



FIJI ELECTRICITY AUTHORITY

TENDER DOCUMENT

TENDER NUMBER: MR283/2017

TENDER NAME: 33kV Underground Cable Installation Works

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TENDER No. MR 283/2017

33kV Underground Cable Installation Works

The Fiji Electricity Authority invites sealed bids from reputable companies for 33,000V Underground Cable Installation Works between Cunningham Zone Substation and Hibiscus Park Zone Substations, in the greater Suva Area.

Interested Bidders are to meet at the FEA's Kinoya Depot at **10.00am** on **Wednesday the 25th of October, 2017** for the project briefing and site visit. SITE VISIT IS COMPULSORY ATTENDANCE WILL BE TAKEN.

For information or clarification please contact our Supply Chain Office on phone (+679) 3224360 or (+679) 9991587.

This tender closes at 4.00pm (16.00hrs Fiji Time) on Wednesday, 1st November, 2017.

It is mandatory for bidders to submit **three (3) hard copies** of tenders in sealed envelopes and clearly marked as – **“Tender MR 283/2017 – 33kV Underground Cable Installation Works”**.

Bids must be addressed to:

**The Secretary – Tender Committee,
Fiji Electricity Authority,
Private Mail Bag, Suva;**

And be deposited in the **Tender Box** located at the **Fiji Electricity Authority Head Office, 2 Marlow Street, Suva;** by no later than the above stipulated date and time.

All late tenders, unmarked envelopes and envelopes without bidder's name and addresses on the reverse will be returned to the Tenderers.

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

1.	Scope of Bid	<p>The Fiji Electricity Authority (hereinafter referred to as "the Employer"), wishes to receive bids for 33kV Underground Cable Installation Works, as specified in these bidding documents.</p> <p>Stage 1 thru 16 of this project encompasses the installation of 33kV cables as per attached drawings and plans. The numbering of Stages shall be commenced from Cunningham Zone Substation for each 500m route length. (Stage 1 being the first 500m from Cunningham Zone Substation, and each Stage progressively numbered for each 500m progression of route length towards Hibiscus Park Zone Substation)</p>
2.	Eligible Bidders	<p>This Invitation to Bid is open to bidders who have sound technical and financial background and have relevant previous experience.</p> <p>Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer as the Employer may reasonably request.</p> <p>Bidders shall not be under a declaration of ineligibility for corrupt or fraudulent practices.</p>
3.	Compulsory Site Visit	<p>10.00am on Wednesday the 25th of October, 2017. Interested Bidders are to report to the FEA Kinoya Depot in Lautoka for tender discussion, followed by Compulsory Site Visit.</p> <p>Bidders are to arrange their own 4vehicles for transportation to site.</p>
4.	Qualification of the Bidder	<p>To be qualified for award of Contract, bidders shall submit proposals regarding construction methods, scheduling and resourcing which shall be provided in sufficient detail to confirm the bidder's capability to fulfil the contract.</p>
5.	Cost of Bidding	<p>The bidder shall bear all costs associated with the preparation and submission of its bid and the Employer will in no case be responsible or liable for those costs.</p>
6.	Sealing, Marking and Submission of Bids	<p>Bidders are required to submit hard copies of the Bid.</p> <p><u>Tender Submission - Instruction to bidders</u></p> <p><u>Hard Copy Submission:</u> Three (3) hard copies of the tender bids in sealed envelope shall be deposited in the tender box located at the Supply Chain Office at the FEA Head Office, 2 Marlow Street, Suva, Fiji.</p> <p>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 2 copies of the original bid and mark them as "COPY - PROPOSAL". Each copy proposal shall also be individually sealed within an envelope. The 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:</p> <ul style="list-style-type: none"> Bid for Tender MR 283/2017 – 33kV Underground Cable Installation Works: Stage 1 DO NOT OPEN BEFORE TENDER CLOSING DATE AND TIME.

		<p>All envelopes shall also indicate the name and address of the Bidder on the reverse of the envelope.</p> <p>The inner and outer envelopes shall be addressed to the Employer as follows:</p> <p style="padding-left: 40px;">Tender MR 283/2017 – 33kV Underground Cable Installation Works: Stage 1 The Secretary - Tender Committee, c/o Supply Chain Office, Fiji Electricity Authority, Private Mail Bag, 2 Marlow Street, Suva, Fiji Islands</p> <p><u>All postage or courier charges for delivery of Tender documents must be paid by the bidders.</u> 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.</p> <p>This tender closes at 4:00pm, on Wednesday 1st of November, 2017.</p> <p>All late tenders, and inadequately marked envelopes shall be returned to the Tenderers unopened. (Bids via e-mail or fax will not be considered).</p> <p>For further information or clarification on the submission of bids, please contact our Supply Chain Office on phone (+679) 3224360 or (+679) 9991587 Hard copies of the Tender bid will also be accepted after the closing date and time provided a <u>soft copy is uploaded in the e-Tender Box</u> and it is dispatched before the closing date and time.</p> <p>For further information contact The Secretary Tender Committee, by e-mail TDelairewa@fea.com.fj</p> <p>Tenders received after the closing date shall not be considered.</p> <p>Lowest bid will not necessarily be accepted as successful bid.</p>
7.	Deadline for Submission of Bids	<p>Bids must be received by the Employer at the address specified above 4:00pm or 16:00hrs, on Wednesday 1st of November, 2017.</p> <p>The Employer may, at its sole discretion, extend the deadline for submission of bids by issuing an addendum, in which case all rights and obligations of the Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadlines extended.</p>
8.	Late Bids	<p>Any bid received by the Employer after the deadline for submission of bids prescribed will be rejected and returned unopened to the bidder.</p>
9.	Modification and Withdrawal of	<p>The bidder may modify or withdraw its bid after bid submission, provided that written notice of the modification or withdrawal is received by the Employer</p>

	Bids	<p>prior to the deadline for submission of bids.</p> <p>The bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered, with the outer and inner envelopes additionally marked "MODIFICATION" or "WITHDRAWAL", as appropriate. A withdrawal notice may also be sent by fax but must be followed by a signed confirmation copy.</p> <p>No bid may be modified by the bidder after the deadline for submission of bids.</p>
10.	Employer's Right to Accept any Bid and to Reject any or all Bids	<p>The Employer reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for the Employer's action.</p>
11.	Notification of Award	<p>Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder by fax/email, confirmed by registered letter, that its bid has been accepted. This letter (hereinafter and in the Conditions of Contract called the "Letter of Award") shall name the sum which the Employer will pay the Bidder in consideration of the execution, completion and maintenance of the Works by the Bidder as prescribed by the Contract (hereinafter and in the Conditions of Contract called "the Contract Price"). The notification of award will constitute the formation of the Contract.</p> <p>The Employer will promptly notify the other bidders that their bids have been unsuccessful.</p>
12.	Corrupt or Fraudulent Practices	<p>The Employer requires that the Bidder observe the highest standard of ethics during the procurement and execution of such contracts. In Pursuance of this policy, the Employer:</p> <p>(a) defines, for the purposes of this provision, the terms set forth below as follows:</p> <p>(i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and</p> <p>(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition;</p> <p>(b) Will reject a proposal for tender award if it is determined that the bidder has engaged in corrupt or fraudulent practices in competing for the contract in question.</p>

13.	Project Drawings	Bidders are to refer to attached project drawings for bidding and construction.
14.	Guidelines for Execution of Works	<p>All excavation and cable installation works shall be carried out manually with hand tools only. No mechanized excavation or mechanized cable pulling shall be permitted. Bidders are to price for 100% manual excavation and cable installation. In the interest of expediting the execution of the project, the FEA reserves the right to suggest, approve or deny the areas where mechanized works may allowed or required and also what mechanized tools are to be permitted.</p> <p>All works shall be carried out in a practical and professional manner, without compromise to safety of people and property or assets.</p> <p>Proper planning and communication shall be conducted by the contractor with the FEA and the relevant external stakeholders.</p> <p>The following guidelines shall be utilized and adhered to, for the smooth execution of works:</p> <ol style="list-style-type: none"> 1. While the FEA has already finalized the cable routes and prepared provisional construction drawings (attached with this contract), which were availed to the contractor and according to which the site visits were also conducted during the bidding process, and while the routes were pegged/marked according to the provisional construction drawings, and a joint site visit was carried out by the FEA with relevant external stakeholders, who have availed their consents in principle for the works encompassed by this contract. Nevertheless, the FEA shall once again peg and/or mark the finalized route for each stage, to clearly indicate where trenching is to be done, prior to the commencement of these works, in a progressive manner, for each 500m progression of the route prior to the commencement of works by the contractor. 2. The FEA's Project Manager or designated representative(s) shall liaise with the relevant stakeholders to carry out a joint site visits along the finalized marked route, together with the contractor, prior to the commencement of works. The following stakeholders shall be typically present, as and where applicable: <ol style="list-style-type: none"> a. Telecom Fiji Limited (TFL) b. Water Authority of Fiji (WAF) c. Suva City Council (SCC) d. Fiji Roads Authority (FRA) 3. Once the cable route and the location of existing utility services has been field inspected and verified by the relevant stakeholders, the FEA shall record the finalized/marked route using Global Positioning System (GPS) and reflect this on the finalized construction drawings, and provide the contractor and relevant stakeholders with a revised issue for construction drawings indicating any changes done to the original plans. 4. The finalized drawings shall not indemnify the contractor from any damages to the utility services. All damages caused by the contractor to existing utility services shall be rectified professionally as deemed necessary. The payment for the final cost for the damages, associated rectification costs and any loss in revenue shall be made by the FEA to the aforementioned stakeholders, and this shall be recovered in entirety from the contractor. The contractor is solely responsible for all damages pertaining to the execution of the works encompassed by the scope of this contract.

