

TENDER DOCUMENT

FOR

DISTRIBUTION LINE CONSTRUCTION 2024-2026

Prepared by: Belize Electricity Limited

Distribution Operation Department 2½ Miles Philip Goldson Highway Belize City, Belize January 2024 Bidders will be required to submit a fixed price quotation via the price schedule linked here and provide all equipment and materials. Submit proposal via email to bidsubmittal@bel.com.bz no later than 3:00 p.m. on Friday, February 9, 2024, and labelled:

"BID #2023-2265 – DISTRIBUTION LINE CONSTRUCTION 2024 – 2026"

IMPORTANT DATES:

- Expression of interest in Pre-bid meeting 5:00 p.m. Wednesday, January 31, 2024
- Prebid meeting 9:00 a.m. Thursday, February 1, 2024
- Bid submittal 3:00 p.m. on Friday, February 9, 2024.

1. GENERAL

This Distribution Line Construction tender document will have contractors (bidders) specify a firm and fixed unit price for the completion of Construction works that may include but not limited to the Construction of High Voltage and Low Voltage Over Head Infrastructure. The expected list of duties to be performed is in the "Standard Contractor - Schedule of Price" below. The Distribution Line Construction contract for each Service Area aims to execute customer driven request and System improvement projects that are received throughout the years two thousand twenty-four to two thousand twenty-six (2024 - 2026). The Contract will be established with consideration of the unit prices provided for each item and budget, which Belize Electricity Limited has allocated per Service area. The works described by the "Standard Contractor - Schedule of Price" is not exclusive to the bid winner for the service area. BEL can utilize any contractor to complete the same nature of works within the Service Area by means of other company policies and procedures. All bidders MUST provide a unit price (without GST) for each item identified under the "Standard Contractor - Schedule of Price". Each Bidder MUST indicate whether they pay GST and indicate whether they can complete each task on the price list. Clearly identify the Service Area you are Interested in working for the annual contract on the "Standard Contractor -Schedule of Price" form. A contractor is allowed to bid for multiple load centers if he/she chooses, you must submit one (1) form with the associated prices per Service Area. Each bidder should consider the servicing of the entire geographic layout of the distribution network for each Service Area when structuring his or her unit price. The company's Service Areas are Corozal Service Area, Orange walk Service Area, San Pedro Service Area (including Caye Caulker), Belize City Service Area, Ladyville Service Area, Belmopan Service Area, San Ignacio Service Area, Dangriga Service Area, Independence Service Area (including Placencia), Punta Gorda Service Area.

1.1 Intent of Tender

The intent of the Distribution Line Construction Tender is to provide prospective bidders with sufficient information to prepare a bid. Following receipt of the bid, BEL will evaluate

and select the successful submission. This Distribution Line Construction Tender contains an exhaustive list of the works to be perform. Any works that are related to the nature of works executed under the Distribution Line Construction Contract but is outside the description of the "Standard Contractor - Schedule of Price" must be submitted to the Superintendent of the respective zone for approval of payment. Each proposal will be evaluated on its own merit. BEL intends, if it accepts any tender at all, to base its decisions on criteria that BEL considers to be in its best interest.

Evaluation Criteria

CRITERIA	PERCENTAGE ASSIGNED	GUIDE
		The applicable rates and fees to
		complete the indicated task on the
		"Standard Contractor - Schedule of
		Price" must be fair and sufficient to
Cost of Work	60%	satisfactorily complete the scope.
		Assess the contractors' workforce
Experience of work		Prior work related and relevant
Force	20%	experience.
		Ensure the minimum equipment
		requirement is met and assess the
Plant and Equipment	20%	relevance of additional equipment.

1.2 Contract

BEL requires a signed contract between the Company and the successful bidder. Any tender may be withdrawn at any time before acceptance at the option of the bidder. After the contract is signed, it is mandatory that the contractor honours the "Scope of Work" for the duration of the contract. Failure to comply may result in disciplinary action or possible termination of the contract.

2. PROPOSAL SUBMISSION AND INQUIRIES

2.1 Submission

Bidders are required to fill out the bidding schedule and submit via email to bidsubmittal@bel.com.bz no later than 3:00 p.m. on Friday, February 9, 2024, labelled:

E-mail subject:

"BID #2023-2265 – DISTRIBUTION LINE CONSTRUCTION 2024 – 2026"

2.2 Inquires

Inquiries related to this tender will be addressed in a pre-bid meeting, which will be held on Thursday, February 1, 2024. To express interest in attending this meeting please send an email to bidsubmittal@bel.com.bz no later than **5:00 p.m. on Wednesday, January 31, 2023.** While this meeting is not mandatory, we strongly urge you to attend.

E-mail subject:

"EXPRESSION OF INTERENST IN BID #2023-2265 – DISTRIBUTION LINE CONSTRUCTION 2024 – 2026"

You will be provided with a link to attend a virtual pre-bid meeting scheduled for Thursday, February 1, 2024, shortly after your expression of interest.

Important Dates:

- Expression of interest in Pre-bid meeting 5:00 p.m. Wednesday, January 31, 2024
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- Bid submittal 3:00 p.m. on Friday, February 9, 2024.

3. SCOPE OF WORK

3.1 Minimum Scope of Work

- **A.** The contractor should be able to provide qualified personnel to execute the work in a safe manner.
- **B.** The contractor should be willing to do all corrective works after inspections have been completed.
- **C.** The Contractor must complete the issued work in a reasonable period. Distribution Line Construction must be completed within 3 working days.
- **D.** All Distribution Line Construction work must be executed in accordance with the established distribution standards.

3.2 Owner's/Contractor's Provisions

- **A.** Contractors are to supply all services and equipment for the duration of the entire Contract.
- **B.** A BEL representative will be available when required to accompany contractor's personnel and to address any questions/concerns.
- **C.** Damage to private property resulting from Distribution Line Construction works shall be the responsibility of the contractor. All safety precautions are to be put in place by the contractor to avoid any injury to personnel's or damages to property and the environment.
- **D.** The Contractor should ensure his/her employees are using their Personal Protective Equipment. The contractor should supply his/her employees with the requisite hardhat, working gloves, googles and proper footwear.
- **E.** The Contractor is responsible to pay for the following insurances for the duration of the contract:
 - I. General liability Insurance

- II. Employees insurance
- III. Automobile and third-party insurance
- **F.** The Contractor is to ensure that all materials utilized in distribution line construction or removed from the field must be properly accounted for and those removed must be returned to the Service Area.
- **G.** The Contractor is to ensure that all materials utilized in distribution line construction or removed from the field must be properly accounted for and those removed must be returned to the Service Area.
- **H.** The Contractor is responsible for receiving all construction materials at the Service Area, and retired materials removed from the system should be returned to the Service Area.
- Contractor will be charged the depreciated cost for any material lost, damaged or misplaced while executing work.
- **J.** If the contractor resides outside of the Service Area, additional travel costs will **not** be accounted for within contract. The Travelling Cost should be included in the unit prices.
- **K.** Contractor must sign the Return to Store Form made available to them by BEL personnel at Service Area as proof that materials were returned at the end of each workday.
- L. Payment will be made as per amount of works specified by Contractor Works Verification Form. Each contractor must complete all Contractor Works Verification Form at the end of each working day. This form should be submitted to the Power Line Supervisor for consent that works have been completed.
- **M.** Submission of invoices and supporting documentation for period $1^{st} 15^{th}$ of the month must be submitted by the end of the current month.
- **N.** Invoices and supporting documentation for period 16th to the end of the month must be submitted by the 15th of the following month.

4. STANDARD CONTRACTOR - SCHEDULE OF PRICES

The table below lists the description of works for prospective jobs (Per unit cost) for the respective Service Areas in BEL. Please fill out excel format and submit only this as your bid.



