

Control Number: 35077



Item Number: 999

Addendum StartPage: 1

**Project No. 35077** RECEIVED

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**Amendment No. 9** PUBLIC UTILITY COMMISSION  
REGULATORY DIVISION

**INTERCONNECTION AGREEMENT**

**Between**

**LCRA Transmission Services Corporation**

**and**

**Central Texas Electric Cooperative, Inc.**

**August 7, 2019**

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**NINTH AMENDMENT TO  
INTERCONNECTION AGREEMENT**

This Ninth Amendment (“Amendment”) is made and entered into this 7<sup>th</sup> day of August, 2019, between the Central Texas Electric Cooperative, Inc. (“CTEC”) and LCRA Transmission Services Corporation (“LCRA TSC”) collectively referred to hereinafter as the Parties.

**WHEREAS**, LCRA TSC and CTEC entered into that certain Interconnection Agreement executed August 13, 2009, as amended by that certain Amendment No. 1 executed as of June 22, 2011, as amended by that certain Amendment No. 2 executed as of September 14, 2011, as amended by that certain Amendment No. 3 executed as of September 25, 2012, as amended by that certain Amendment No. 4 executed as of January 7, 2013, as amended by that certain Amendment No. 5 executed as of January 25, 2017, as amended by that certain Amendment No. 6 executed as of February 3, 2017, as amended by that certain Amendment No. 7 executed as of May 19, 2017, as amended by that certain Amendment No. 8 executed as of December 1, 2017 (collectively, as amended, the “Agreement”);

**WHEREAS**, CTEC and LCRA TSC have entered into an agreement (the “Asset Purchase Agreement”) whereby LCRA TSC will acquire certain transmission line and substation assets from CTEC;

**WHEREAS**, following consummation of the transactions contemplated by the Asset Purchase Agreement, the Parties will have updated points of interconnection as currently set forth in the Agreement;

**WHEREAS**, the Parties wish to amend the Agreement in order to reflect the additions and deletions of points of interconnection in the Asset Purchase Agreement;

**WHEREAS**, this amendment to the Agreement is necessary to reflect LCRA TSC’s ownership of the transmission line and substation assets acquired from CTEC, as agreed in the Asset Purchase Agreement, at the following substations:

1. Bluffton
2. Buchanan CTEC
3. Doss
4. Fredonia
5. Goehmann Lane
6. Harper
7. Kingsland 1
8. Kingsland 2
9. Live Oak
10. Mason CTEC
11. Sunrise Beach

**NOW, THEREFORE**, in consideration of the mutual promises and undertakings herein set forth, the Parties agree to amend the Agreement as follows:

1. Exhibit “A” attached to the Agreement is deleted in its entirety and Exhibit “A” attached to this Amendment is hereby added to the Agreement in lieu thereof.
2. Facility Schedule No. 1 (including the diagrams attached thereto) is deleted in its entirety and Facility Schedule No. 1 attached to this Amendment is hereby added to the Agreement in lieu thereof.
3. Facility Schedule No. 6 (including the diagrams attached thereto) is deleted in its entirety and Facility Schedule No. 6 attached to this Amendment is hereby added to the Agreement in lieu thereof.
4. Facility Schedule No. 13 (including the diagrams attached thereto) is deleted in its entirety and Facility Schedule No. 13 attached to this Amendment is hereby added to the Agreement in lieu thereof.
5. Facility Schedule No. 13 (including the diagrams attached thereto) is deleted in its entirety and Facility Schedule No. 13 attached to this Amendment is hereby added to the Agreement in lieu thereof.
6. Facility Schedule No. 15 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
7. Facility Schedule No. 16 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
8. Facility Schedule No. 17 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
9. Facility Schedule No. 18 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
10. Facility Schedule No. 19 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
11. Facility Schedule No. 20 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
12. Facility Schedule No. 21 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
13. Facility Schedule No. 22 (including the diagrams attached thereto) attached to this

Amendment is hereby added to the Agreement.

14. Facility Schedule No. 23 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
15. Facility Schedule No. 24 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
16. Facility Schedule No. 25 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.
17. Facility Schedule No. 26 (including the diagrams attached thereto) attached to this Amendment is hereby added to the Agreement.

Except as otherwise expressly provided for herein, the Agreement will continue in full force and effect in accordance with its terms.

IN WITNESS WHEREOF, the Parties have caused this Amendment to be executed in several counterparts, each of which shall be deemed an original but all shall constitute one and the same instrument.

CENTRAL TEXAS ELECTRIC  
COOPERATIVE, INC.

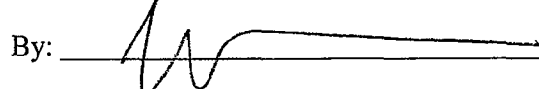
By: 

Name: Robert A. Loth III

Title: Chief Executive Officer

Date: 8/7/19

LCRA TRANSMISSION SERVICES  
CORPORATION

By: 

Name: Sergio Garza, P.E.

Title: LCRA Vice President, Transmission  
Design and Protection

Date: 08/07/2019



**EXHIBIT A**  
Ninth Amendment

<b>FACILITY SCHEDULE NO.</b>	<b>LOCATION OF POINT(S) OF INTERCONNECTION (# of Points)</b>	<b>INTERCONNECTION VOLTAGE (KV)</b>	<b>EFFECTIVE DATE OF INTERCONNECTION</b>
1	Buchanan CTEC (2)	69-kV	Date of 9 <sup>th</sup> Amendment
2	Castell (1)	138-kV	September 14, 2011
3	Eckert (2)	4.16-kV	January 7, 2013
4	Fredericksburg (1)	69-kV	December 1, 2017
5	Kendall CTEC (1)	138-kV	December 1, 2017
6	Live Oak CTEC (1)	69-kV	Date of 9 <sup>th</sup> Amendment
7	Nimitz (9)	12.5-kV	January 7, 2013
8	Pittsburg (2)	138-kV and 12.5-kV	December 1, 2017
9	Rim Rock (6)	12.5-kV	August 13, 2009
10	Wolf Creek (1)	138-kV	May 19, 2017
11	Jack Furman (1)	138-kV	June 22, 2011
12	Sunrise Beach (1)	69-kV	August 13, 2009
13	Mason CTEC (2)	69-kV	Date of 9 <sup>th</sup> Amendment
14	Gillespie (1)	138-kV	December 1, 2017
15	Hollmig (1)	138-kV	September 14, 2011
16	Nebo (1)	69-kV	January 7, 2013
17	Blumenthal (1)	138-kV	May 19, 2017
18	San Saba (1)	138-kV	February 3, 2017
19	Bluffton (1)	69-kV	Date of 9 <sup>th</sup> Amendment
20	Doss (1)	69-kV	Date of 9 <sup>th</sup> Amendment
21	Fredonia (1)	69-kV	Date of 9 <sup>th</sup> Amendment
22	Goehmann Lane (2)	69-kV	Date of 9 <sup>th</sup> Amendment
23	Harper (2)	69-kV	Date of 9 <sup>th</sup> Amendment
24	Kingsland 1 (1)	69-kV	Date of 9 <sup>th</sup> Amendment
25	Kingsland 2 (1)	69-kV	Date of 9 <sup>th</sup> Amendment
26	Sunrise Beach (1)	69-kV	Date of 9 <sup>th</sup> Amendment
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**FACILITY SCHEDULE NO. 1**  
Ninth Amendment