		<ol style="list-style-type: none"> 5. To execute works safely and with due care and without damage to existing utility services, it is mandatory that the contractor shall manually excavate a pilot trench 500mm x 500mm x 1200mm deep at every 10m interval along the finalized trench route, and field verify the exact site conditions, and the presence of any existing utility services. 6. Furthermore, on every 50m interval along the finalized trench route, the contractor shall manually excavate a pilot trench <u>perpendicular</u> to the finalized trench route, to verify whether any existing utility services are present in the vicinity of the finalized trench route, their exact placement in the field and the associated clearances the new 33kV Power Cables shall be having from the existing utility services. This aforementioned perpendicular pilot trench shall be a minimum 1200mm deep x 500mm wide by 1500mm long and centered on the cable route, thereby flanking it by 500mm on either side perpendicular to the route. At the locations where it may not be practical to excavate these perpendicular pilot trenches, the contractor shall notify the FEA Project Manager and explain the field conditions, and seek permission prior to proceeding with the final trenching works. 7. Once the pilot trenching has been carried out, as per the aforementioned items #5 and #6, for every 100m of the cable route, the contractor shall notify the FEA to facilitate a joint site visit, with the contractor and <u>any relevant stakeholders</u>. After the FEA and relevant stakeholders have given the go-ahead the contractor shall excavate the final trench for cable laying at the earliest. 8. The contractor is to ensure that water ingress and flooding does not happen in the trenches and adequate temporary drainage is facilitated. 9. The contractor shall take measures to ensure public safety, by means of adequately covering the excavated area, and putting adequate warning/danger signage. 10. Once the 1200mm deep final trenching is complete, and the trench bottom has been levelled and compacted, the contractor shall notify the FEA for trench inspection, prior to the commencement of the mandatory 200mm deep sand bedding. The FEA shall provide the contractor the necessary written signoff to commence the sand bedding works. This inspection and signoff by the FEA's Project Manager or delegated representative is <u>mandatory</u>. The contractor shall not proceed forward without this mandatory inspection and signoff. 11. Once the 200mm deep sand bedding inside the trench has been completed, the contractor shall duly notify the FEA to inspect this sand bedding. This inspection and signoff by the FEA's Project Manager or delegated representative is <u>mandatory</u>. The contractor shall not proceed forward without this mandatory inspection and signoff. 12. Before the commencement of any sand bedding, the contractor should have notified the FEA at least 72 hours prior in writing for the amount of sand required and the location at which the sand is required and the time at which deliveries are required. The contractor is to provide the FEA with a written delivery schedule with the request details for the supply of sand for cable bedding purposes, so that the FEA can liaise with the sand supplier and facilitate a timely delivery. Ideally the contractor shall provide the FEA's Project Manager a weekly delivery/dispatch schedule for the requirements of Sand.
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		<p>13. All sand deliveries shall be made in the presence of the FEA Project Manager's designated field representative, and only he/she shall sign the delivery dockets for the supply of sand. <u>The contractor shall not sign on the delivery dockets for the supply of sand.</u></p> <p>14. The contractor shall duly notify the FEA's Project Manager and his/her delegated representative when pickup of power cables or any other materials is required from the FEA's Kinoya Depot Stores. For all materials to be issued from FEA's Kinoya Depot Stores, the contractor shall plan accordingly and do materials pickup on regular working days and not on Saturday, Sunday and public holidays. The necessary paperwork and documentation for materials pickup shall be carried out and presented to the FEA Project Manager for necessary signoffs, at least 24hours prior.</p> <p>15. It is mandatory that the cable transportation, cable handling and cable laying works shall be carried out under full FEA supervision on site. <u>No works directly associated with the cables shall be executed without mandatory FEA supervision.</u> All cable handling works shall be properly planned and discussed with the FEA, prior to execution. The contractor shall not proceed forward without this mandatory onsite supervision and relevant signoffs for all works pertaining to cable transportation, cable handling and cable laying works.</p> <p>16. FEA's mandatory supervision does not indemnify the contractor from any damages to the power cables. The contractor shall be <u>solely liable</u> in entirety for any damages to the power cables due to the actions and/or decisions of the contractor.</p> <p>17. Once the cables are laid by the contractor and have been inspected and tested by FEA, the contractor shall not delay the backfilling of the trench to applicable specifications. Additional sand covering of 200mm depth (compacted) above the power cables is required prior to the commencement of any backfilling as per specifications. The contractor's backfilling shall facilitate open pits at ends for cable jointing and cable testing upon cable joint completion. Temporary drainage and covering shall be provided to mediate water ingress into the cable jointing and testing pits. Appropriate signage and physical measures shall be provided for public safety.</p> <p>18. <u>All trench excavation works shall be mandatorily carried out manually</u> by hand tools only and not utilizing excavators or any other form of mechanized excavation, as per tender specifications. The only exception to be made shall be in the event, solid rock is encountered after surface excavations by manual digging. If a rock breaker and/or jack hammer is to be utilized then the contractor shall notify the FEA, and carry out a site visit, prior to using any mechanized tools.</p> <p>19. Where road crossings and/or driveway crossings are encountered along the cable route, HDPVC ducts are to be installed as per tender specifications. For each 500m drum length of cable to be laid, the trenching, installation of ducts for cables crossing the road/drive-way shall be completed prior to the excavation of the remaining trench along this 500m route.</p> <p>20. All encumbrances to public shall be minimized, both in duration and intensity through proper planning and work execution methodologies.</p>
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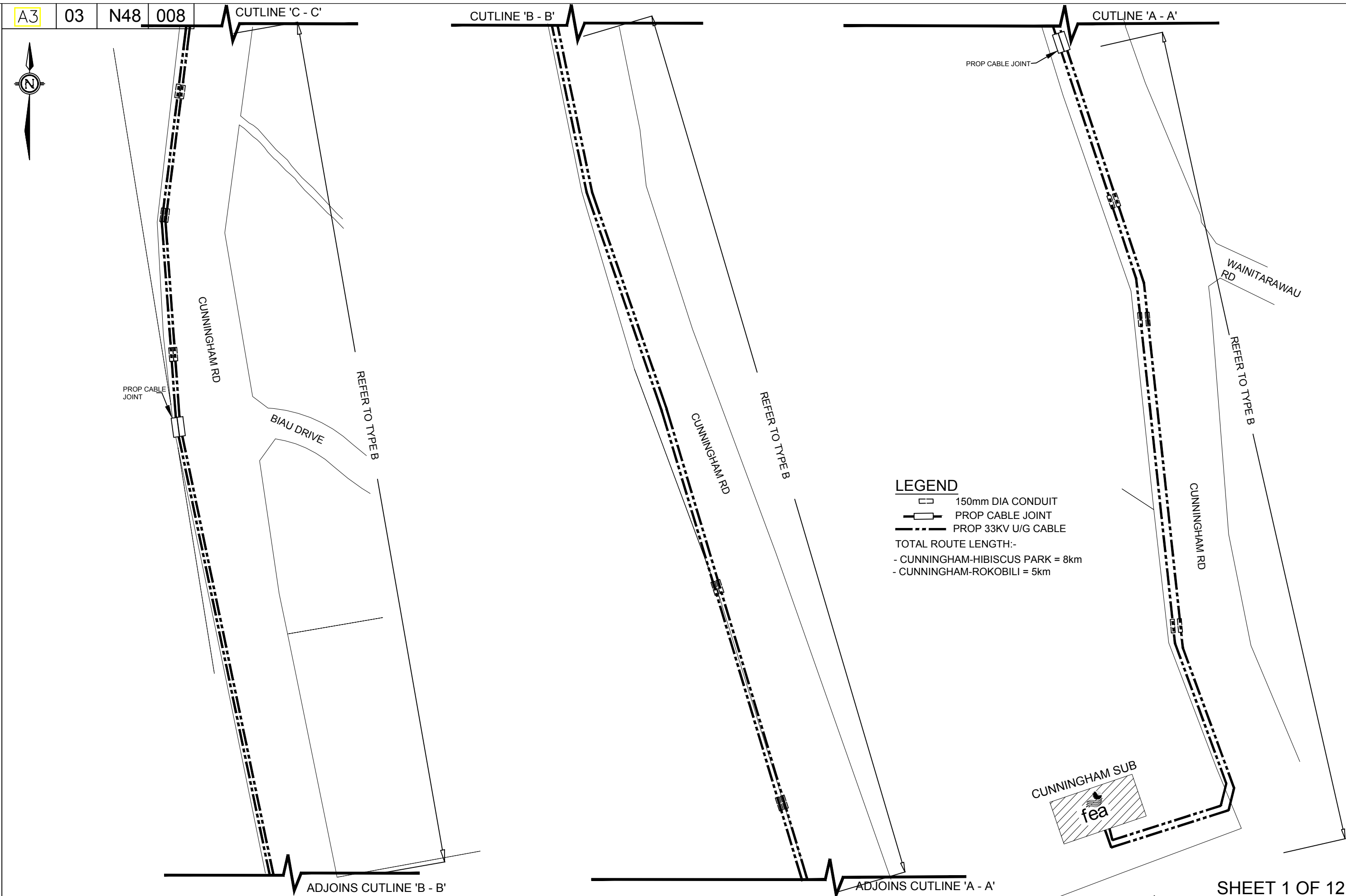
		<p>21. Installation of ducts shall be carried out under mandatory FEA supervision and inspection. The FEA shall approve these works, prior to the commencement of any backfilling. The FEA shall also record the duct locations by GPS.</p> <p>22. The backfilling and restoration of roads and driveways shall be completed at the earliest. The backfilling, compaction and restoration of roads shall be executed as per FRA mandated specifications. The backfilling and compaction of road crossings shall be inspected and approved by the FRA. All defective works shall be re-excavated and rectified by the contractor in a timely manner at the contractor's sole expense.</p> <p>23. Final road resurfacing shall be carried out by FRA approved contractors and the FEA shall engage the FRA and its approved contractors for the same. The payment for road resurfacing shall be made by the FEA and all costs associated with road resurfacing shall be borne by the FEA, as per tender specifications.</p> <p>24. The Contractor shall provide the FEA at least 48 hours prior notice in writing to facilitate any of the site visits together with the relevant external stakeholders.</p> <p>25. The contractor shall provide the FEA with adequate prior notice of at least 24hours wherever FEA intervention (mandatory supervision / inspections / testing / signoffs / etc) are required on a normal working day. If the FEA intervention has to be executed on Monday, Saturday, Sunday or public holidays, then the contractor shall have provided the prior notice at least 24hours prior to the Close of Business of the last working day previous to these days.</p>															
15.	Variations or Additional Works	<p>Any variation or additional works foreseen by the contractor shall be immediately brought to the notice of the FEA's designated Project Manager [Unit Leader Transmission], in writing. The FEA shall issue a separate Local Purchase Order (LPO), for the relevant variation or additional works. The contractor shall only proceed forward with the relevant works only after having received the LPO and/or written/emailed consent from the FEA Project Manager on which the General Manager Network has been duly copied on the correspondence. NO PAST DATED VARIATIONS OR ADDITIONAL WORKS CLAIMS SHALL BE ENTERTAINED AND DEEMED PAYABLE BY THE FEA. The contractor shall allow the FEA adequate prior notice of 3 working days to facilitate the LPO, with prior planning such that zero disruptions in works eventuate due to the claim for any variation or additional works.</p>															
16.	Progressive Milestone Payments	<p>Progressive Milestone Payments: shall be made for each 500m Stage (or part thereof) of cabling works, comprising the route of cabling works.</p> <table border="1"> <thead> <tr> <th>Phase</th><th>Description / Breakdown</th><th>Percentage payment</th></tr> </thead> <tbody> <tr> <td>1</td><td>Ducting and Trenching</td><td>30%</td></tr> <tr> <td>2</td><td>Installation of cable</td><td>30% upon positive cable test results</td></tr> <tr> <td>3</td><td>Backfilling and Site Restoration</td><td>30%</td></tr> <tr> <td>4</td><td>Retention</td><td>10% to be released after 6 months, pending zero defects</td></tr> </tbody> </table>	Phase	Description / Breakdown	Percentage payment	1	Ducting and Trenching	30%	2	Installation of cable	30% upon positive cable test results	3	Backfilling and Site Restoration	30%	4	Retention	10% to be released after 6 months, pending zero defects
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17.	Project Timeline and Deadline for project Completion	<p>The Works shall be tentatively commenced on or before the 15th of November, 2017 and each 500m stage shall be progressively completed within 21 calendar days of commencement. Project shall be deemed commenced from the next day from the date of issuance of the LPO.</p> <p>Each Stage shall be completed within a Maximum Number of 21 Calendar Days from the Commencement of Works for each 500m stage.</p> <table border="1" data-bbox="609 506 1410 1301"> <thead> <tr> <th>Stage #</th><th>Total Route Length</th><th>Maximum Number of Calendar Days</th></tr> </thead> <tbody> <tr><td>1</td><td>First 500m</td><td>21</td></tr> <tr><td>2</td><td>More than 500m and up to 1000m</td><td>42</td></tr> <tr><td>3</td><td>More than 1000m and up to 1500m</td><td>63</td></tr> <tr><td>4</td><td>More than 1500m and up to 2000m</td><td>84</td></tr> <tr><td>5</td><td>More than 2000m and up to 2500m</td><td>105</td></tr> <tr><td>6</td><td>More than 2500m and up to 3000m</td><td>126</td></tr> <tr><td>7</td><td>More than 3000m and up to 3500m</td><td>147</td></tr> <tr><td>8</td><td>More than 3500m and up to 4000m</td><td>168</td></tr> <tr><td>9</td><td>More than 4000m and up to 4500m</td><td>189</td></tr> <tr><td>10</td><td>More than 4500m and up to 5000m</td><td>210</td></tr> <tr><td>11</td><td>More than 5000m and up to 5500m</td><td>231</td></tr> <tr><td>12</td><td>More than 5500m and up to 6000m</td><td>252</td></tr> <tr><td>13</td><td>More than 6000m and up to 6500m</td><td>273</td></tr> <tr><td>14</td><td>More than 6500m and up to 7000m</td><td>294</td></tr> <tr><td>15</td><td>More than 7000m and up to 7500m</td><td>315</td></tr> <tr><td>16</td><td>More than 7500m and up to 8000m</td><td>336</td></tr> </tbody> </table> <p>The FEA anticipates the contractor to be working on a continuous daily basis, at least 5 days in a week and all necessary facilitation required from the FEA's end shall be furnished in prior even for the weekend days, provided the contractor has provided prior adequate notice.</p>	Stage #	Total Route Length	Maximum Number of Calendar Days	1	First 500m	21	2	More than 500m and up to 1000m	42	3	More than 1000m and up to 1500m	63	4	More than 1500m and up to 2000m	84	5	More than 2000m and up to 2500m	105	6	More than 2500m and up to 3000m	126	7	More than 3000m and up to 3500m	147	8	More than 3500m and up to 4000m	168	9	More than 4000m and up to 4500m	189	10	More than 4500m and up to 5000m	210	11	More than 5000m and up to 5500m	231	12	More than 5500m and up to 6000m	252	13	More than 6000m and up to 6500m	273	14	More than 6500m and up to 7000m	294	15	More than 7000m and up to 7500m	315	16	More than 7500m and up to 8000m	336
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18.	Liquidated Damages	<p>Failure to meet the aforementioned deadlines stipulated in the above table shall consequent in the contractor incurring LIQUIDATED DAMAGES of 1% per stage per working day and up to the total of 15% of the respective price for each Stage.</p> <p>Liquidated Damages shall be applied ONLY to the respective project stage(s) which encounter(s) delays. When executing the liquidated damages, the FEA shall take into account force majeure, and/or any genuine delays directly caused by the FEA and/or any extreme/inclement weather days which may deteriorate site conditions and cause delays to works, and shall offer the contractor a grace period equal in number to the sum of force majeure, and/or any genuine delays directly caused by the FEA and/or extreme/inclement weather days, provided the contractor has notified the FEA Project Manager in writing or by email, of the disruption to works due to such eventualities deemed beyond the control of the contractor, and within 48 hours of such disruptions happening.</p>																																																			

19.	Insurance Policies	Bidders shall at the time of bidding provide proof of insurance. The following are minimum insurance requirements from the Employer:					
		Policy type	Value	Date of Issue	Expiry Date	Insurance Company	Policy Number
		Workers Compensation	\$250,000.00				
		Public Liability	\$500,000.00				
		Contractors All Risk	\$500,000.00				
20.	Necessary Competent Personnel	The contractor shall be required to maintain competent and qualified personnel for the supervision and execution of works. A competent cable jointer shall be required at all times during the execution of the project, and especially during the trenching and cable handling. Bidders are to provide details of competent cable jointers to be engaged in these works. Bidders are required to submit the necessary ID Cards and Licenses / Certifications for the same at the time of bidding.					
21.	Prices & Validity	Bidders are to submit prices in Fijian Dollars (FJ\$). Prices noted in bids shall be Value Added Tax (VAT) Inclusive Prices (VIP)					
22.	Drawings	Bidders are to refer to the attached drawings for bidding purposes. Bidders are required to bring a copy of the attached drawings for site visit.					






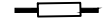
Bidders shall submit prices in the following tabular format.

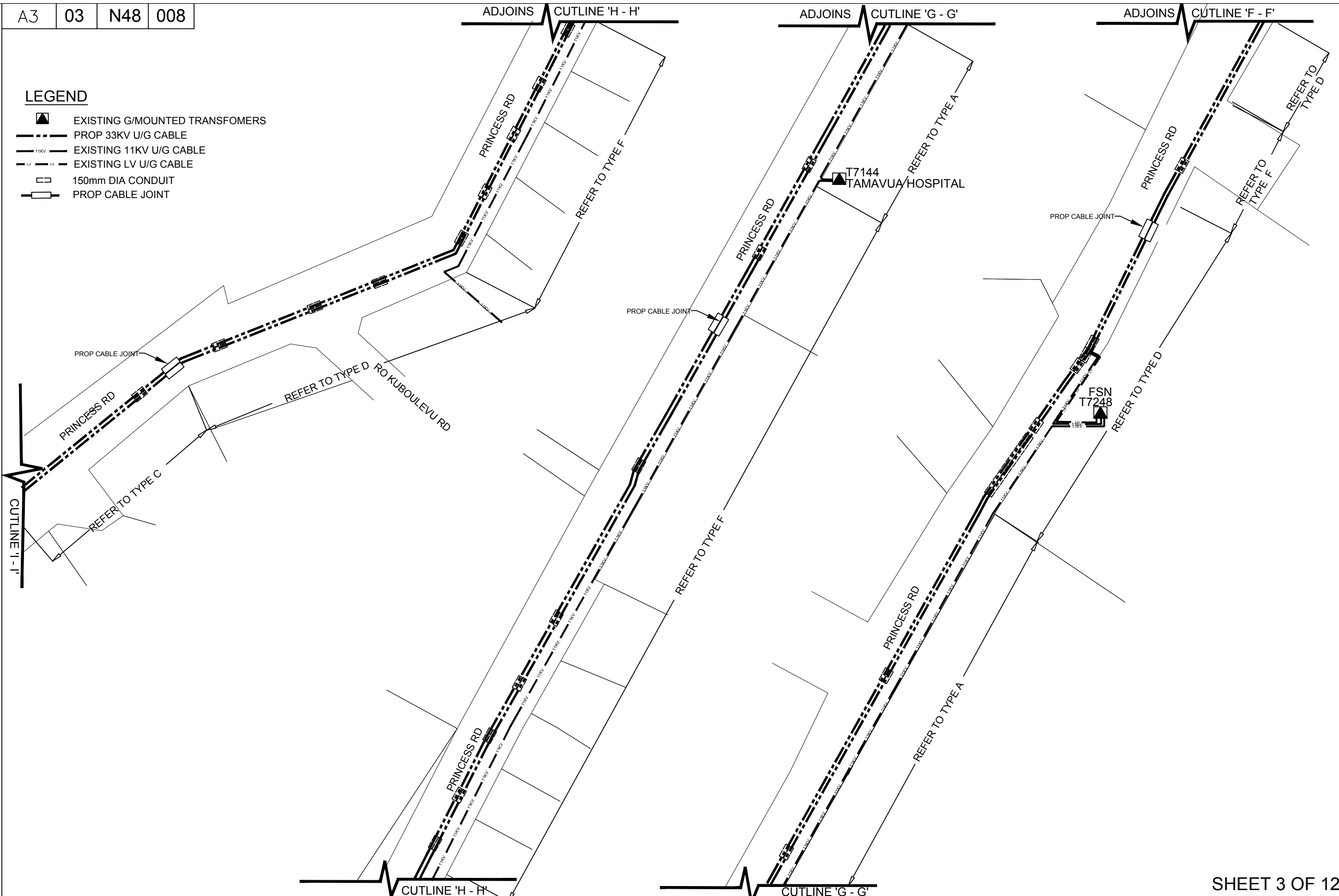
MR283/2017: 33kV Underground Cable Installation Works	
Pricing Schedule	
Bidder Name: {Bidders to Insert Name}	
Project Stage	Bid Price (FJ\$ & VIP)
Stage 1: 0m to 500m from Cunningham Substation	{Bidders to Insert Price}
Stage 2: 500m to 1000m from Cunningham Substation	{Bidders to Insert Price}
Stage 3: 1000m to 1500m from Cunningham Substation	{Bidders to Insert Price}
Stage 4: 1500m to 2000m from Cunningham Substation	{Bidders to Insert Price}
Stage 5: 2000m to 2500m from Cunningham Substation	{Bidders to Insert Price}
Stage 6: 2500m to 3000m from Cunningham Substation	{Bidders to Insert Price}
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Stage 15: 7000m to 7500m from Cunningham Substation	{Bidders to Insert Price}
Stage 16: 7500m to 8000m from Cunningham Substation	{Bidders to Insert Price}
TOTAL:	{Bidders to Insert Price}