Contractor Name (print name)	
Company Name (if applicable)	
Service Area of Interest	
Address of the Contractor's Base	
Registered for GST (Yes or No)	

		OH LINE CONSTRUCTION			
1	PRIMARY LINES				
					Extended
Item	Description of Works		Unit	Unit Cost	Cost
1.1	Framing				
1.1.1		AS	Each		
1.1.2		ASD	Each		
1.1.3		BS	Each		
1.1.4		CS	Each		
1.1.5		DS	Each		
1.1.6		DSD	Each		
1.1.7		DDE	Each		
1.1.8		ES	Each		
1.1.9		FS	Each		
1.1.10		G	Each		
1.1.11		AAS	Each		
1.1.12		AST	Each		
1.1.13		BBS (double Alley Arm)	Each		
1.1.14		Installation of taps (Vertical)	Each		
1.1.15		Installation of taps (Horizontal)	Each		
1.1.16		Insulator replacement	Each		
1.1.17		Reframing of Structure to Standards	Each		
1.2	Dismantle				
1.2.1		Remove HV Structure framing	Each		
			Each		
1.2.2		Remove HV conductor	Span		
1.2.3		Remove HV Guying	Each		
1.3	Guying				
1.3.1		Installation of HV Down-guy	Each		

1.3.2		Installation of HV OH-guy	Each	
		Installation of HV Sidewalk		
1.3.3		Guy	Each	
		Installation and remove of		
1.3.4		temporary anchor and guy	Each	
1.3.5		Attaching push brace	Each	
1.4	Stringing			
1.4.1		(1/0) Azusa – 3 phases	Span	
1.4.2		(394) Canton – 3 phases	Span	
		Re-ssaging of HV conductor		
1.4.3		(1/0) Azusa	Span	
		Install middle phase (1/0)		
1.4.4		Azusa	Span	
1.4.5		1/0 Underground cable	FT	
	Transformer Installation			
1.5	Complete/Removal		Each	
	(10-100kVA)			
1.6	Remove Pole Head		Each	
	Installation of Arrestor			
	set (complete with			
	grounding wire and earth			
1.7	rod)		Each	
1.8	Installation of Earth Rods		Each	

2	SECONDARY LINES				
Item	Description of Works		Unit	Unit Cost	Extended Cost
2.1	Framing				
2.4.4		Intermediate (spreader/D-			
2.1.1		iron)	Each		
2.1.2		Dead-end	Each		
2.1.3		T- Corner	Each		
2.1.4		Dead-end Extension	Each		
2.1.5		L - Comer	Each		
2.1.6		4 way - Comer	Each		
2.2	Dismantle				
2.2.1		Remove LV Structure framing	Each		
2.2.2		Remove LV conductor	Span		
2.2.3		Remove LV Guying	Each		
2.2.4		Remove Anchor On LV extension	Each		
2.2.5		Remove LV service line	Each		
2.3	Guying				
2.3.1		Installation of LV Down-guy	Each		
2.3.2		Installation of LV OH-guy	Each		
		Installation of LV Side walk			
2.3.3		Guy	Each		
2.3.4		Installation of LV Span Guy	Each		
2.4	Stringing				

2.4.1		#4 Triplex	Span
2.4.2		2/0 Triplex	Span
2.4.3		4/0 Triplex	Span
2.4.4		2/0 Quadruplex	Span
2.4.5		4/0 Quadruplex	Span
		Re-sagging of LV conductor	
2.4.6		2/0	Span
		Re-sagging of LV conductor	
2.4.7		4/0	Span
2.4.8		Installation of LV service line	Each
2.5	Streetlight		
2.5.1		Removal of Streetlight	Each
2.5.2		Installation of Streetlight	Each
		Removal and Installation of	
2.5.3		Streetlight	Each

3	EXTRA ORDINARY CONDITI	ONS			
					Extended
Item	Description of Works		Unit	Unit Cost	Cost
	A CREW CONSISTS OF: 2 CLI	MBERS, 2 GROUNDMAN 1			
	SUPERVISOR AND 1 PICKUP TRUCK Emergency Call Out for the				
		Emergency Call Out for the			
3.1		mandatory crew complement.	Each		
		Emergency Call Out for			
		addition crew completement,			
		separate from your			
		mandatory crew compliment -			
		cost per crew (a crew consist			
		of: 2 climbers, 2 groundman			
		1 supervisor and 1 pickup			
3.2		truck)	Each		
		Additional daily fee per crew			
		(applicable to San Pedro and			
		Caye Caulker only for			
3.3		overnight accommodation)	Each		
		Daily rate for 1 crew (used to			
		support construction work			
		executed by BEL crew with			
		addition manpower. a crew			
		consists of: 2 climbers, 2			
		groundman 1 supervisor and			
3.4		1 pickup truck)	Each		
		Cost for the mandatory crew			
		to execute work in prescribe			
		timeframe under outage			
		conditions (covers attendance			
		of pre-job meeting when held			
		a day before the outage,			
		overnight accompany where			
		applicable, all crew members			
3.5		must be in attendance of pre-	Each		

	job meeting and preliminary work)		
3.6	Cost for the mandatory crew to execute work in prescribe timeframe under outage conditions (covers mobilization on the day of the outage)	Each	
3.7	Cost for additional crew to execute work in prescribed timeframe under outage conditions (covers mobilization on the day of the outage. a crew consist of: 2 climbers, 2 groundman 1 supervisor and 1 pickup truck)	Each	
5.7	Cost for additional crew to execute work in prescribe timeframe under outage conditions (covers attendance of pre-job meeting when held a day before the outage, overnight accompany where applicable, all crew members must be in attendance of pre-job meeting and preliminary work. a crew consists of: 2 climbers, 2 groundman 1 supervisor and 1 pickup	Lacii	
3.8	truck)	Each	

Please verify all prices before submitting

5. EQUIPMENT

The Bidder must demonstrate that he/she will have access to the key Equipment & Tools listed hereafter, in order to suffice the needs of the Service Area he/she plans to serve:

No.	Equipment Type and Characteristics	Minimum Number Required	Service Area	How Many do you Posses
1	Lineman Climbing Gears such as but not limited to; Body belt, body harness, pole choker, spur, hand line, hand tools & drill	1	ALL	
2	Extension Ladder	1	ALL	
3	Cable Roller	3	ALL	

4	Chain Hoist	2	ALL	
5	Crimper (MD6)	1	ALL	
6	Crimper (MD6-8)	1	ALL	
7	Cable Cutter	1	ALL	
8	Bolt Cutter	1	ALL	
9	Chicago Grip, Puller & Sling	2	ALL	
10	Set of Distribution Grounds, Grip All & Grounding Rod	1	ALL	
11	Pickup Truck	1	ALL	
12	Access to lifting equipment such as; bucket Truck & RBD with Bucket attachment, crane truck with bucket attachment etc.	1	ALL	

5.1 Forms for Equipment

The Bidder shall provide adequate information to demonstrate clearly that he/she has the capability to meet the requirements of the equipment listed above. The Bidder shall provide all the information requested in **Appendix 5: Contractor Equipment log Form**.

Example:

Equip	oment information				
Item	Equipment & Tool Name	Quantity	Proposed location of Equipment	Area of Intended Coverage	Source - own, rented or leased.
1	Chain Hoist	1	Corozal	Corozal	Own
2					

Proof of Ownership for each Vehicular Equipment is to be provided to satisfy the requirements of the service area.

The following information shall be provided only for equipment not owned by the Bidder.

Owner	Name of owner:	
	Address of owner:	

	Telephone:	Contact name and title:
	Email Address:	
Agreements	Details of rental / lease / project	manufacture agreements specific to the

6. MANPOWER

The Bidder must demonstrate that he /she will have the personnel for the key positions that meet the following requirements:

No.	Position	Minimum Person required	Total Work related Experience (years)	In Similar Works Experience (years)
1	Climber	2	2	1
2	Ground man	2	2	1
3	Supervisor	1	5	5

Work executed daily assumes a crew compliment of two crews, known as the mandatory crew. Each crew consist of 2 climbers, 2 groundman 1 supervisor and 1 pickup truck. All works assigned shall consider this fact when deadlines are given. The contractor has the discretion to increase crew compliment for a shorter completion time at his own cost.