1. **Name:** Buchanan CTEC Substation
2. **Facility Location:** The Buchanan CTEC Substation is located at 16340 E. State Hwy. 29, Buchanan Dam, Llano County, Texas 78609.
3. **Points of Interconnection:** There are two (2) Points of Interconnection in the Buchanan CTEC Substation generally described as:
  - where the CTEC jumper from the CTEC switch (8257) connects to the LCRA TSC 69-kV transfer bus.
  - where the CTEC jumper from the CTEC switch (8264) connects to the LCRA TSC 69-kV operating bus.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformers are located in the T1; 12.5-kV transformer bus and the T2; 12.5-kV transformer bus. The metering potential transformers are located on both 12.5-kV operating buses.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Buchanan CTEC Substation including, but not limited to, the following items:

- Five (5) 69-kV switches 8254, 8257, 8264, 8274, and 8284
- Two (2) fuses F1 and F2
- Two (2) power transformers T1 and T2 and associated surge arresters
- All distribution circuits including dead end insulators that attach to the dead end structure, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including A-frames, trusses, insulators, disconnect switches, surge arresters, 12.5-kV operating and transfer bus, bus potential



transformers and associated cabling

- Six (6) single phase regulators REG1 and REG2 and associated cutoff and bypass switches.
- Two (2) station service SS1 and SS2
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of all structures, conductors, insulators, and connecting hardware:
  - Buchanan CTEC to Bluffton 69-kV transmission line
  - Buchanan CTEC to Kingsland 2 69-kV transmission line
  - Live Oak to Harper 69-kV transmission line
- 69-kV dead-end structures, foundations, insulators and jumpers
- Four (4) 69-kV circuit breakers 8250, 8260, 8270 and 8280 including foundations, jumpers and protective relay packages
- Twelve (12) 69-kV switches 8249, 8251, 8253, 8259, 8261, 8263, 8269, 8271, 8273, 8279, 8281, 8283
- Five (5) 69-kV surge arresters SA4, SA13, SA14, SA15, and SA16
- 69-kV operating and transfer bus including structures, insulators, foundations and jumpers
- One (1) metering potential transformer PT1
- Two (2) low voltage metering current transformers CT1 and CT2
- One (1) 69-kV relaying current transformer CT3
- Control house, battery charger and battery bank
- Underfrequency relay panel

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

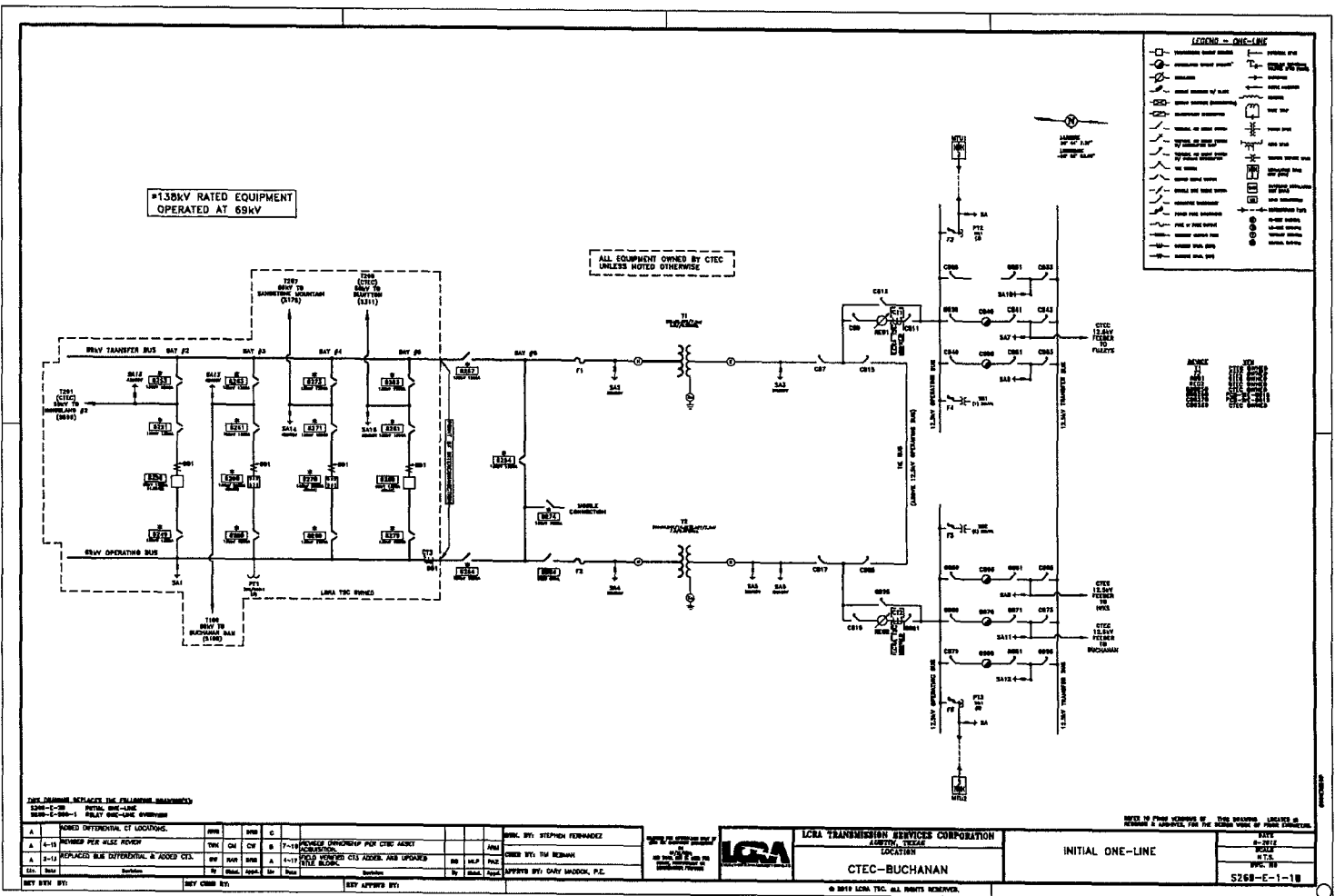
**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

