

Design and Construction of Irish Crossings for FEA Access Roads to Transmission Towers

TENDER SPECIFICATION – MR 308/2017

The Fiji Electricity Authority (FEA) invites bids from reputable contractors for the Design and Construction of Irish Crossings existing Access Roads to its 132kV Transmission Line Towers on the Wailoa-Cunningham 132,000V Transmission Line. This document serves to define the extent of works to be carried out. FEA wishes to construct low water crossings at six (6) distinct locations. The low water crossing as also known as “vented ford with multiple culverts” or “Irish Crossing”, and is envisaged to be similar to one shown in the photograph below:



Compulsory Site Visit shall be organized by the FEA on **Wednesday 6th December, 2017**. Interested Bidders are to report at **11:30hrs** at to the reception counter at FEA Kinoya Depot.

Bidders shall bring their own 4x4 vehicles for transportation to the site. Trip to the sites is about 1 hour from Kinoya Depot. Site Visit shall be conducted by the Transmission Engineer (Phone # 9992408) and **attendance shall be compulsory and recorded by FEA and signed by the interested bidders.**

SCOPE OF WORKS

The following is the scope of works for the provision of Irish Crossings on FEA Tower Access Roads:

1. Design

The bidder shall be responsible for the complete design of the Irish crossings at each location. The bidder shall include the following in the design:

1. Detailed schematic drawings for each Irish Crossing
2. It's Civil, Structural and Hydrology characteristics and limitations.
3. Bill of Quantities (BOQ) for all the materials that will be used in the project (Culverts, Reinforcement Steel, Concrete, etc.)

Upon successful award of the tender, the bidder shall submit the aforementioned design components for approval to the FEA prior to the commencement of the construction process.

However, with the bid submission the bidder shall submit draft design i.e. a draft schematic drawings for each of the Irish crossing, the proposed Civil, Structural and Hydrology characteristics and limitations and Bill of Quantities (BOQ) for all the materials that will be used in the project (Culverts, Reinforcement Steel, Concrete, etc.)

2. Standards

The Irish crossings shall be designed to the following documents and standards

Standards	Website Link
1. Fiji Roads Authority DNR/PWD standard documents	http://www.fijiroads.org/dnrpwd-documents/
2. The Fiji Roads Authority Design guide	http://www.fijiroads.org/wp-content/uploads/2017/08/FRA-Design-Guide-Version-A-June-2015-1.pdf
3. The New Zealand Forest Road Construction Manual	https://www.nzfoa.org.nz/resources/file-libraries-resources/transport-and-roading/484-nz-forest-road-engineering-manual-2012/file

3. Construction

a. FEA's proposed methodology of construction is as follows:

1. At-least 50% of the stream is diverted and remaining portion dried up relatively to support the construction works.
2. A bed level is then chosen to form the base of the crossing, upon which the required number of minimum 900mm dia culverts shall be installed.
3. The width of the crossing bed shall be a minimum of 5m, and additions of scour protection on both upstream and downstream sided.
4. A concrete bedding shall be used for the culvert base and scour protection. Riprap or gabions may be used for downstream scour protection, depending on site conditions, stream slope, etc.
5. After the culverts are placed and adequate curing time allowed for base concrete and headwalls, the spaces shall be backfilled with approved compacted material.

6. The carriageway shall then be constructed with a reinforced concrete slab, with a minimum thickness of 150mm.
 7. The carriageway slab shall be extended at least 4m on both ends of the crossing, onto the access road to form suitable and smooth approaches to the crossing.
 8. All concrete used shall be of 30MPa strength. (28 day cylindrical sample tests shall be undertaken to verify the strengths).
 9. Once the first half of the crossing is constructed and concrete adequately cured, the stream shall be diverted to flow through this newly completed section, and the remaining portion constructed as per 1 – 8 above.
- b. The above methodology is suggested as a guideline, however **the Contractor shall submit a detailed construction methodology, with the design, sketches and cross sections as necessary.**

4. Bill of Quantity of Materials for Construction Works

The bidders shall be responsible to source and transport materials for the construction work. However, the bidder shall submit a pricing breakdown for each of the materials required as per the table below. Please note that each crossing location shall have a separate BOQ table.

5. Machinery

The bidder shall be fully equipped with relevant machinery for successful completion of the project. Bidders are to provide proof of ownership of machinery and equipment, such as LTA registration and third-party documents, and photographs of each machinery and equipment intended to be used on the project. If bidders intend to hire machinery and equipment from other parties, then bidders are to submit quotations for the same, together with LTA registration, third-party documents, and photographs of each hired machinery and equipment intended to be used on the project.

6. Project Timeline and Working Terms

The bidder shall submit with the bid a detailed project timeline by filling in the table below, anticipating project completion before the 31st of April, 2018.