6.1 Forms for Personnel

Bidders should provide the names of a suitably qualified personnel to meet the specified requirements for the positions listed above. The employees' information and relevant work experience must in inputted in **Appendix 4: Employee Listing**.

Example:

1.	Name: Mr. John Doe	Experience:				
	Social Security Number: 000120012	7 Years experience as Power Line Technician for BEL				
	Title of position: Supervisor					
2.	Name:	Experience:				
	Social Security Number:					
	Title of position:					

7. DISCIPLINARY GUIDELINES

7.1 Definitions

- **A.** Contract Manager An authorize person/employee of BEL who invokes the hiring of the contractor and manages the contractual agreement between the contractor and BEL.
- **B.** Violation Infringement of any term or condition of a Contract Document, including any failure to comply with environmental, safety or legislative rules and regulations.
- **C.** Verbal Warning Any notification to the Contractor resulting from a Violation that is recorded on a "Contractor/Supplier Verbal Warning Form".
- **D.** Written Warning Any notification to the Contractor resulting from a Violation that is in the form of a letter given to the Contractor.
- **E.** Financial Penalty A fine in the amount of the difference between the Distribution Line Construction Contractor's price and the price to get the project completed by a second contractor.
- **F.** User Department The department of the Contract Manager that is responsible for the Work associated with a Contract.

- **G.** Disqualification The removal of a Contractor from the BEL "Approved Contractors Listing" for a period of not less than one year from the Contract suspension date.
- **H.** Approved Contractors Listing A list of suppliers who have successful completed BEL vetting process to execute specialized work for the Company.

7.2 Verbal Warnings

The Contract Manager's Representative may issue a Verbal Warning to a Contractor for any failure to comply with a term or condition of a Contract Document. The Contract Managers Representative is to report all Verbal Warnings to the Procurement Department for recording in the Supplier Database.

7.3 Written Warnings

- **A.** Where the issuance of a Verbal Warning is followed by repeated failure to comply with any of the terms or conditions of a Contract Document, the Contract Manager's Representative may issue a Written Warning.
- **B.** A Written Warning may also be issued where no Verbal Warnings have been issued, but in the Contract Manager's Representative's opinion, the seriousness of a Violation justifies a Written Warning.
- **C.** A Written Warning may, in the Contract Manager's Representative's discretion, include a warning that any further Violation may result in a Financial Penalty, the Contract Manager's Representative is to report all written warnings to the Procurement Department for recording in the Supplier Database.

7.4 Financial Penalty

A. If a contractor has been given a written warning containing a warning that any further Violation may result in a Financial Penalty, the Contract Manager's Representative is to report all Written Warning to the Procurement Department for recording in the Supplier Database.

B. A Financial Penalty may, in the discretion of the Contract Manager's Representative, be accompanied by written notification that any further Violation may result in Contract cancellation.

7.5 Contract Cancellation

Where a Financial Penalty has been imposed on the Contractor, and the Contractor has been notified that further violations may result in Contract cancellation, the Contract Manager's Representative may, in consultation with the Procurement Department, cancel the Contract if a further Violation occurs.

7.6 Disqualification from the Approved Contractors Listing

- **A.** A Contract Cancellation, if the Violation is serious enough in the opinion of the Procurement Department, may result in the disqualification of the Contractor. A written decision shall be issued to the Contractor or Supplier setting out the reasons for disqualification. The Manager Procurement and the User Department will jointly approve the disqualification.
- **B.** Disqualification of a Contractor may be imposed if any of the following conditions occur:
 - Serious breach of Contract indicating an unwillingness to perform a contract in accordance with the terms and conditions of the Contract or specifications, or a record of unsatisfactory performance of one or more Contracts in accordance with the terms and condition thereof or in accordance with the specifications or both.
 - II. Pending the outcome of an investigation into serious or multiple instances of poor performance, or until the Contractor meets conditions set for reinstatement; and
 - III. Repeated Violations after Verbal and Written Warnings and financial penalties have been imposed to the Contractor.

C. To be added back to the Approved Contractors Listing, the Contractor would have to request reinstatement at the end of the suspension period. Reinstatement may be obtained when evidence of improvements satisfactory to the Contract Manager is provided and references are provided from successful projects completed during the suspension periods. Procurement Department and the appropriate User Department would review this request and the supporting documentation.

7.7 Permanent Disqualification from the Approved Contractors Listing

- **A.** Depending on the seriousness and the nature of the violation, a Contractor may be removed permanently from the Approved Contractors Listing. A decision to remove a Contractor from the Approved Contractors Listing will be made jointly by the Procurement Department and the User Department. Permanent Disqualification of a Contractor may be imposed if any of, but not limited to, the following conditions occur:
 - The Contractor, supplier, a director or official of the supplier or Contractor is convicted for a criminal offense relating to obtaining or attempting to obtain a Contract or subcontract; and
 - II. The Contractor has offered gratuity to the Contract Manager in an attempt to gain a competitive advantage over other Contractors.

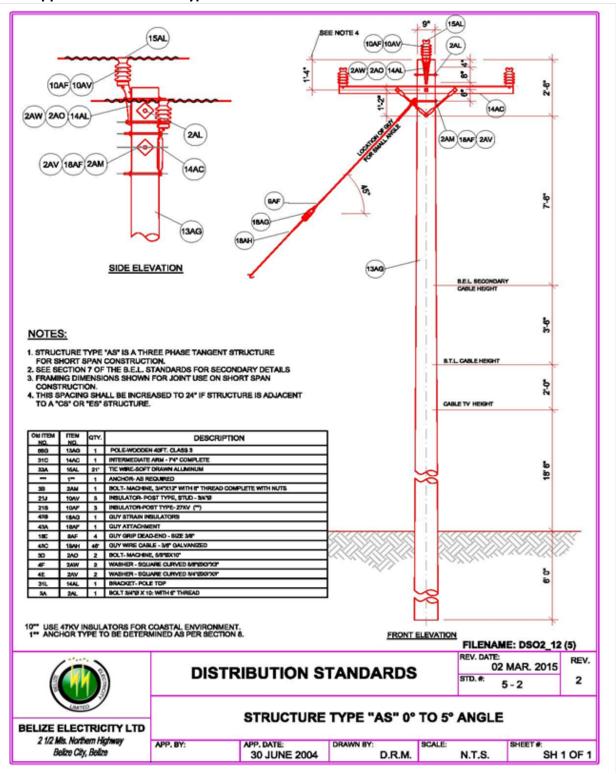
7.8 Temporary Disqualification from the Approved Contractors Listing

A. A Contractor may be removed temporarily from the Approved Contractors Listing in circumstances where the Contractor becomes temporarily unavailable to fulfil his obligations under this Agreement. The decision to remove a Contractor temporarily from the Approved Contractors Listing will be made jointly by Procurement and Inventory Department and the User Department. Temporary Disqualification of a Contractor may be imposed if any, but not limited to, the following conditions occurred:

