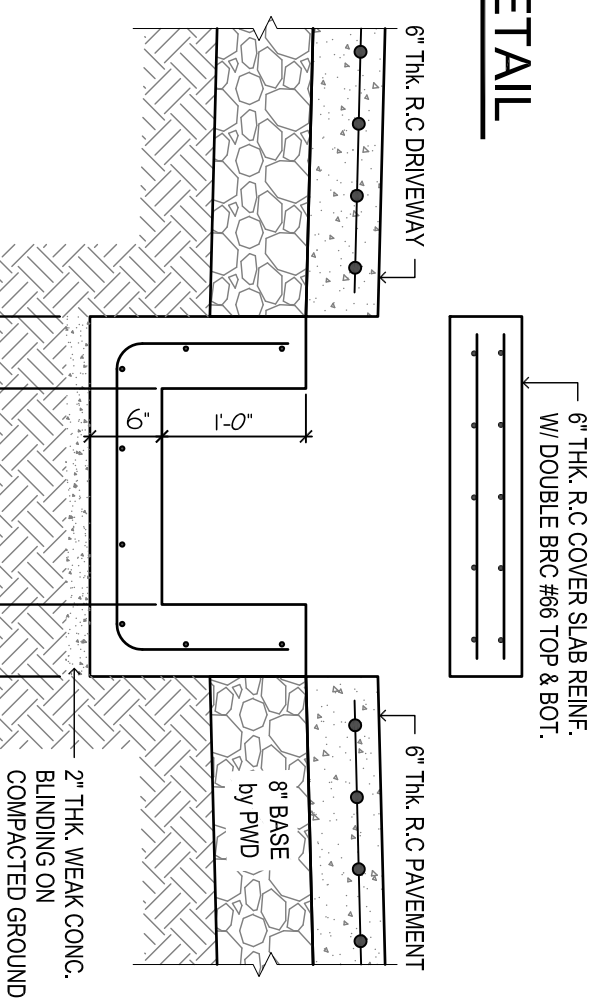
FOUNDATION KEY DETAIL

3/4" = 1'-0"



PAVEMENT @ UDRAIN

$3/4" = 1'-0"$



COVER SLAB @ UDRAIN

3/4" = 1'-0"

Revisions

A	DD/MM/YY	
	Date	Description

General Note

1. Drawings are not to be scaled

2. This drawing is to be read in conjunction with other consultant's documentation that is applicable to the project.

**PROJECT
BANKS ROAD
IMPROVEMENT,
SHINNLAND**

DRAWING
CIVIL DETAILSPROJECT NO:
BRIS-2016

DATE 27 May 2016

SCALE
As Shown
DRAWN BY:
John P
CHECKED BY:

DRAWING NO.
C501

**Engineering
solutions**

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Basic Need Trust Fund

BNTF 8

SPECIFICATIONS

of

Labour and Materials

for

Banks Road Improvement, Shinnland

CONTENTS

1.	General Items	S/ 3 of 17
2.	Earthworks.....	S/ 4 of 17
3.	Road Pavement.....	S/ 7 of 17
4.	Drainage.....	S/ 13 of 17
5.	Concrete for Structural Works	S/ 14 of 17

SECTION 1 — GENERAL ITEMS

1.1 SITE SERVICES

Any arrangements that the Contractor enters into regarding the provision of electricity, water and other services shall be the sole responsibility of the Contractor. The Contractor shall take all reasonable care to ensure that water is not wasted. The Contractor shall be liable for all charges arising from such arrangements

1.2 SITE POSSESSION

The contractor is responsible for obtaining permission to enter private lands.

1.3 PLANT HIRE

The contractor shall be responsible for payment of all plant hire charges from MCWL or others for plant the contractor uses on this project. The Employer shall not be responsible for delays or costs attributable to the delivery, performance or workmanship of plant or equipment under hire. The Contractor shall be responsible for the actions of any plant on hire and shall provide adequate instruction and supervision of drivers, plant, and machines.

1.4 DISRUPTION

The Contractor is responsible for arranging the Works to minimise disruption to, local residents and commercial activities in the vicinity of the site. Full and sufficient precautions to ensure the safety of all traffic through and around the work site and of traffic that is diverted by the Works shall be taken at all times, such measures to be approved by the MCWL. Signs shall be erected and maintained on the Site and at prescribed points on the approaches to the Site for the direction and control of traffic. The sizes of all such signs and the lettering and wording thereon shall be approved before erection. Construction and excavations shall be signed posted and, during periods of darkness lighted.

In the event of the operation of single-way traffic becoming necessary on any particular length of the Works or on the approaches to the Works, through traffic routes shall be maintained by providing a width of at least 3m for single-way traffic. Manually “Stop/Go” signal shall be used and be of an approved colour and type.

The Contractor is obliged to seek the approval of the Engineer before occupying any area of the site for the storage of materials, plant or equipment or welfare facilities.

1.5 UTILITY COMPANY SERVICES

The Contractor shall be responsible for contacting the utility companies to arrange for location of their plant at the site. The Contractor shall also notify the companies of any excavation in the vicinity of their plant and give sufficient notice to allow them to attend on site if required.

The contractor shall locate all buried plant in the vicinity of any area of excavation and mark the position clearly on site. The Contractor shall locate buried service within any area of excavation by hand digging before mechanical excavation is used.

The Contractor shall be deemed to be in control of all plant hired to him and shall be responsible for its actions. Should any utility company equipment be damaged by the Contractor or plant hired to him, the Contractor shall be responsible for paying any charges or costs associated with its repair. The Contractor shall also allow free and unhindered access to utility company employees carrying out any such repair work.

1.6 INSURANCE

The Contractor is required to obtain contractors all risk insurance to cover at least public liability and damage to property and persons. The Contractor shall be required to prove that he has such insurance and that the sums insured are sufficient for the works in hand prior to commencement of the works. The Contractor shall ensure that the insurance remains valid throughout the period of the works and that any premiums due are paid. The Engineer may request proof of insurance at any time during the works.

1.7 DRAWINGS

The following is a list of drawings that form part of the Contract:

- Location Plan
- Standard detail of Curb and Slipper Drain
- Details of reinforced concrete retaining walls
- Standard Asphalt pavement details.

SECTION 2 — EARTHWORKS

2.1 GENERAL

This work shall comply with the General Conditions.

2.2 WORK INCLUDED

Any and all excavation, filling, backfill and grading required to accomplish work in this Section as can be reasonably inferred from the drawings and as hereinafter specified.

