



ENERGY FIJI LIMITED TENDER DOCUMENT

MR 13/2025

**SCHEME: SR05/20A – PROPOSED 33KV
TRANSMISSION LINE FROM KORONUBU
SUBSTATION TO RARAWAI SUBSTATION.**

**CARRY OUT MANUAL TRENCHING, CABLE
INSTALLATION, BACKFILLING, TRAFFIC
MANAGEMENT AND
ROADS/FOOTPATH/DRIVEWAY REINSTATEMENT
WORKS FROM RARAWAI SUBSTATION TILL POLE**

A

COMPULSORY SITE VISIT: 15/01/2025 at 11am at Rarawai Substation, Ba

TENDER CLOSING: 4pm on 22/01/2025

PROPOSED 33KV TRANSMISSION LINE FROM KORONUBU SUBSTATION TO RARAWAI SUBSTATION,

Carry Out Manual Trenching, Cable Installation, Backfilling, Traffic Management and Roads/Footpath/Driveway Reinstatement Works from Rarawai Substation Till Pole A

1. Scope of Works

The Energy Fiji Limited invites quotations from EFL trained and certified contractors to carry out manual trenching, cable installation, backfilling, traffic management and roads/ footpath/ driveway reinstatement works from Rarawai Substation till pole A, according to **EFL & FRA Standards**.

Interested contractors are to meet at Rarawai Substation, Ba on **15/01/2025 at 11am (1100hrs Fiji Time)** for the briefing, collection of specification documents and compulsory site visit.

Please submit your quotes by **4pm (1600hrs Fiji time) on 22/01/2025**

The Tender Bids particularly the “Price” must be typed and not hand written.

Notes:

1. **Bidders to submit copies of EFL training records with current validity. Bids without this will be disqualified.**
2. Safety Plan to be included in tender bid.
3. Safety Report for 2023, 2024 to be submitted with tender.
4. List of Construction projects completed for EFL to be submitted with tender.
5. Contractor shall provide photo ID of all employees who will be working on the project, clearly indicating their Employment/FNPF number and Job Description.
6. Cable Jointer Certificates to be included in tender bid.
7. **Please pay specific attention to Clause 25 under PART C, Contractor Requirements: “Transportation of material – The Contractor shall load and transport all materials from the EFL Depot (exact depot dependent on project location) to worksite”**
8. The Contractor needs to pay for any work required from EFL after working hours.
9. The trenching and installation of 33KV underground cables shall be carried out under direct EFL supervision.
10. All work requiring EFL supervision shall be carried out during normal working hours.
11. In the event that the contractor carries out work which requires EFL supervision after normal working hours, the contractor shall pay for the overtime costs incurred. A prior notice needs to be given to EFL at least 5 working days in advance.

Weekly progress reports should include the details below; this shall be submitted without fail, otherwise it will affect process of payment.

Personal Protective Equipment - Condition							
Name of Personnel	Hard Hat	Safety Glass	Safety Boot	Gum Boot	Working Gloves	Reflective Vest	

Contractor Name/Stamp

COMPLIANCE CHECKLIST

Compliance - The following documents are to be provided with the tender bid:

No.		Check (v)
1	Tax Compliance Certificate from FRCA	
2	Business Registration details	
3	FNPF Compliance Certificate	
4	FNU Compliance Certificate	
5	Evidence of manpower employment (e.g. payroll listing, etc.)	
6	Project Team Composition of the team executing the works, including photo IDs, qualification of personnel	
7	Insurance cover details – Public Liability, Workers Compensation, Contractor’s all risk	
9	Evidence of 1% Grant Levy to FNU	

Bidders are to ensure that the above item are included as part of their bid. Failure to provide documentation for the above will disqualify the bid.

FIRST SCHEDULE

A. SPECIAL CONDITIONS OF CONTRACT

1. The works shall comprise of carrying out Manual Trenching, Backfilling, Traffic Management and Roads/Footpath/Railway crossing Reinstatement Works in reference to **Drawing No: A3-03-N52-004**

Rarawai Substation to Pole A and A/1		Route Length (Approx.)	Total Price (VEP)
Section A	Rarawai Substation to H-Pole A and A/1	200m	
i	Dig Trench		
ii	Carry out HDD works [if required]		
iii	Lay 3 x Single Core 300mm ² XLPE HV Cable Circuit 1		
iv	Lay 3 x Single Core 300mm ² XLPE HV Cable Circuit 2		
v	Lay 1 x Single 100mm Conduct for Fibre and Leave Draw wire	200m	
vi	Backfilling		
vii	Traffic Management [if required]		
viii	Roads/Footpath/Driveway Reinstatement [if required]		

Note:

- i. If reinstatement of any sealed roads and concrete driveway/footpath is required at site – the total cost of reinstating shall be submitted with the Tender Bid. ***[Refer to Appendix 1 below for Reinstatement Specifications]***
- ii. Sections can be awarded to multiple Bidders those who meet the Technical compliance.
- iii. The Bidder is to submit prices for all the Items in the above Table even if it says Optional or if required.
- iv. Hand Written Prices will be Dis-qualified.
- v. Ducts will need to be laid across each road crossing and Drive Way with appropriate mechanical protection- such as Electrical slabs.
- vi. Route comprises sealed road, concrete footpaths, grass verge and drains.
- vii. Sub-seal comprise soapstone and services.
- viii. All works should be carried out in such a manner that no structural damages are to be sustained by the FSC Pond located adjacent of the cable route length.

2. The Contract sum for the works shall be

\$ _____ VEP

- a) Payable in a single lump sum upon final completion of the works; or
- b) Payable at the completion of each section as follows:
 - All works per Section completed over total route length as milestone payments (upon quality/standards check from FRA on backfilling works and roads/footpath reinstatement).

- 10% retention fund (for quality assurance of roads/footpath reinstatement works – to be released after 6 months upon zero complains from *Fiji Roads Authority/ Fiji Sugar Corporation/ Ba City Council*).

3. Timeline for the works:

- (a) Latest date for commencement of the works: 7 days from issue of LPO
- (b) Date of completion of Section A : 3 weeks

Date for total completion of works : 3 weeks after receiving LPO

4. For the purpose of supervising the contract on behalf of the Authority, references in the General Conditions to the Authority shall include the Manager Transmission or his designated officer. The Project Manager shall be the Manager Transmission, the Project Engineer shall be the Transmission Projects Engineer and the Project Supervisor shall be the Acting Technical Officer Transmission Western.

5. Insurance

- (a) Contractor's risk \$500,000.
- (b) Public Liability \$500,000.

6. Liquidated and ascertained damages:
\$200 per day

7. Defects Liability period: 6 months

8. Retention Fund:

- (a) Limit of retention fund : 10% of contract sum
- (b) Nature of retention fund : cash
- (c) Release of retention fund: Subject to no pending defects and zero complains from *Fiji Roads Authority/Fiji Sugar Corporation/Ba City Council* & as per EFL Finance Policy.

