

Access Roads Upgrade to 132kV Transmission Towers in Balevuto Area

TENDER SPECIFICATION – MR 24/2017

The Fiji Electricity Authority (FEA) invites bids from reputable contractors for the upgrade of existing Access Roads to its 132kV Transmission Line Towers on the Wailoa-Nadarivatu-Vuda 132,000V Transmission Line. This document serves to define the extent of works to be carried out.

Compulsory Site Visit shall be organized by the FEA on **Wednesday 8th February, 2017**. Interested Bidders are to report **at 08:30hrs at to the reception counter at FEA Navutu Depot in Lautoka**.

Bidders shall bring their own 4x4 vehicles for transportation to the site. Trip to the site is about 1 hour from Navutu Depot. Site Visit shall be conducted by the Technical Officer Transmission West (Phone # 9999299) 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 restoration of 132kV Transmission Line Tower Access Roads:

1. First-Cut:

- a. Bulldoze or excavate and clear a minimum 4500mm wide access road carriageway on along the existing route, and removing and disposing all vegetation. Route information is shown in attached drawings which shall be further discussed and elaborated during the site visit.
- b. FEA understands that 4500mm width may not be achievable over the entire length of the road. Portions of the road which are less than 4500mm wide would require enough width to allow a single vehicle access. At such portions, a passing bay shall be constructed. The bearing capacity of the passing bay shall be same as the main carriageway.
- c. Passing bay locations:
 1. Between culverts B and C.
 2. Between culverts D and E.
 3. At Junction 2.
 4. Between Culverts G and H.
- d. Install culverts wherever required. Culverts shall be supplied by the FEA, and the contractor is required to load the culverts from FEA Navutu Depot. Contractor shall request the culverts from the FEA Project Manager in writing (including the desired sizes), at least 2 weeks prior to the utilization of the culverts.
- e. Minor Diversions and re-routing of the existing access road may be required based on existing site conditions, and these works shall be executed at zero additional cost.
- f. FEA 4x4 vehicles shall start occasional utilizing the road after the "First Cut" to carry out line maintenance works on the 132kV Transmission Line Towers.
- g. Any costs for hill-side bench cutting involving excavation of bench for access road construction shall be factored in the unit rates and included in the lump-sum for First-Cut. No variations shall be entertained for cutting of new bench.

- 2. Crowning & Coning of Carriageway:** Carry out crowning / coning along the entire length of the access road carriageway. Crowned / Coned access road carriageway shall be a minimum of 4500mm wide and as per Clause 1b above. The typical carriageway cross section shall have minimum 5% to 10% slopes (crowning / coning), from the center line to both the edges, for immediate water drainage to

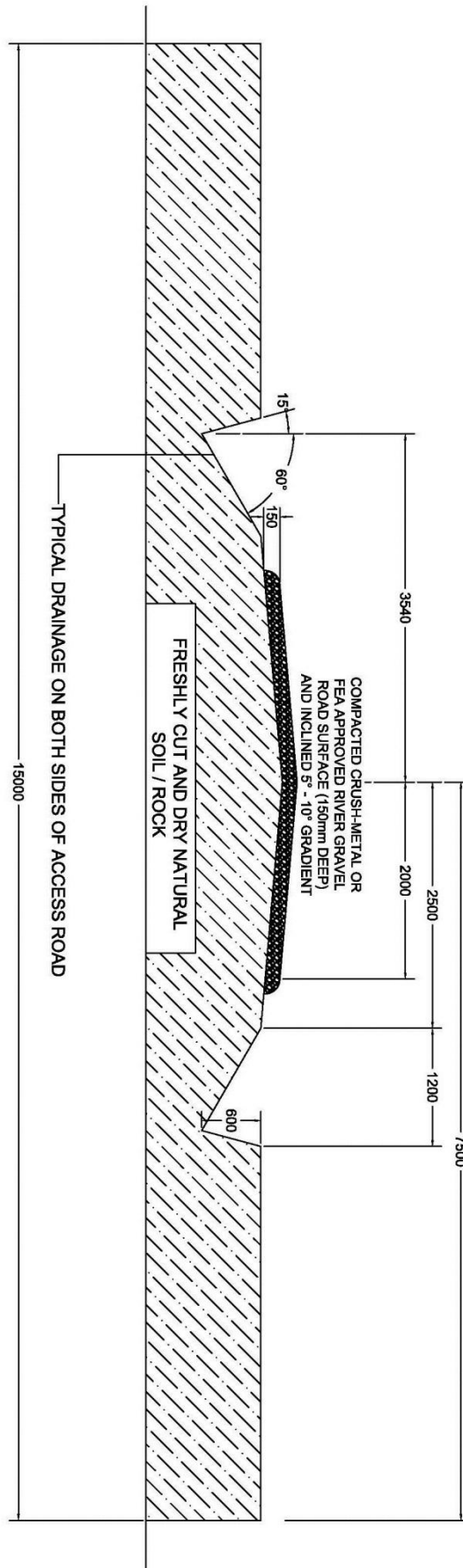
the side edge drains. For those sections of the carriageway where one edge is higher than the other, then the above mentioned slopes shall be applicable from one edge to another. The carriageway surface shall be free of any mud and loose soil.