								 <div>Energising Our Nation</div>	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)	DRAWING NUMBER			
									CHIEF DRAUGHTSMAN				A3	03	N48	008
									TEAM LEADER DESIGN & PLANNING				SCALE 1 :1500			
									ENGINEER							
									HEAD OF DEPARTMENT							
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR												
	No.	REVISION	DATE	BY	CHK	PSD	APP									

LEGEND

-  EXISTING G/MOUNTED TRANSFORMERS
-  PROP 33KV U/G CABLE
-  EXISTING 11KV U/G CABLE
-  EXISTING LV U/G CABLE
-  150mm DIA CONDUIT
-  PROP CABLE JOINT



SHEET 3 OF 12

								 <div>fea Energising Our Nation</div>	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY						
									CHECKED			PROPOSED 33kv CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)			DRAWING NUMBER			
									CHIEF DRAUGHTSMAN						A3	03	N48	008
									TEAM LEADER DESIGN & PLANNING						SCALE 1 :1500			
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					ENGINEER									
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT									



ADJOINS CUTLINE 'N - N'

ADJOINS CUTLINE 'O - O'


ADJOINS CUTLINE 'P - P'

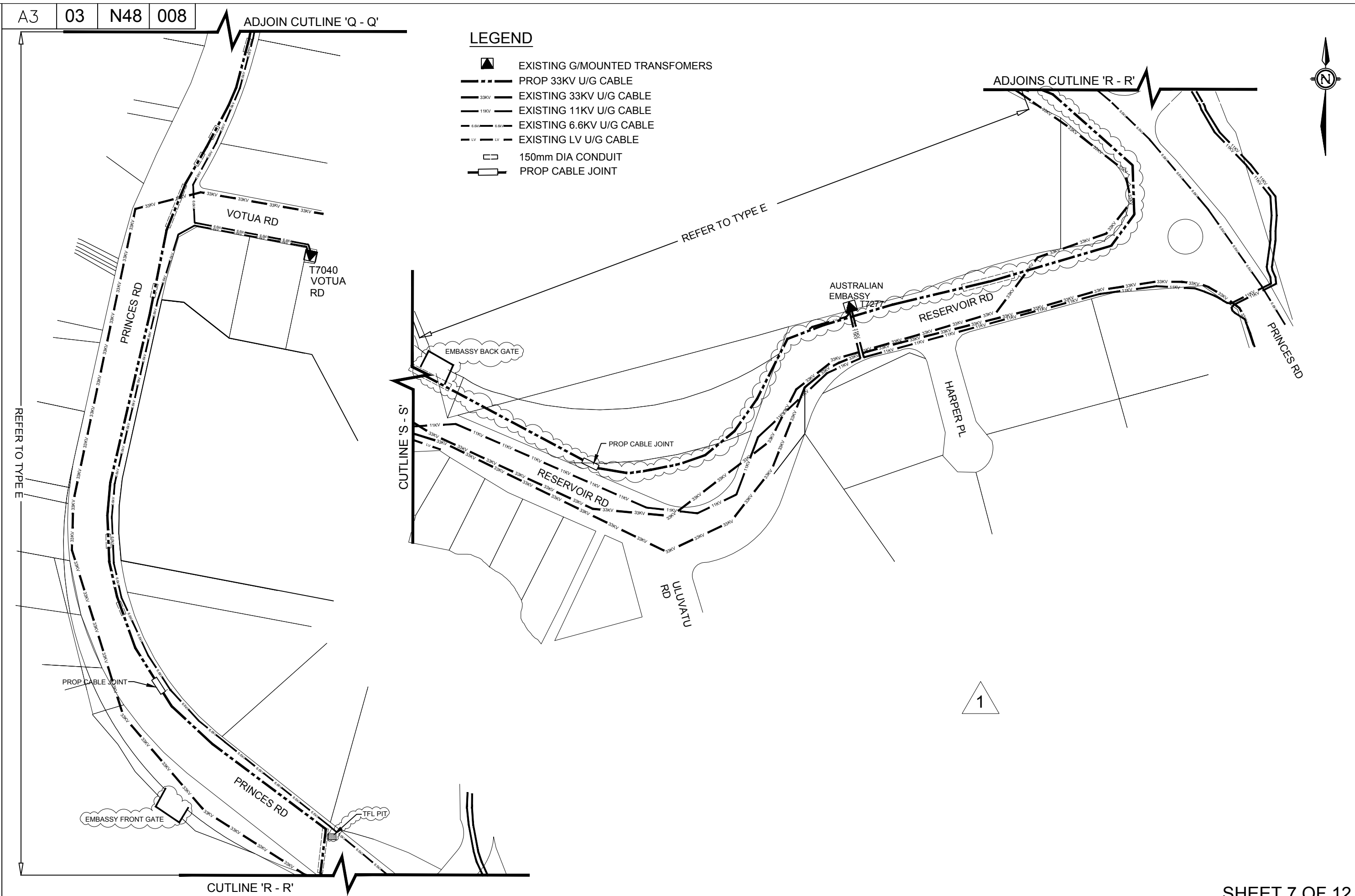
CUTLINE 'O - O'

CUTLINE 'P - P'


CUTLINE 'Q - Q'

SHEET 6 OF 12

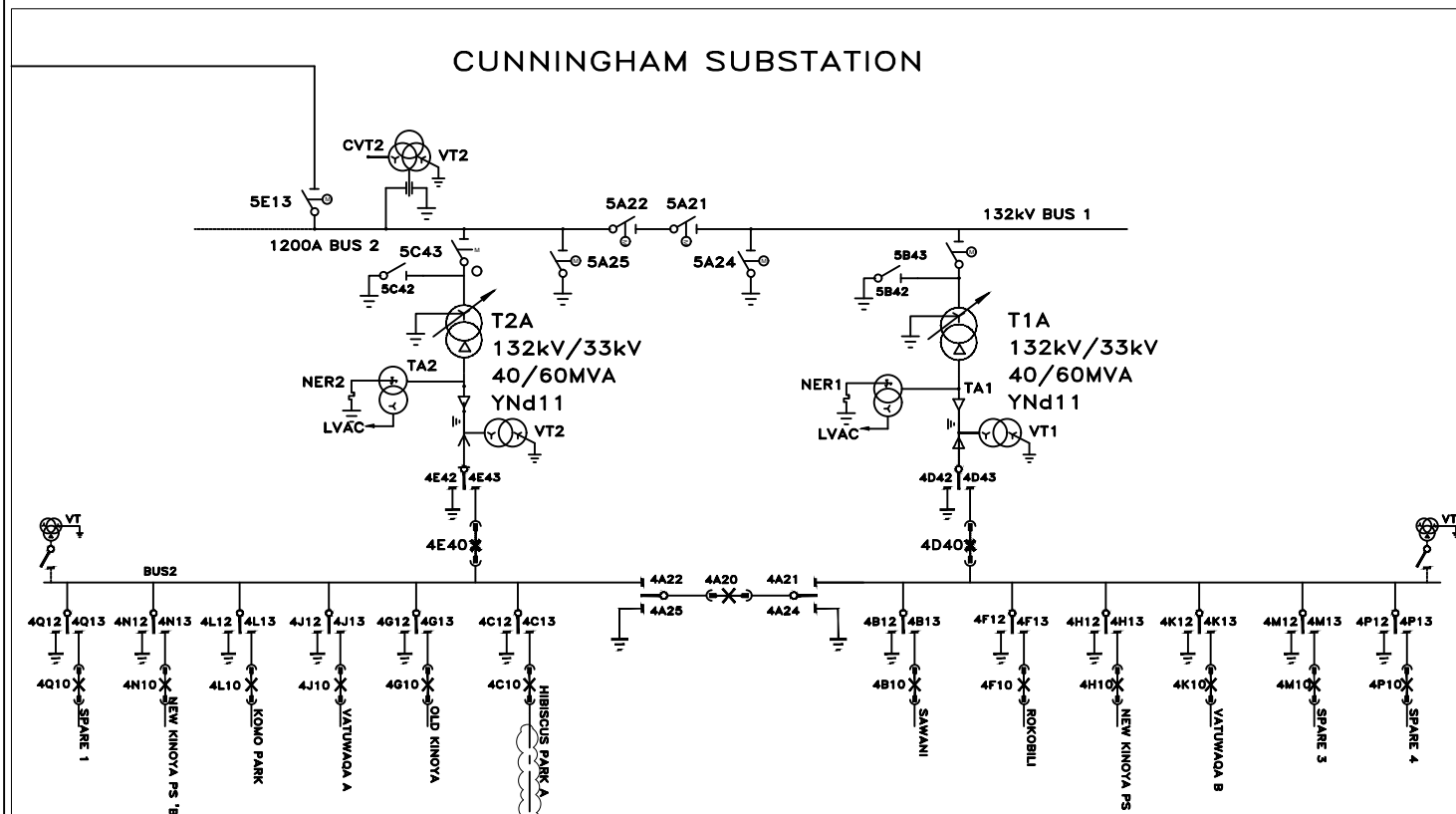
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									CHECKED			PROPOSED 33kv CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)					
									CHIEF DRAUGHTSMAN								
									TEAM LEADER DESIGN & PLANNING								
									ENGINEER			DRAWING NUMBER					
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	No.	REVISION	DATE	BY	CHK	PSD	APP					SCALE 1 :1500					



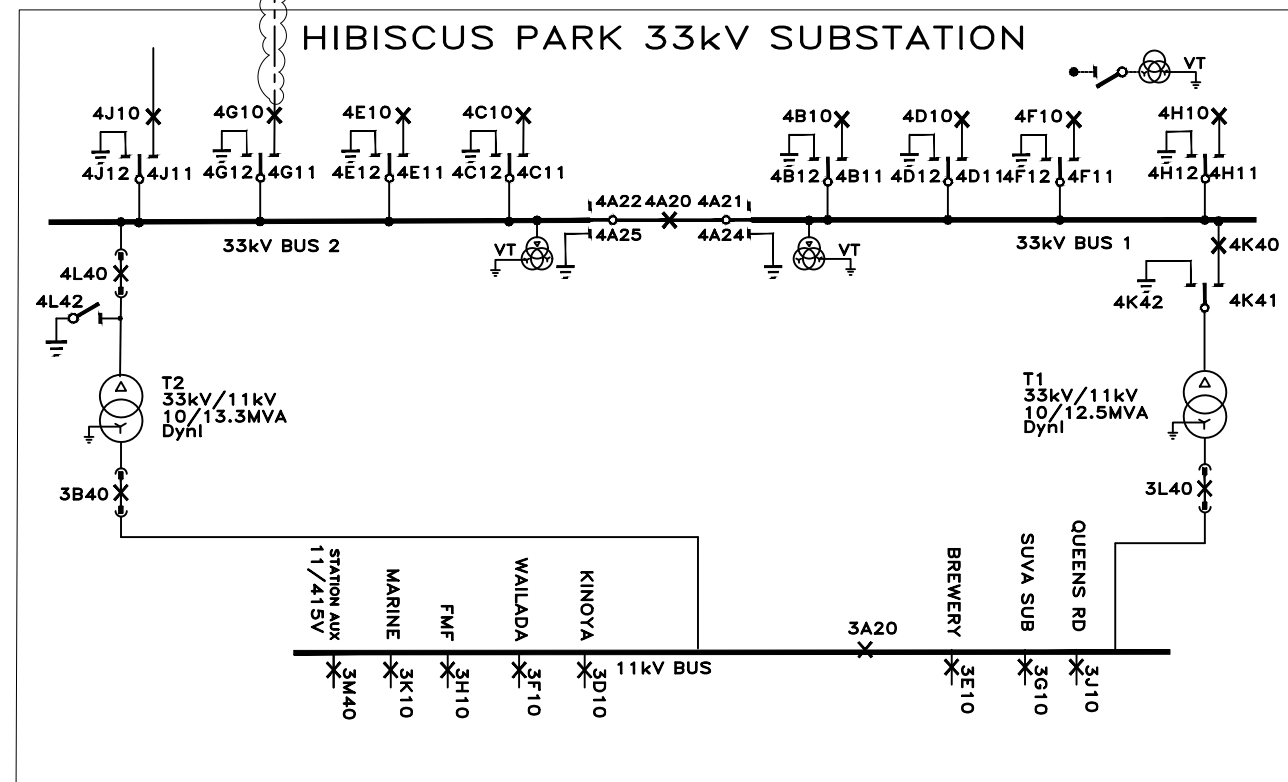
SHEET 7 OF 12

								 Energising Our Nation	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
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	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					TEAM LEADER DESIGN & PLANNING							
									ENGINEER							
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT				SCALE 1 :1500			