SECOND SCHEDULE

PROJECT: PROPOSED 33KV TRANSMISSION LINE FROM KORONUBU SUBSTATION TO RARAWAI SUBSTATION.

CARRY OUT MANUAL TRENCHING, BACKFILLING, TRAFFIC MANAGEMENT AND ROADS/FOOTPATH/DRIVEWAY REINSTATEMENT WORKS FROM RARAWAI SS TILL POLE A

SCHEME: SR05/20A

1.0 General

This specification covers the carrying out of Manual Trenching, Backfilling, Traffic Management and Roads/Footpath Reinstatement Works in reference to **Drawing No: A3-03-N52-004** under conditions of contract attached herein.

2.0 Scope of Work

Work involved in this contract is broadly classified below:

- i. Trenching
- ii. Ducting Works
- iii. Backfilling of Trench
- iv. Traffic Management
- v. Reinstatement of Roads and Footpath & Driveways up to FRA Standards

2.1 **Phase One** – Trenching of Cable route

- i. Manual trenching works for the power cable.
- ii. To be clear from other existing underground services.
- iii. No damages are to be sustained by the vibrations from plant and machinery to FSC Pond located nearby.

2.2 **Phase Two** – Ducting of Power Cables

- i. Install conduits across road crossings, driveways, footpaths and Railways as per FRA and EFL Standards.

2.3 **Phase Three** – Backfilling of trenches

- i. Apply suitable layer of sand bedding (to be supervised by EFL).
- ii. Backfill sand on top of cable to height specified by EFL site supervisor.
- iii. Backfill remainder of trench with trench soil.
- iv. Backfilling of road crossings, driveways and footpath needs to be done to FRA Standards.
- v. No damages are to be sustained by the vibrations from plant and machinery to FSC Pond located nearby.

All materials (cable and slab) are to be transported to work site by the contractor.

The contractor is responsible for ensuring that all unused excavated soil is laid neatly on top of the trench to allow for soil subsidence where possible. Any un-used excess soil is to be cleared and dumped at a site specified by EFL Supervisor at the contractors cost. All left over materials is to be returned to the EFL Navutu Stores and credited accordingly.

Fine Sand and Base Course Aggregates (AP65/AP40) shall be supplied by EFL.

All the works of phase three must be as per the specifications, and it shall conform with all aspects of the standards outlined in the "Standard Overhead Line Design and Construction Manual", guideline set up by EFL. It should also comply with the FRA's road maintenance standards.

Note: All Driveways and Footpaths that having been trenched needs to be reinstated up to the required FRA standards. All roads crossings must be filled with appropriate aggregate material immediately.

2.4 **Phase Four – Traffic Management**

- i) Apply suitable Traffic Management processes at various sections of the project
- ii) All trenches to be barricaded properly at all times and be safe to the general public
- iii) Provide a temporary walkway if footpath is being excavated
- iv) Consult with EFL Supervisor first before any temporary road/lane closure is done on site
- v) FRA reps will be monitoring the traffic management works on a regular basis to ensure compliance and quality control.

2.4 **Phase Five – Reinstatement of Roads/Footpaths/Driveways**

- i) Any opening of roads/footpaths/driveways shall be immediately backfilled after completion of works with appropriate aggregates (AP65/AP40) and compacted with a tamping rammer.
- ii) No damages are to be sustained by the vibrations from plant and machinery to FSC Pond located nearby.
Note – any damage to the nearby property or 3rd party, the contractor will be liable for repair works or compensation.
- iii) Appropriate Sealing works and Concrete reinstatement to follow within 2 days of the completion of works
- iv) Sealing works on roads to be done according to FRA Standards.
- v) Footpath/Driveways reinstatement to be done to FRA Standards (Refer Appendix 1).

C: CONTRACTOR REQUIREMENTS

1. **Tender Bid** – Contractor shall submit a firm lump sum bid.
2. **Site Visit** – Contractor shall participate in a site visit which is compulsory. Bids from tenderers who do not participate in the site visit shall be disqualified.
3. **Standards** – All construction work shall be in compliance with EFL Standard Overhead Line Design & Construction Manual.
4. **HSE Compliance** – The tender bid shall include all requirements from the EFL HSE Contractor Safety Management System. These will be evaluated by the EFL's HSE Unit. Tender bids with incomplete, unacceptable, or without the HSE requirements will not be considered for award.
5. **Safety Record** – Tender bid shall include a brief report on Safety performance over the last two years. The report shall include all incidents and accidents.
6. **Sub-contracting** – Subcontracting shall not be permitted, except where this is specifically presented in the tender bid, and only upon approval by EFL. Subcontractors shall be required to fulfil all requirements as if they were the contractor.
7. **Scope of works** - Work involved in this contract is broadly classified into three phases, and progress payments shall be processed accordingly.
 - i) Trenching and Ducting
 - ii) Ducting of Power Cables
 - iii) Backfilling of Trench
 - iv) Traffic Management
 - v) Reinstatement of Roads and Footpath & Driveways up to FRA Standards
8. **Contact** - Contractor shall have a valid postal address, Office phone/fax/e-mail contact. The Principal shall be available by mobile phone at any time.
9. **Work Program** - Contractor shall submit a work programme before starting of project. This shall be part of the contract. Work shall commence within seven (7) days after receiving an official EFL Local Purchase Order.
10. **Training** – Contractor shall ensure his employees have attended EFL Safety Manual Training at least once in the past 6 months, and records of this shall be submitted with the tender bid. In the event that the training has not been carried out, the Contractor shall ensure these training are carried **PRIOR** to induction for new project.
11. **Ground condition** – Contractors are to note that sub-soil comprises soapstone and could contain other services like Telecom Fiji Ltd, Water & Sewerage, etc.
12. **Invoicing** – Contractor shall submit details of work completed to allow prompt approval

of invoice.

- 13. **Safety Induction** - A Safety induction must be conducted before start of power line construction work.
- 14. **Instruction to Commence Work** - Contractor shall NOT commence work on site unless an "Instruction to Commence Work" has been received from the Project Manager.
- 15. **Signboards** - One signboard (6'X 4') must be erected at the start of the works and one at the end of the works clearly stating :

DANGER
PROJECT: UNDERGROUND CABLE INSTALLATION WORKS – [Description of project]
CONTRACTOR:
Emergency phone contact: _____
UNDERGROUND CABLE INSTALLATION WORKS.
Driver please reduce speed.
Pedestrians please use other footpath/side of road
THANKS

- 16.
- 17.
- 18.
- 19. **Transportation of material** – The Contractor shall transport all materials from EFL Navutu Stores to work site.
- 20. **Security** - Contractor shall be responsible for the safekeeping of all materials at work site, and will be required to pay for damage and/or loss.
- 21. **Damage to property** – The Contractor shall ensure that there is no damage to roadways, footpaths, drains, water-courses, properties and other services. The Contractor shall make good to the satisfaction to the owner any damage caused by the contractor.
- 22. **Portable signboards** - Portable signboards must be placed at 50m intervals.
- 23. **Traffic and Pedestrian Control** – The Contractor shall ensure that there is minimum disruption to the flow of traffic and pedestrian. EFL procedures on Traffic Control and Pedestrian Control shall be diligently exercised.
- 24. **Worksite protection** - Bollards/cone must be placed at 10m intervals.
- 25. **Barricades** - Open trench/pole-hole is to be baricaded on a full time basis by the Contractor.
- 26. **Jobsite Safety Assessment** - Contractor to carry out Jobsite Safety Assessment daily, and as and when required, and submit these to EFL on a weekly basis.