If necessary, any loose shallow material, soft organic deposits or similar unsuitable material shall be excavated prior to backfilling ditch to the required level.

Locate and mark all services in the vicinity of any excavation in consultation with the utility company concerned. Where any utility is thought to cross an area of excavation it is to be located by hand digging prior to the use of mechanical excavation.

Remove, protect, cap or otherwise dispose of, as approved by utility company or local authorities, any utilities, sewers or any underground obstructions encountered.

All necessary shoring and bracing.

Provide and maintain all required pumping to keep excavation sufficiently dry until completion of foundation work and backfilling.

2.3 SURVEYS

Bench marks, monuments and other reference marks shall be properly maintained and if destroyed, accurately and properly replaced by the Contractor.

The Contractor will be responsible for all setting out. Relevant information will be available from the Consultant on award of contract.

2.4 STRIPPING OF TOP SOIL

All suitable topsoil to be reused shall be stripped and stockpiled where directed within the limit lines of the contract premises or as directed by the Consultant.

Top soil shall be spread or disposed of as directed or indicated by the Consultant and/or drawings.

2.5 EXCAVATION

2.5.1 **General.** This work shall consist of excavation, disposal or compaction of all materials not being removed under some other item which is encountered within the limits of the Contract in accordance with the specifications and in close conformity with the lines, grades, thickness and cross-sections shown on the plans or established by the Consultant.

2.5.2 **Unsuitable Material.** Material that is unsuitable for the planned use shall be excavated and disposed of as directed by the Consultant. The removal and disposal of such unsuitable material will be paid for in the actual quantities removed to construct the works only if such removal is required to carry out the works shown on the Plans or in the Specifications.

2.6 STRUCTURE EXCAVATION AND BACKFILL

2.6.1 **General.** Structure excavation shall consist of the removal of material for the construction of foundations for bridges, retaining walls, head-walls, culverts, or other structures, and other excavation designated on the Plans or in the Specifications as structure excavation.

Structure backfill shall consist of furnishing material, if necessary, and placing and compacting backfill material around structures to the lines designated on the Plans.

Structure excavation and structure backfill shall include the furnishing of all materials and equipment; the construction or installation of all cofferdams and other facilities which may be necessary to perform the excavations and to place and compact the backfill; and the subsequent removal of such facilities, except where they are required or permitted by the Plans or Specifications to remain in place.

2.6.2 **Inspection.** Whenever any structure excavation is completed, the Contractor shall notify the Consultant who will make an inspection of the foundation. No concrete or masonry shall be placed until the foundation has been approved by the Consultant.

- 2.6.3 **Structure Backfill Requirements.** Structure backfill shall not be placed until the structure has been inspected by the Consultant and approved for backfilling. No backfill material shall be deposited against the back of concrete abutments or concrete retaining walls, until the concrete has developed not less than the specified 28-day compressive strength. Backfill at the inside of bridge wing-walls shall be placed before railing bases on the wing-walls are constructed.

Material used for structure backfill shall have a sand equivalent of not less than 20 and shall have the following grading:

Sieve Size	Percent Passing
4"	100
No. 4	35-100
No. 30	20-100

Structure backfill shall be placed in 8-inch horizontal lifts and shall be mechanically compacted to a minimum relative compaction of 90 percent.

- 2.6.4 **Pervious Backfill.** Pervious backfill material shall be placed behind bridge abutments, wing-walls and retaining walls as shown on the Plans and in accordance with the following requirements.

Pervious backfill material shall consist of gravel, crushed gravel, crushed rock, natural sands, manufactured sand, or combinations thereof and shall conform to the following grading requirements:

Sieve Size	Percent Passing
3/4"	100
3/8"	80-100
No. 100	0-8
No. 200	0-3

That portion of filter material passing a No. 4 sieve shall have a sand equivalent of not less than 60.

Sand and gravel sourced from beaches shall not be permitted unless it has been thoroughly washed in clean water. Such sand and gravel shall be tested for the presence of salts before placing.

All weep holes shall be backed with 2 cubic feet of course aggregate — with no more than 50% of all faces fractioned — securely tied in a burlap sack and placed in such a manner that the backing covers the weep holes and extends at least 12 inches above the bottom of the opening. An 8-inch square section of 1/4-inch galvanized or aluminum screen having a minimum wire diameter of 0.03 inches shall be firmly attached at the back of each weep hole before the material is placed.

Pervious backfill material shall be placed in layers along with and by the same methods specified for structure backfill. Pervious backfill material at any one location shall be approximately the same grading, and, at locations where the material would otherwise be exposed to erosion, shall be covered with at least a 1-foot layer of earthy material approved by the Consultant.

2.7 SHORING AND BRACING

Include all shoring and bracing necessary to retain earth banks, adjoining buildings and prevent caving in or displacement of adjacent soil, improvements or buildings.

SECTION 3 — ROAD PAVEMENT

3.1 GENERAL

This Work shall comply with the General Conditions.

3.2 WORK INCLUDED

This Work shall consist of the shaping, trimming, compacting and finishing of the sub-grade, the grading and finishing of all unpaved shoulders and slopes, and the preparation of all areas for topsoil, loam, riprap or slope paving as shown on the Plans or as directed, shall be constructed in accordance with these specifications and in close conforming with the lines, grades and typical cross-sections shown on the Plans or established by the Engineer.

3.3 SUBGRADE PREPARATION

3.3.1 General. This section shall govern the preparation of natural, filled, or excavated roadbed material prior to the placement of sub-base or base material, pavement, curbs and gutters, driveways, sidewalks or other roadway structures.

3.3.2 Preparation of Subgrade. Scarifying and cultivating will be required for dry soils which are impervious to the penetration of water, for soils which contain excessive amounts of moisture which may result in unstable foundations, for soils which are non-uniform in character which may result in non-uniform relative compactions and subsequent differential settlements of finished surfaces, or when pavement is to be placed directly on the roadbed material. Unsuitable material found below the processing depth for subgrade specified herein shall be excavated and disposed of as directed by the Consultant.

After rough grading has been completed, when scarifying and cultivating are required, the roadbed shall be loosened to a depth of at least six (6) inches. The loosened material shall then be worked to a finely divided condition and all rocks larger than three (3) inches in diameter shall be removed. The moisture content shall be brought to optimum by the addition of water, by the addition and blending of dry suitable material or by the drying of existing material. The material shall then be compacted by approved equipment to the specified relative compaction.