# BUCHANAN CTEC ONE-LINE DIAGRAM

## Ninth Amendment



**FACILITY SCHEDULE NO. 6**  
Ninth Amendment

1. **Name:** Live Oak Substation
2. **Facility Location:** The Live Oak Substation is located at 724 Post Oak Rd., Fredericksburg, Gillespie County, Texas 78624.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Live Oak Substation generally described as:
  - where the CTEC jumper from the CTEC circuit switcher (CS755) connects to the LCRA TSC 69-kV switch (756), located on the LCRA TSC box structure.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformer is located in the T1; 12.5-kV transformer bus. The metering potential transformer is on the 12.5-kV operating bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Live Oak Substation including, but not limited to, the following items:

- One (1) 69-kV circuit switcher CS755 with foundations, stands, protective relaying and associated bypass switch 757
- One (1) 69-kV power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution and total bays including box structure, insulators, disconnect switches, 12.5-kV operating and transfer bus and associated cabling
- One (1) control house (24' x 30') with battery bank, charger and appurtenances
- One (1) station service SS1 with fuse F3
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of all structures, conductors, insulators, and connecting hardware:
  - Live Oak to Gillespie 69-kV transmission line
  - Live Oak to Goehmann Lane 69-kV transmission line
  - Live Oak to Harper 69-kV transmission line
- One (1) 69-kV box structure including insulators, 69-kV operating bus (string bus), jumpers and foundations
- Three (3) 69-kV circuit breakers 710, 750 and 820 including jumpers, foundations, and protective relaying
- Ten (10) 69-kV switches 709, 711, 713, 749, 751, 753, 756, 819, 821 and 823
- Three (3) 69-kV surge arrester SA5, SA6 and SA7
- One (1) 69-kV bus potential transformer PT1
- Supervisory Interface Panel 11
- RTU Panel 12 and associated cabling
- Metering Panel 13 and associated cabling
- One (1) metering potential transformer PT1 and associated fuse F3
- One (1) metering current transformer CT1

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

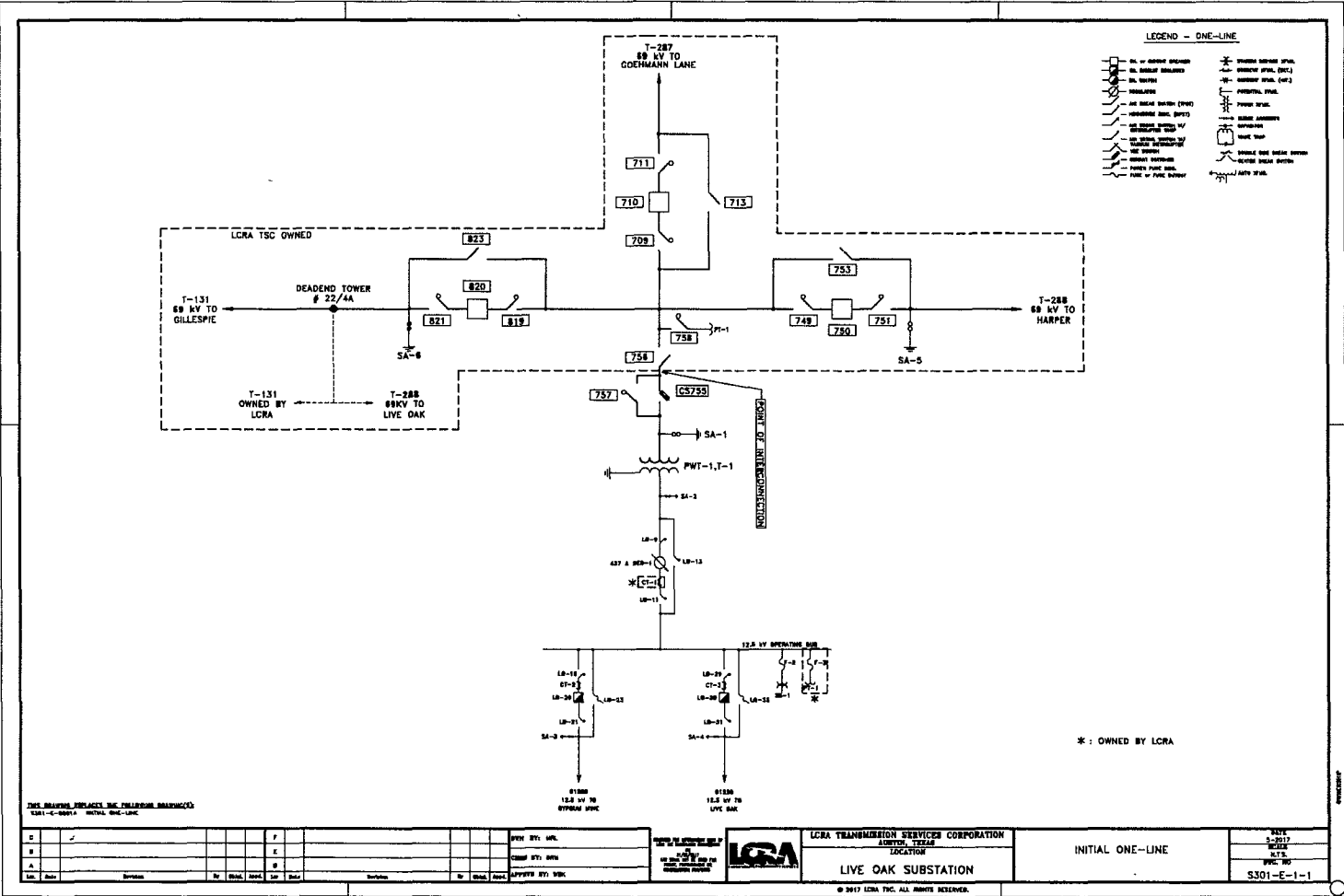
**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

# LIVE OAK ONE-LINE DIAGRAM

Ninth Amendment



THIS DRAWING REPLACES THE FOLLOWING DRAWINGS:

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**LCRA TRANSMISSION SERVICES CORPORATION**  
 LIVINGSTON, TEXAS  
 LOCATION: **LIVE OAK SUBSTATION**  
 INITIAL ONE-LINE  
 DATE: 5-20-17  
 DRAWN BY:   
 CHECKED BY:   
 APPPROVED BY:   
 TITLE:   
 PROJECT NO: S301-E-1-1  
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**FACILITY SCHEDULE NO. 13**  
Ninth Amendment