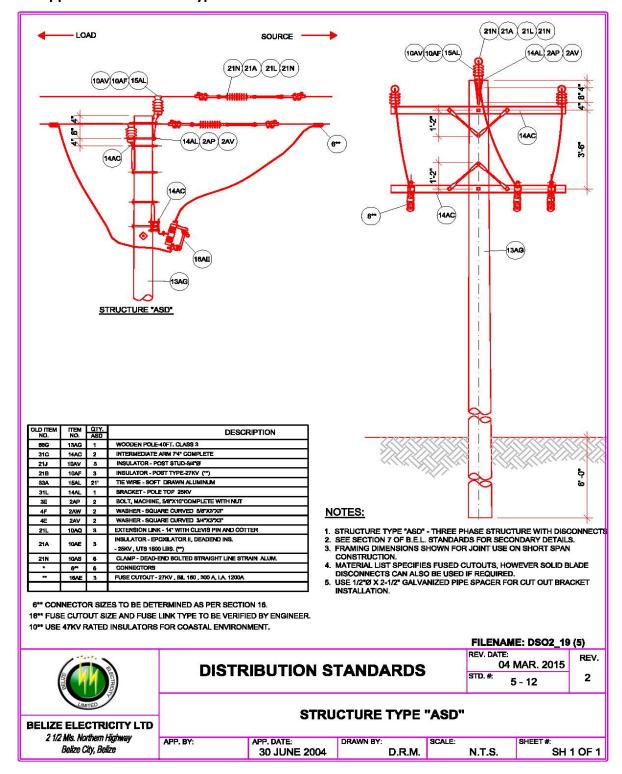
that I am o	Contractor)(Print)		(City/Town/Village) the above information. I have (Date)	
that I am o	Contractor)(Print) of sound mind and ha	ve carefully read all		
that I am o	Contractor)(Print) of sound mind and ha	ve carefully read all		
	Contractor)(Print)			
(Name of		(Address)	(City/Town/Village)	y deciare.
I				y deciare.
	of		, hereb	v doclaro
tne works v	vithin the time stipulat	ed in the contract.		
			within 3 days of notification an	d complete
8. ADDITIO	ONAL INFORMATION			
O ADDITIO				
		nanded in custody.		
II.	The Contractor is ren			

9. APPENDICIES

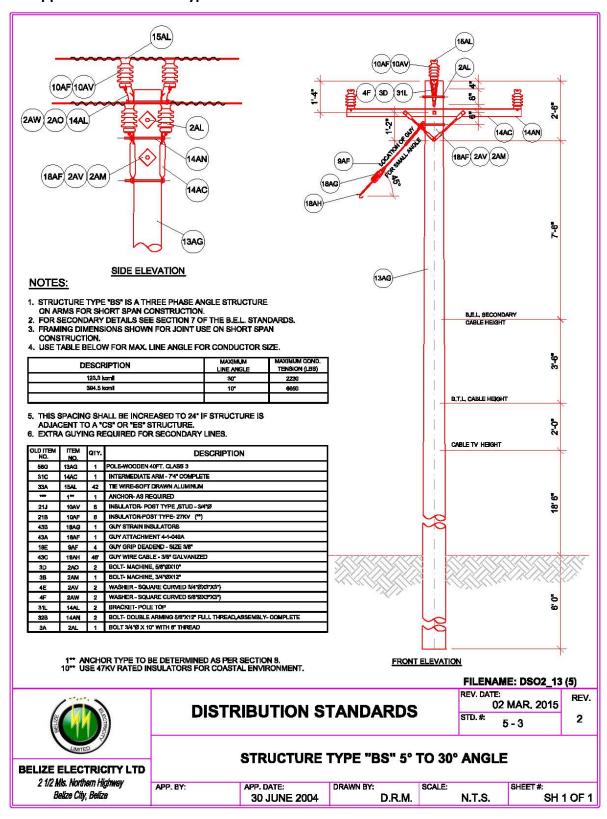
9.1 Appendix 1: Structure Type "AS"



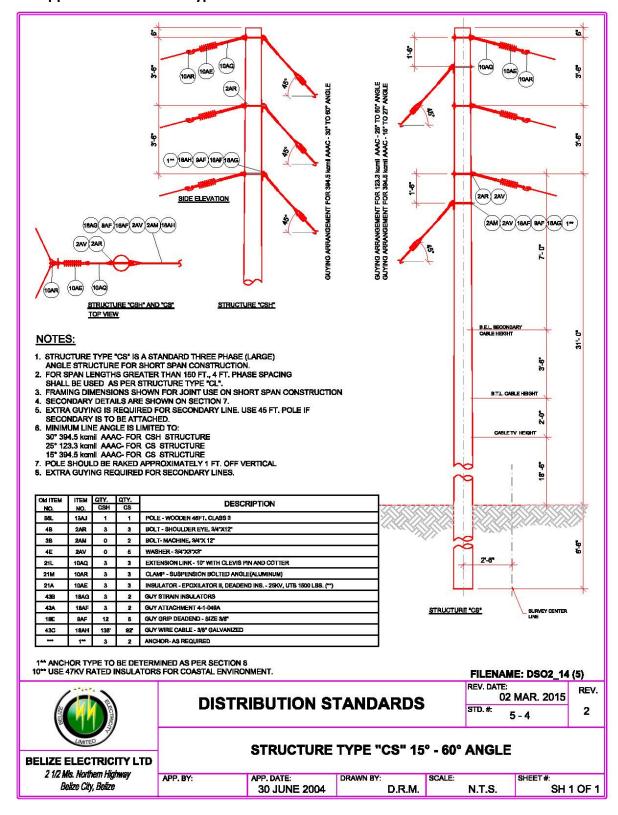
9.2 Appendix 2: Structure Type "ASD"



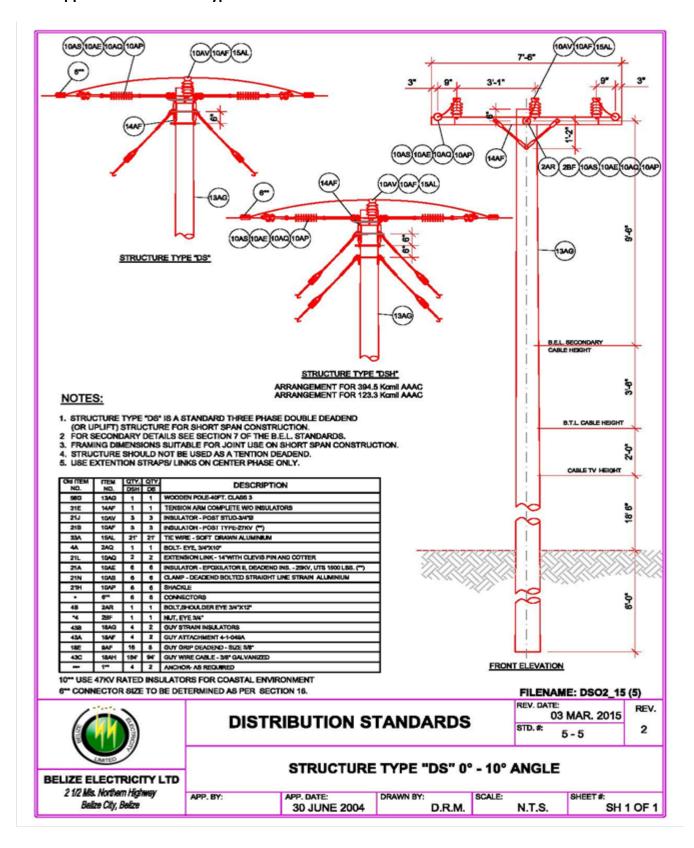
9.3 Appendix 3: Structure Type "BS"



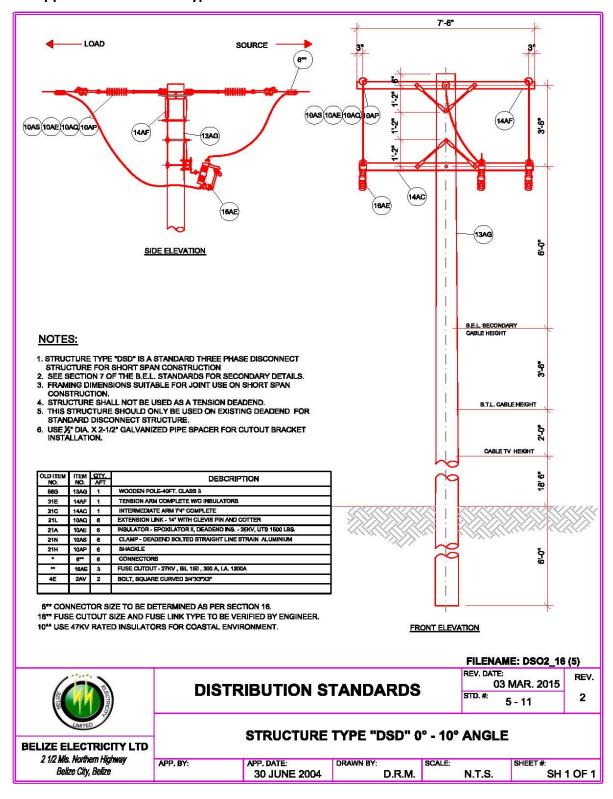
9.4 Appendix 4: Structure Type "CS"