27. **Credit of surplus material** – The contractor shall transport and credit all unused materials to EFL Navutu Stores.
28. **Defects Rectification** – The contractor shall rectify all defects within seven (7) days as per contract.
29. **Project completion** – The contractor shall complete work on time as per contract.
30. **Project progress** – If the Contractor fails to proceed with the works with reasonable diligence or suspends the works or refuses to comply with the reasonable direction from EFL by reason of which the works are materially affected and any such default continues for a period of seven (7) days after the issue of written notice, EFL may itself call any other person to complete the works at the Contractor's risk and expense.
31. **Safe Work Procedure Training** - Contractor must have completed Distribution Safe Work Procedure training.

D: EFL REQUIREMENT

- EFL Project Supervisor shall obtain Road/footpath opening permits.
- EFL Project Engineer shall obtain clearance from Fiji Roads Authority, Municipal Council, Telecom Fiji Ltd, Water Authority of Fiji, and Sewerage Department.
- EFL's HSE Unit shall vet Safety Plan submitted by Contractor and approve after queries clarified by Contractor.
- EFL Project Supervisor shall ensure that any EFL underground mains on the jobsite is clearly located, marked and identified to the Contractor.
- EFL Project Supervisor shall submit to the Project Manager all necessary approval documentation from Fiji Roads Authority, Municipal Council, Telecom Fiji Ltd, Water Authority of Fiji, and Sewerage Department. Upon receipt of these approvals, and the approved Safety Plan, the Project Manager shall issue an "Instruction to Commence Work" to the Contractor.
- EFL Project Supervisor and Project Engineer shall carry out regular site inspections to ensure compliance with HSE requirements, and submit Safety Visit Reports of the visit.
- EFL Project Supervisor and Project Engineer shall issue Non-Conformance Report if required, and follow up for verification of implementation of Action Items arising out of the Non-Conformance Report.

E: PAYMENT SCHEDULE

Payment shall be made as per below:

1. All works per Section completed over total route length as milestone payments (upon quality/standards check from FRA on backfilling works and roads/footpath reinstatement)
2. 10% retention fund (for quality assurance of roads/footpath reinstatement works – to be released after 6 months upon zero complains from Fiji Roads Authority/Fiji Sugar Corporation/Lautoka City Council)

Appendix 1: Footpath Reinstatement Specifications

Details for Footpath Reinstatement Works

The reinstatement works has to be done within the following standards:

Item	Specification	Standard
Concrete mix	20MPA	FRA
Mesh wire	665 mesh wire for reinforcement	FRA
Sub-grade	150mm (compacted layer)	FRA
Base course	100mm	FRA
Surface level	Concrete should be firmly laid to even up the surfaces currently left open on site	As per initial site condition

Appendix 2: FRA Reinstatement Specifications

Details for All Reinstatement Works



Appendix D Trenchless and Trenching Specification

D1. General

Utility Operators must operate and manage Work Sites with Trenchless and Trenchless techniques to:

- a) to protect public safety at all times;
- b) to avoid impacts on other assets (other buried assets);
- c) in compliance with all other requirements of this Code.

D2. Trenchless Specification

1. When using trenchless construction, the Utility Operator must:

- a) agree the construction technique with the FRA, taking into account the design requirement and site constraints; and
- b) use plans, locators and trial excavations as appropriate to locate existing Utility Structures in the same way as for excavation methods.

2. The preference is for Utility Operator to use trenchless construction in Main Roads, particularly in the Carriageway, unless it can demonstrate that this is not reasonable or practicable. Reticulation by trenchless construction rather than open trenching is encouraged to minimise any adverse effects on the Road, unless it is impracticable, technically infeasible, unsafe, uneconomic or represents an unacceptable level of risk to other underground Utility Structures.

When using trenchless construction, the Parties should also consider:

- a. increasing clearances from other Utility Structures, taking into account factors such as the construction of adjacent plant, ground conditions, bore diameter, the accuracy and reliability of the technique/equipment being used and whether the other Utility Structures are parallel to or crossing the proposed line;
- b) increasing minimum cover requirements due to soil conditions and their potential to deflect the bore or drill; and
- c) exercising special care to ensure that other underground Utility Structures are not damaged.

D3. Trenching Specification

1. Prior to the excavation of the Trench:

- a) any concrete, asphalt or chip seal surfaces must be cut with a power saw in a clean, straight line through the full thickness of the surface layer;
- b) the separation distance from the original saw cut (the trimming allowance, refer Figure D 1) must be a minimum of 150mm, except for concrete Carriageways where a minimum of 300mm applies, but more may be required to maintain the integrity of the final Trench reinstatement;
- c) if necessary, a second saw-cut must be made to ensure that all edges are straight, smooth, parallel to the line of the Trench and that minimum Trench trimming allowance is achieved; and
- d) all joints must be cut to a depth sufficient to avoid disturbance of adjoining pavement. The depth of cutting must be not less than 30mm, or for concrete Carriageways, Footpaths and vehicle crossings the depth must be not less than 80% through the concrete pavement layer.

2. If any over-break occurs:

- a) a further cut must be made to maintain trimming allowances and a clean edge for reinstatement;
- b) any change in direction of the saw cut must not exceed an angle of 45° to the Trenchline;
- c) the total length of over-break must not exceed 10% of the length of the Trench; and
- d) the length of trim at any one section of over-break must not be less than 5m (refer Figure D 2: Parallel Cutting of Joints).

3. During excavation of the Trench:

- a) there must be no undercutting of areas adjacent to the excavation;

- b) if slumping at the sides of the excavation causes depressed areas adjacent to the excavation, or if the edges of the pavement are lifted during excavation, additional Trench cutting outside the original line of the excavation and outside the area of damage must be carried out;
- c) excavation to profile/depth must be in accordance with the construction drawings;
- d) the length of open Trench must be kept to a minimum and backfilled as soon as practicable;
- e) excavated material that is not being used for backfill must be removed from the site;
- f) where groundwater is likely to accumulate as a result of Utility Works, excavations must be permanently drained; and
- g) the Utility Operator must provide temporary support/shoring to all Trenches if required to provide lateral support to the excavation and to comply with health and safety codes. Effective drainage of the Trench is particularly important in rural situations where Trenches run through cut areas, fill embankments or slip prone areas.