Uniform pervious soils that allow the immediate penetration of water or uniform impervious soils which will allow the penetration of water to a depth of at least six (6) inches after the addition of a suitable wetting agent will not require scarifying and cultivating unless a condition previously set forth in this sub-section requires such processing. When scarifying and cultivating

are not required, the moisture content of the top six (6) inches of the subgrade material shall be brought to optimum by the addition of water at the surface, and the material shall be compacted by approved equipment to the specified relative compaction.

- 3.3.3 **Relative Compaction.** Except when pavement is to be placed directly on subgrade material, the top six (6) inches of subgrade material shall be compacted to a relative compaction of 95%. When base or sub-base material, curb, gutter, driveways, or sidewalks are to be placed on the subgrade material, the top six (6) inches of such subgrade material shall be compacted to a relative compaction of 90 percent.

After compaction and trimming, the subgrade shall be firm, hard, and unyielding.

- 3.3.4 **Subgrade Tolerances.** Subgrade for pavement, sidewalk, curb and gutter, driveways, or other roadway structures shall not vary more than 0.02 foot from the specified grade and cross-section. Subgrade for sub-base or base material shall not vary more than 0.04 foot from the specified grade and cross-section. Variations within the above specified tolerances shall be compensating so that the average grade and cross-section specified are met.

- 3.3.5 **Grading of Areas Not To Be Paved.** Roadway areas where "grade only" is called for on the Plans shall be graded to meet the tolerances for base subgrade. The surface shall be constructed to a straight grade from the finish pavement or curb elevations shown on the Plans to the elevation of the existing ground at the extremities of the area to be graded.

- 3.3.6 **Adjustment of Manhole Frame and Cover Sets to Grade.** Utility manhole and vault frames and covers within an area to be paved or graded will be set by the owners thereof to finish grade.

The Contractor shall remove all debris attributable to his work from manholes.

3.4 **UNTREATED BASE**

- 3.4.1 **General.** Untreated base for pavement, curb, drains and similar types of improvements, shall be constructed as specified.

- 3.4.2 Material used for untreated base shall have the following grading:

Sieve Size	Percent Passing
1-1/2"	100
3/4"	90-100
3/8"	50-80
No. 4	35-55
No. 30	10-30
No. 200	2-9

- 3.4.3 **Spreading.** Imported aggregate bases shall be delivered to the roadbed as uniform mixtures and each layer shall be spread in one operation. Segregation shall be avoided and the base shall be free from pockets of coarse or fine material.

Aggregate bases shall be deposited on the roadbed at a uniform quantity per linear foot, which quantity will provide the required compacted thickness within the tolerances specified herein without resorting to spotting, picking up or otherwise shifting the aggregate base material. At the time aggregate base is spread, it shall have a moisture content sufficient to obtain the required compaction. Such moisture shall be uniformly distributed throughout the material.

Where the required thickness is six (6) inches or less, the base material may be spread and compacted in one layer. Where the required thickness is more than six (6) inches the base material shall be spread and compacted in two or more layers of approximately equal thickness, and the maximum compacted thickness of any one layer shall not exceed six (6) inches. Each layer shall be spread and compacted in a similar manner.

The use of motor graders will be permitted during depositing, spreading and compacting operations, except where self-propelled spreaders are specified.

When the subgrade for aggregate base consists of cohesionless sand and written permission is granted by the Consultant, a portion of the aggregate base may be dumped in piles upon the subgrade and spread ahead from the dumped material in sufficient quantity to stabilize the subgrade. Segregation of aggregates shall be avoided and the material as spread should be free from pockets of coarse or fine material.

- 3.4.4 **Compacting.** Rolling shall always be commenced along the edge of the area to be compacted and the roller shall gradually advance toward the center of the area to be compacted.

Rollers shall be operated along lines parallel or concentric with the centerline of the road being constructed, and no material variation there from will be permitted. All rollers must be maintained in good mechanical condition.

The relative compaction of each layer of compacted base material shall not be less than 95 percent, except in the areas back of curb (under sidewalks and driveways). Compaction in the excepted areas shall have a minimum relative compaction of 90 percent.

The surface of the finished aggregate base at any point shall not vary more than 0.02 foot above or below the grade established by the Consultant.

Base which does not conform to the above requirements shall be reshaped or reworked, watered and thoroughly compacted to conform to the specified requirements.

3.5 **CEMENT CONCRETE PAVEMENT**

- 3.5.1 **General.** Unless otherwise specified, Portland cement concrete pavement shall be considered to be structural works and shall be constructed of concrete prepared as prescribed below:

- a. All concrete shall be to working strength of 3000 PSI in 28 days, shall have as a minimum OPC content of 500 lbs per cubic yard and a maximum free water/cement ratio of 0.5.
- b. Cover to reinforcement shall be 2 inches. Reinforcement shall be round mild steel bars unless shown otherwise on the drawings.

- c. All reinforced concrete shall be fully compacted by means of power-driven immersion type vibrators. The concrete shall be vibrated until the section is a solid mass entirely free of voids and cavities. Care should be taken to ensure excessive vibration does not occur. Vibrators shall not be allowed to come into contact with the reinforcement, shutter ties or shutter faces.
- d. The concrete must not be loaded or otherwise worked on until the period of curing is complete or the concrete has reached an adequate strength, whichever comes later.
- e. Construction joints at positions where no contraction or expansion joint is to be constructed shall have the full area of reinforcement continuing across the joint. The surface of the joint shall be scabbled to remove surface laitance prior to casting the adjacent section.

3.5.2 Forms and Headers

- 3.5.2.1 **General.** The formwork must be sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and for the appropriate method of placing and compacting the concrete. Formwork (including supports) shall be sufficiently rigid to maintain the forms in their correct position and to correct shape and profile so that the final concrete structure is within specification. All formwork shall have its surface scraped smooth and clean before re-use. Any damage to formwork shall be repaired before re-use.

Forms and headers shall be either wood or metal. They shall be set plumb and true to line and grade, with the upper edge thereof set to the grade of the pavement to be constructed; and shall be rigidly installed on a true alignment and so maintained for a distance in advance of placing the pavement to provide for at least a one-day run of concrete. Headers shall rest firmly on the subgrade or base. They shall be oiled immediately prior to the placing of the concrete and shall remain in place for at least 12 hours after concrete has been placed. Forms and headers must be removed before the work will be accepted.