1. **Name:** Mason CTEC Substation.
2. **Facility Location:** The CTEC Mason Substation is located 3 miles east of the City of Mason at 3226 E. State Hwy 29, Mason County, Texas.
3. **Points of Interconnection:** There is two (2) Point of Interconnection in the Mason CTEC Substation generally described as:
  - where the LCRA TSC jumper from the LCRA TSC 69-kV switch (22614) connects to the CTEC 69-kV dual core CT.
  - where the CTEC jumper coming from the CTEC mobile connection switch (3984) connects to the LCRA TSC 69-kV bus.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 24.9-kV. The metering current transformers are located between the station voltage regulators and the 24.9-kV operating bus. The metering potential transformers are located on the 24.9-kV operating bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Mason CTEC Substation including but not limited to the following items:

- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- One (1) 69-kV circuit switcher CS22615 with foundations, stands, protective relaying and associated bypass switches 22614 and 22617
- One (1) 69-kV current transformer CT4
- One (1) 69-kV mobile connection switch 3984
- All distribution and total bays including box structure, insulators, disconnect switches, 24.9-kV operating and transfer bus and associated cabling
- One (1) control house (12' x 15') with battery bank, charger and appurtenances

- One (1) station service SS1 with fuse F3
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Mason CTEC to Fort Mason 138-kV transmission line
  - Mason CTEC to Castell 138-kV transmission line
  - Mason CTEC to Fredonia 69-kV transmission line
- One (1) A-frame dead end structure for Mason CTEC to Fredonia 69-kV transmission line
- Three (3) bus supports to raise the 69-kV string bus
- One (1) 69-kV bus differential relaying scheme
- 69-kV box structure including insulators, 69-kV operating bus (string bus), jumpers and foundations
- Two (2) 138-kV dead end structures, foundations and insulators
- 138-kV ring bus including structures, foundations, jumpers and protective relaying
- Four (4) 138-kV circuit breakers 22500, 22530, 22540 and 27660 including jumpers, foundations, and protective relaying
- Nine (9) 138-kV switches 22499, 22501, 22529, 22531, 22536, 22539, 22541, 27659 and 27661
- Three (3) 138-kV surge arrester SA10, SA11 and SA12
- Two (2) coupling capacitor voltage transformer CCVT2 and CCVT3
- Two (2) auto transformers AT2 and AT3 with associated surge arresters, jumpers, foundations and protective relaying
- Three (3) 69-kV circuit breakers 22610, 27630 and 27650 including jumpers, foundations and protective relaying
- Nine (9) 69-kV switches 883, 22609, 22611, 22618, 27623, 27629, 27631, 27633 and 27649
- Two (2) 69-kV surge arresters SA1 and SA16
- One (1) 69-kV bus potential transformer PT1
- One (1) supervisory Interface Panel / RTU Panel and associated cabling
- Metering/Underfrequency Panel and associated cabling
- One (1) metering current transformer CT1
- One (1) 24.9-kV metering potential transformer PT2 with fuse F2
- One (1) control house (24' x 42') with battery bank, charger and appurtenances
- Two (2) station service SS2 and SS3 with fuse F4 and F5

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for

the maintenance of the equipment it owns.

**12. Other Terms and Conditions:**

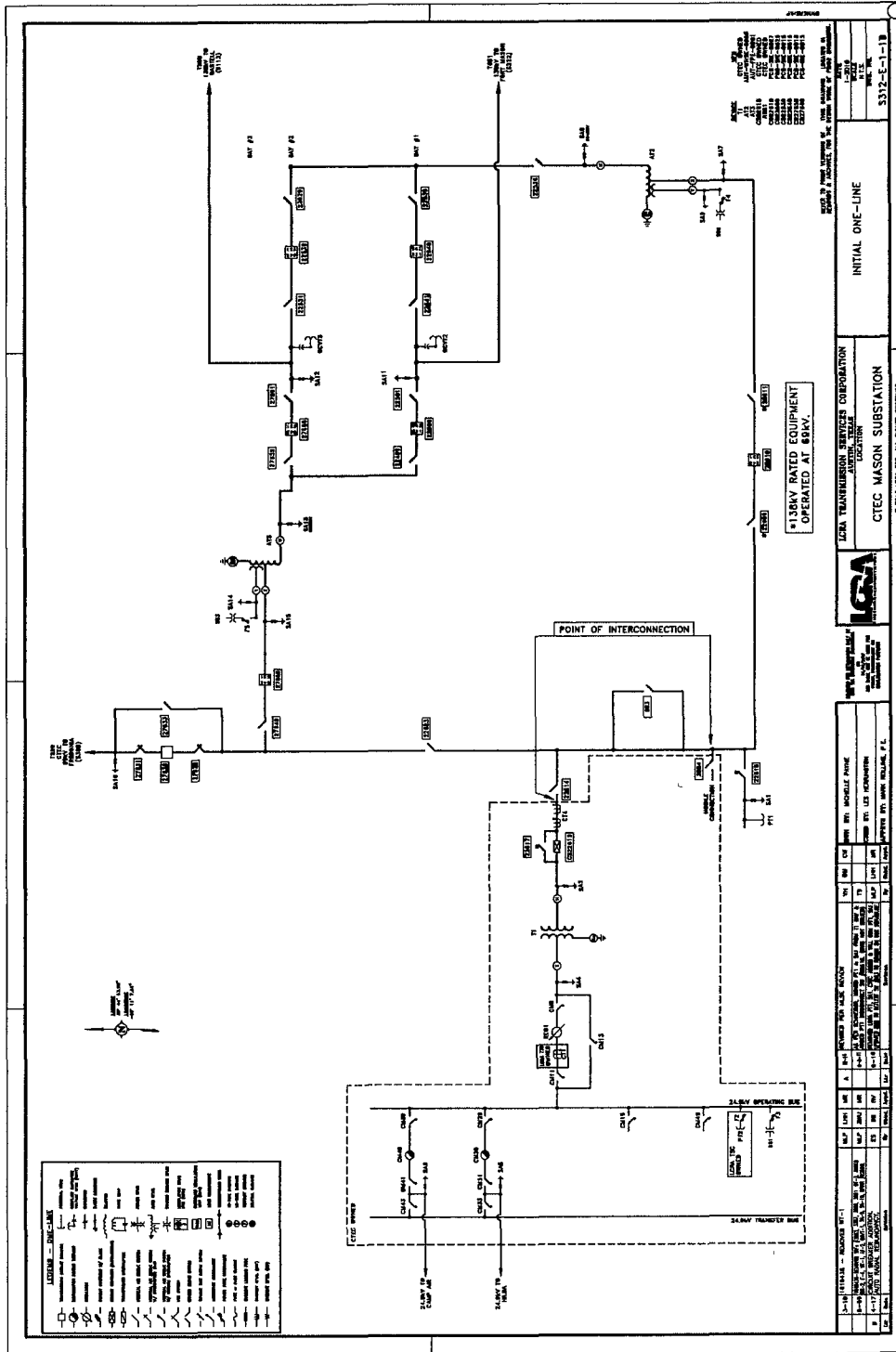
- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in CTEC's control house door.
- LCRA TSC will share access to its Mason CTEC Substation control house. Access is obtained by calling LCRA TSC's System Operations Control Center using the intercom at the door of the control house.
- LCRA TSC will provide tripping and close inhibit contacts from its 69kV bus differential relaying panel to the CTEC's transformer differential relaying panel.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.
- For the facilities that it owns, LCRA TSC will utilize its access and physical security standards.