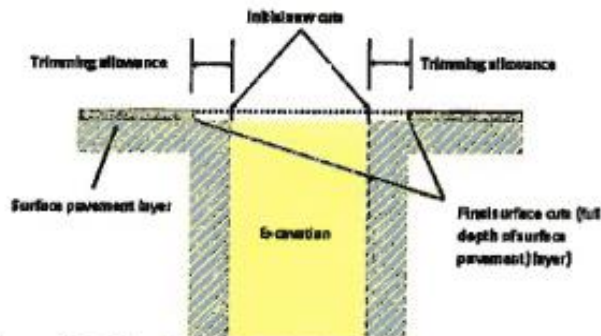


Figure D 1: Standard Trimming for Trench Cuts

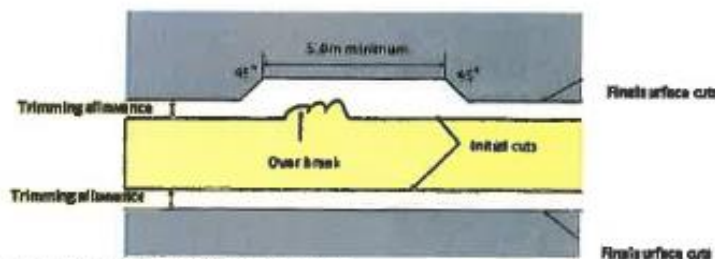


Figure D 2: Parallel Cutting of Joints

1. After backfill and prior to surface reinstatement, the Utility Operator must re-cut surfaces if required, to achieve a neat simple pattern for reinstatement and to maintain minimum trimming allowances. Generally this will mean parallel saw cuts on the sides of any area, but for open graded porous asphalt saw cutting is not the recommended method.
2. When a Trench turns a corner, additional allowances must be made, as shown in Figure D 3.

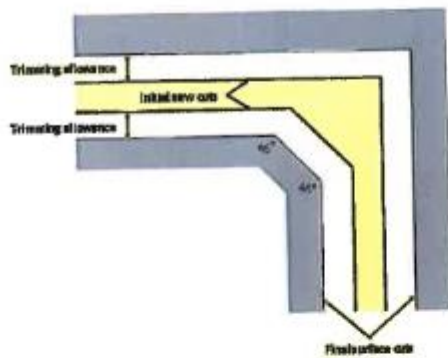


Figure D 3: Trench Excavation with Corners

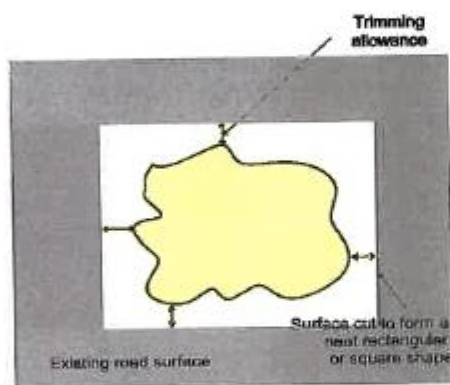


Figure D 4: Finishing of Irregular Shaped Excavation

Figure D 4 is an example of how an irregular excavation should be expanded to form a more regular shape to minimise disruption to the surface.

D4. Backfill materials

1. All backfill materials:

- a) must be in accordance with recognised standards and approved by the FRA;
- b) must be adequate to ensure that the backfilled area can at least match the pre-Trench subsurface integrity;
- c) must be of sufficient quality and strength to support the imposed loading, including Traffic and Road construction loading; and
- d) where concrete or other stabilised layers, including geotextile material, exist in the Road pavement, the Utility Operator must reinstate the Trench with similar material (further guidance on concrete reinstatement is included in Section D5).

Figure D 5: Fill Layers in Trenches illustrates typical Trench zones, with requirements for each zone details below.

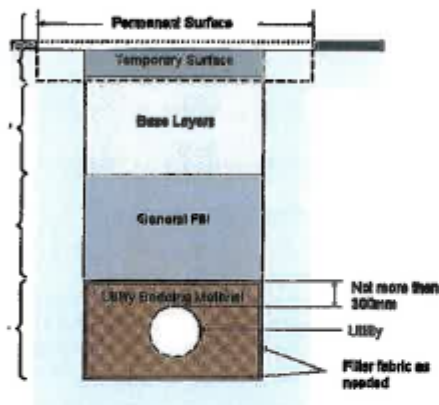


Figure D 5: Fill Layers in Trenches

2. The bedding material must be specified by the Utility Operator and placed:

- a) in a loose state (sand must be dampened) and tamped to achieve compaction and surround of Utility; or
- b) in a fluidised state where specifically approved by the FRA; and
- c) to a depth of not more than 300 mm above the top of the Utility Structure, unless a variance is agreed between the Utility Operator and FRA.

3. General fill:

- a) in Road Carriageway, Shoulder and Footpath, general fill must be well graded granular material free of deleterious material with maximum stone size 75mm;
- b) where the Utility Operator uses suitable excavated material in Berms, the required compaction standards must be achieved (refer Section D5).

4. Base layers – Road Carriageways: where there is more than one base layer:

- a) the lower base layer (sub-base) material must be well-graded crushed granular, with maximum aggregate size 65mm, and a controlled grading curve and weathering and crushing resistance; and
- b) the upper base layer (basecourse) for the Carriageway, or the whole basecourse if it is a single layer, must comply with the FRA's has approved basecourse product specification.

5. Base layers – Footpaths: must be well graded GAP40 granular material.

- a) Berms generally do not need a separate base layer other than general fill.
- b) Prior to backfilling, excavated material that is unsuitable for backfilling must be removed from site and not be used to backfill Trenches.

D5. Backfill Placement and Compaction

1. Placement and compaction of all layers must:

- a) be in layers not exceeding 200 mm (solid) thickness;
- b) allow for appropriate compaction methods around the Utility Structures;
- c) have mechanical compaction completed for each subsequent layer in turn; and
- d) ensure lapping of any geotextile material in accordance with the manufacturer's specification.

2. During backfilling and compaction:

- a) care must be taken to ensure no damage occurs to Utility Structures during compaction; and
- b) if over break or other disturbance of the pavement layers occurs, the surface of such areas must be re-cut, excavated and backfilled in compliance with this Section.

3. Compaction must:

- a) be carried out using suitable plant and equipment to achieve the specifications in Section D8; and
- b) be confirmed by a Clegg hammer, or an agreed alternative, for sub-base and deeper fill.

4. When reinstating excavated concrete layers in the Carriageway, the Utility Operator must ensure that the new concrete:

- a) retains at least the performance characteristics of the existing layer;
- b) is installed at a minimum depth of 250mm;
- c) has a 28-day compressive strength of 20 MPa;
- d) interlocks with the old concrete using R20 steel reinforcing bars placed centrally perpendicular to the face at 500 mm spacing along all joint faces. The bars must be bonded 250 mm into the existing concrete and extend into the new concrete a minimum of 250mm. The concrete must be reinforced with 665 steel mesh placed centrally. Where expansion or contraction joints are affected these must be reinstated; and
- e) has a coarse broom finish surface and matches the line and crossfall of the Road surface, with allowance for asphalt overlay to be placed to the same thickness as on adjacent pavement as appropriate.
- f) has a coarse broom finish surface and matches the line and crossfall of the Road surface, with allowance for asphalt overlay to be placed to the same thickness as on adjacent pavement as appropriate.