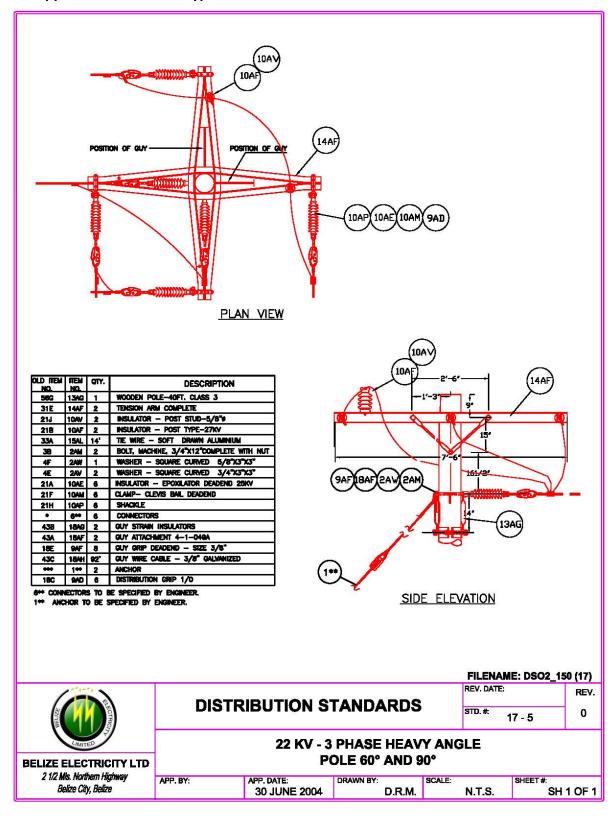
9.5 Appendix 5: Structure Type "DS"



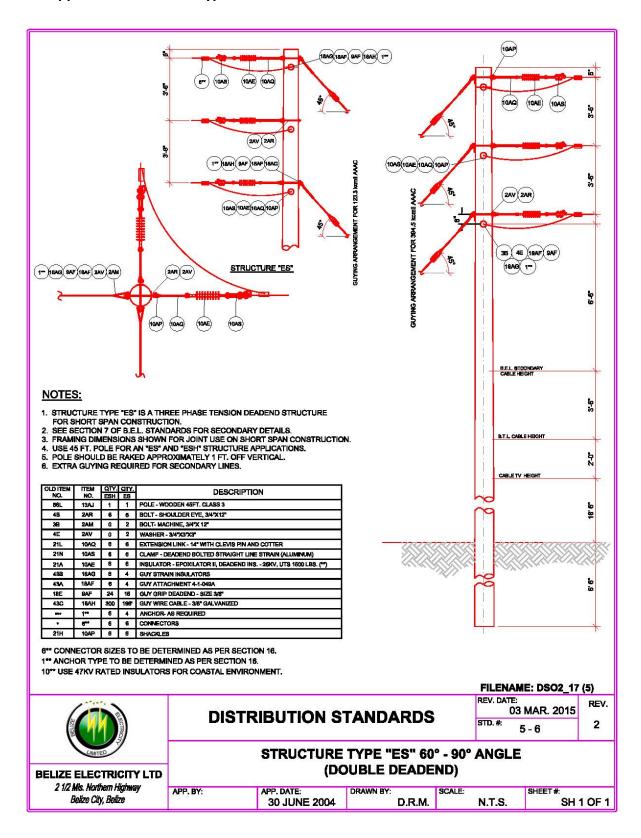
9.6 Appendix 6: Structure Type "DSD"



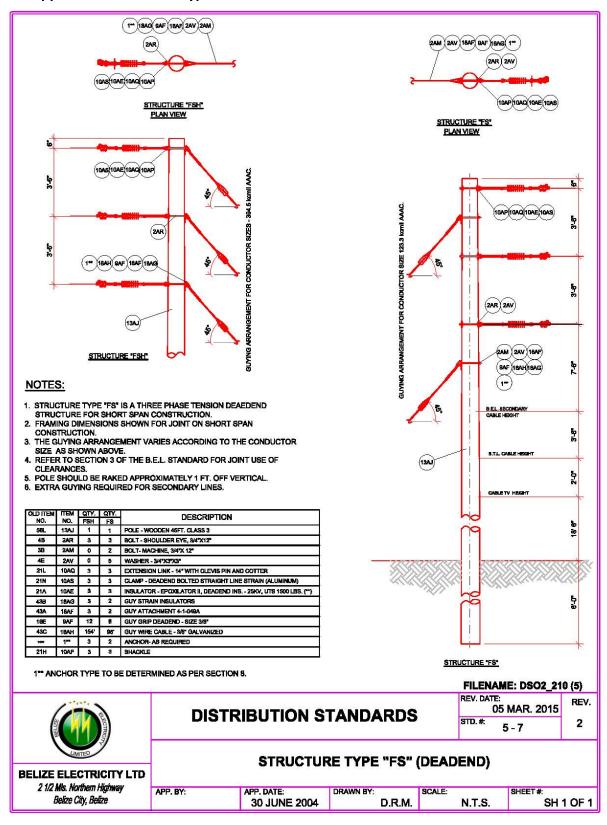
9.7 Appendix 7: Structure Type "DDE"



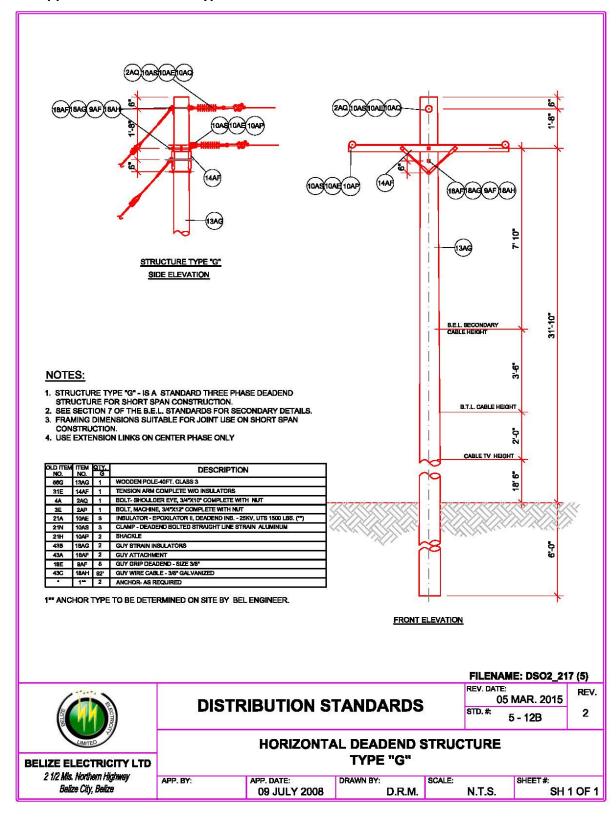
9.8 Appendix 8: Structure Type "ES"