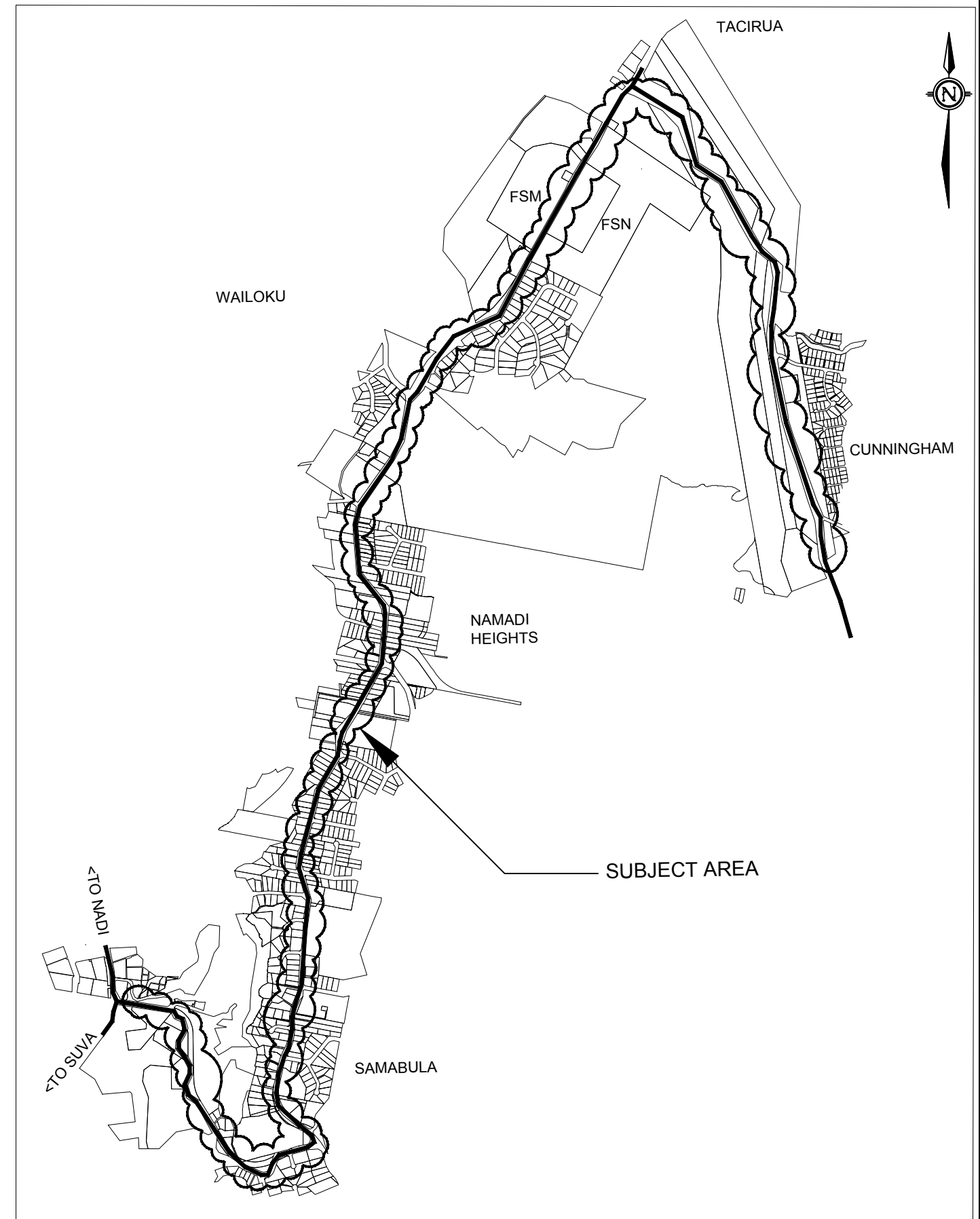
PROPOSED SLD




630mm², 1Cx 3,AL. PROP RL=8km

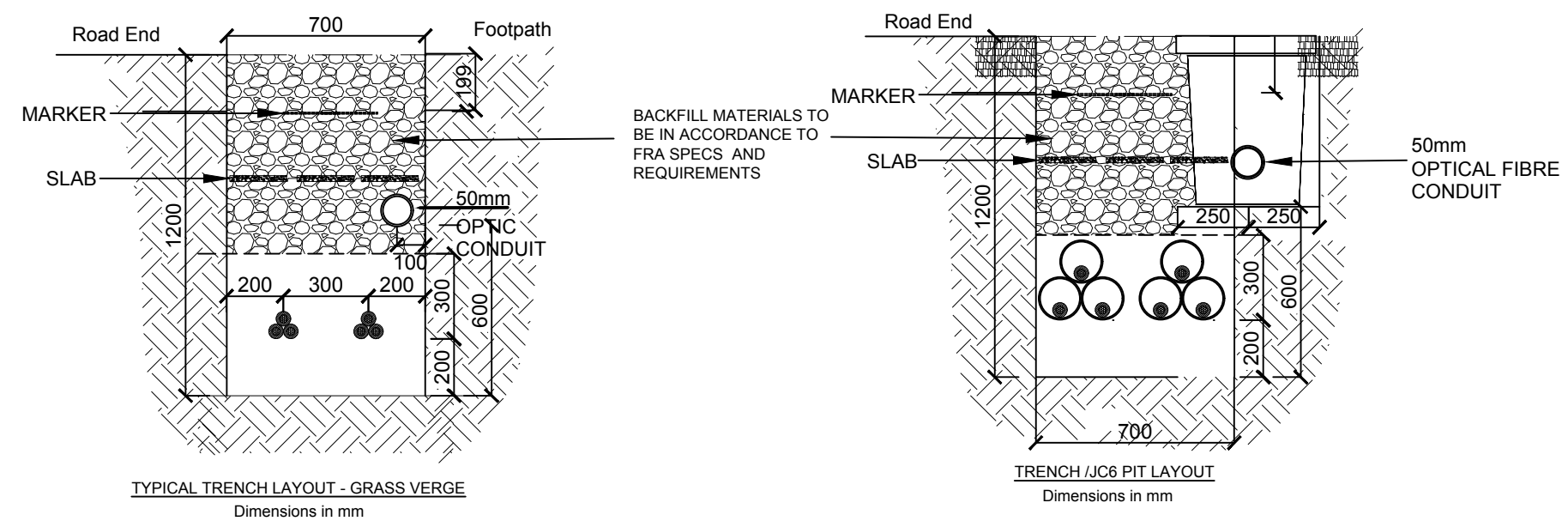


LOCALITY PLAN

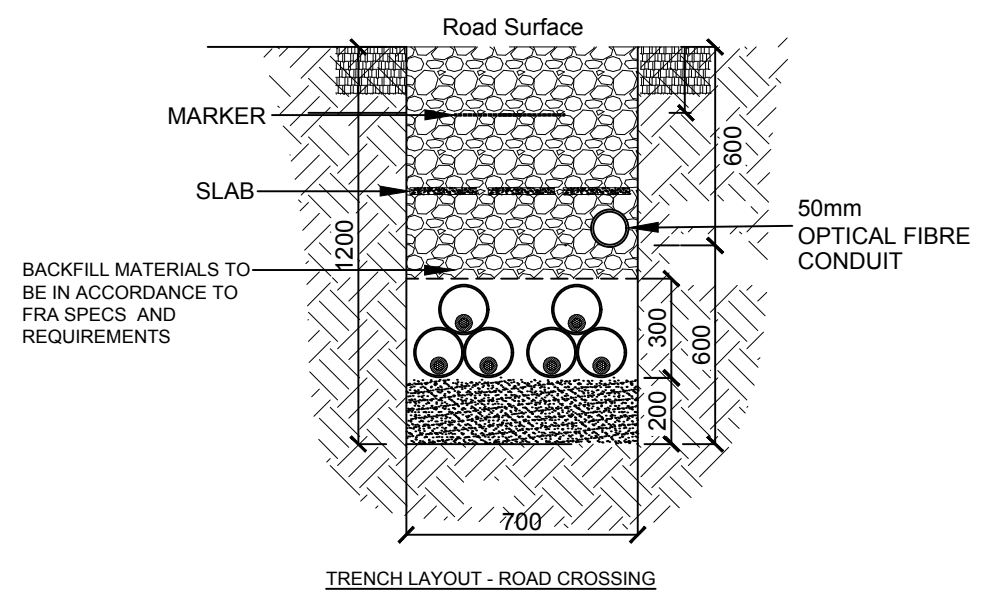


SHEET 9 OF 12


									DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY									
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									CHIEF DRAUGHTSMAN							A3	03	N48	008		
									TEAM LEADER DESIGN & PLANNING												
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					ENGINEER												
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT							SCALE 1 :1500					

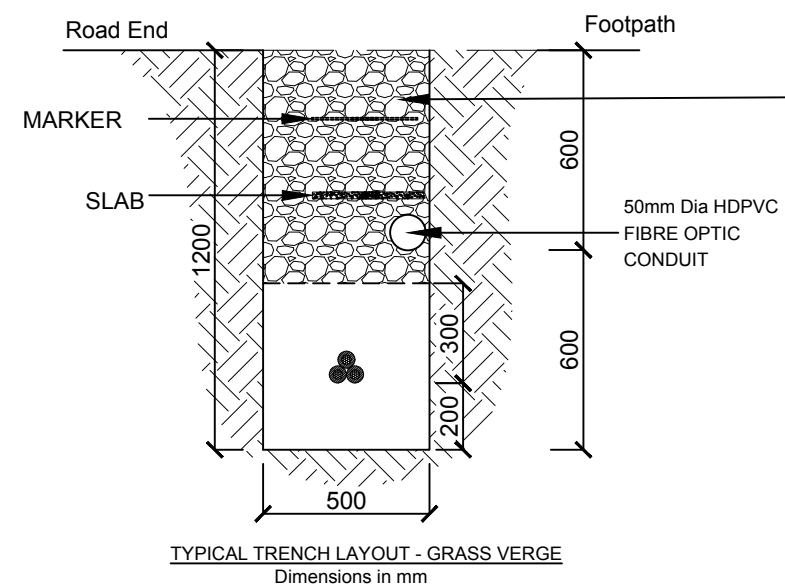


TYPICAL TRENCH LAYOUT FOR DOUBLE CIRCUIT

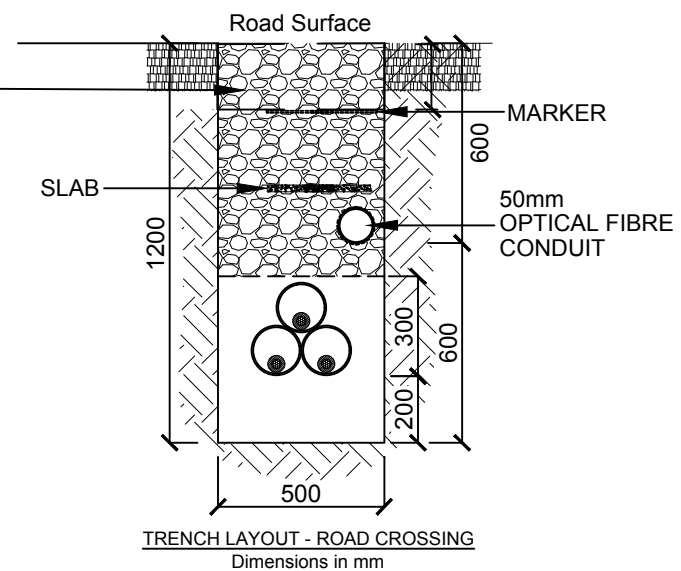


- NOTES
1. EXACT ROUTE SHALL BE FIELD VERIFIED BY THE CONTRACTOR IN CONSULTATION WITH FEA AND RELEVANT EXTERNAL STAKEHOLDERS AS PER CONTRACTUAL GUIDELINES FOR EXECUTION OF WORKS.
 2. ALL FOOTPATH AND ROAD REINSTATEMENT WORKS TO BE CARRIED TO FIJI ROADS AUTHORITY (FRA) SPECIFICATIONS AND TO THE SATISFACTION OF FRA.
 3. CONTRACTOR SHALL OBTAIN FEA'S GIS DRAWINGS FOR EXISTING FEA POWER LINES / CABLES. LOCATIONS FROM FEA'S PROJECT MANAGER AND FIELD VERIFY EXISTING INSTALLATIONS JOINTLY WITH FEA PROJECT MANAGER OR DULY DESIGNATED REPRESENTATIVE.
 4. 150mm DIA PVC DUCT SHALL BE LAID ACROSS EXISTING DRIVEWAYS AND ROAD CROSSINGS.

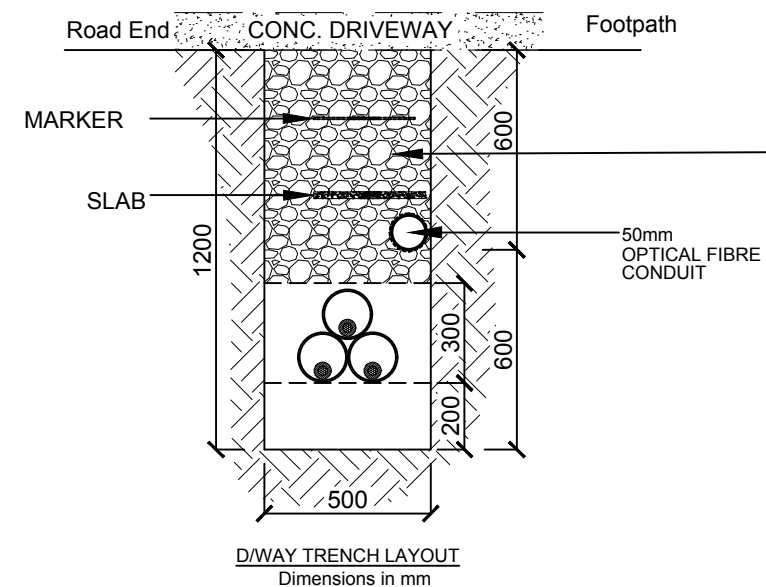
								 fea Energisng Our Nation	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
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									CHIEF DRAUGHTSMAN				A3	03	N48	008
									TEAM LEADER							
									PLANNING&DESIGN							
									ENGINEER							
	0	ORIGINAL ISSUE FOR SR05/17	13.02.17	RR					HEAD OF DEPARTMENT			SCALE 1:20				
	No.	REVISION	DATE	BY	CHK	PSD	APP									



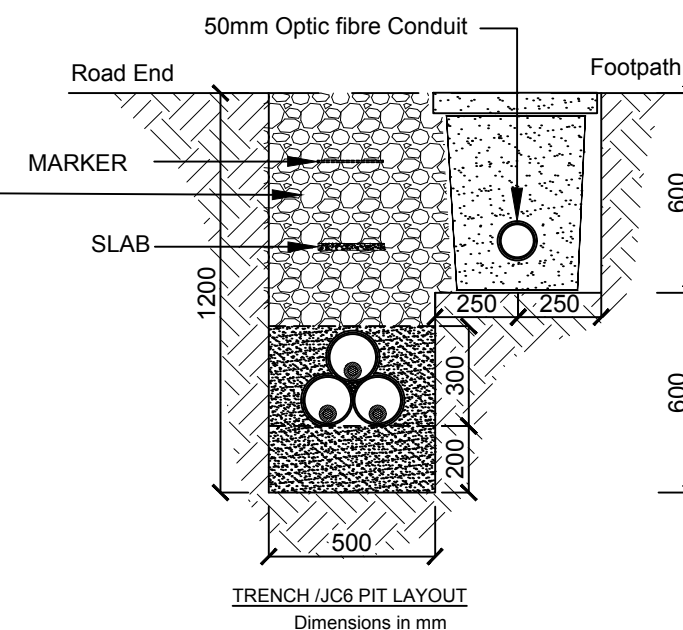
BACKFILL MATERIALS TO
BE IN ACCORDANCE TO
FRA SPECS AND
REQUIREMENTS




TYPICAL TRENCH LAYOUT FOR SINGLE CIRCUIT

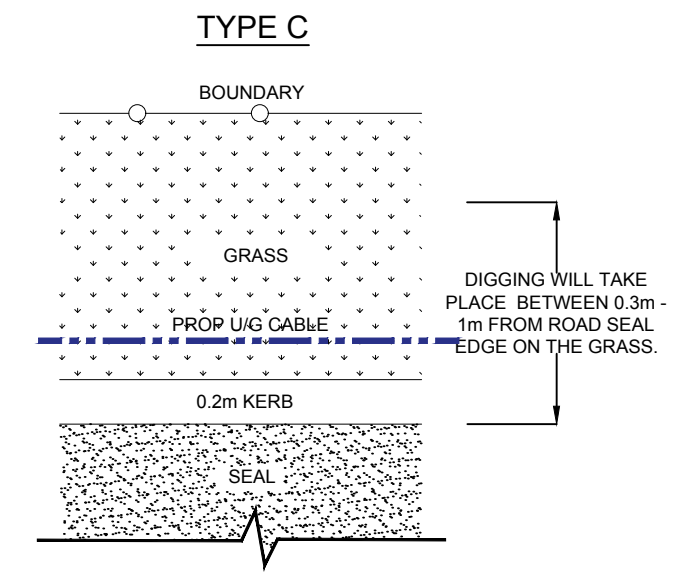
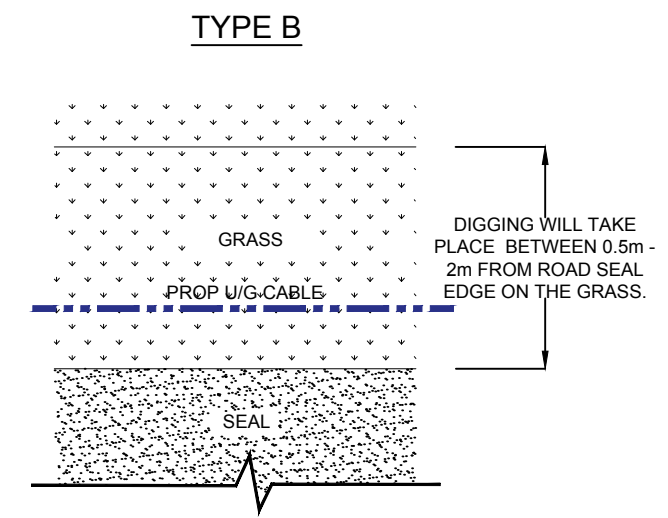
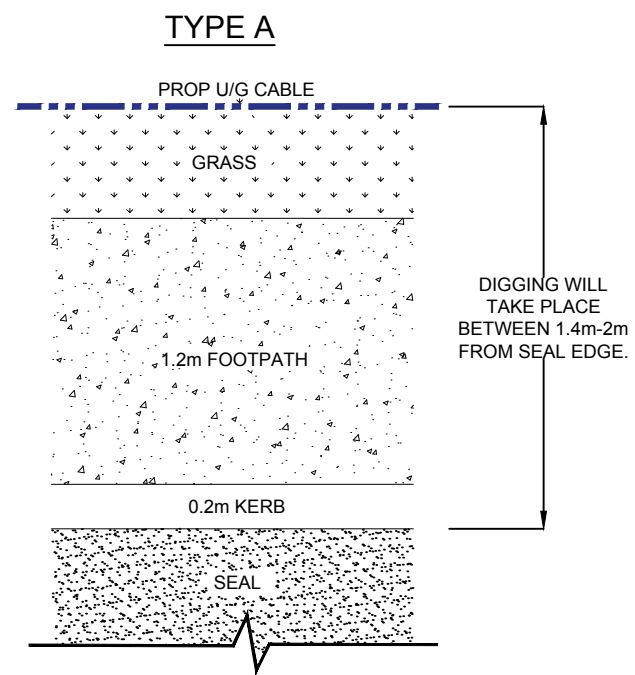