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# MASON CTEC ONE-LINE DIAGRAM

## Ninth Amendment



**FACILITY SCHEDULE NO. 19**  
Ninth Amendment

1. **Name:** Bluffton Substation
2. **Facility Location:** The Bluffton Substation is located at 10190 Ranch Road 261, Bluffton in Llano County, TX 78607.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Bluffton Substation generally described as:
  - where the LCRA TSC jumper from the LCRA TSC switch (602) connects to the CTEC 69-kV operating bus, located on the LCRA TSC H-Frame.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformer is located on the 12.5-kV transformer bus. The metering potential transformer is located on the 12.5-kV transformer bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Bluffton Substation including, but not limited to, the following items:

- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers from the Point of Interconnection to CTEC's substation equipment
- One 69-kV surge arrester SA1
- One (1) Fuse F1
- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structure, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and

foundations

- All distribution and total bays including structures, trusses, insulators, disconnect switches, surge arresters, and 12.5-kV operating bus
- One (1) station service SS1 with fuse F2
- One (1) control house and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Bluffton to Buchanan CTEC 69-kV transmission line
- 69-kV H-frame structure including insulators, jumpers and foundations
- One (1) 69-kV switch 602
- One (1) 12.5-kV metering potential transformer PT1 with associated fuse F1
- One (1) 12.5-kV metering current transformer CT1
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

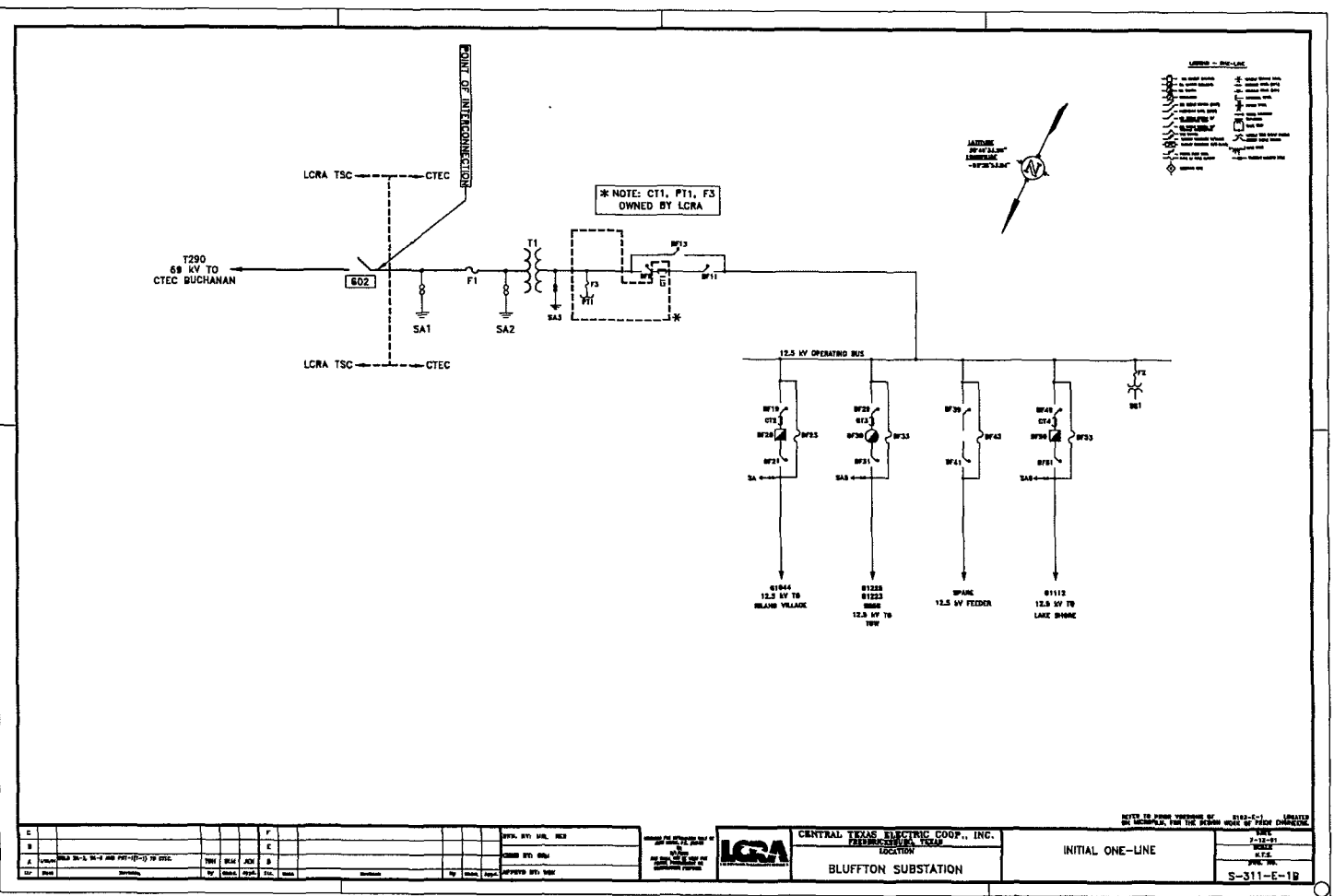
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# BLUFFTON ONE-LINE DIAGRAM

Ninth Amendment



**FACILITY SCHEDULE NO. 20**  
Ninth Amendment

1. **Name:** Doss Substation
2. **Facility Location:** The Doss Substation is located at 15113 N Ranch Road 783, Doss in Gillespie County, TX 78618.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Doss Substation generally described as:
  - where the LCRA TSC jumper from LCRA TSC switch (914) connects to the CTEC 69-kV operating bus, located on the LCRA TSC H-Frame.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformer is located on the 12.5-kV transformer bus. The metering potential transformer is located on the 12.5-kV transformer bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Doss Substation including, but not limited to, the following items:

- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers from the Point of Interconnection to CTEC's substation equipment
- One 69-kV surge arrester SA1
- One (1) Fuse F1
- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structure, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and

foundations

- All distribution and total bays including structures, trusses, insulators, disconnect switches, surge arresters, and 12.5-kV operating bus
- One (1) station service SS1 with fuse F2
- One (1) control house and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Doss to Harper 69-kV transmission line
- 69-kV H-frame structure including insulators, jumpers and foundations
- One (1) 69-kV switch 914
- One (1) 12.5-kV metering potential transformer PT1 with associated fuse F3
- One (1) 12.5-kV metering current transformer CT1
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

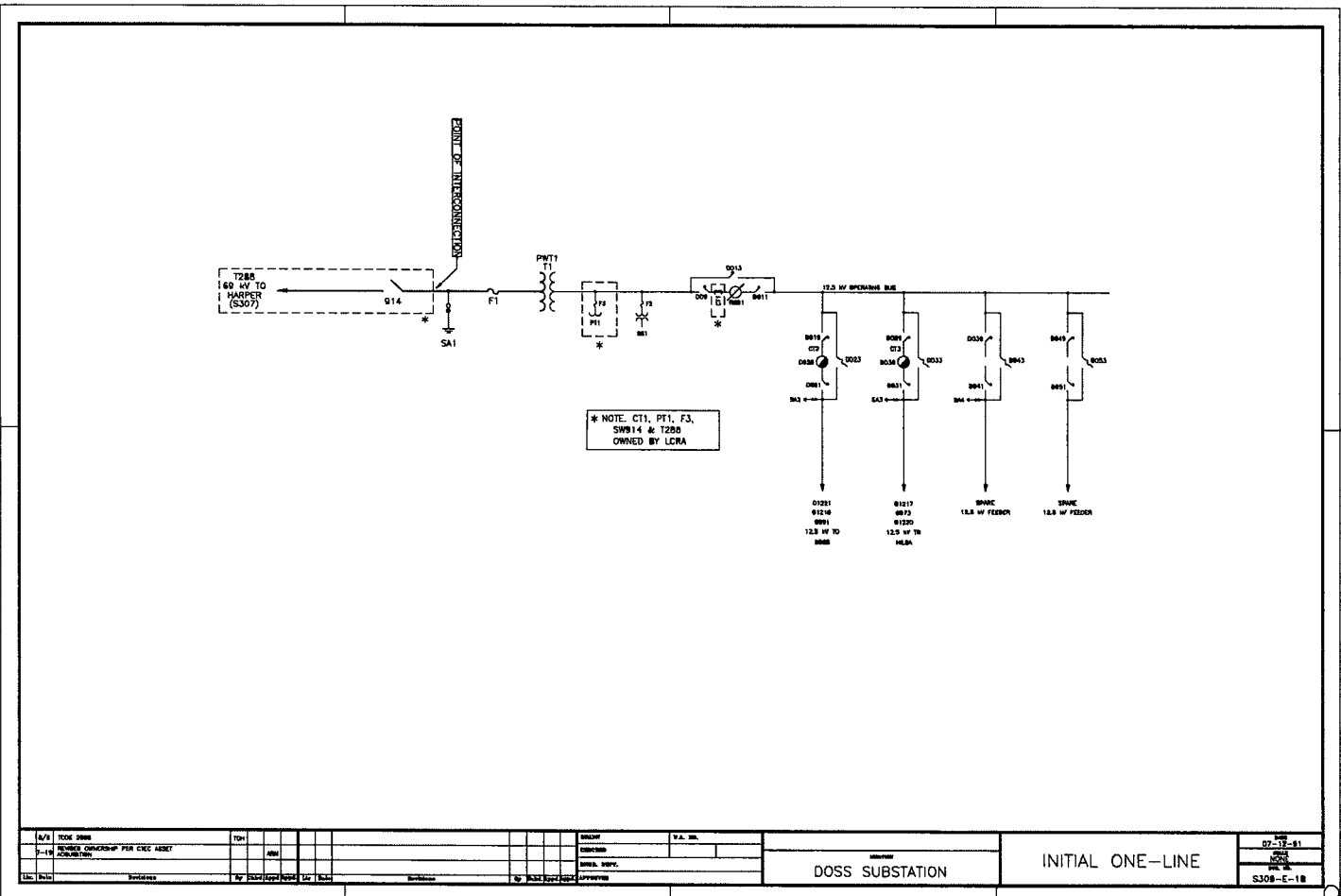
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# DOSS ONE-LINE DIAGRAM

## Ninth Amendment



**FACILITY SCHEDULE NO. 21**  
Ninth Amendment

1. **Name:** Fredonia Substation
2. **Facility Location:** The Fredonia Substation is located at 9510 Oak Grove Road, Fredonia in Mason County, TX 76842.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Fredonia Substation generally described as:
  - where the LCRA TSC jumper from the LCRA TSC switch (542) connects to the CTEC 69-kV operating bus, located on the LCRA TSC H-Frame.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformer is located on the 12.5-kV transformer bus. The metering potential transformer is located on the 12.5-kV transformer bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Fredonia Substation including, but not limited to, the following items:

- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers from the Point of Interconnection to CTEC's substation equipment
- One (1) 69-kV surge arrester SA1
- One (1) Fuse F1
- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structure, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and



foundations

- All distribution and total bays including structures, trusses, insulators, disconnect switches, surge arresters, and 12.5-kV operating bus
- One (1) station service SS1 with fuse F2
- One (1) control house and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Fredonia to Mason CTEC 69-kV transmission line
- 69-kV H-frame structure including insulators, jumpers and foundations
- One (1) 69-kV switch 542
- One (1) 12.5-kV metering potential transformer PT1 with associated fuse F3
- One (1) 12.5-kV metering current transformer CT1
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