- 3.5.2.2 **Wooden Forms.** Wooden forms shall be constructed of 3-inch nominal lumber in pieces not less than eight (8) feet long, except where changes in alignment or grade necessitate the use of material of smaller dimensions. The lumber used shall be free from warp and other imperfections which would impair the strength for the use intended; shall have square edges (which shall be slightly bevelled) and square ends; shall be surfaced on the upper edge; and shall be not more than 1/2-inch in depth than the specified thickness of the edge of the pavement.

Such forms shall be secured by nailing to side stakes spaced not more than four (4) feet apart and driven into the subgrade vertically to a depth not less than twelve (12) inches, and so that the tops will be below the upper edge of the header. The stakes shall be of sufficient length and cross-sectional area to adequately resist lateral displacement of the headers during the paving operations.

Wooden headers shall be spliced by nailing a board to the outside of the headers. The board shall be at least four (4) feet long, one (1) inch thick, and at least six (6) inches wide (or the depth of the header, whichever is least), and shall be centered on the joint.

3.5.2.3 Metal Forms. Metal forms shall be free from warp, have sufficient rigidity to resist springing during the paving operations, and shall be not less in depth than the specified thickness of the edge of the pavement being constructed. They shall be secured by means of metal stakes spaced not more than five (5) feet apart and driven below the top of the forms. They shall be designed so as to be driven through openings in the forms to lock them in position.

3.5.3 Mixing

- a. Concrete shall be mixed by purpose-made, power-driven concrete mixers. Hand-mixing of concrete will not be permitted.
- b. Each batch shall be mixed until the concrete is uniform in colour and consistency and for not less than three (3) minutes, which shall be measured from the time when all the solid material is in the mixing drum. All the mixing water shall have been introduced before 25 percent of the mixing period has elapsed. No further water shall be added to the mix once it has left the mixer. Any concrete which has become partly set or too stiff to compact properly shall be discarded.
- c. Volume batching shall be done in purpose-made boxes or by calibrated concrete mixers or with carrying handles which shall be carefully supervised to ensure that the boxes are struck level each time. Water must be measured by volume.
- d. The mixer and associated batching and placing equipment shall be thoroughly cleaned out at the end of each day's work.
- e. The concrete shall be transported from the mixer to the position of placing quickly and in such a way that segregation does not occur. The time between mixing and placing shall not exceed 10 minutes.

3.5.4 Placing Concrete

3.5.4.1 General. Concrete shall be placed on a subgrade sufficiently dampened to ensure that no moisture will be absorbed from the fresh concrete.

- a. Before any concrete is placed, an inspection shall be made to ensure that no dirt, shavings, loose stones, etc. have been allowed to remain in or about the formwork. Formwork and reinforcement shall also be well watered immediately prior to placing the new concrete.
- b. Immediately after being mixed, the concrete shall be deposited on the subgrade to the required depth over the entire width of the section.
- c. Concrete shall be placed gently in position to avoid segregation and not allowed to fall freely from a height greater than six (6) feet.
- d. At the end of each day's run, or at any time when operations are stopped for a period of more than 40 minutes, a rigid transverse header shall be placed vertically and at a right angle across the pavement at the location designated by the Consultant and the pavement shall be finished to form a square vertical joint against which the work may

be resumed. Hand-mixing may be used only if necessary to provide sufficient concrete to complete paving to the expedient header.

Great care shall be taken to ensure that reinforcement and embedded structural steel is not displaced during concreting or disturbed after the initial set has taken place.

3.5.5 Finishing

3.5.5.1 **General.** The concrete shall be consolidated, and the surface finished true to grade and cross-section. Upon completion the surface shall be free of any unevenness greater than 1/8 inch when checked with a 10-foot straightedge placed on the surface of the pavement. The 10-foot straightedge shall be furnished by the Contractor and shall be at the Work site prior to the commencing of the placing of the concrete.

3.5.5.2 **Tamping.** The concrete shall be distributed uniformly between the side forms as soon as it is placed, after which the concrete shall be struck off and tamped by means of a mechanical tamper. The tamper shall be operated at right angles to the centerline of the pavement, and tamping continued until the concrete is thoroughly consolidated to the specified cross section and sufficient mortar for finishing purposes has been brought to the surface.

Steel-shod hand tampers or vibrating bars may be substituted in those cases where the use of a mechanical spreader and tamper would be obviously impracticable.

Approved concrete vibrating equipment shall be used in conjunction with the mechanical tamper to consolidate the concrete adjacent to the forms or existing pavement.

3.5.5.3 Floating

- a. **General.** After tamping, the surface of the concrete shall be floated by either the finishing machine method or the transverse-float method described below.
- b. **Finishing-machine Method.** The concrete shall be floated smooth and true to grade with an approved finishing machine.
- c. **Transverse-float Method.** The concrete shall be floated at least twice with a long-handled float at least 5 feet wide, following which the surface of the concrete shall be finished smooth and true to grade, with a wooden float 8 feet long, 2 inches thick, and 6 inches wide. It shall be rigidly ribbed and with adjustable screws between the rib and float board to ensure a true and flat surface on the under side at all times. The float shall be operated from the side of the pavement, and parallel with the centerline.

The edge of the float shall be used to cut down all high areas, and the material so removed shall be floated into the depressions until a true surface is obtained. Each successive pass of the float shall half-lap the previous pass.

3.5.5.4 **Final Finishing.** After being finished, the outside edges of pavement shall be rounded to 1/2-inch radius; and transverse joints, expansion joints, and joints adjacent to an existing pavement shall be rounded to 1/4-inch radius.

After working to a smooth finish, draw a stiff bristled broom across the surface of the slab to produce an even non-slip finish of fine parallel lines free from ridges and depressions.

3.5.6 **Transverse Expansion Joints**

- 3.5.6.1 **General.** Unless otherwise specified all transverse joints shall be constructed perpendicularly to the centerline of the pavement and the face of all joints shall be perpendicular to the finished surface of the pavement.

Transverse expansion joints shall be installed at 20-foot centers. Expansion joint filler material shall have a minimum thickness of 1/2-inch, a maximum thickness of 3/4 inch. After the concrete has been finished, an edger of 1/4-inch radius shall be used on each side of the expansion joint filler. The expansion joint filler shall be cleaned of all concrete mortar.