- When reinstating concrete in any other areas, the concrete used should be of similar type and finish as the adjacent concrete.

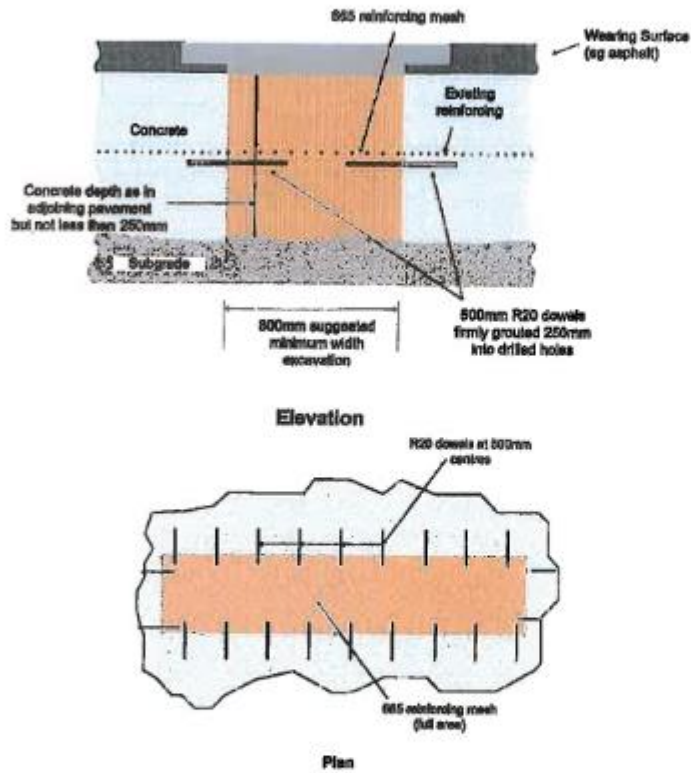


Figure D 6: Concrete Road Carriageway

D6. Base layers – Foam Bitumen Pavements

- a) the carriageway constructed from Foamed Bitumen Basecourse shall comply with the attached diagram for *Foamed Bitumen Basecourse Trench Reinstatement Details*

D.8 Compaction Testing

1. Compaction testing must be carried out:

- a) by a suitably qualified person
- b) using equipment with a current calibration certificate;
- c) as specified in the Reasonable Conditions and Quality Plan; and
- d) as necessary to achieve the standards in Figure D7 at all depths of any backfill.

A lesser compaction for sand may be approved by the FRA if it can be clearly shown that the compaction is at least as much as the undisturbed sand in the adjoining ground. In the case of low volume roads a minimum Clegg Impact Value (CIV) of 55 for carriageway basecourse may be accepted by the FRA as an alternative to specifying a maximum dry density (MDD).

2. A testing regime must be carried out as agreed with the FRA, or, in the absence of any agreement, as outlined below:

- a) for Trenches in Berms, tests at a rate of at least one test per layer of backfill per 15m of Trench, with a minimum of two tests;
- b) for Trenches in Carriageways or under Footpaths, tests at a rate of at least one test per layer of backfill per 5m of Trench with a minimum of two tests;
- c) where the excavated area is greater than 0.5m² and less than 5m², tests at a rate of one test per backfill layer or, for larger excavations, one test per 5m²;
- d) all test locations must be uniformly spaced in the pavement; and
- e) tests must be carried out on every lift of each tested backfill layer to be assured of proper compaction of all of the backfill.

3. The above specifications do not remove the responsibility of the Utility Operator to ensure that no settlement occurs.

Also note that:

- Subject to satisfactory test results the above frequency of testing may be reduced with the prior agreement of the FRA;
 - The Clegg hammer may be used for testing of general fill and base layers but not for the upper base layer of Carriageways;
- 4. The Utility Operator must retain the test records and make them available to the FRA on request.**

	Carriageway	Footpath	Berm
Basecourse	98% MDD	IV 25	N/A
Sub-base	IV 35	IV 25	N/A
Deeper Fill	IV 25	IV 15	IV 10

IV = Impact value

Figure D 7: Compaction Testing

Appendix E Surface Layer Reinstatement

E1. General Requirements

1. The Utility Operator must use suitably qualified and experienced persons for the construction of Road surfacing
2. The Utility Operator must, unless otherwise agreed with the FRA:
 - a) not open Trenched sites to Traffic until temporary or permanent resurfacing is in place;
 - b) not use temporary resurfacing unless permanent resurfacing is not practicable; and
 - c) have permanent resurfacing in place within seven days of completion of backfill or temporary surfacing.
3. The Utility Operator must ensure the reinstated surfacing:
 - a) is installed in clean, long, straight lines parallel to the kerb or Footpath, or for transverse Trenches, perpendicular to the kerb and channel;
 - b) uses materials that match the surrounding surface in type, quality, texture, skid resistance and strength;
 - c) matches at least the pre-existing surface in smoothness or ride quality for vehicles (vertical movements);
 - d) has a finished surface level and adjoining surface shaped to avoid ponding of surface water, such that the deviation of the surface from a 3m straight edge does not exceed 5mm;
 - e) does not vary more than 5mm in any location from the original surface;
 - f) continuously graded towards stormwater drainage channels or gully entries; and
 - g) has no lips greater than 3mm high in pedestrian surfaces.
4. At the FRA's request, the Utility Operator must carry out Road surface roughness testing on a before-and-after basis for large projects.

E2. Reinstatement near a Joint or Edge

If the edge of the Trench in a Footpath or Road Carriageway is within 1m of a joint or existing edge of the pavement, then the existing pavement must be replaced to that joint or edge as part of the surface reinstatement, and cut accordingly.

This requirement is commonly referred to as the '1 m rule' and is illustrated in Figure E 1 and Figure E 2. However the FRA may waive the requirement to extend reinstatement to a construction joint in a concrete surface when the concrete is significantly cracked.