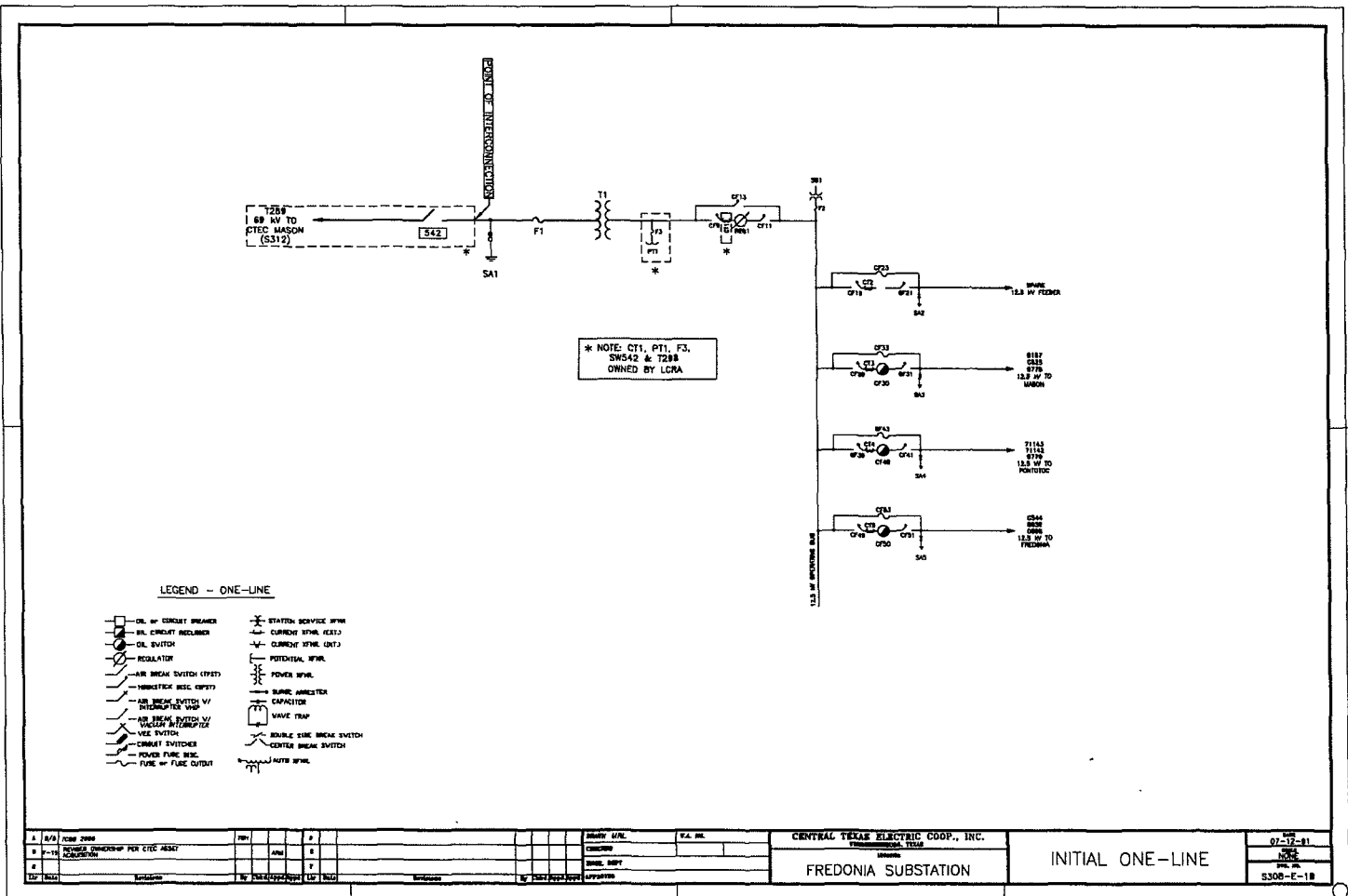
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# FREDONIA ONE-LINE DIAGRAM

## Ninth Amendment



**FACILITY SCHEDULE NO. 22**  
Ninth Amendment

1. **Name:** Goehmann Lane Substation
2. **Facility Location:** The Goehmann Lane Substation is located at 502 Goehmann Lane, Fredericksburg in Gillespie County, TX 78624.
3. **Points of Interconnection:** There are two (2) Points of Interconnection in the Goehmann Lane Substation generally described as:
  - where the LCRA TSC jumper from the LCRA TSC switch (632) attaches to the CTEC 69-kV operating bus, located on the LCRA TSC box structure.
  - where the LCRA TSC jumper from the LCRA TSC switch (652) attaches to the CTEC 69-kV operating bus, located on the LCRA TSC box structure.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 24.9-kV. The metering current transformers are located in the T2; 24.9-kV and T2; 24.9-kV transformer buses. The metering potential transformers are located on both of the 24.9-kV operating buses.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Goehmann Lane Substation including, but not limited to, the following items:

- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers from the Point of Interconnection to CTEC's substation equipment
- Two (2) Fuses F3 and F4
- Two (2) power transformers T1 and T2 with associated surge arresters, foundations, jumpers and protective relaying
- Two (2) 24.9-kV voltage regulators REG1 and REG2 with associated disconnect and bypass switches, foundations, insulators and jumpers
- Two (2) 24.9-kV potential transformers PT1 with fuse F5 and PT2
- All distribution circuits including dead end insulators that attach to the dead end

- structures, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including structures, trusses, insulators, disconnect switches, surge arresters, and 24.9-kV operating buses
- Two (2) station service transformers SS1 with fuse F1 and SS2 with fuse F2
- One (1) control house and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Goehmann Lane to Live Oak 69-kV transmission line
- 69-kV H-frame structure including insulators, jumpers and foundations
- Two (2) 69-kV switches 632 and 652
- Two (2) 24.9-kV metering current transformers CT1 and CT2
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