- 3.5.7 **Curing.** Immediately after the finishing operations have been completed and as soon as marring of the concrete will not occur, the entire surface of the newly placed concrete shall be covered and cured. Curing may be accomplished by flooding or by polythene sheeting in close contact.

SECTION 4 — DRAINAGE

4.1 **GENERAL**

This Work refers to the Specification and Construction of curbs, slipper drains, U drains and culverts.

4.2 **CURBS**

Shall be precast concrete units 5" wide 9" high and 30" in length and shall be laid in accordance with the drawings with a 1/2" mortar joint between curbs. Curbs may either be laid on a mortar bed on the kerb bedding or laid directly on to the concrete curb bedding before it has cured; curbs are to be tapped down into the concrete bedding to achieve the correct levels. All curbs are to have a curb backing placed behind the laid curb as shown on the drawings.

Curb backing is to be placed before the concrete in the base has set in a single operation. If the base is cast as a separate operation, 1/2 inch steel dowel bars shall be cast vertically in the base at 12" centers and extend into the curb backing.

Cast insitu curbs may be proposed by the contractor in place of the precast items. The contractor is to supply details of the method of forming and profile of the curb proposed for approval by the consultant if he wishes to use this system. The requirements for bedding, backing and alignment shall remain.

4.3 **SLIPPER DRAIN**

Concrete mixing and placing shall meet the requirements of that for concrete for structural works. The size and layout shall be as shown on the drawings. The exposed face shall be troweled to a smooth finish.

4.4 **U DRAIN**

Concrete mixing and placing shall meet the requirements of that for concrete for structural works. The size, layout and reinforcement shall be as shown on the drawings. The exposed faces shall be troweled to a smooth finish.

4.5 **CULVERT**

The requirements for concrete and associated works shall be that for concrete for structural works. The size, layout and reinforcement shall be as shown on the drawings. The exposed faces shall be troweled to a smooth finish. The contractor shall ensure that all formwork inside the culvert is removed before requesting approval of the completed works

4.6 **CONCRETE HEADWALLS, PARAPETS AND SLABS**

The concrete slabs and headwalls shown on the drawings shall be constructed according to the requirements given for concrete for structural works in this Specification. The reinforcement for the slabs, parapets and headwalls shall be as shown on the drawings. All exposed surfaces shall be given a smooth trowelled finish.

SECTION 5 CONCRETE FOR STRUCTURAL WORKS

- 5.1 **General.** Unless otherwise specified, headwalls, drains, culverts and other structural elements shall be constructed of concrete prepared as prescribed below:
- a. All concrete shall be to working strength of 3000 PSI in 28 days, shall have as a minimum OPC content of 500 lbs per cubic yard and a maximum free water/cement ratio of 0.5.
 - b. Cover to reinforcement shall be 1.5 inches. Reinforcement shall be deformed type 2 high yield steel reinforcing bars unless shown otherwise on the drawings.
 - c. All reinforced concrete shall be fully compacted by means of power-driven immersion type vibrators. The concrete shall be vibrated until the section is a solid mass entirely free of voids and cavities. Care should be taken to ensure excessive vibration does not occur. Vibrators shall not be allowed to come into contact with the reinforcement, shutter ties or shutter faces.
 - d. The shutters shall not be stripped until the concrete has cured sufficiently to not require the support of the shutters. The concrete must not be loaded or stressed until it has reached an adequate strength to prevent damage occurring. If the Contractor wishes to strip shutters or load the concrete at an early age he must have concrete cubes tested to show that sufficient strength has been attained.
 - e. Construction joints at positions where no contraction or expansion joint is to be constructed shall have the full area of reinforcement continuing across the joint. The surface of the joint shall be scabbled to remove surface laitance prior to casting the adjacent section.

5.2 Forms and Headers

- 5.2.1 **General.** The formwork must be sufficiently rigid and tight to prevent loss of grout or mortar from the concrete at all stages and for the appropriate method of placing and compacting the concrete. Formwork (including supports) shall be sufficiently rigid to maintain the forms in their correct position and to correct shape and profile so that the final concrete structure is within specification. All formwork shall have its surface scraped smooth and clean before re-use. Any damage to formwork shall be repaired before re-use.
- 5.2.2 Formwork shall be either wood or metal. They shall be set plumb and true to line to the profiles shown on the drawings. They shall be oiled immediately prior to the placing of the concrete and shall remain in place until the concrete has reached sufficient strength as described in section d above. Formwork must be removed before the work will be accepted.

5.3 Materials for Reinforced Concrete

- 5.3.1 **Cement** - Cement shall be Ordinary Portland Cement from a reputable supplier. All cement is to be stored in dry conditions. Any bag opened shall be completely used on the same day or discarded. Any bag found to have become damp or where the cement has partly hardened shall be discarded and not used in the works.
- 5.3.2 **Admixtures** - Admixtures shall not be used in concrete without the express consent of the Consultant.
- 5.3.3 **Aggregate**
- 5.3.3.1 Coarse aggregate shall be clean hard gravel or crushed rock with no deleterious properties. Before the use of aggregate from any source the Contractor shall obtain the Consultant approval of that source, if the Contractor intends to change the source during the works fresh approval of the new source shall be sought. Where required by the Consultant samples of the proposed aggregate shall be tested to ensure that it has satisfactory properties for the proposed use.
- 5.3.3.2 Fine aggregate shall be sand or crushed rock fines with no deleterious properties, the requirements for testing and approval shall be as noted for coarse aggregate.
- 5.3.3.3 Aggregate extracted from sea beaches shall not be used unless it has been thoroughly washed in clean water and tested to show no salt remains.
- 5.3.4 **Reinforcement**
- 5.3.4.1 Reinforcing bar or mesh is to be from a reputable supplier and quality certificates shall be supplied when requested by the Consultant.
- 5.3.4.2 Reinforcement is to be fixed in the positions shown on the drawings. Reinforcement is to be firmly tied to prevent movement when concrete is placed. Purpose made cover blocks and spacers shall be used as required.
- 5.3.4.3 No steel element, reinforcing steel or tie wire shall intrude into the specified cover of the section.

5.3.4.4 All reinforcement is to have adequate lap where bars join and adequate anchorage into concrete at the free ends of bars, all as shown on the drawings. Consult with the Consultant in the event of any doubt as to the structural requirements.

5.3.4.5 The contractor shall give the Consultant at least 24 hours notice before casting any element to allow for inspection of the fixed reinforcement and shutters.