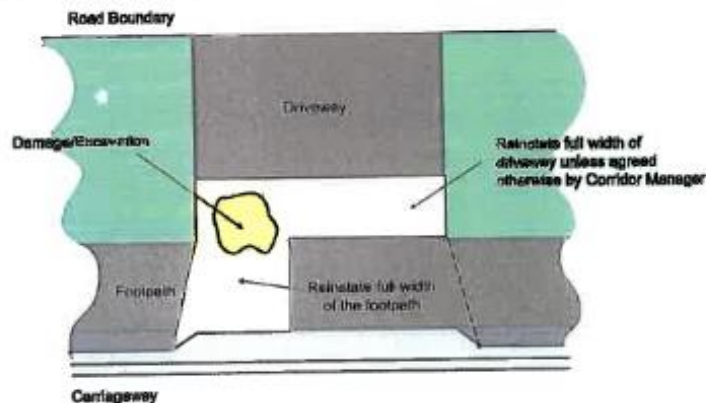


Figure E 1: Excavation in Footpath or Driveway

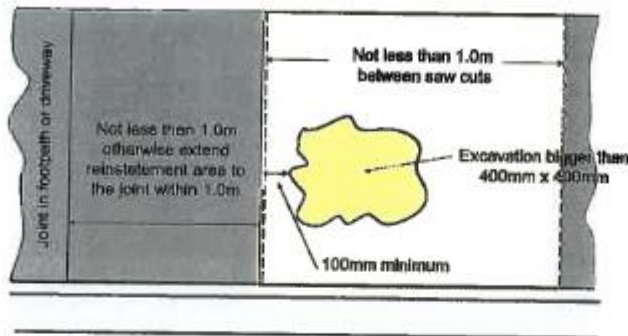


Figure E 2: Reinstatement of Concrete Path or Driveway

E3. Temporary Surface Reinstatement

1. Temporary surfaces constructed by the Utility Operator must be:
 - a) 'cold mix' asphalt or an equivalent approved by the FRA;
 - b) at a surface level must be between 5mm below and 15mm above the original surface level, with a lip not greater than 5mm in any part of the surface;
 - c) laid in a manner and to a depth that is durable for both vehicular and pedestrian use;
 - d) maintained by the Utility Operator until permanent surfacing has been undertaken, including undertaking any repairs as soon as possible if damaged; and
 - e) fully removed prior to reinstatement with permanent materials.
2. Where the Utility Operator considers that special circumstances (but not at pedestrian crossings) require leaving an area of Road Carriageway and Footpath without a proper temporary surface, the Utility Operator must:
 - a) seek prior agreement from the FRA;
 - b) provide additional 'Uneven Surface' and 'Speed Restriction' signage;
 - c) maintain the surface within agreed tolerances of the surrounding surface level; and
 - d) reinstate the surface with a proper temporary surface within one Working Day or as agreed with the FRA.
3. Where steel plates are used, they must:
 - a) be in place for no more than seven days or as agreed with the FRA;
 - b) have their use approved by the FRA;
 - c) be securely fixed in place to prevent dislodgement and to not be a nuisance or danger to passing Traffic (vehicles, pedestrians, cyclists) users of local properties;
 - d) be skid resistant, secured and cushioned to prevent them from rocking, moving or creating noise;
 - e) be of sufficient strength and quality to support imposed Traffic loading;
 - f) have appropriate signposting with temporary speed restrictions and hazard warnings
 - g) have a ramp formed and filleted to ensure safe pedestrian and vehicular access; and
 - h) have any temporary markings required by the FRA.



E4. Specific Requirements for Different Surface Types

1. Asphaltic concrete surfaces must be constructed as follows:
 - a) not more than 75mm thick;
 - b) laid on a waterproof membrane seal coat;
 - c) be specifically designed and constructed to restore the structural integrity of the adjacent surface
 - d) surface mix design shall be undertaken to provide a surface that restore the structural integrity of the adjacent surface and is suitable for the traffic loading applied
 - e) material laid and compacted to provide a surface that restore the structural integrity of the adjacent surface and is suitable for the traffic loading
 - f) where the asphaltic concrete is laid in-situ for the wearing layer, the target air voids must meet any conditions in the CAR;
 - g) the base course layer swept free of all loose material before the membrane seal is applied;
 - h) if the asphalt concrete surface will be deferred for some time, provide a first coat seal consisting of a hot bitumen or emulsion seal coat sprayed on the edges of the existing pavement and the surface of the base course at a residual bitumen application rate of 1l/m² with a 10mm chip surface; and
2. Structural asphalt concrete surfaces must:
 - a) be specifically designed and constructed to restore the structural integrity of the original pavement; and
 - b) have reinstatement details approved by the FRA.
3. Chip seal Carriageways must:
 - a) be reinstated using a two coat chip seal; the first coat must be a coarse grade chip (e.g. Grade 3) and the second coat a finer grade (e.g. Grade 4 or 5) to visually blend with the existing adjacent surfacing. The second coat must overlap the existing surface by not less than 100mm;
 - b) where the area being reinstated is adjacent to a concrete channel, the new seal must overlap the channel by a minimum of 50mm

E5. Special Paving, Amenity Areas and Decorative Areas

1. Special Paving Areas must:
 - a) be reinstated by a Contractor experienced in working with the medium required;
 - b) match the original standard, with the same quality, texture, type, colour and material of the existing pavement and minimal visible evidence of the Trench reinstatement;
 - c) have the whole panel replaced, where the paving is laid out in panels;
 - d) match any special treatments used in the existing construction (e.g. geogrid membranes, chip seal, high friction surface, grooved asphaltic concrete); and
 - e) use alternatives agreed with the FRA, where matching materials are not available.

Some treatments, such as geogrids, need extended excavation to properly anchor the product.

2. Amenity and special decorative areas must:
 - a) be reinstated by a Contractor approved by the FRA;
 - b) match the original standard, with the same quality, texture, type, colour and material as the existing pavement with minimal visible evidence of the Trench reinstatement; and
 - c) have any urban design features, architectural finishes, gardens, artworks and landscaping properly reinstated to the pre-existing condition.

E6. Road Markings, Signs and Furniture

1. The Utility Operator must ensure that road markings are:
 - a) recorded prior to being impacted by Works, including description of markings by type, their location and any special items;
 - b) located by way of an offset at the side of the Road to enable accurate remarking; and
 - c) reinstated prior to completion of Works and, in urban areas, preferably prior to reopening the lane or road to Traffic.

The Utility Operator should take photographic evidence of pre-existing markings where significant impacts on markings are expected. The FRA may hold records of existing road markings and, if so, should make this available as required.