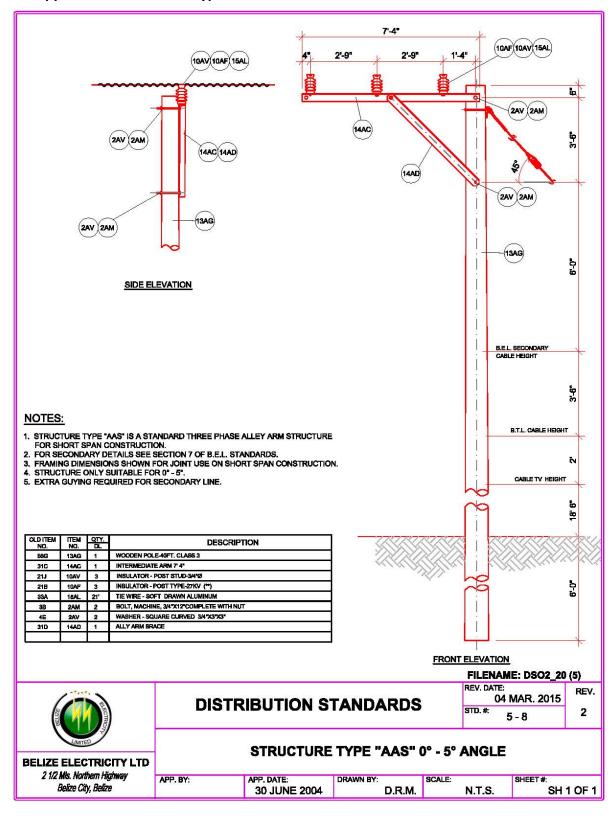
9.9 Appendix 9: Structure Type "FS"



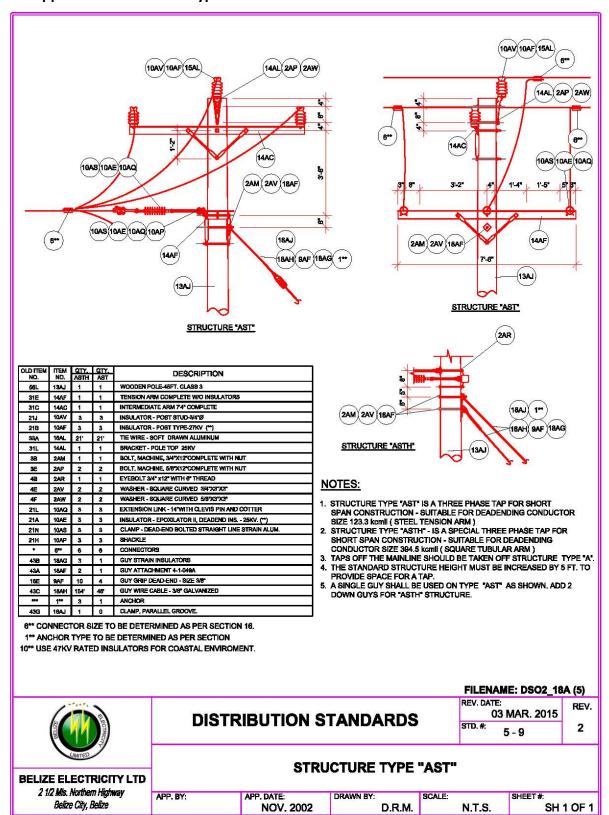
9.10 Appendix 10: Structure Type "G"



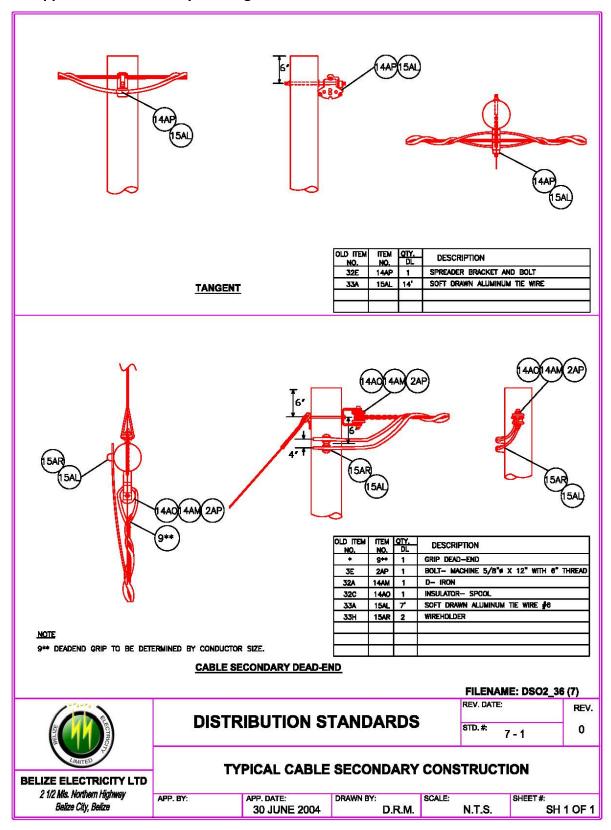
9.11 Appendix 11: Structure Type "AAS"

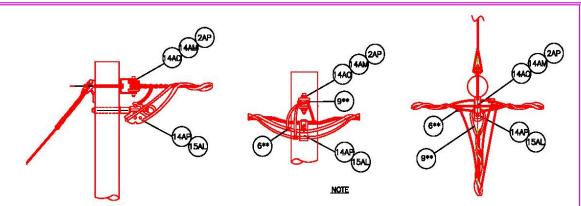


9.12 Appendix 12: Structure Type "AST"



9.13 Appendix 13: Secondary Framing



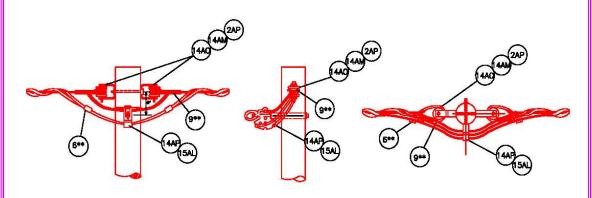


"T" CORNER

900 DEADEND GRIP TO BE DETERMINED BY CONDUCTOR SIZE.
600 H BLOCK CONNECTOR SIZE TO BE DETERMINED
BY CONDUCTOR SIZE.

OLD ITEM	ITEM NO.	QTY.	DESCRIPTION	OLD ITEM NO.	ITEM NO.	QTY.	DESCRIPTION
•	9**	1	GRIP -CONDUCTOR DEADEND	32E	144	1	SPREADER BRACKET AND BOLT
3E	2AP	1	BOLT- MACHINE 5/8"# X 12" WITH 6" THREAD	33A	15AL	7'	SOFT DRAWN ALUMINUM TIE WIRE
32A	14AM	1	D- IRON	*	6**	3	CONNECTOR H-BLOCK
32C	14A0	1	INSULATOR— SPOOL	1			

9** TO BE DETERMINED BY CONDUCTOR SIZE.



NOTE

9** DEADEND GRIP TO BE DETERMINED BY CONDUCTOR SIZE. 6** H BLOCK CONNECTOR SIZE TO BE DETERMINED BY CONDUCTOR SIZE.

SECONDARY EXTENSION FROM SECONDARY DEAD END

OLD ITEM NO.	ITEM NO.	QTY.	DESCRIPTION
	9 ⇔	2	GRIP DEAD—END
3E	2AP	1	BOLT- MACHINE 5/8" X 12" WITH 6" THREAD
32A	14AM	2	D- IRON
32C	1440	2	INSULATOR— SPOOL
	644	3	CONNECTOR H-BLOCK
32E	14AP	1	SPREADER BRACKET AND BOLT
33A	15AL	2'	SOFT DRAWN ALUMINUM TIE WIRE #6