BACKFILL MATERIALS TO
BE IN ACCORDANCE TO
FRA SPECS AND
REQUIREMENTS

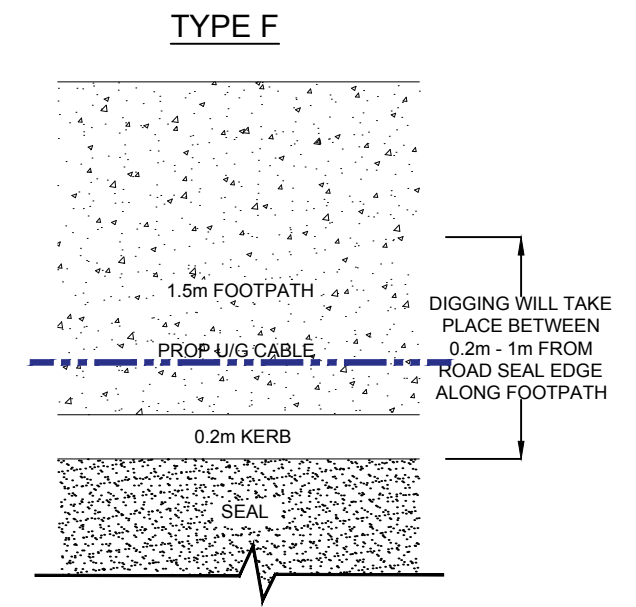
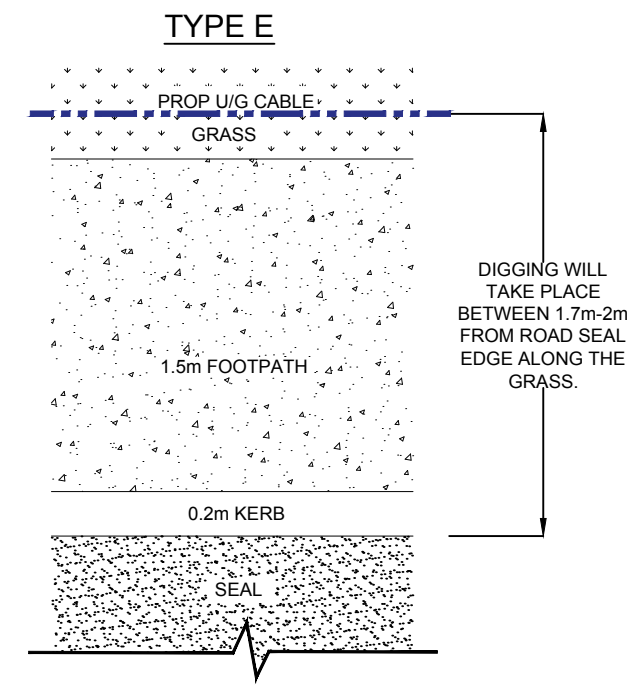
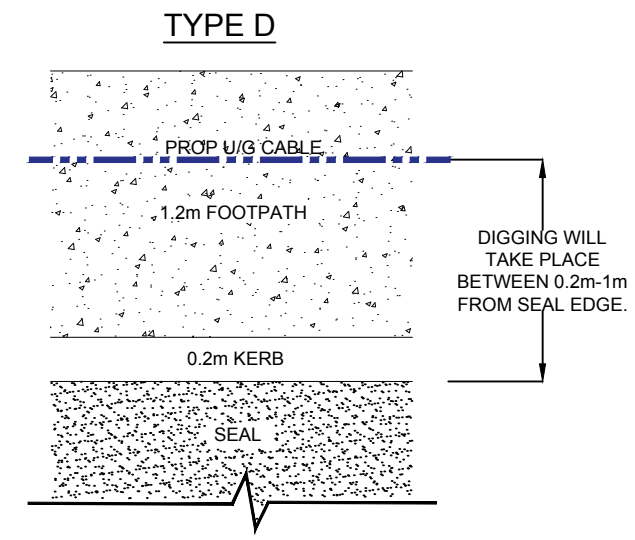



SHEET 11 OF 12

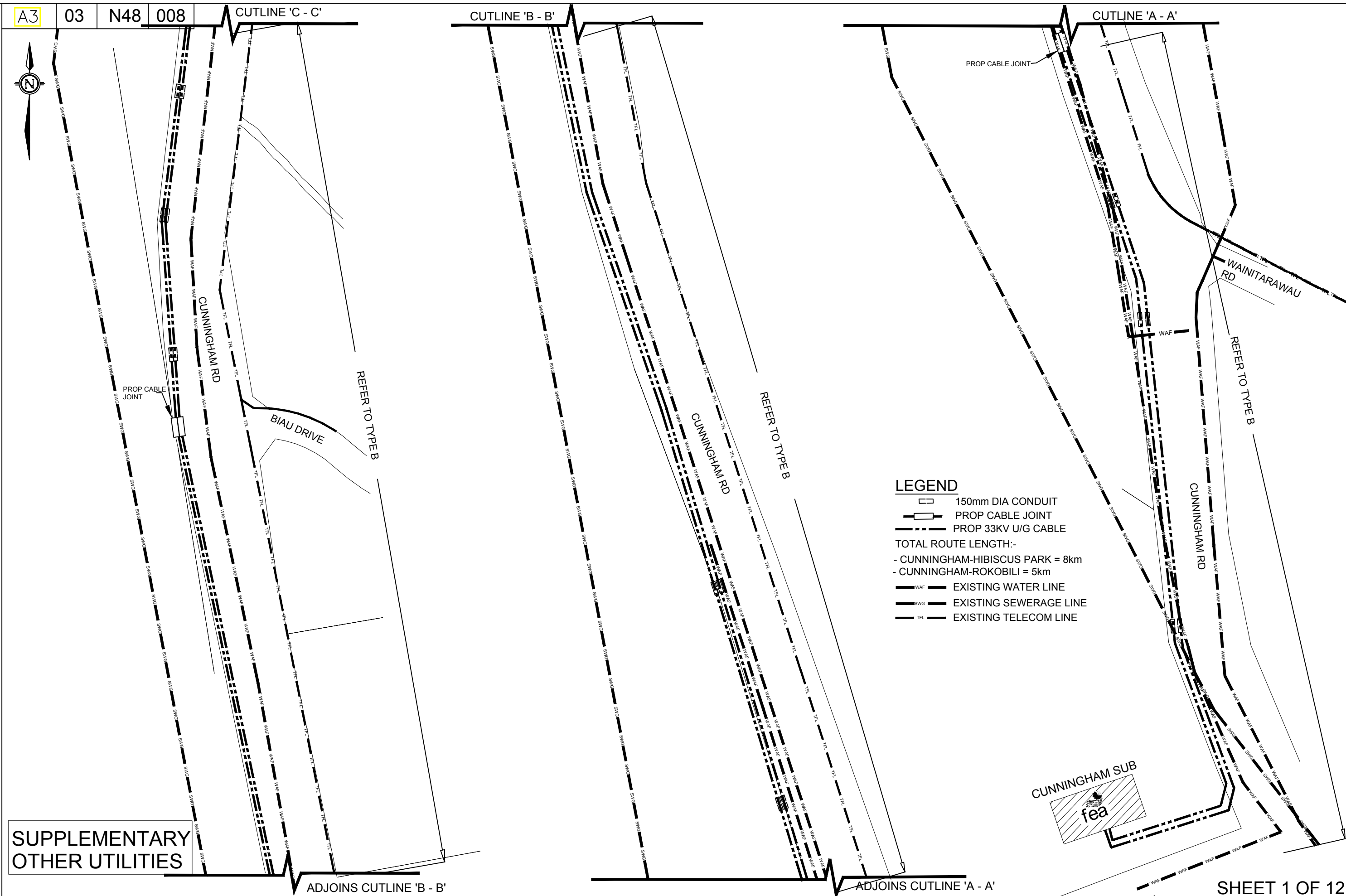
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									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)	DRAWING NUMBER			
									CHIEF DRAUGHTSMAN				A3	03	N48	008
									TEAM LEADER				SCALE 1:20			
									PLANNING&DESIGN							
	0	ORIGINAL ISSUE FOR SR05/17	13.02.17	RR					ENGINEER							
	No.	REVISION	DATE	BY	CHK	PSD	APP	HEAD OF DEPARTMENT								




TYPICAL PLAN VIEW OF PROPOSED CABLE LOCATION



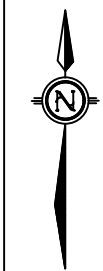
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									CHIEF DRAUGHTSMAN				A3	03	N48	008
									TEAM LEADER							
									PLANNING & DESIGN							
	0	ORIGINAL ISSUE FOR SR05/17		13.02.17	RR				ENGINEER							
	No.	REVISION		DATE	BY	CHK	PSD	APP	HEAD OF DEPARTMENT			SCALE 1:30				



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No.	REVISION		DATE	BY	CHK	PSD	APP		

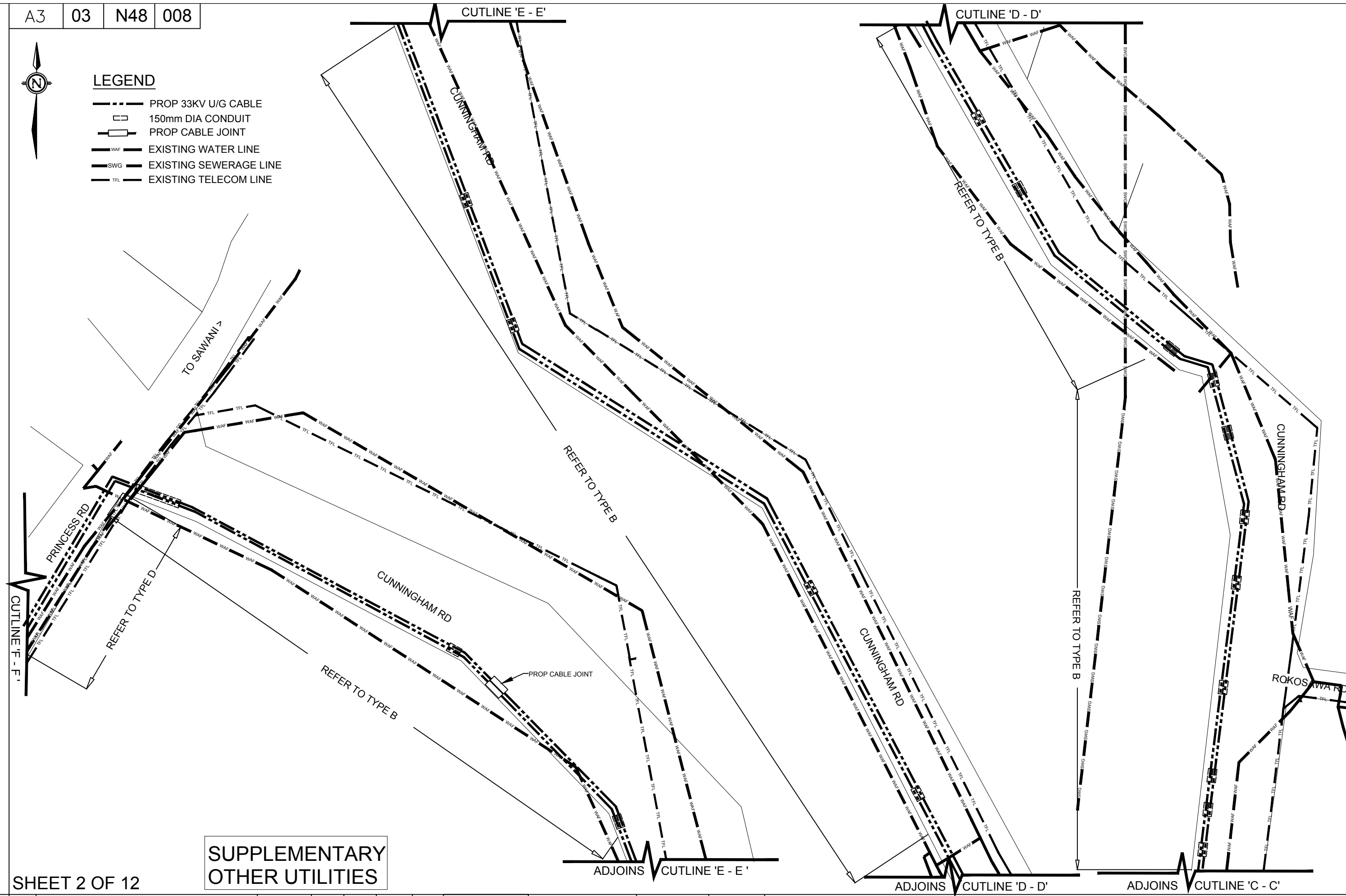
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	CHECKED		
	CHIEF DRAUGHTSMAN		
	TEAM LEADER DESIGN & PLANNING		
	ENGINEER		
	HEAD OF DEPARTMENT		

FIJI ELECTRICITY AUTHORITY			DRAWING NUMBER	
PROPOSED 33kv CABLE ROUTE			A3 03 N48 008	
CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)			SCALE 1 :1500	




LEGEND

- PROP 33KV U/G CABLE
- 150mm DIA CONDUIT
- ▭ PROP CABLE JOINT
- WAF — EXISTING WATER LINE
- SWG — EXISTING SEWERAGE LINE
- TFL — EXISTING TELECOM LINE