5.4 Formwork

5.4.1 Formwork shall be set up to give a smooth surface with no visible joins between sheets and no significant marking of the concrete surface with imperfections in the formwork. Formwork oil shall be selected to avoid any staining or marking of exposed surfaces.

5.5 Mixing

5.5.1 Concrete shall be mixed by purpose-made, power-driven concrete mixers. Hand-mixing of concrete will not be permitted.

5.5.2 Each batch shall be mixed until the concrete is uniform in colour and consistency and for not less than three (3) minutes, which shall be measured from the time when all the solid material is in the mixing drum. All the mixing water shall have been introduced before 25 percent of the mixing period has elapsed. No further water shall be added to the mix once it has left the mixer. Any concrete which has become partly set or too stiff to compact properly shall be discarded.

5.5.3 Volume batching shall be done in purpose-made boxes or by calibrated concrete mixers or with carrying handles which shall be carefully supervised to ensure that the boxes are struck level each time. Water must be measured by volume.

5.5.4 The mixer and associated batching and placing equipment shall be thoroughly cleaned out at the end of each day's work.

5.5.5 The concrete shall be transported from the mixer to the position of placing quickly and in such a way that segregation does not occur. The time between mixing and placing shall not exceed 10 minutes.

5.5.6 Where requested by the Consultant, the Contractor shall cast concrete test cubes in British Standard cube test moulds using the methods specified in the British Standard. The Engineer can supply copies of the cube making instructions if requested. The Contractor shall be responsible for ensuring that the moulds are available on site when required. The Contractor shall be responsible for ensuring that the cubes are stored in an environment similar to the environment of the structure. The Contractor shall permanently label each cube and keep records indicating where within the structure the concrete represented by the cubes was placed. The Consultant will be responsible for testing of cubes.

5.6 Placing Concrete

- 5.6.1 Before any concrete is placed, an inspection shall be made to ensure that no dirt, shavings, loose stones, etc. have been allowed to remain in or about the formwork. Formwork and reinforcement shall also be well watered immediately prior to placing the new concrete, but standing water in the base of the shutter will not be permitted.
- 5.6.2 Immediately after being mixed, the concrete shall be deposited in the shutter to an even depth across the entire width of the section. The production and placing of concrete shall be a continuous operation until the position of agreed construction joints is reached.
- 5.6.3 Concrete shall be placed gently in position to avoid segregation and not allowed to fall freely from a height greater than six (6) feet.
- 5.6.4 Great care shall be taken to ensure that reinforcement and embedded structural steel is not displaced during concreting or disturbed after the initial set has taken place
- 5.6.5 The concrete shall be compacted using a powered vibrating poker until the material is satisfactorily compacted and the release of air bubbles has ceased.
- 5.6.6 At the end of each day's run, or at any time when operations are stopped for a period of more than 20 minutes, a rigid transverse stop end shall be placed at any vertical construction joint formed. All construction joints either horizontal or vertical shall be scabbled to remove any surface laitance before adjacent concrete is cast.
- 5.6.7 Hand mixing of concrete for structures will not be permitted.

5.7 Finishing

- 5.7.1 Unformed surfaces shall be finished to a smooth trowelled finish worked to give a dense, blemish free surface with no trowel marks.
- 5.7.2 Application of mortars or screeds to concrete surfaces to fill blow holes or other surface blemishes will only be permitted with the express consent of the Consultant.
- 5.7.3 All Exposed corners of headwalls, U drains and other concrete elements shall have the corners chamfered with a 1" x 1" (25mm x 25mm) chamfer.

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1. INTRODUCTION

- 1.1 The Banks Road Environmental Management Plan (EMP) was developed to ensure that any potential adverse impact on the environment by the road works will be minimized. The Contractor must familiarize themselves with this EMP and be guided accordingly.
- 1.2 The overarching environmental and planning laws of Montserrat (Conservation and Environmental Management Act, Physical Planning Act, Public Health Act) along with this complementary EMP would ensure that the project is conducted in an environmentally responsible and conscientious manner in accordance with best practice. This EMP is premised on the fact that no Strategic Environmental Assessment (SEA) or Environmental Impact Assessment (EIA) was conducted for the project.
- 1.3 An effective tool to complement the EMP is a work method procedure for each significant aspect of the construction. These procedures clearly outline the processes to be followed from start to completion of each significant construction operation so that all concerned are clear on the sequence of activities to be carried out to achieve a particular objective.
- 1.4 The purpose of the EMP is to address, where applicable, the various aspects that can potentially be impacted upon by the project while prescribing mitigation and corrective actions. These aspects include:
- Prevention of damage to sensitive and protected areas (archaeological, etc)
 - Chemical spills and vehicle leakages
 - Soil erosion impacts on watercourses and coastal areas
 - Disposal of solid and liquid construction wastes
 - Construction noise and vibration
 - Construction dust and air pollution
 - The preservation of roadside vegetation to prevent soil erosion
 - Construction traffic management

- 1.5 This EMP is the only environmental management tool developed specifically for this project and so will also contain EM procedures for the PWD and other Contractors to follow. This plan also sets out the monitoring and reporting arrangements required. The Department of the Environment, Environmental Health Department and the Physical Planning Unit are the main Government entities that have the expertise to provide guidance on environmental matters.

2. RESPONSIBILITIES

2.1 The Contractor will be responsible for ensuring compliance with all relevant legislation and with environmental controls and mitigation measures as set out in this plan. GOM/BNTF and Consultant are responsible for monitoring the activities of the contractors and have the authority to stop works in the event of environmental damage, negligence or failure to comply with the legislation.

2.2 It is vitally important for the community to be kept informed of project activities that may impact their daily routines, whether in a positive or negative manner. The Contractor and BNTF representative should notify all residents and business owners of the following:

- The purpose of the project;
- The nature and duration of the works;
- The possible nuisances and inconveniences;
- Working hours;
- Key contact persons.

2.3 Community meetings should be used as a means to disseminate information although individual notification and personal meetings will have to be periodically conducted, especially in cases where single properties will be impacted by specific works. All formal enquiries and complaints are to be investigated in a timely manner and a formal response given. A log is to be maintained by BNTF to record all formal complaints.