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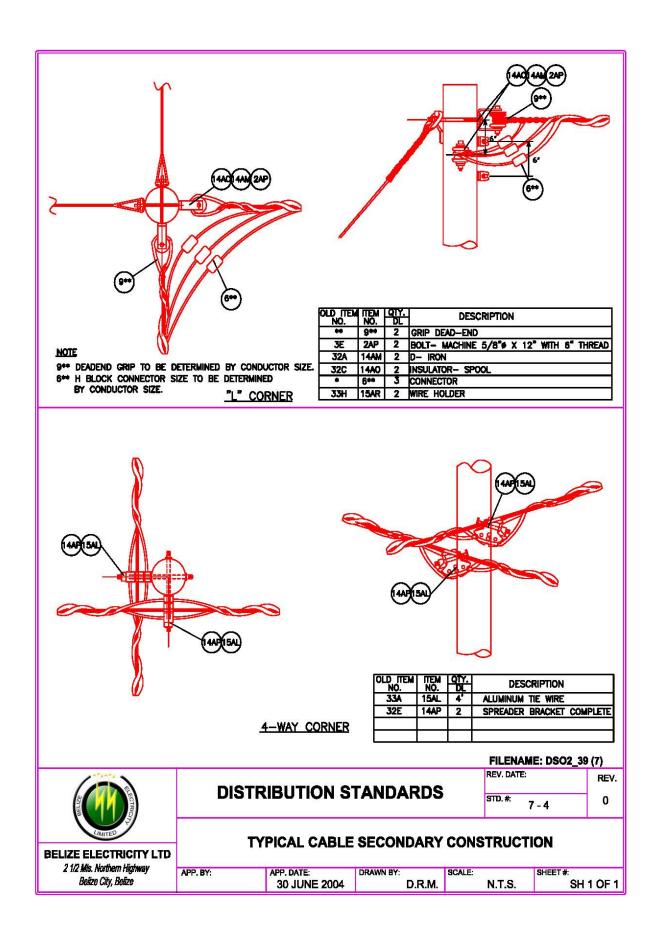
DISTRIBUTION STANDARDS

REV. DATE:	REV.	
STD.#: 7 - 2	0	

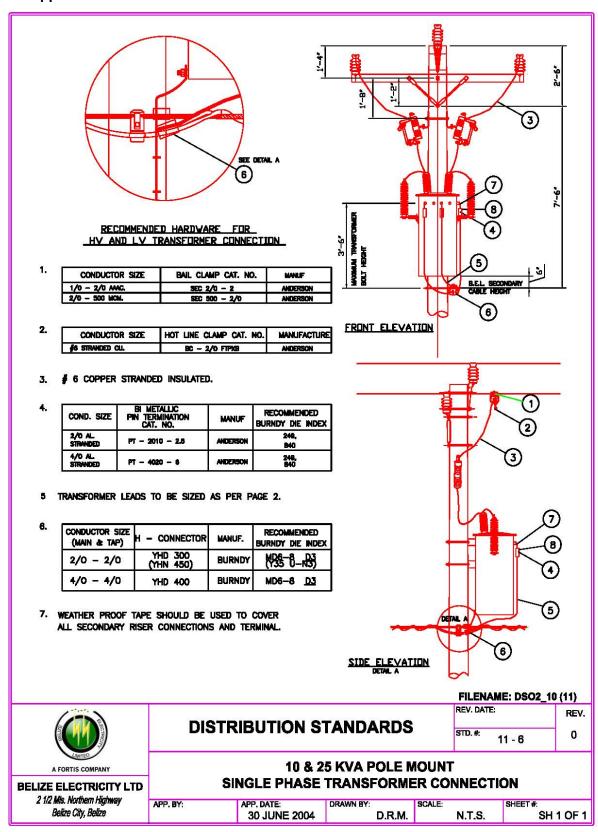
TYPICAL CABLE SECONDARY CONSTRUCTION

2 1/2 Mis. Northern Highway Belize City, Belize

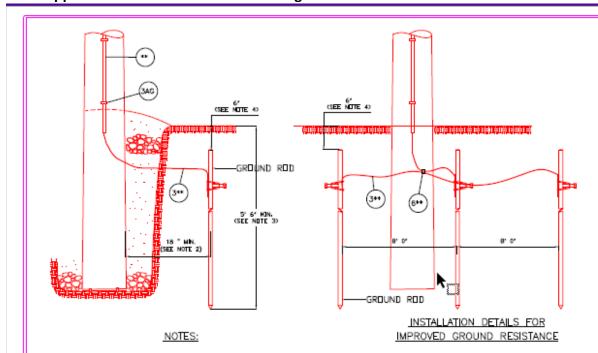
APP. BY: APP. DATE: DRAWN BY: SCALE: SHEET #: 30 JUNE 2004 D.R.M. N.T.S. SH 1 OF 1



9.14 Appendix 14: Transformer Installation



9.15 Appendix 15: Installation of Grounding Rod



- (1.) A GROUND ROD IS TO BE USED WHERE IT IS IMPRACTICAL TO INSTALL A GROUND COIL.
- (2.) GROUND RODS SHALL BE INSTALLED IN UNDISTURBED EARTH (AT LEAST 18" INCHES FROM WOOD POLES) TO ENSURE THE BEST POSSIBLE CONTACT WITH THE SOIL
- (3.) THE GROUND ROD SHALL BE DRIVEN VERTICAL IF THIS IS NOT POSSIBLE THE GROUND ROD MAY BE DRIVEN AT AN ANGLE NOT LESS THAN 45' TO THE HORIZONTAL TO ITS FULL DEPTH.
- (4.) FOR PROTECTION THE GROUND ROD AND GROUND WIRE SHALL BE BURIED AT LEAST 6* BELOW FINAL GRADE.
- (5.) THE GROUND WIRE SHALL BE COVERED WITH A GROUND WIRE GUARD. THE GUARD SHALL EXTEND 6" BELOW FINAL GRADE AND BE CLAMPED AT 8" INTERVALS.
- (6.) TO IMPROVE GROUND RESISTANCE AT A PARTICULAR LOCATION TWO OR THREE GROUND RODS MAY BE ADDED TO THE EXISTING ELECTRODE AS INDICATED.
- (7.) THE ADDITIONAL RODS SHOULD BE SPREAD NOT LESS THAN 8 FT. APART AND INSOFAR AS POSSIBLE BE INSTALLED ALONG THE ROUTE OF THE POLE.

OLD ITEM NO.	ITEM NO.	OTY.	DESCRIPTION
•	3**	1	GROUND WIRE #4 BARE COPPER
**	**	1	GUARD - GROUND WIRE 8'-0"
6LC	340	2	STAPLES — GROUND WIRE, 3/8"X1 1/2"
_	6**	•	CONNECTOR BOLT , SPLIT .



DISTRIBUTION STANDARDS

FILENAME; DSUZ_13	14 (15)
REV. DATE:	REV.
STD.#: 15 - 3	0

ELLENAME: DOOS 434 (45)

STANDARD GROUNDING ROD INSTALLATION DETAILS

APP. BY:	APP. DATE:	DRAWN BY:	SCALE:	SHEET#:
	30 JUNE 2004	D.R.M.	N,T,S,	SH 1 OF 1

9.16 Appendix 16: Employee Listing

		CONTRACTOR'S STAFF LISTING
1	Name:	Experience:
	Social Security Number:	
	Title of position:	
2	Name:	Experience:
	Social Security Number:	
	Title of position:	
3	Name:	Experience
	Social Security Number:	
	Title of position:	
4	Name:	Experience:
	Title of position:	
	Social Security Number:	
5	Name:	Experience:
	Title of position:	
	Social Security Number:	
6	Name:	Experience:
	Title of position:	
	Social Security Number:	
7	Name:	Experience:
	Title of position:	
	Social Security Number:	
8	Name:	Experience:
	Title of position:	
	Social Security Number:	
9	Name:	Experience:
	Title of position:	
	Social Security Number:	
10	Name:	Experience:
	Title of position:	
	Social Security Number:	

9.17 Appendix 17: Contractor Equipment Log Form

			Equipment information	on	
Item	Equipment & Tool Name	Quantity	Proposed location of Equipment	Area of Intended Coverage	Source - own, rented or leased.
1					
2					
3					
4					
5					
6					
7					
8					
9					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

9.18 Appendix 18: Corozal Service Area – Historical Data

	Corozal Service Area Historical Data					
Item	Description of Works		Unit	June to October 2023		
1	PRIMARY LINES					
1.1	Framing					
1.1.1		AS	Each	38		
1.1.5		DS	Each	2		
1.1.6		DSD	Each	1		
1.1.10		G	Each	3		
1.1.12		AST	Each	2		
1.2	Dismantle					
1.2.1		Remove HV Structure framing	Each	3		
1.4	Stringing					
1.4.1		(1/0) Azusa – 3 phases	Span	20		
1.5	Transformer Installation Complete/Removal (10- 100kVA)		Each	2		
1.6	Remove Pole Head		Each	3		
2	SECONDARY LINES	•				
2.1	Framing					
2.1.1		Intermediate (spreader/D-iron)	Each	10		
2.1.2		Deadend	Each	11		
2.1.3		T- Comer	Each	2		
2.1.4		Deadend Extension	Each	16		
2.1.5		L - Comer	Each	1		
2.2	Dismantle					
2.2.1		Remove LV Structure framing	Each	7		
2.4	Stringing					
2.4.1		#4 Triplex	Span	14		
2.4.2		2/0 Triplex	Span	23		