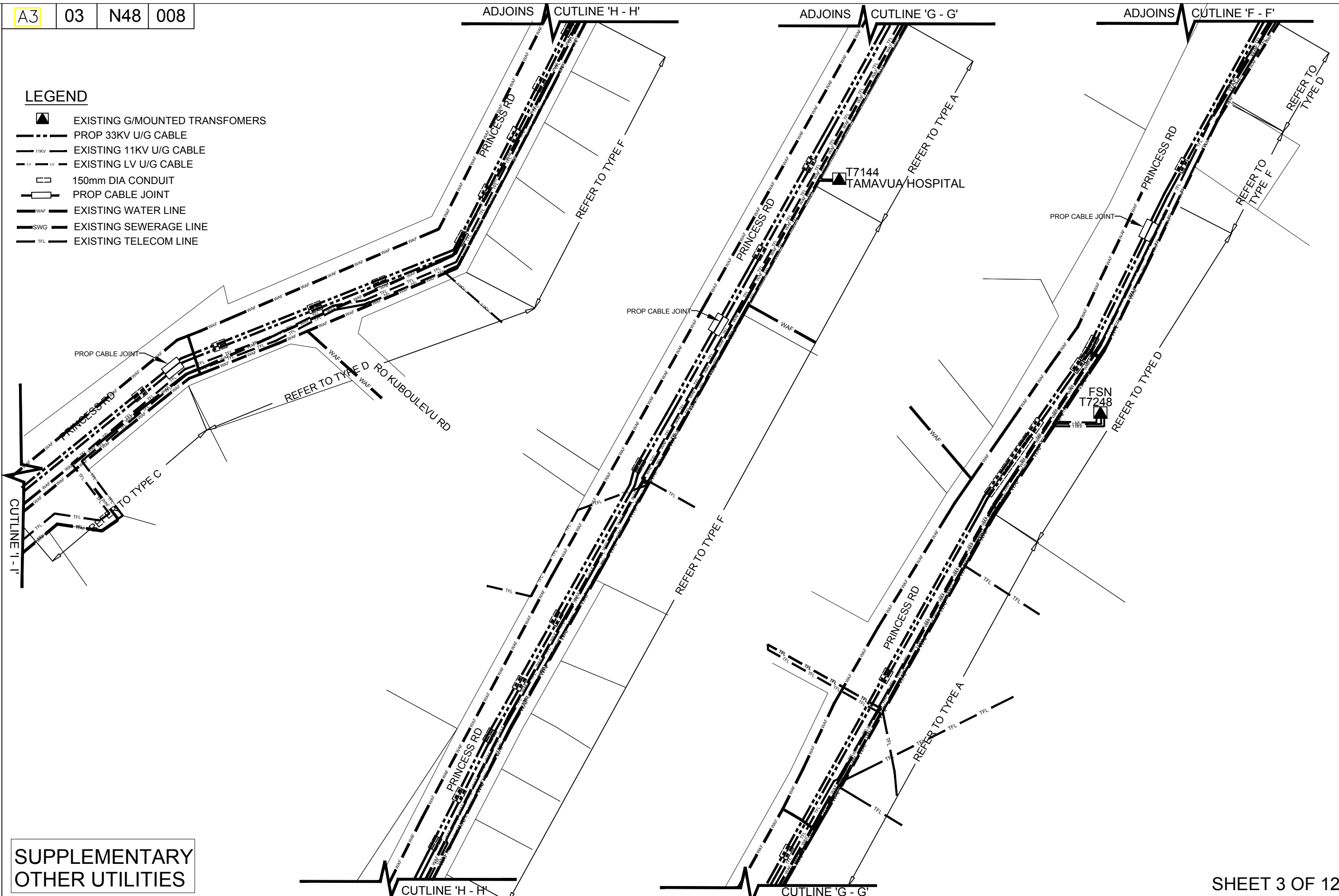
SHEET 2 OF 12

SUPPLEMENTARY
OTHER UTILITIES

									DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY					
									CHECKED			PROPOSED 33kv CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)	DRAWING NUMBER				
									CHIEF DRAUGHTSMAN				A3	03	N48	008	
									TEAM LEADER DESIGN & PLANNING								
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					ENGINEER				SCALE 1 :1500				
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT								

LEGEND

- EXISTING G/MOUNTED TRANSFORMERS
- PROP 33KV U/G CABLE
- EXISTING 11KV U/G CABLE
- EXISTING LV U/G CABLE
- 150mm DIA CONDUIT
- PROP CABLE JOINT
- EXISTING WATER LINE
- EXISTING SEWERAGE LINE
- EXISTING TELECOM LINE



SUPPLEMENTARY
OTHER UTILITIES

								DRAWN RAULUI.R 13.02.17				FIJI ELECTRICITY AUTHORITY			
								CHECKED CHIEF DRAUGHTSMAN TEAM LEADER DESIGN & PLANNING				DRAWING NUMBER			
								ENGINEER HEAD OF DEPARTMENT				A3 03 N48 008			
0 ORIGINAL ISSUE.FOR SR05.17				13.02.17 RR				PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)				SCALE 1:1500			
No.	REVISION	DATE	BY	CHK	PSD	APP									

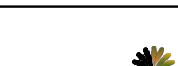


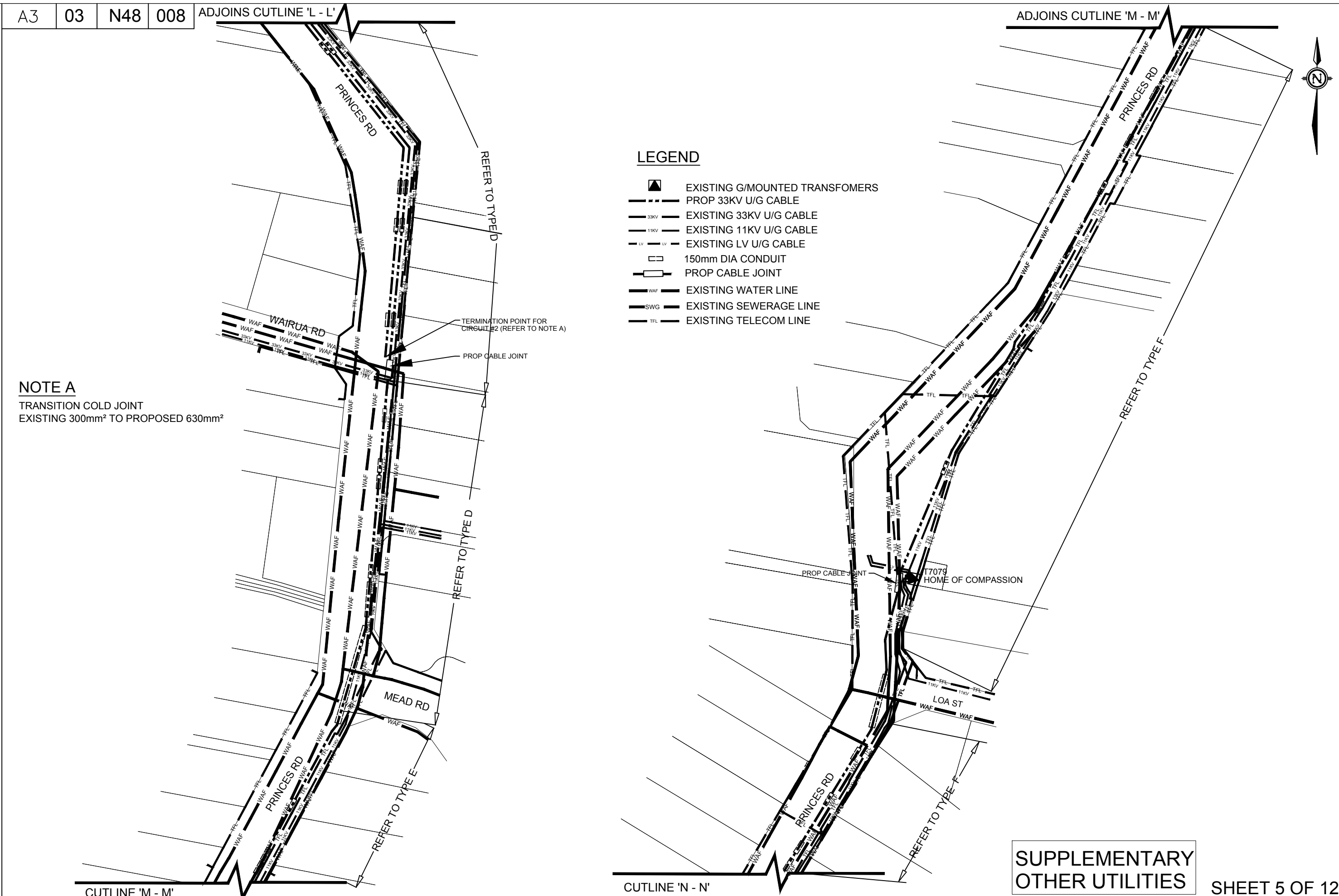


FIJI ELECTRICITY AUTHORITY

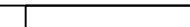
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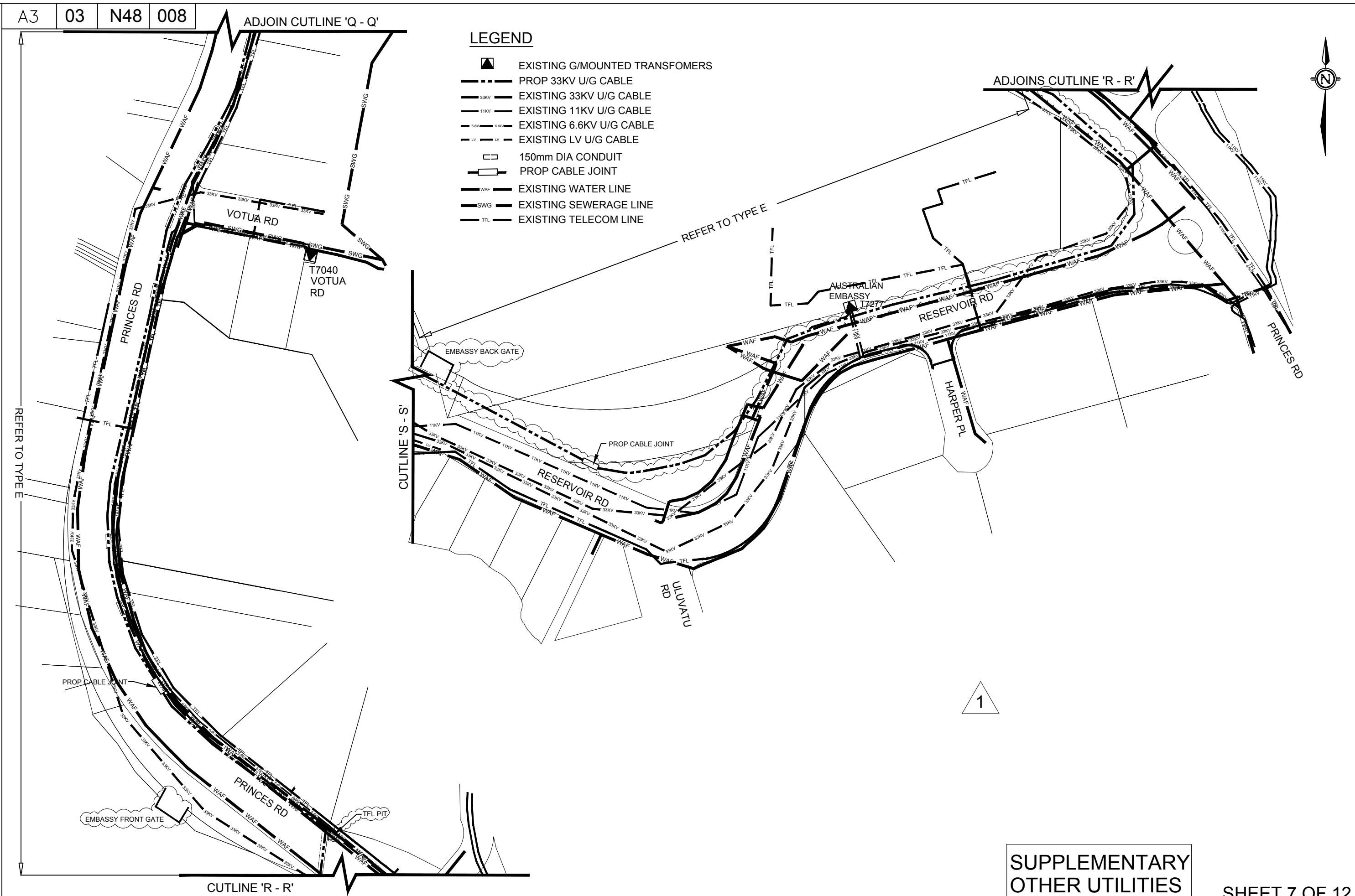
SCALE 1 :1500

	DRAWN	RAULUI.R	13.02.17
	CHECKED		
	CHIEF DRAUGHTSMAN		
	TEAM LEADER DESIGN & PLANNING		
	ENGINEER		
	HEAD OF DEPARTMENT		




NOTE A
TRANSITION COLD JOINT
EXISTING 300mm² TO PROPOSED 630mm²

								 fea Energising Our Nation	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)				
									CHIEF DRAUGHTSMAN							
									TEAM LEADER DESIGN & PLANNING			DRAWING NUMBER				
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					ENGINEER			A3	03	N48	008	
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT			SCALE 1 :1500				