3. LEGISLATION, REGULATIONS, CONSENTS & PERMITS

3.1 Legislation

3.1.1 The Contractor shall comply with all relevant legislation and regulations, including environmental legislation by firstly, being familiar with the relevant sections of the legislation and recognizing the importance and benefits of conforming:

- Conservation and Environmental Management Act
- Physical Planning Act 2002
- Forestry, Wildlife, National Parks and Protected Areas Act 2002
- Public Health Act
- Any other relevant legislation

3.2 Organization and Responsibilities

3.2.1 All incidences potentially having an environmental impact shall be reported promptly to the BNTF manager by the Contractor. Corrective measures shall be prescribed by the BNTF and actioned by the contractor.

3.2.2 The Contractor will work closely with the local environmental authorities to be aware of their concerns and expertise. In the event of complex matters; debris disposal; tree and vegetation removal; impact on watercourses, historic and archaeological sites, private property and other such matters, the following authorities should be consulted:

- Department of the Environment – The Director of the Environment
- Environmental Health Department – Principal Environment Health Officer
- Physical Planning Unit – The Chief physical Planner
- Montserrat National Trust – The Managing Director
- Public Works Department – The Director of Public Works

4.0 RISK REGISTER

Aspect	Cause	Probability w/o mitigation	Pathway	Receptor	Consequences	Potential for Mitigation
Sediment Transport	Earthworks	2	Surface runoff	Ghats & Coastline	3	B
Stone Transport	Base/ Subbase Wk	2	Vehicle raveling, runoff	Carriageway Property	2	B
Hydrocarbon Spills	Equipment	2	Pavement Matrix	Pavement	3	A
Air pollution	Earthworks	3	Local atmosphere	Property People	3	A
Noise Pollution	General works	3	Atmosphere	People	2	C
Vibration	Earth Asphalt wk	3	Pavement ground	Structures People	3	C
Water runoff	Drainage Carriageway	2	Pavement	Property	2	A
Gridlock Traffic mgt	General works	3	Roadway	People	3	C
Site Erosion	Earthworks Carriageway	2	Slopes Roadway	Property Ghats	2	A

Probability 1 to 3 – High to Low; Consequences 1 to 3 – Severe to Minimal; A to C – High to Low

5. ENVIRONMENTAL MANAGEMENT PROCEDURES

5.1 Purpose

5.1.1 It is a project requirement that these procedures be followed by contractors responsible for the execution of the various aspects of the project. These procedures have been developed to enable the effective mitigation of all risks, with procedures addressing each of the following environmental aspects:

- Prevention of damage to sensitive and protected areas (archaeological, etc);
- Prevention of damage to utilities;
- Chemical spills and vehicle leakages;
- Soil erosion impacts on slopes, watercourses and coastal areas;
- Disposal of solid waste;
- Construction noise and vibration;
- Construction dust and air pollution;
- Ecology;
- Construction traffic management

5.2 Prevention of damage to sensitive and protected areas (archaeological, etc)

5.2.1 The designated project Environmental Managers (EMs) are to liaise with the relevant environmental authorities to ascertain all the sensitivities (natural or archaeological) of the environment that can be potentially impacted by the project and what to be vigilant for. Although it may be that no significant concerns may be raised by the authorities, it is important that a watching brief be maintained by the EMs to document any unexpected or suspect areas, structures, formations or artefacts. All such matters are to follow the protocol in section 3.2.

5.3 Prevention of damage to utilities

5.3.1 Very close collaboration must be held with all key managers of the utility companies.

The existing utility plan for the entire project area must be clear and known by all contractors.

5.3.2 Due care and attention must be taken during excavation works with small test, carefully excavated test trenches dug in areas that are confined, suspect or do not have a known utility plan. Areas with road crossings are to be observed and treated with care so as not to disturb customers' supply. When operating in areas with overhead lines, the site supervisor and workers must ensure that these lines are not impacted on by any heavy equipment by being watchful and directive.

5.3.3 In the event that a utility service is impacted on or broken, the relevant utility is to be contacted immediately. No site worker is to attend to broken power or other utility cables.

5.4 Chemical spills and vehicle leakages

5.4.1 All vehicles and equipment employed for the project are to be in excellent serviced condition free from leaks, faulty, worn or old seals and in good operating condition. A regular maintenance program supported by daily inspection of each piece of machinery is to be implemented and followed.

5.4.2. Deliberate care must be taken to handle all construction related chemicals and fuels in designated safe areas or distances away from the immediate construction site unless those materials are for direct application and part of the construction specification. No vehicle or equipment shall be refuelled, lubricated or hydraulic system filled on the construction site except in cases of real emergencies and breakdown where such action is absolutely necessary.

5.4.3 The spraying or application of asphaltic materials is to be conducted by the relevant trained personnel in accordance with the specifications pertaining to that activity. Over application is to be avoided.

5.4.4 The PWD must have the necessary, adequate hazardous materials collection vessels, absorbent mats/materials and fine sand for addressing leaks, spills and over application. The cleaning of asphalt and related material from equipment and machinery and the disposal of these hazardous materials must be conducted in a manner and location that is in accordance with national laws and policies and as directed by the environmental authorities.

5.4.5 All chemical spills and leaks are to be reported immediately to BNTF.

5.5 Soil and deposited material erosion impacts on slopes, watercourses and coastal areas

5.5.1 As much as is reasonably possible, the road alignment, profile, drainage structures, shoulder, embankment and slope alterations must be engineered and constructed in such a way as to prevent the incidence of erosion in any area (proximal or remote) by water, wind, traffic or any other agent that would not have caused erosion prior to the execution of the project. Daily, close monitoring of the weather is a prudent undertaking.

5.5.2 The deposition and stockpiling of materials should be done in accordance with best practices by implementing the necessary confinement and compaction techniques. Deposited and disturbed materials should not be allowed to interfere with drainage structures and features so as to cause blockage or flow restrictions.

5.5.3 Excavation works should be done in manageable tranches that allow closing, securing or completion by the end of the work period.

5.6 Disposal of solid waste

5.6.1 Having paid all diligence to the reduction of construction waste, the possibility may arise where some solid waste is still generated. In such cases, the disposal of the waste is to be conducted in an environmentally responsible manner. The waste is to

be classified and disposed of in accordance with guidelines from the environmental authorities and in such areas designated beforehand to receive such waste. New disposal areas are to meet with the approval of the environmental authorities after careful consultation. Soil and other material contaminated by chemicals, fuel or other hazardous material are to be disposed of in a way and location that meets the approval of the relevant environmental authorities. No waste should be dumped or left in the vicinity of the roadway, neighbouring property or ghauls and water courses.