9.19 Appendix 19: Orange Walk Service Area – Historical Data

	Orange Walk Servi	ice Area Histori	cal Dat	ta	
Item	Description of Works		Unit	June to October 2023	
1	PRIMARY LINES				
1.1	Framing				
1.1.1		AS	Each	5	
1.1.5		DS	Each	1	
1.1.10		G	Each	2	
1.2	Dismantle				
1.2.3		Remove HV Guying	Each	1	
1.3	Guying				
1.3.1		Installation of HV Down-guy	Each	4	
1.4	Stringing				
1.4.1		(1/0) Azusa – 3 phases	Span	7	
1.5	Transformer Installation Complete/Removal (10-100kVA)			7	
2	SECONDARY LINES	•			
2.1	Framing				
2.1.1		Intermediate (spreader/D-iron)	Each	27	
2.1.2		Deadend	Each	50	
2.1.3		T- Comer	Each	6	
2.1.4		Deadend Extension	Each	17	
2.2	Dismantle				
2.2.3		Remove LV Guying	Each	1	
2.3	Guying				
2.3.1		Installation of LV Down-guy	Each	41	
2.4	Stringing				
2.4.1		#4 Triplex	Span	56	
2.4.2		2/0 Triplex	Span	69	
2.4.3		4/0 Triplex	Span	3	
2.4.4		2/0 Quadruplex	Span	2	
2.5	Installation of Streetlight		Each	19	

NB. The historical data represents work the contractor completed during the span of time indicated. The work completed indicates de-energize work executed. A growing distribution network and a more extensive period would contribute to a potential increase in work.

9.20 Appendix 20: San Pedro Service Area – Historical Data

	San Pedro Service Area Historical Data					
Item	Description of Works		Unit	June to October 2023		
1	PRIMARY LINES		1			
1.1	Framing					
1.1.1		AS	Each	2		
1.2	Dismantle					
1.2.1		Structure framing	Each	2		
2	SECONDARY LINES					
2.1	Framing					
2.1.1		Intermediate (spreader/D-iron)	Each	3		
2.1.2		Deadend	Each	5		
2.2	Dismantle					
2.2.1		Remove LV Structure framing	Each	7		
2.2.2		Remove LV Guying	Each	2		
2.3	Guying					
2.3.1		Installation of LV Down-guy	Each	7		
2.4	Stringing					
2.4.1		#4 Triplex	Span	5		
2.4.2		2/0 Triplex	Span	4		
2.4.3		4/0 Triplex	Span	4		
2.5	Installation of Streetlight		Each	6		

9.21 Appendix 21: Ladyville Service Area – Historical Data

	Ladyville Service Area Historical Data				
Item	Description of Works			June to October 2023	
1	PRIMARY LINES				
1.1	Framing				
1.1.5		DS	Each	1	
1.2	Dismantle				
1.2.1		Structure framing	Each	13	
1.2.2		Guying	Each	1	
1.3	Guying				
1.3.1		Installation of HV Down-guy	Each	5	
1.3.2		Installation of HV OH-guy	Each	5	
1.4	Stringing				
1.4.1		(1/0) Azusa – 3 phases	Span	14	
1.5	Transformer Installation Complete/Removal (10- 100kVA)		Each	2	
2	SECONDARY LINES				
2.1	Framing				
2.1.1		Intermediate (spreader/D-iron)	Each	33	
2.1.2		Deadend	Each	26	
2.1.6		4 w-ay - Comer	Each	2	
2.2	Dismantle				
2.2.1		Remove LV Structure framing	Each	243	
2.2.2		Remove LV Guying	Each	2	
2.3	Guying				
2.3.1		Installation of LV Down-guy	Each	24	
2.4	Stringing				
2.4.1		#4 Triplex	Span	52	
2.4.2		2/0 Triplex	Span	124	
2.5	Installation of Streetlight		Each	34	

NB. The historical data represents work the contractor completed during the span of time indicated. The work completed indicates de-energize work executed. A growing distribution network and a more extensive period would contribute to a potential increase in work.

9.22 Appendix 22: Belmopan Service Area – Historical Data

Belmopan Service Area Historical Data					
Item	Description of Works		Unit	June to October 2023	
	PRIMARY LINES				
1.1	Framing				
1.1.1		AS	Each	28	
1.1.3		BS	Each	6	
1.1.4		CS	Each	2	
1.1.5		DS	Each	4	
1.1.6		DSD	Each	1	
1.1.8		ES	Each	1	
1.1.10		G	Each	11	
1.1.11		AAS	Each	2	
1.1.12		AST	Each	3	
1.2	Dismantle				
1.2.1		Remove HV Structure framing	Each	7	
1.2.2		Remove HV Guying	Each	5	
1.3	Guying				
1.3.1		Installation of HV Down-guy	Each	37	
1.3.2		Installation of HV OH-guy	Each	17	
1.4	Stringing				
1.4.1		(1/0) Azusa – 3 phases	Span	94	
1.4.2		(394) Canton – 3 phases	Span	6	
1.5	Transformer Installation Complete/Removal (10-100kVA)		Each	13	
2	SECONDARY LINES				
2.1	Framing				
2.1.1		Intermediate (spreader/D-iron)	Each	6	
2.1.2		Deadend	Each	20	
2.1.3		T - Corner	Each	1	
2.1.4		Deadend - Extension	Each	5	
2.1.5		L - Corner	Each	3	
2.2	Dismantle				
2.2.1		Remove LV Structure framing	Each	8	

2.2.2		Remove LV Guying	Each	10
2.3	Guying			
2.3.1		Installation of LV Down-guy	Each	14
2.4	Stringing			
2.4.1		#4 Triplex	Span	16
2.4.2		2/0 Triplex	Span	44
2.4.3		4/0 Triplex	Span	5
2.5	Installation Of Streetlight		Each	7

9.23 Appendix 22: San Ignacio Service Area – Historical Data

	San Ignacio Service Area Historical Data					
Item	Description of Works		Unit	June to October 2023		
	PRIMARY LINES					
1.1	Framing					
1.1.1		AS	Each	5		
1.1.5		DS	Each	1		
1.1.7		ES	Each	1		
1.1.10		G	Each	3		
1.3	Guying					
1.3.1		Installation of HV Down-guy	Each	10		
1.4	Stringing					
1.4.1		(1/0) Azusa – 3 phases	Span	9		
1.5	Transformer Installation Complete/Removal (10-100kva)		Each	3		
2	SECONDARY LINES	1				
2.1	Framing					
2.1.1		Intermediate (spreader/D-iron)	Each	6		
2.1.2		Deadend	Each	9		
2.1.4		Deadend - Extension	Each	4		
2.2	Dismantle					
2.2.2		Remove LV Guying	Each	3		
2.3	Guying					
2.3.1		Installation of LV Down-guy	Each	6		
2.4	Stringing					
2.4.1		#4 Triplex	Span	7		
2.4.2		2/0 Triplex	Span	15		

9.24 Appendix 22: Dangriga Service Area – Historical Data

	Dangriga Service Area Historical Data					
Item	Description of Works		Unit	June to October 2023		
1	PRIMARY LINES					
1.1	Framing					
1.1.1		AS	Each	20		
1.1.3		BS	Each	12		
1.3	Guying					
1.3.1		Installation of HV Down-	Each	4		
		guy				
1.4	Stringing					
1.4.1		(1/0) Azusa – 3 phases	Span	28		