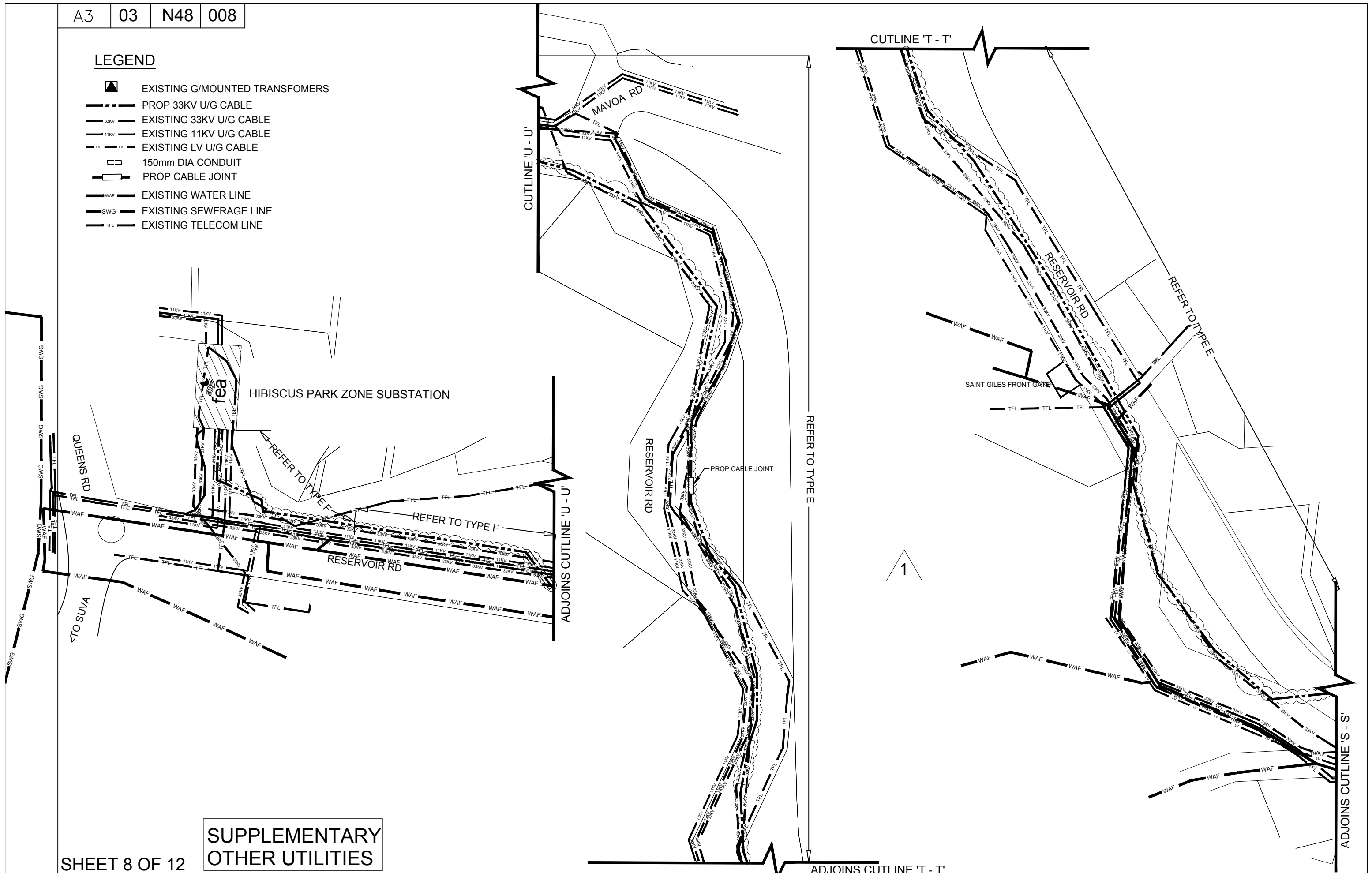
SUPPLEMENTARY
OTHER UTILITIES

SHEET 7 OF 12

								 <div>fea Energising Our Nation</div>	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)			DRAWING NUMBER	
	1.	CHANGES IN DESIGN AFTER FRA SITE MEETING AS REQ BY VANDANA.	10.08.17	RR					CHIEF DRAUGHTSMAN TEAM LEADER DESIGN & PLANNING						A3	03
	0	ORIGINAL ISSUE.FOR SR05.17	13.02.17	RR					ENGINEER			SCALE 1:1500				
	No.	REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT							

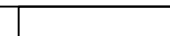
LEGEND

- | | |
|---|---------------------------------|
|  | EXISTING G/MOUNTED TRANSFORMERS |
|  | PROP 33KV U/G CABLE |
|  | EXISTING 33KV U/G CABLE |
|  | EXISTING 11KV U/G CABLE |
|  | EXISTING LV U/G CABLE |
|  | 150mm DIA CONDUIT |
|  | PROP CABLE JOINT |
|  | EXISTING WATER LINE |
|  | EXISTING SEWERAGE LINE |
|  | EXISTING TELECOM LINE |

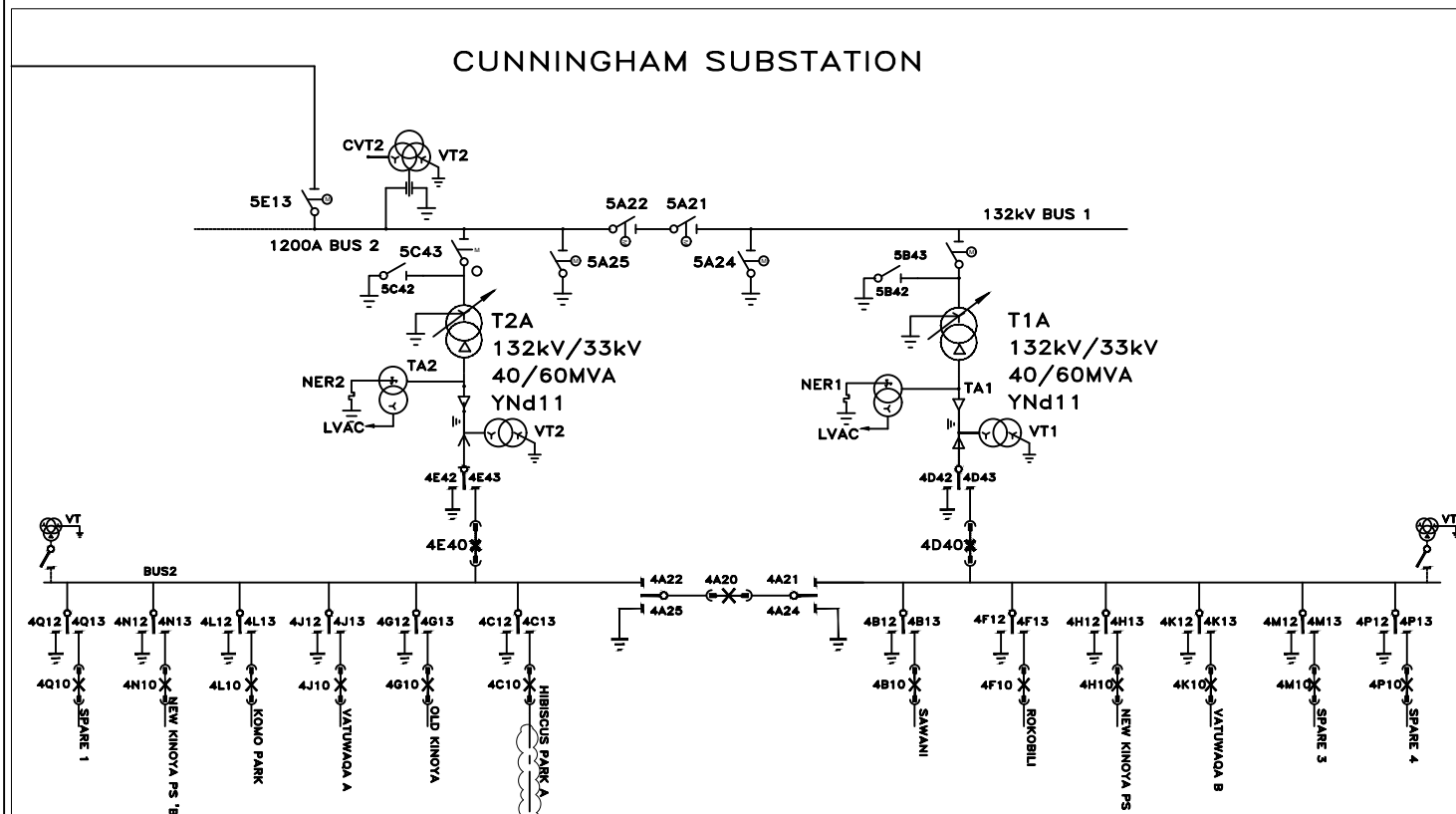


SHEET 8 OF 12

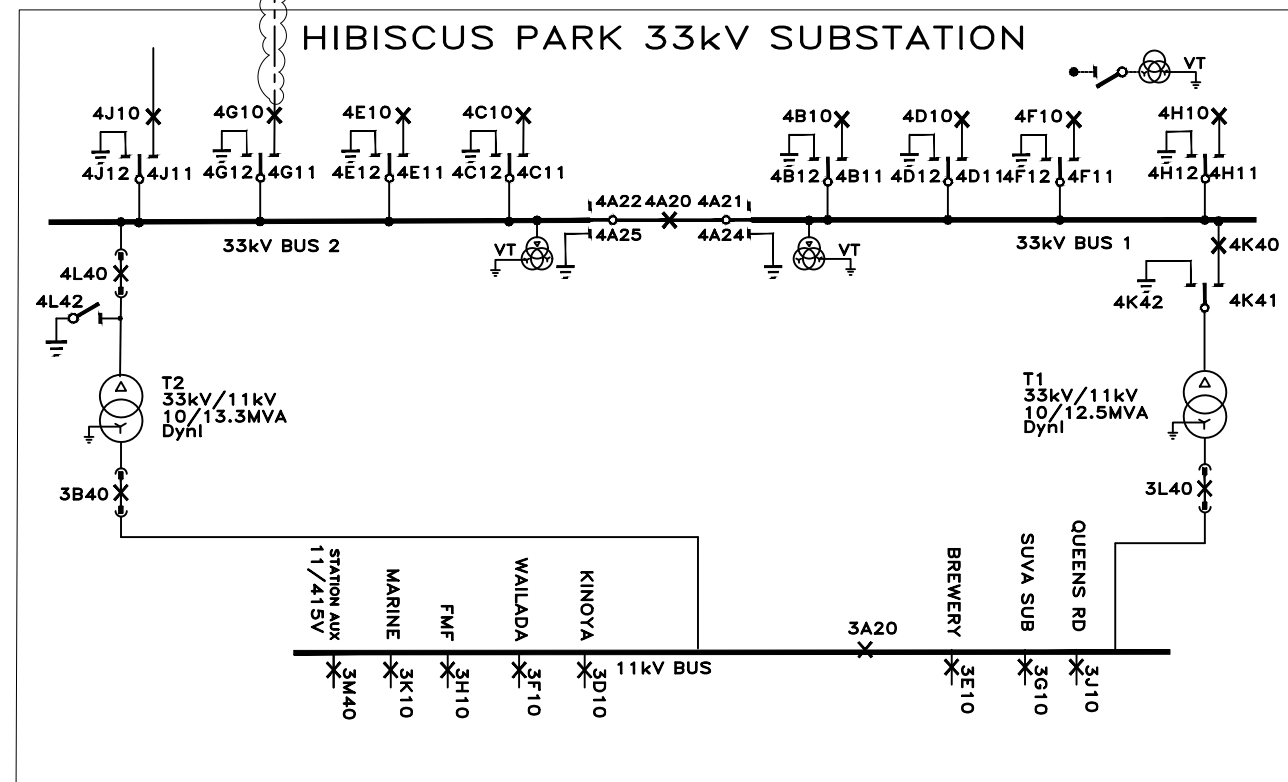
SUPPLEMENTARY OTHER UTILITIES

									DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY							
									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)				DRAWING NUMBER			
									CHIEF DRAUGHTSMAN							A3 03 N48 008			
	1.	CHANGES IN DESIGN AFTER FRA SITE MEETING AS REQ BY VANDANA.	10.08.17	RR					TEAM LEADER DESIGN & PLANNING				SCALE 1 :1500						
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No.		REVISION	DATE	BY	CHK	PSD	APP		HEAD OF DEPARTMENT										