#	Site	Tower #	Location	Start Date	End Date
1	Crossing 1	T111	Waitolu		
2	Crossing 2	T117	Waibau		
3	Crossing 3	T118/T119	Waibau		
4	Crossing 4	T120	Waibau		
5	Crossing 5	T128	Nakobalevu		
6	Crossing 6	T139	Wailoku		

FEA desires the contractor to execute the works in an efficient and optimized manner to complete the works in the minimum possible timeframe. Construction Works can be executed simultaneously at various sites, if the approved methodology permits. The FEA requires the contractor to work at least 5 days a week, and fully utilizing the entire day's daylight, if possible. Works shall be responsibly carried out by the contractor with minimal FEA supervision. For the purpose of this contract, **the FEA mandates supervision when the contractor is working within 50m proximity of the FEA's Transmission Towers. The contractor shall not encroach within 50m of a Transmission Line Tower without FEA supervision.**

Liquidated Damages (LD) for delays in completion of works shall apply across each item defined in the scope of works. LD shall be applicable at the rate of 1% per day up to a maximum of 15%. The FEA shall consider loss of productive days due to inclement weather and other force majeure events, as defined by FIDIC Contract



Fiji Electricity Authority




Transmission Unit

2 Marlow Street, Suva

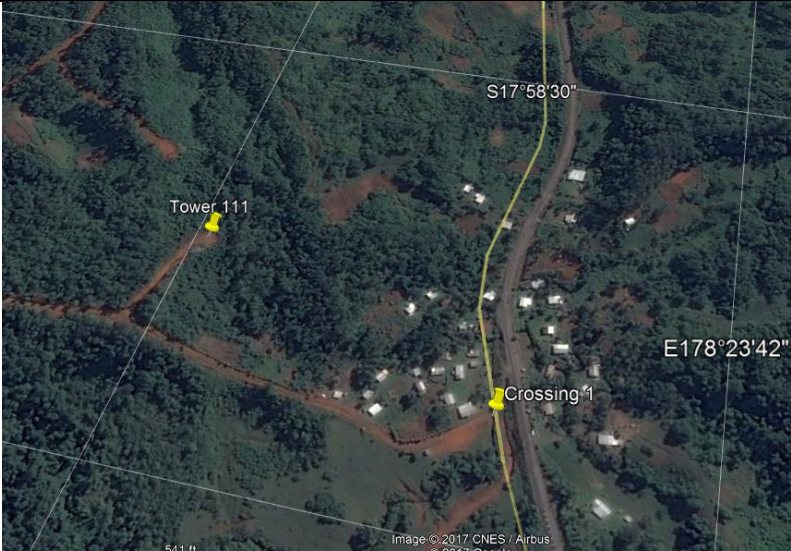
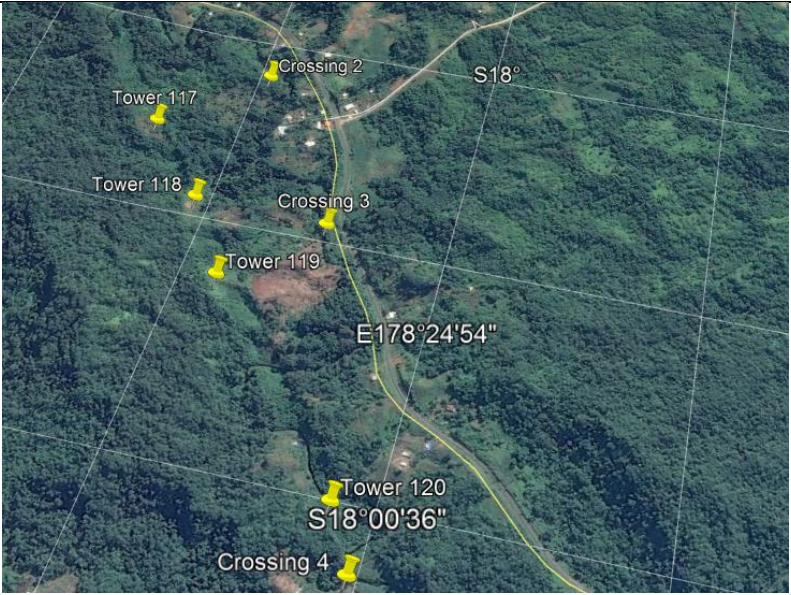
Guidelines. The contractor is required to notify FEA's project manager in writing of any inclement weather related delays or other force majeure events, within 48 hours of any such delays happening.