5.7 Construction noise and vibration

5.7.1 The working hours should be chosen with consideration given to the impact that construction noise has on the proper functioning, rest, study and sleep periods of residents in the dissemination path of the noise. Noise sensitive areas should be identified and where possible the impact of noise to those residents kept to a minimum. Where deemed necessary and possible within the financial and material scope of the project, noise reduction screening could be erected for such areas. Noise generating, construction activities should be restricted to peak working and ambient noise periods during the day. All equipment are to have the necessary, effectively functioning, noise muffling attachments where is practically applicable. Loud chatter, shouting and profane speech by site workers are also forms of nuisance, noise and pollution that must not be practiced.

5.7.2 Where vibration is necessary along the construction route to obtain necessary compaction of materials, the best practice of monitoring and measuring should be employed so as not to unnecessarily prolong the vibration operation. Optimum gradation and moisture content of materials to be vibrated should be used in order to reach desired compaction levels in as efficient a time as possible.

5.7.3 It is important to record and photograph the condition of nearby structures to properly address damage complaints and ascertain the impact the vibration may have had. The execution of work involving strong vibration must be conducted with the knowledge

that that some form of cosmetic, superficial or structural damage may occur and thus caution and due regard must be exercised.

5.8 Construction dust and air pollution (including fumes)

5.8.1 The public and project workers are very sensitive to the appearance of air pollution even more so in Montserrat where the heightened awareness of the effects of air contaminants (especially ash) prevails.

5.8.2 Dust abatement measures such as dampening, compacting, covering, rapid utilization of stockpiles, stockpile location and size control, must be employed with regularity in all applicable situations. Where dampening is used, the rate of application of the water should allow for penetration and minimizing the risk of runoff and erosion. The weather forecast, times of day, traffic frequency and property occupation are all factors that should be considered when trying to control the dust levels. Traffic speed control education and mechanisms should be implemented, especially in areas that are unpaved. Where possible, unpaved, trafficked areas should receive some asphalt surface treatment or scarified, wet, re-graded and compacted as a minimum treatment. This not only reduces dust levels but increases motorist satisfaction.

5.8.3 Project workers should be protected against the carcinogenic asphalt fumes by being supplied with and using the appropriate air filtering respirators. The engines of project vehicles and equipment should be well tuned and serviced so as to minimize the amount and toxicity of their exhaust emissions.

5.9 Ecology

5.9.1 The project management team should seek to be made aware of any sensitive ecological systems that lie along the construction route, by consulting with the applicable environmental authorities. If such systems are identified then impact

assessment monitoring systems should be put in place to record the baseline conditions and changes, if any, introduced as a result of the project and inform on what actions need to be taken. Care must be taken not to impact remote ecologies as a result of erosion, sedimentation and increasing turbidity levels of coastlines and ghauts.

5.10 Construction and other traffic management

5.1.1 A robust Traffic Management Plan should be prepared to guide the handling of all traffic for the duration of the project and for various segments of roadway. Timing of the different aspects of works; alternate routes and diversions; traffic lights, signals and signal personnel; restricted flow areas; police expertise; communication radios; location of construction vehicles and equipment all have to be taken into consideration. The objective should be to afford the road user the most comfortable, safe and expeditious travel experience possible considering the circumstances accompanying road construction. Proper scheduling of traffic disrupting works, signals, signage and efficient guides are necessary especially where alternative routes are not possible.

5.2.2 Where culverts and bridges are impacted and the effective road width is reduced, adequate, temporary water channelling structures, shoring up, guardrails, cones, reflective tape and hazard lights may all have to be utilized to ensure safety and maintain proper water flow in the ghauts, especially during the hurricane season.

6.0 RECORDING AND REPORTING

6.1 Recording of environmental management during the project life will be conducted by the Consultant. The recording will entail documenting of the following:

- Complaints related to noise and vibrations and inspections and observations
- Complaints related to dust and visual inspections and observations
- Evidence of erosion or water related matters
- All other environmental related incidents and complaints as per this EMP
- Supporting photographs of matters related to the essentials of this EMP

6.2 An environmental management section will form part of the Consultant's monthly reports

7.0 REVIEW OF PERFORMANCE OF ENVIRONMENTAL MANAGEMENT PROCEDURES

- 7.1 Where deemed necessary due to peculiar site experiences and observed deficiencies, the Consultant may update the procedures to promote better environmental protection and responsibility. This may be done after discussions with BNTF. A monthly review of the procedures is useful to make the document as current and relevant as is possible, for the project.

8. EMERGENCY PREPAREDNESS AND RESPONSE

8.1 The basis of emergency response planning is firstly incident prevention, and secondly rendering any incidents harmless. Incident containment or clean-up is a last resort. In responding to any emergency situation, the objective will be to protect the following, in priority order:

- (i) Human life and health
- (ii) The environment
- (iii) Assets belonging to the Employer
- (iv) Maintenance of normal construction operations on the site

8.2 Any incident resulting in, or is likely to result in, injury or threat to human health or life, either on- or off-site, is to be reported to the emergency services immediately.

8.3 Any emergency or incident that has caused, or may give rise to pollution of water, air or land, is to be reported immediately in accordance with section 3.2 of this EMP.

8.4 All reasonable measures shall be taken to prevent contamination of water, air or land as a result of any incident, to reduce such contamination if it is unavoidable, and to remedy any contamination which has occurred. The PWD shall co-operate with the emergency services \ and statutory authorities to warn the public of any danger to health or safety arising from activities on the site.

8.5 The PWD should prepare a Pollution Incident Control Plan that includes:

- a) Guidance on the storage and use of hazardous materials;
- b) Guidelines on the degree of containment required dependent on the nature of the materials involved;
- c) Procedures and measures to be adopted in the event of a pollution incident, to contain and limit any adverse effects;
- d) Procedures with regard to the spillage or release of any hazardous materials.

9. ENVIRONMENTAL MANAGEMENT AUDIT

- 9.1 The BNTF may periodically authorize an independent check of the robustness and effectiveness of the EMP. The audit will entail the examination of the monthly reports; complaints; incidences; site conditions; work procedures; thoroughness and accuracy of documentation; response to complaints and incidents; interviews; reporting process, and consultation with the environmental authorities, project management team and other stakeholders.
- 9.2 The Auditor will produce an Environmental Inspection Report to the client including observed areas of compliance, noncompliance and recommendations for possible inclusion in the existing EMP.