3. **Side Edge Drains:** Side Edge drains shall be formed running along both sides of the access road carriageway, wherever possible and as and where required and shall be provided throughout the entire length of the access road carriageway to drain water away from the access road carriageway, to a low point and discharged into an existing river or creek. All drains shall be formed in a manner to keep the water table lower than the carriageway and its edge drains. Soil excavated to form the edge drains shall not be put on the access road carriageway. Excavated soil shall be placed in such a manner that it does not wash back into the drains and/or the access road carriageway, or it shall be disposed off at locations shown by the FEA Representative. The side edge drains shall smoothly integrate with the access road carriageway, and should not be a sudden/steep vertical drain. This shall ensure that any vehicles which accidentally slip into the drain can be easily towed out. Side Edge drains shall not encroach into the 4500mm wide access road carriageway, and shall be formed outside the carriageway boundary, OR AS PER Clause 1b above. Drainage costs/prices quoted by the bidders shall include the construction of new drainage and soil batter cutting/forming as and where required. Sloping of the benches shall not exceed 60 degrees slope. The bidders shall verify for themselves, the quantities of new drainage, existing drainage and side batter cutting/forming during the site visits. Separate rates shall not be provided for de-silting existing drainage and cutting/forming new drainage and side batter slopes. Bidders to provide one unit rate for all drainage works entailed on a per meter and lump sum basis as per the pricing schedule below. The lump sum amount shall comprise the contract value, and the unit rates shall only be used for compensation of any additional works for additional road kilometers only.
 - a. It shall be noted that certain sections of the road that lie along the mountain ridge may not require side drainage, or may require side drainage on one side only. Bidders are to provide a lump sum price for the drainage works, as and where required.
4. **Steep & Slippery Sections Treatment:** Along the access road, extremely Steep and Slippery Sections spots may be encountered and it may not be practical or possible to divert or re-route the access road around these Steep & Slippery areas. To improve vehicular traction and to provide driving safety, the following Steep & Slippery Sections Treatment shall be carried out:
 - a. Spread and compact a 150mm layer deep of AP-65/75 crushed rock / crushed metal. The width of the steep & slippery section treatment area shall be 4000mm wide (fully compacted 150mm deep layer of AP-85), wherever achievable, or as per Clause 1b above. The AP65/75 Crushed Rock shall be purchased and supplied by FEA to the site stockpile location located within 500m distance of the Access Road entrance and it's junction from a public road. Stockpile location to be shown during the site visit.
 - b. Based on site conditions the FEA may or may not mandate the contractor to install 4500mm wide layer of geotextile (Bidim A39 or equivalent) prior to the spreading and compaction of AP-65/75 crushed rock/metal. Bidders shall include this cost in the cost of Steep & Slippery Sections Treatment
 - c. Compaction shall be carried out in 150mm deep layers. Vibrational Drum Roller-Compactors shall be mandated and required. Bidders shall provide a unit rate for vibrational roller compactors. Compaction shall be subject to testing (proof roll) and approval by the authorized FEA Representative. Independent third party testing by a mutually recognized independent third party may be carried out at the cost of the contractor if required, if any differences arise in FEA and contractor opinions. Relevant industry standard testing shall be carried out as per

ASTM and AASHTO standards. Other internationally recognized applicable testing standards may be utilized, if deemed necessary.