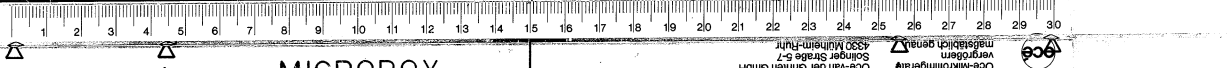
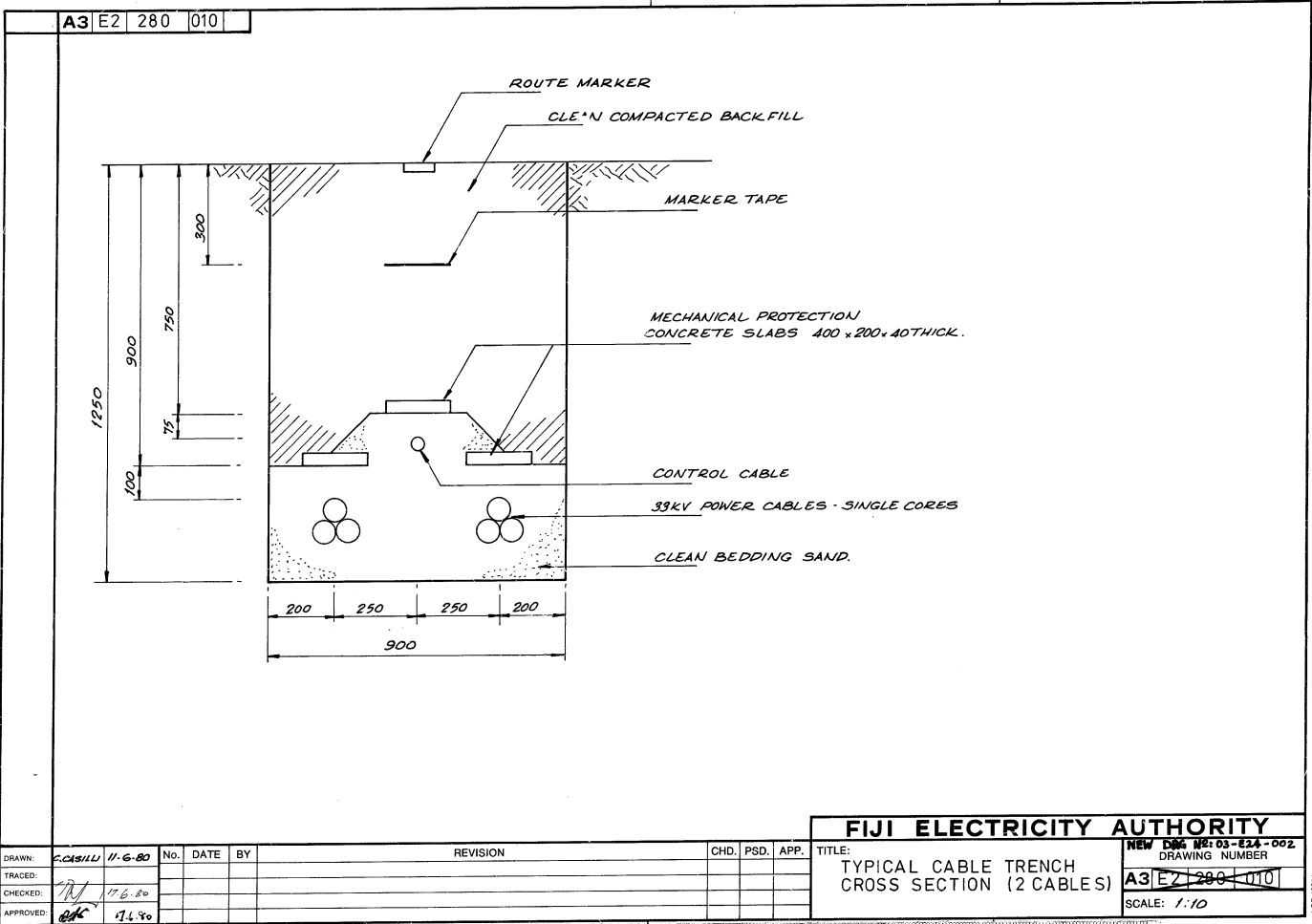
2. The Utility Operator must ensure that temporary road markings, where required for Traffic safety purposes, are:
 - a) of an approved type and suitable for the purpose as specified by the FRA;
 - b) in place prior to Traffic usage of the Road surface areas affected;
 - c) in an effective condition for the period of use until the permanent situation is established;
 - d) fully removed prior to re-opening the area;
3. The Utility Operator must ensure that signs, furniture and lids:
 - a) are protected and maintained during the Work;
 - b) are replaced if they become damaged or lost prior to completion of the Work; and
 - c) have utility chamber lids and covers restored to the finished road level.

The FRA may carry out reinstatement of signs and markings on behalf of the Utility Operator and at the Utility Operator's cost, if agreed between both Parties or if not reinstated within a reasonable timeframe.

4. The Utility Operator must ensure that fire hydrants boxes are ;
 - a) are not covered over during Works;
 - b) remain identifiable during Works;

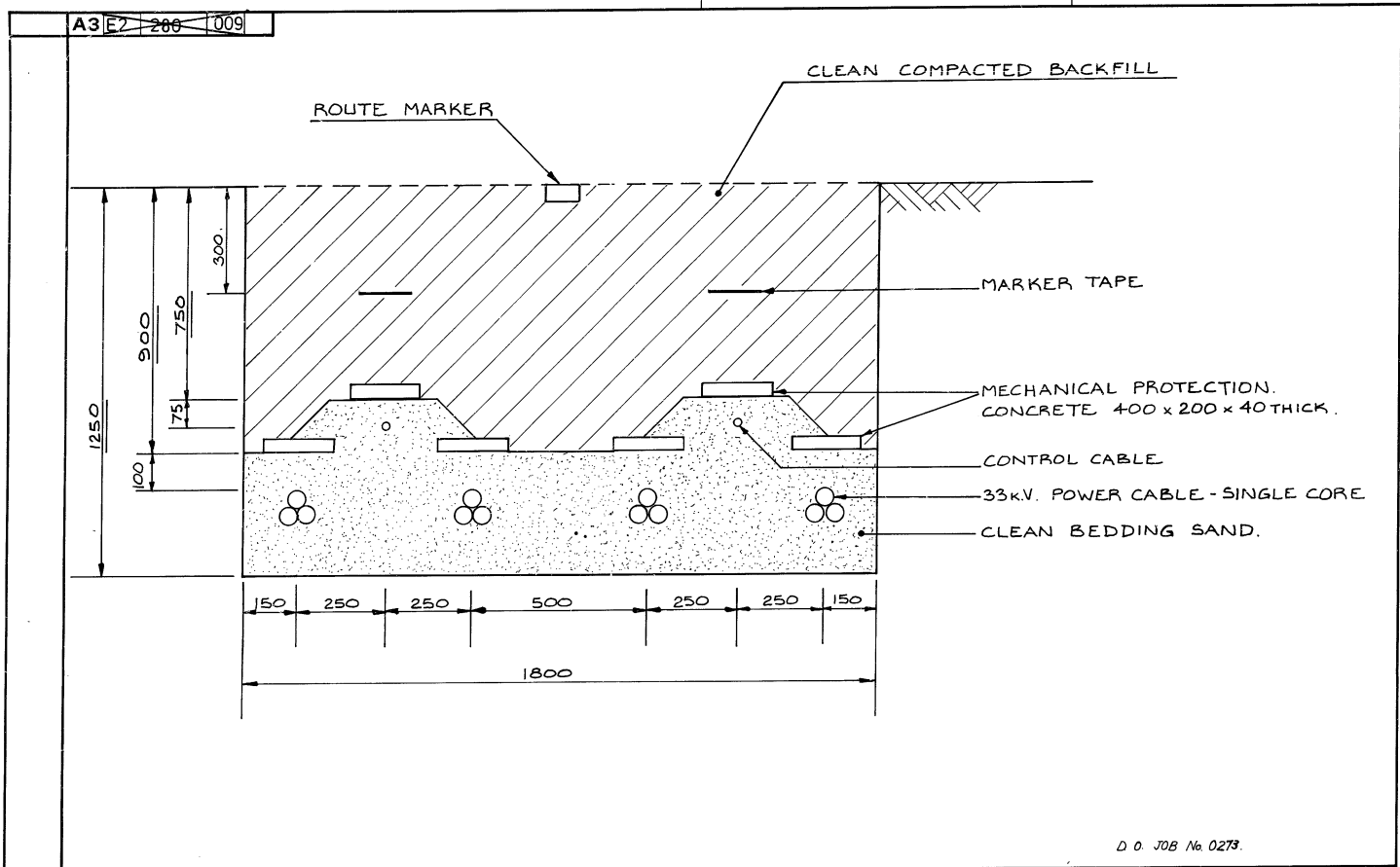
Appendix 4: Typical Cable Trench Cross Section – (2 Cables)

Cable Trench details for 2 Cables



Appendix 5: Typical Cable Trench Cross Section – (4 Cables)

Cable Trench details for 3 or more cables.