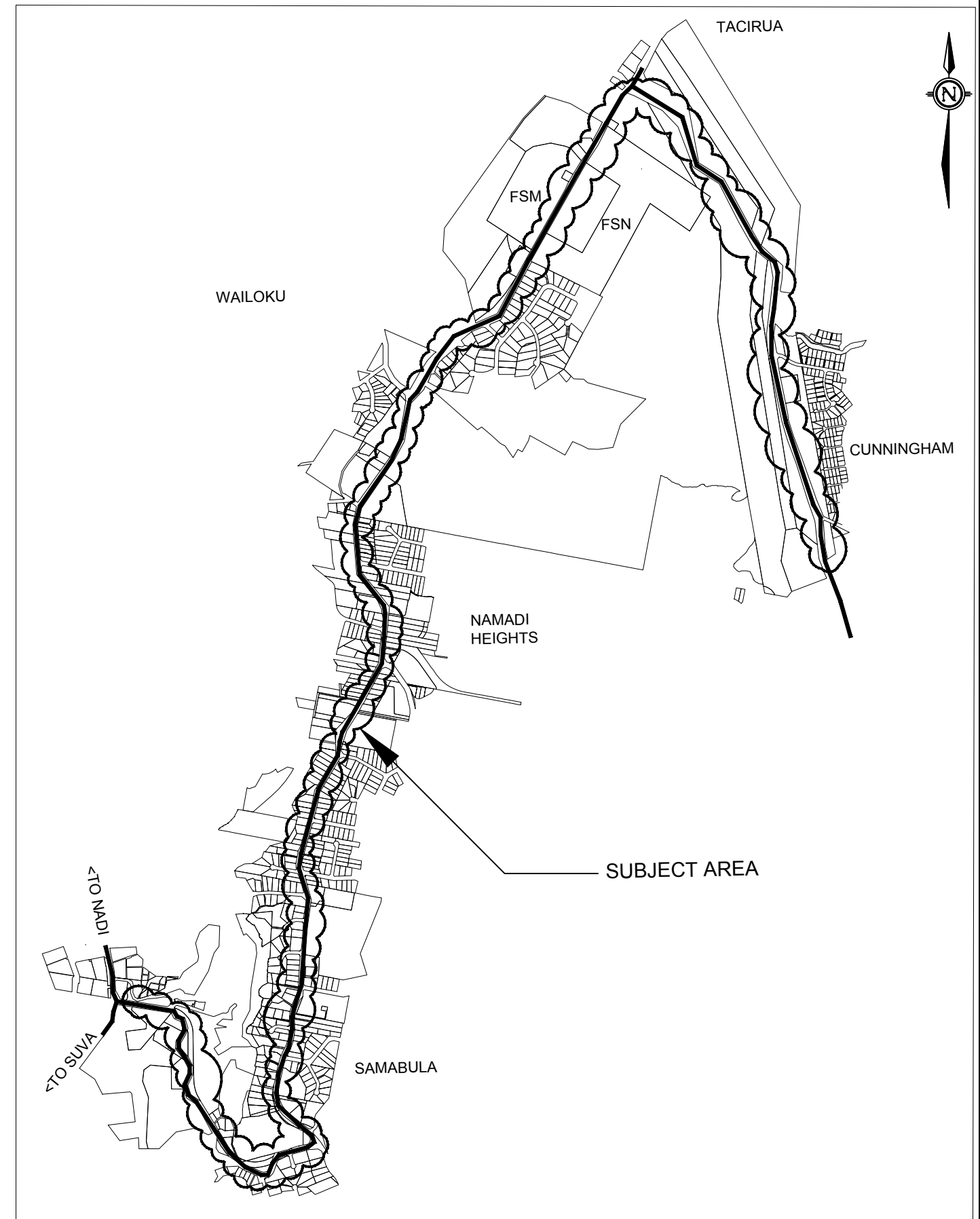
PROPOSED SLD



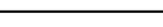
630mm², 1Cx 3,AL. PROP RL=8km

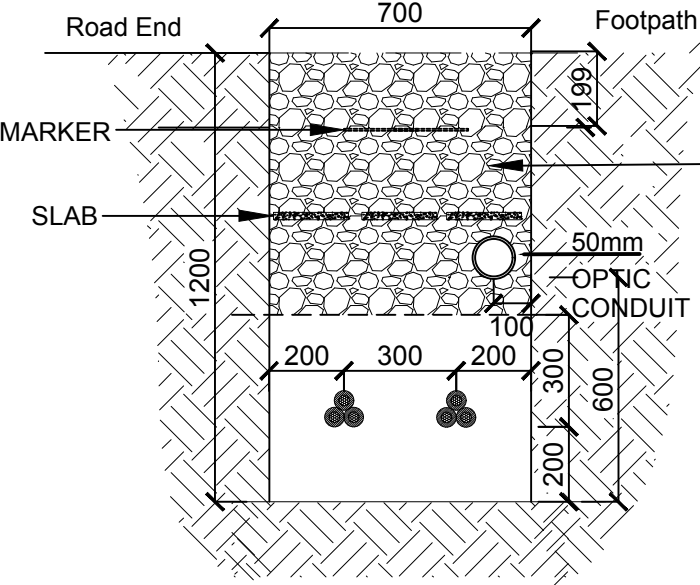


LOCALITY PLAN

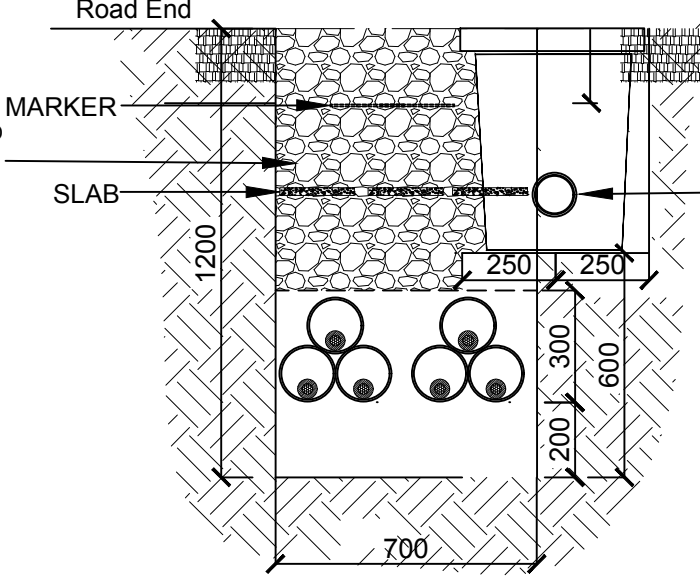


SHEET 9 OF 12

									DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY				
									CHECKED			PROPOSED 33kv CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)	DRAWING NUMBER			
									CHIEF DRAUGHTSMAN				A3	03	N48	008
									TEAM LEADER DESIGN & PLANNING				SCALE 1 :1500			
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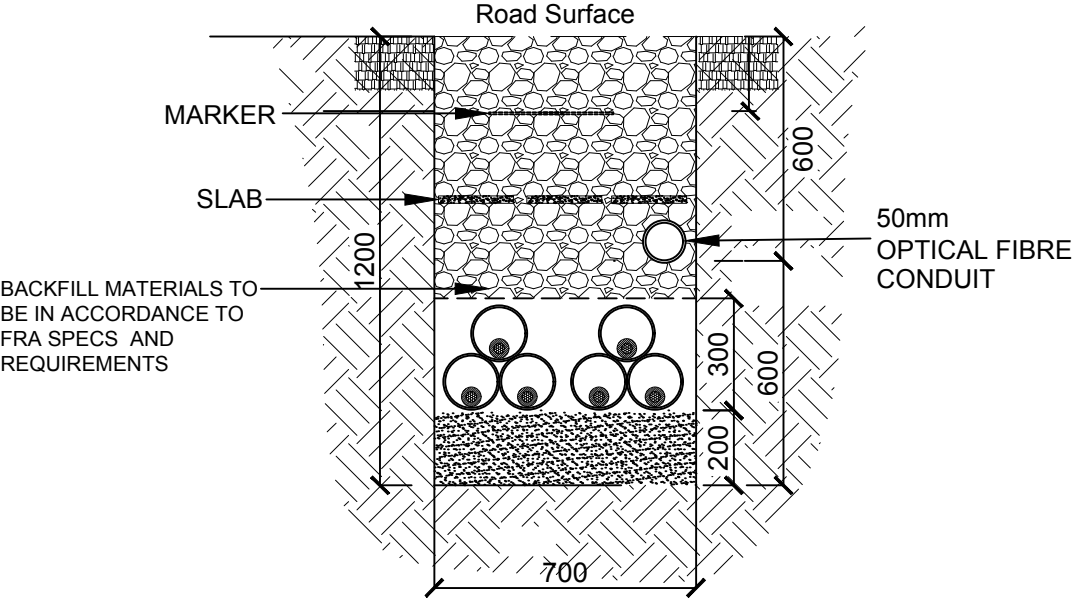


TYPICAL TRENCH LAYOUT - GRASS VERGE
Dimensions in mm



TRENCH /JC6 PIT LAYOUT
Dimensions in mm


TYPICAL TRENCH LAYOUT FOR DOUBLE CIRCUIT

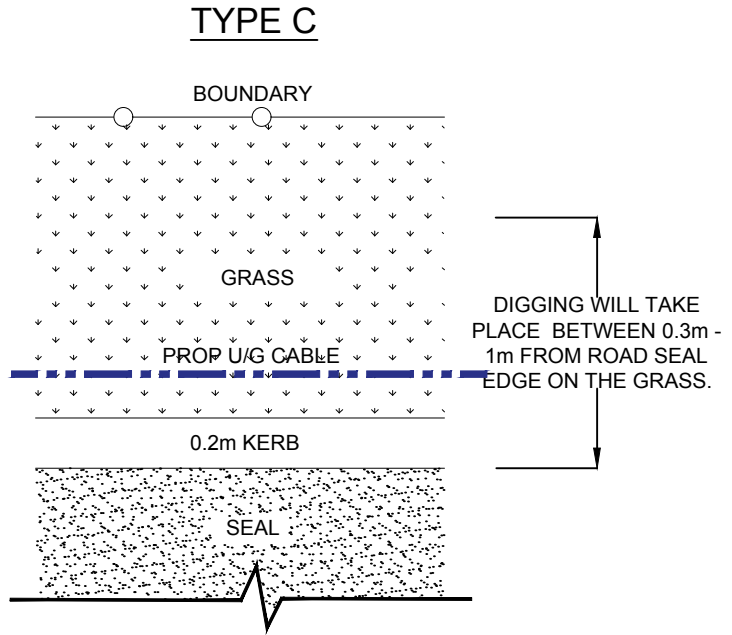
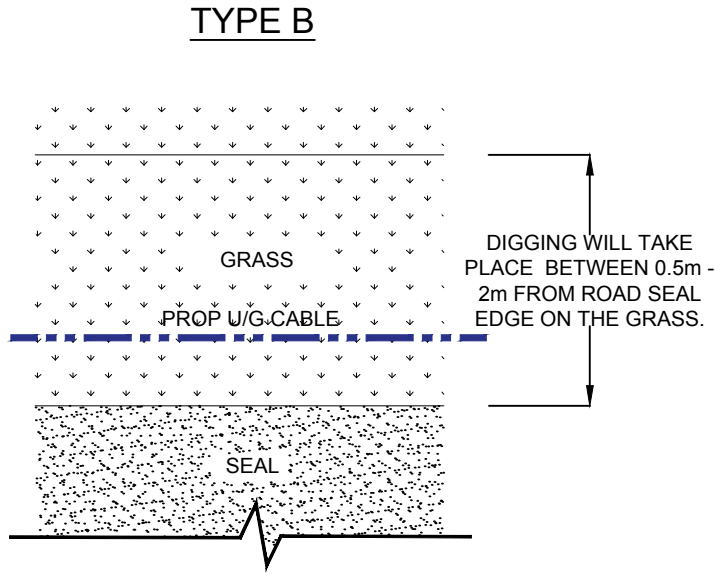
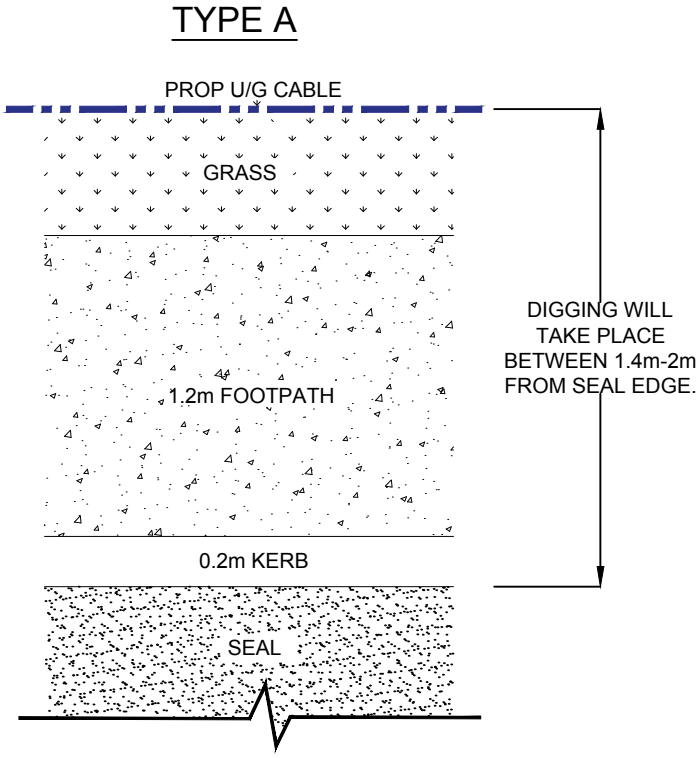


TRENCH LAYOUT - ROAD CROSSING

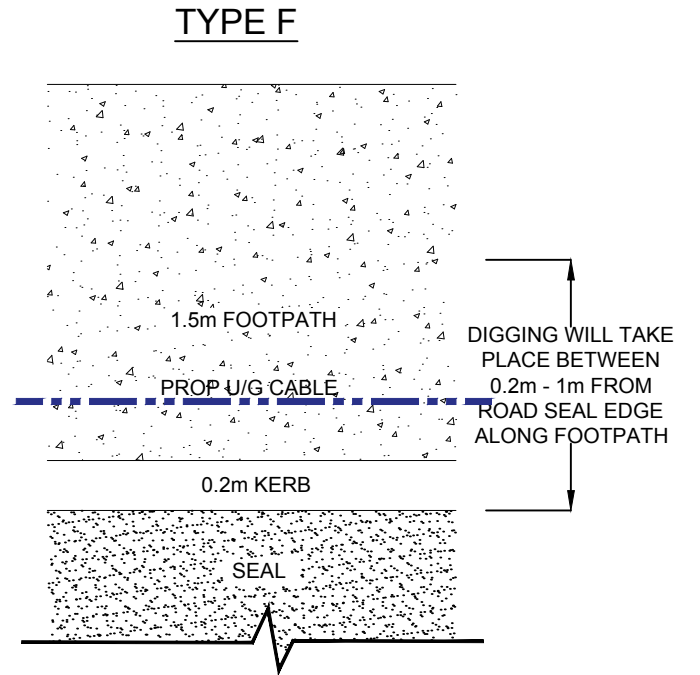
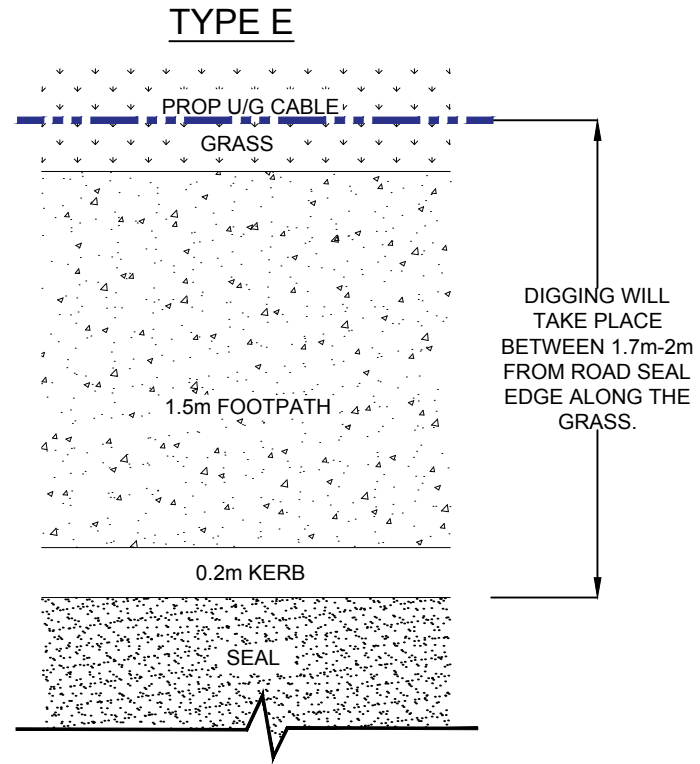
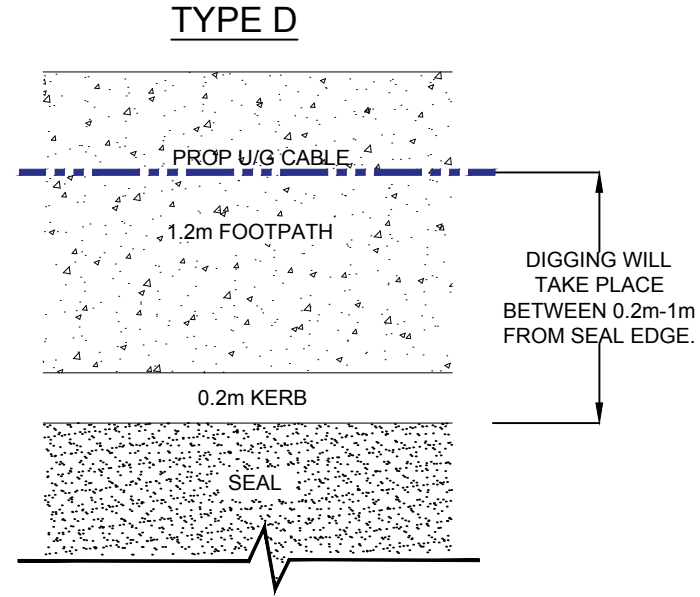
NOTES


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2. ALL FOOTPATH AND ROAD REINSTATEMENT WORKS TO BE CARRIED TO FIJI ROADS AUTHORITY (FRA) SPECIFICATIONS AND TO THE SATISFACTION OF FRA.
3. CONTRACTOR SHALL OBTAIN FEA'S GIS DRAWINGS FOR EXISTING FEA POWER LINES / CABLES. LOCATIONS FROM FEA'S PROJECT MANAGER AND FIELD VERIFY EXISTING INSTALLATIONS. JOINTLY WITH FEA PROJECT MANAGER OR DULY DESIGNATED REPRESENTATIVE.
4. 150mm DIA PVC DUCT SHALL BE LAID ACROSS EXISTING EXISTING DRIVEWAYS AND ROAD CROSSINGS.

									DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY										
									CHECKED			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)				DRAWING NUMBER						
									CHIEF DRAUGHTSMAN							A3				03	N48	008
									TEAM LEADER							SCALE				1:20		
									PLANNING&DESIGN													
									ENGINEER													
	0	ORIGINAL ISSUE FOR SR05/17	13.02.17	RR				HEAD OF DEPARTMENT														
	No.	REVISION	DATE	BY	CHK	PSD	APP															



TYPICAL PLAN VIEW OF PROPOSED CABLE LOCATION



								 Energising Our Nation	DRAWN	RAULUI.R	13.02.17	FIJI ELECTRICITY AUTHORITY			
									CHECKED						
									CHIEF DRAUGHTSMAN			PROPOSED 33kV CABLE ROUTE CUNNINGHAM-HIBISCUS PARK (SR05.17A) & CUNNINGHAM-ROKOBILI (SR05.17C)		DRAWING NUMBER A3 03 N48 008	
									TEAM LEADER						
									PLANNING&DESIGN			SCALE 1:30			
									ENGINEER						
	0	ORIGINAL ISSUE FOR SR05/17	13.02.17	RR					HEAD OF DEPARTMENT						
	No.	REVISION	DATE	BY	CHK	PSD	APP								