- d. **FEA Shall provide the required construction materials such as Geotextile Fabric, AP65/75 Crushed Rock, Culverts etc. Bidders are to exclude the cost of purchasing these materials. The Cartage of the materials within the access roads shall be at the sole cost of the bidder/contractor. The Geotextile fabric and Culverts shall be loaded by the contractor from the FEA Navutu Depot.**

Modus Operandi: The optional Steep & Slipper Sections treatment areas shall be identified by the contractor during the First-Cut stage of the project. The contractor shall notify the FEA Project Manager, when such Steep & Slipper Sections areas are identified. The FEA Project Manager / Engineer shall inspect and clearly peg and measure and indicated the route and length of the access road where the optional Steep & Slipper Sections treatment is required. A separate purchase order shall be issued by the FEA for the execution of these works. The contractor shall not commence the optional Steep & Slipper Sections treatment, without FEA's consent and approval and issuance of a purchase order for the same. Unit rates for Steep & Slipper Section Treatment shall apply on purchase orders and contractor's deliverables on a per Square Meter Road Surface Area basis.



NOTES:

1. Schematic drawings for scope of works to be carried out shall be provided on the day of the site visit.
2. 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.
3. FEA desires the contractor to execute the works in an efficient and optimized manner to complete the works in the minimum possible timeframe. Multiple Works can be and shall be executed simultaneously. For example, One bulldozer can be carrying out the First-Cut, second bull dozer can be following the first and carrying out the Crowning & Coning, and one or more excavator(s) can be following behind carrying out the drainage and culvert installation works. The FEA requires the contractor to work at least 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.**
4. 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 20%. The FEA shall consider loss of productive days due to inclement weather and other force majeure events, as defined by FIDIC Contract Guidelines. The following time-frame shall be utilized for each item defined in the scope of works:

Workscope Item	Quantity	Contractual Timeframe for completion
First Cut of Access Road Carriageway	Per 1km	4 Calendar Days
Crowning & Coning of Access Road Carriageway	Per 1km	2 Calendar Days
Side Edge Drains (both sides of access road carriageway)	Per 1km	2 Calendar Days
Steep & Slippery Section Treatment	Per 1km	7 Calendar Days

THE DEADLINE FOR COMPLETION OF ALL WORKS SHALL BE WITHIN 3 MONTHS FROM THE DATE OF SIGNING OF CONTRACT. LIQUIDATED DELAY DAMAGES SHALL BE CHARGED AT THE RATE OF 1% PER DAY UP TO A MAXIMUM OF 20% FOR ANY DELAYS.

IF THE CONTRACTOR ENVISAGES THAT ANY SECTION OF THE ROAD MAY TAKE UP MORE TIME THAN STIPULATED IN THE ABOVE TABLE, THEN IT SHOULD BE MENTIONED CLEARLY IN THE TENDER SUBMISSION, TOGETHER WITH THE PROPOSED TIMEFRAMES.

5. 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.

EXTENT OF WORKS:

Access Road to Towers 81, 82, 83, and 84 in Balevuto Area						
Track Number	Track Description (See attached drawings for graphical depiction)	Approximate Quantity of Works				
		First Cut	Crowning & Coning	Drainage (On both Sides as and where required)	Steep & Slippery Sections	Culvert Locations
1.	Balevuto Village to Junction 1	5.21 km	5.21 km	5.21 km	5.21 km	0
2.	Junction 1 to T81	1.61 km	1.61 km	1.61 km	1.61 km	1
3.	Junction 1 to Junction 2	2.50 km	2.50 km	2.50 km	2.50 km	6
4.	Junction 2 to Fallen T82	0.24km	0.24km	0.24km	0.24km	0
5.	Junction 2 to T83	1.35 km	1.35 km	1.35 km	1.35 km	2
6.	T83 to T84	0.43 km	0.43 km	0.43 km	0.43 km	1
TOTAL		11.34 km	11.34 km	11.34 km	11.34 km	10

NOTE:

1. ALL LENGTHS / QUANTITIES ARE APPROXIMATE AND SUBJECT TO VERIFICATION AND FINALIZATION BY BIDDERS DURING SITE-VISIT AND PRIOR TO BID DEADLINES
2. BIDDERS SHALL SUBMIT FIRM LUMP SUM PRICES FOR EACH WORKSCOPE.