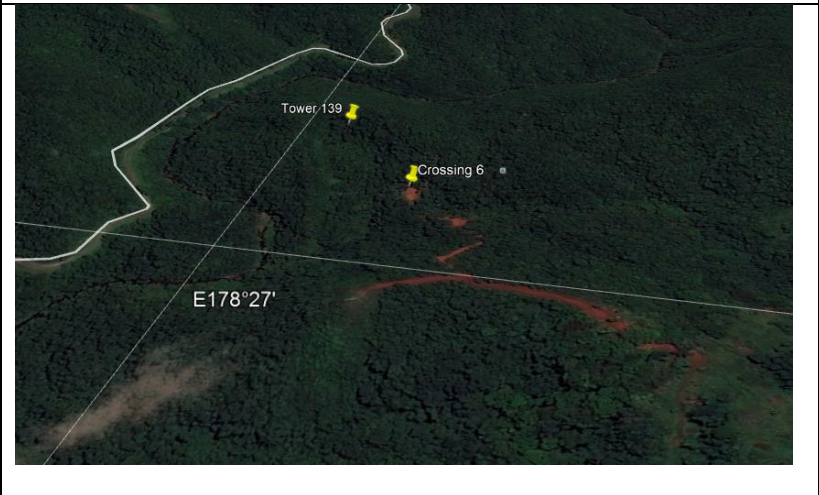
Landowners Consents and Sevusevu: The FEA shall liaise with the Landowners as and where required, and the contractor must seek and follow FEA guidance and accompaniment to observe the required traditional protocols of the land, as and where required. The cost of Yaqona for Sevusevu shall be borne by the contractor.

7. Location Pictures

#	Site	Tower #	Location	Picture
1	Crossing 1	T111	Waitolu	
2	Crossing 2	T117	Waibau	
3	Crossing 3	T118/T119	Waibau	
4	Crossing 4	T120	Waibau	To be provided on Site Visit
5	Crossing 5	T128	Nakobalevu	To be provided on Site Visit
6	Crossing 6	T139	Wailoku	To be provided on Site Visit

8. Location Map

#	Site	Tower #	Location	Picture
1	Crossing 1	T111	Waitolu	
2	Crossing 2	T117, 118/119, 120	Waibau	

5	Crossing 5	T128	Nakobalevu	
6	Crossing 6	T139	Wailoku	

9. Pricing Schedule

Site	Tower #	Pricing Composition	Price (FJD VEP)
Crossing 1	T111	Design	
		Material	
		Labour and Machinery	
Crossing 2	T117	Design	
		Labour and Machinery	
		Material	
Crossing 3	T118/T119	Design	
		Labour and Machinery	
		Material	
Crossing 4	T120	Design	
		Labour and Machinery	
		Material	
Crossing 5	T128	Design	
		Labour and Machinery	
		Material	
Crossing 6	T139	Design	
		Labour and Machinery	
		Material	
Total Cost (FJD VEP)			

The material prices shall be a total of the material pricing breakdown as per table below which should align to the Bill of Quantities. Each crossing shall have a separate Material pricing breakdown list.

Crossing 1

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 1				\$

Crossing 2

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 2				\$



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Crossing 3

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 3				\$

Crossing 4

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 4				\$

Crossing 5

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 5				\$

Crossing 6

Item	Quantity	Unit	Unit Price (FJD VEP)	Total Price (VEP)
Total Material Cost for Crossing 6				\$

TENDER DOCUMENT SUBMISSION – INSTRUCTION TO BIDDERS

Hard Copy Submission

Bidders are required to submit Three (3) hard copies of the tender bids in sealed envelope which shall be deposited in the tender box located at the Supply Chain Office at the FEA Head Office, 2 Marlow Street, Suva, Fiji.

The bidder shall seal the original hardcopy of the bid comprising of both the technical proposal and the price proposal, in one envelope, and clearly mark the envelope as: "ORIGINAL - PROPOSAL". Bidders shall also provide two (2) additional copies of the original bid and mark them as "COPY - PROPOSAL". Each proposal shall be individually sealed within an envelope. The three (3) envelopes comprising the Original and Copies shall be sealed within an outer envelope. All inner and outer envelopes shall bear the following marking / identification, and be addressed as follows:

Bid for FEA Tender MR 308/2017 - Design and Construction of Irish Crossings for FEA Access Roads to Transmission Towers

**The Secretary - Tender Committee,
c/o Supply Chain Office,
Fiji Electricity Authority,
Private Mail Bag, 2 Marlow Street,
Suva, Fiji Islands**

DO NOT OPEN BEFORE TENDER CLOSING DATE AND TIME.

All envelopes shall also indicate the name and address of the Bidder on the reverse of the envelope.

The inner and outer envelopes shall be addressed to the Employer as follows:

All postage or courier charges for delivery of Tender documents must be paid by the bidders. It is the responsibility of the bidder to pay courier chargers and all other cost associated with the delivery of the hard copy of the Tender submission.

This tender closes at 4:00pm, on Wednesday, 20th of December, 2017.

All late tenders, and inadequately marked envelopes shall be returned to the Tenderers unopened. (Bids via e-mail or fax will not be considered).

For further information or clarification on the submission of bids, please contact our Supply Chain Office on phone (+679) 3224360 or (+679) 9991587, or The Secretary Tender Committee, by e-mail: TDelairewa@fea.com.fj

Tenders received after the closing date shall not be considered.

Lowest bid will not necessarily be accepted as successful bid.