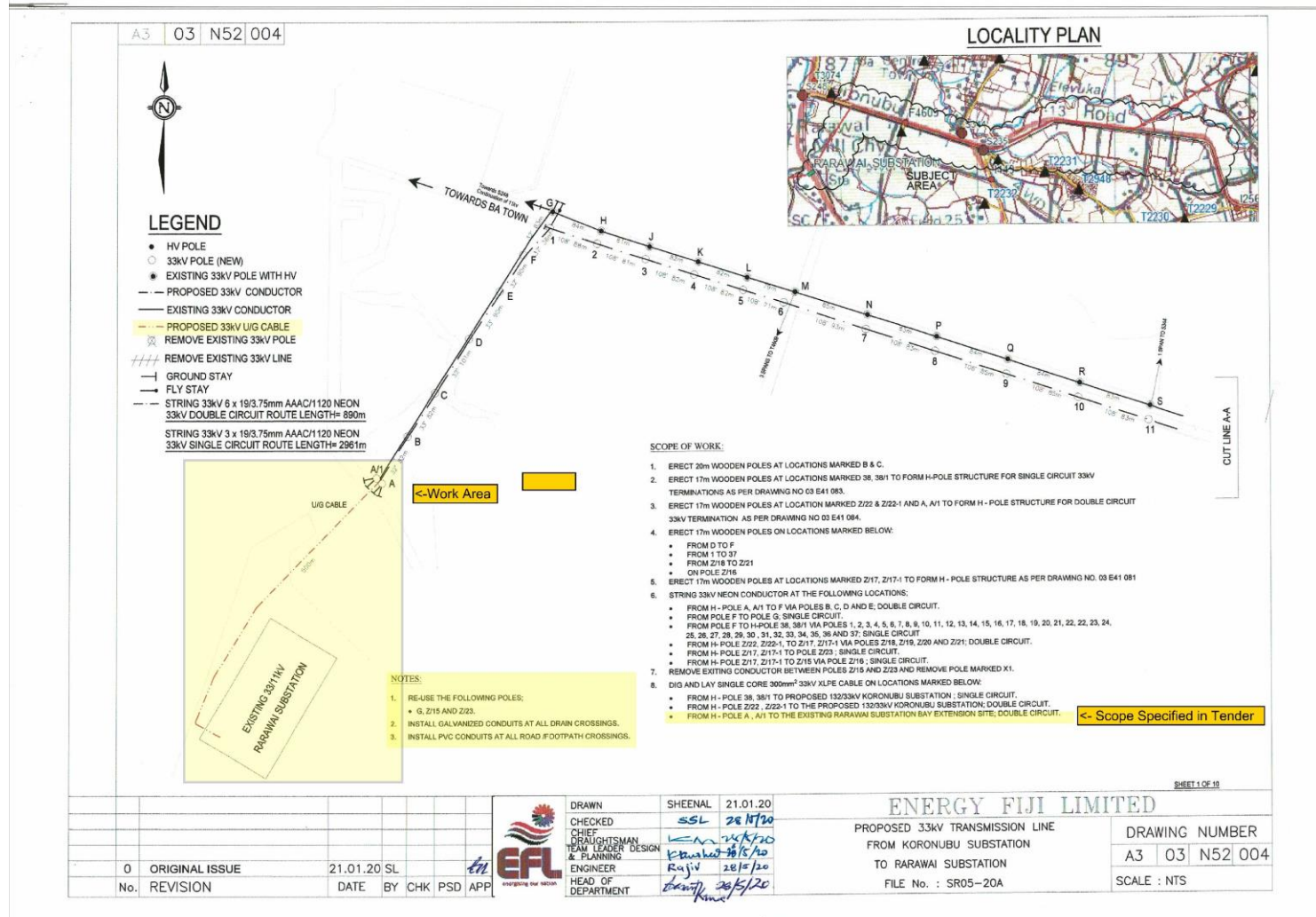


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TITLE: TYPICAL CABLE TRENCH CROSS - SECTION. (4 CABLES) CUNNINGHAM ROAD. SUVA.																																																			



Appendix 5: Drawing of Proposed 33kV from Koronubu Substation to Rarawai Substation

Scheme Details for SR05/20A - Proposed 33kV Underground Transmission Line.



TENDER CHECKLIST

The Bidders must ensure that the details and documentation mention below must be submitted as part of their tender Bid

Tender Number _____

Tender Name _____

1. Full Company / Business Name: _____

(Attach copy of Registration Certificate)

2. Director/Owner(s): _____

3. Postal Address: _____

4. Phone Contact: _____

5. Fax Number: _____

6. Email address: _____

7. Office Location: _____

8. TIN Number: _____

(Attach copy of the VAT/TIN Registration Certificate - Local Bidders Only (Mandatory))

9. FNPF Employer Registration Number: _____ **(For Local Bidders only) (Mandatory)**

10. **Provide a copy of Valid FNPF Compliance Certificate (Mandatory- Local Bidders only)**

11. **Provide a copy of Valid FRCS (Tax) Compliance Certificate (Mandatory Local Bidders only)**

12. **Provide a copy of Valid FNU Compliance Certificate (Mandatory Local Bidders only)**

13. Contact Person: _____

I declare that all the above information is correct.

Name: _____

Position: _____

Sign: _____

Date: _____

Tender submission

Bidders are requested to upload electronic copies via Tender Link by registering their interest at: <https://www.tenderlink.com/efl>

EFL will not accept any hard copy submission to be dropped in the tender box at EFL Head Office in Suva.

This tender closes at 4.00pm (1600hrs) on Wednesday 22nd January, 2025.

For further information or clarification please contact our Supply Chain Office on phone **(+679) 3224360** or **(+679) 9992400** or email us on tenders@efl.com.fj

The bidders must ensure that their bid is inclusive of all Taxes payable under Fiji Income Tax Act. Bidders are to clearly state the percentage of VAT that is applicable to the bid prices.

The lowest bid will not necessarily be accepted as the successful bid.

The Tender Bids particularly the “Price” must be typed and not hand written.

Any request for the extension of the closing date must be addressed to EFL in writing three (3) working days prior to the tender closing date.

Tender Submission via email or fax will not be accepted.