BIDDER'S PRICE SCHEDULES

- (i) Bidders are to compulsorily complete and submit the following price breakdown schedule for each stage, as per the following tables.
- (ii) Bidders shall submit any and all additional costs anticipated to be associated with the execution of the project.

Company Name:					
PROJECT COST SUMMARY					
Access Road from Balevuto to Towers 80 thru 84					
Approximate Access Road Route Length:					11.34 km
S.N.:	Scope of Work as defined in Tender Specification	Unit of Measurement	Bidder's Unit Rate FJD \$ (VEP)	Anticipated Quantity (Verified by Bidder during Site Visit)	Lump Sum Price FJD \$ (VEP)
1.	First Cut	meters		11,340m	
2.	Crowning & Coning of Carriageway as per tender specification	meters		11,340m	
3.	Side Edge Drains as per tender specification (Both sides of access road carriageway as and where required)	Meters (of access road route length)		11,340m	
4.	Slippery/Steep Sections				
4.1	Installation of Geotextile fabric (5m wide rolls of variable length) Note: Geotextile fabric shall be purchased and supplied by FEA. Contractor to load Geotextile fabric from FEA Navutu Depot.	meters		11,340m	
4.2	Loading and Cartage of AP65/75 crushed rock from Access Road Site stockpile along Access Road for spreading. <ul style="list-style-type: none"> • Include Cost of Machinery (Excavator / Loader) for Loading AP65/75 onto trucks for Cartage along Access Road. • Include Cost of Trucks used for the Cartage of AP65/75 crushed rock from site stockpile along Access Road 	Approximately 1 m ³ (cubic meters) per 1m route length progress		11,340 m ³ (cubic meters) for 11,340m long access road route length	
4.3	Cost of Machinery (Excavator / Bulldozer / Grader) for Spreading of AP65/75 Crushed rock on Access Road	1 m ³ (cubic meters) per 1m route length		for 11,340m route length	
4.4	Cost of Machinery (Vibrational Roller) for Compaction of AP65/75 Crushed rock on Access Road	1 m ³ (cubic meters) per 1m route length		for 11,340m route length	
TOTAL:					
FJD \$ (VEP)					

Table # C.1: INSTALLATION OF ADDITIONAL CULVERTS AND HEADWALL CONSTRUCTION (OPTIONAL)

S.N.:	Scope of Work as defined in Tender Specification	Unit of Measurement	Bidder's Unit Rate FJD \$ (VEP)	OPTIONAL Construction of Concrete Head Wall of appropriate size as per culvert size, to FRA / DNR Specifications. Bidder's Unit Rate FJD \$ (VEP)
	Culvert Installation			
1.	300mm Dia x 2.44m Long x 3 pieces	Each Instance		
2.	600mm Dia x 2.44m Long x 3 pieces	Each Instance		
3.	900mm Dia x 2.44m Long x 3 pieces	Each Instance		
4.	1200mm Dia x 2.44m Long x 3 pieces	Each Instance		
5.	1500mm Dia x 2.44m Long x 3 pieces	Each Instance		
6.	1800mm Dia x 2.44m Long x3 pieces	Each Instance		

TENDER DOCUMENT SUBMISSION – INSTRUCTION TO BIDDERS

Hard Copy Submission

Bidders are required to submit Two (2) 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 1 additional copy of the original bid and mark them as "COPY - PROPOSAL". Each proposal shall be individually sealed within an envelope. The 2 envelopes comprising the Original and Copy 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 24/2017 - Access Roads Upgrade to 132kV Transmission Towers in Balevuto Area

**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 charges and all other cost associated with the delivery of the hard copy of the Tender submission.

This tender closes at 4:00pm, on Wednesday 15th of February, 2016.

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.