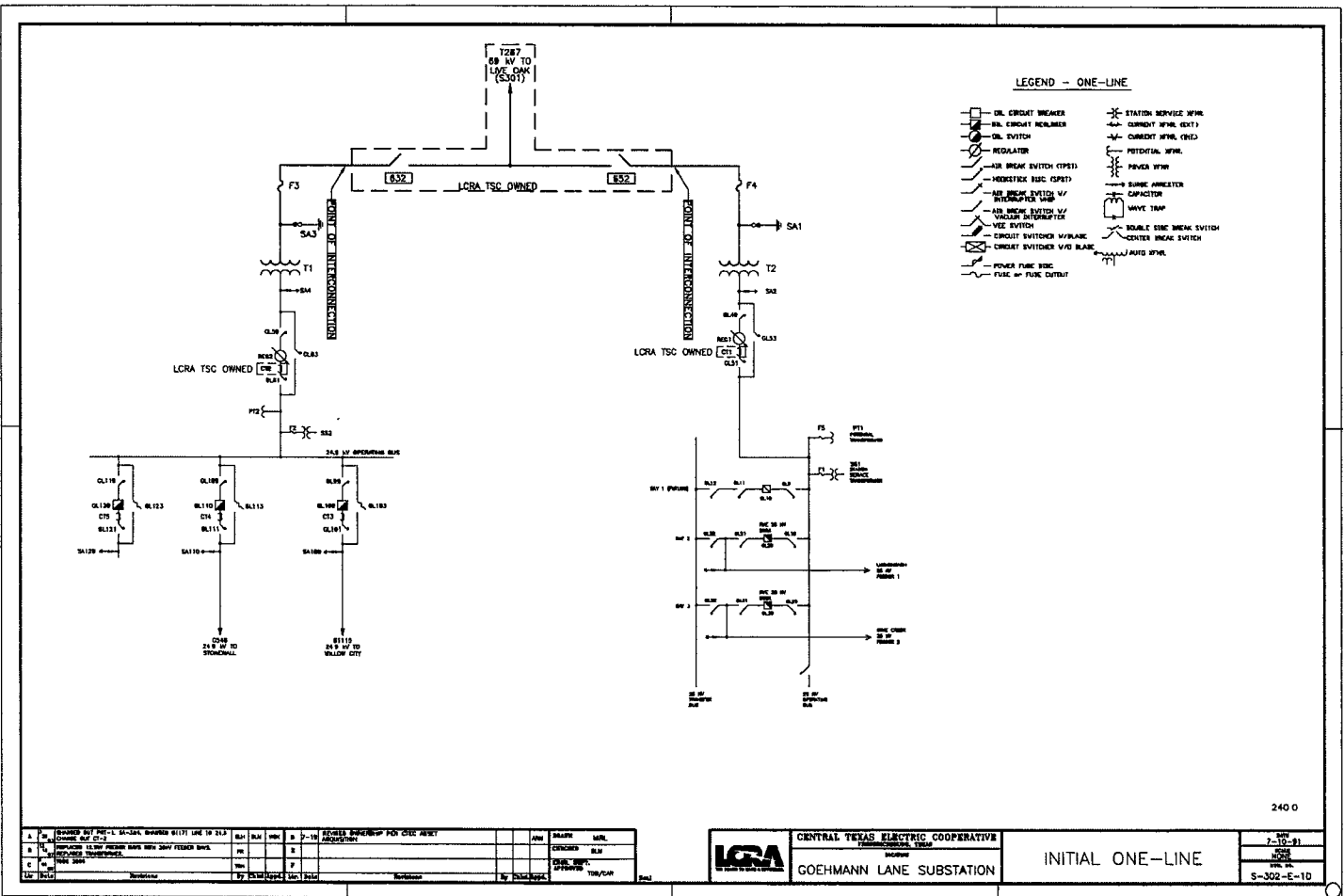
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- CTEC will allow LCRA TSC the use of the potential transformers (PT1 and PT2) for metering.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# GOEHMANN LANE ONE-LINE DIAGRAM

Ninth Amendment



**FACILITY SCHEDULE NO. 23**  
Ninth Amendment

1. **Name:** Harper Substation
2. **Facility Location:** The Harper Substation is located at 22514 FM 2093, Harper in Gillespie County, TX 78631.
3. **Points of Interconnection:** There are two (2) Points of Interconnection in the Harper Substation generally described as:
  - where the CTEC jumper from the CTEC circuit switcher (CS205) connects to the LCRA TSC 69-kV bus, located on the LCRA TSC box structure.
  - where the CTEC jumper from the CTEC circuit switcher (CS215) connects to the LCRA TSC 69-kV bus, located on the LCRA TSC box structure.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 24.9-kV. The metering current transformer for T1 is located in T1 totalizing bay and on the T2 transformer bus for T2. The metering potential transformers are located on both of the 24.9-kV operating buses.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Harper Substation including, but not limited to, the following items:

- Two (2) 69-kV circuit switchers CS205 and CS215 with foundations, stands, protective relaying and bypass switches 207, and 217
- Two (2) power transformers T1 and T2 with associated surge arresters, foundations, jumpers and protective relaying
- Two (2) 24.9-kV voltage regulator REG1 and REG2 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structures, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and

foundations

- All distribution and total bays including structures, A-frames, trusses, insulators, disconnect switches, surge arresters, 24.9-kV operating and transfer bus, bus potential transformers and associated cabling
- Two (1) station service transformers SS1 with fuse F3 and SS2 with fuse F5
- One (1) control house (24' x 30' ) with batteries; battery charger and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Doss to Harper 69-kV transmission line
  - Harper to Live Oak 69-kV transmission line
- One (1) 69-kV dead end structure
- One (1) 69-kV box structure with insulators, hardware, foundations and jumpers
- One (1) 69-kV surge arrester SA (Equipment number TBD)
- One (1) 69-kV circuit breaker CB18970
- Seven (7) 69-kV switches 202, 206, 208, 18969, 18971, 18972 and 18973
- One (1) 69-kV potential transformer PT3
- One (1) meter panel with meters
- One (1) RTU with communications circuit

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in the control house doors.
- CTEC will allow LCRA TSC the use of the potential transformers (PT2) for metering.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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**FACILITY SCHEDULE NO. 24**  
Ninth Amendment

1. **Name:** Kingsland 1 Substation
2. **Facility Location:** The Kingsland 1 Substation is located at 910 Cottonwood Drive, Kingsland in Llano County, TX 78639.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Kingsland 1 Substation generally described as:
  - where the CTEC jumper from the CTEC switch (1034) connects to the LCRA TSC slack span from the LCRA TSC 69-kV bus, located on the CTEC box structure.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 24.9-kV. The metering current transformer is located inside transformer T1. The metering potential transformer is located on the 24.9-kV operating bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Kingsland 1 Substation including, but not limited to, the following items:

- One (1) 69-kV mobile connection
- One (1) 69-kV circuit switcher CS1035 with foundation, stand, protective relaying and disconnect and bypass switches 1034 and 1037
- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- All distribution circuits including dead end insulators that attach to the dead end structures, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including A-frames, trusses, insulators, disconnect switches, surge arresters, 24.9-kV operating and transfer bus

- One (1) station service SS1 with fuse F2
- One (1) control house (24' x 40' ) with batteries, battery charger and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Kingsland 1 to Kingsland 2 69-kV transmission line
  - Kingsland 1 to Sunrise Beach 69-kV transmission line
- Three (3) 69-kV A-frame dead end structures with trusses and foundations
- Three (3) 69-kV surge arresters SA's (Equipment number TBD)
- Two (2) 69-kV circuit breakers CB18950 and CB18960 including jumpers, foundations, and protective relaying
- Seven (7) 69-kV switches 18949, 18951, 18953, 18959, 18961, and 18963
- One (1) 69-kV potential transformer PT3
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

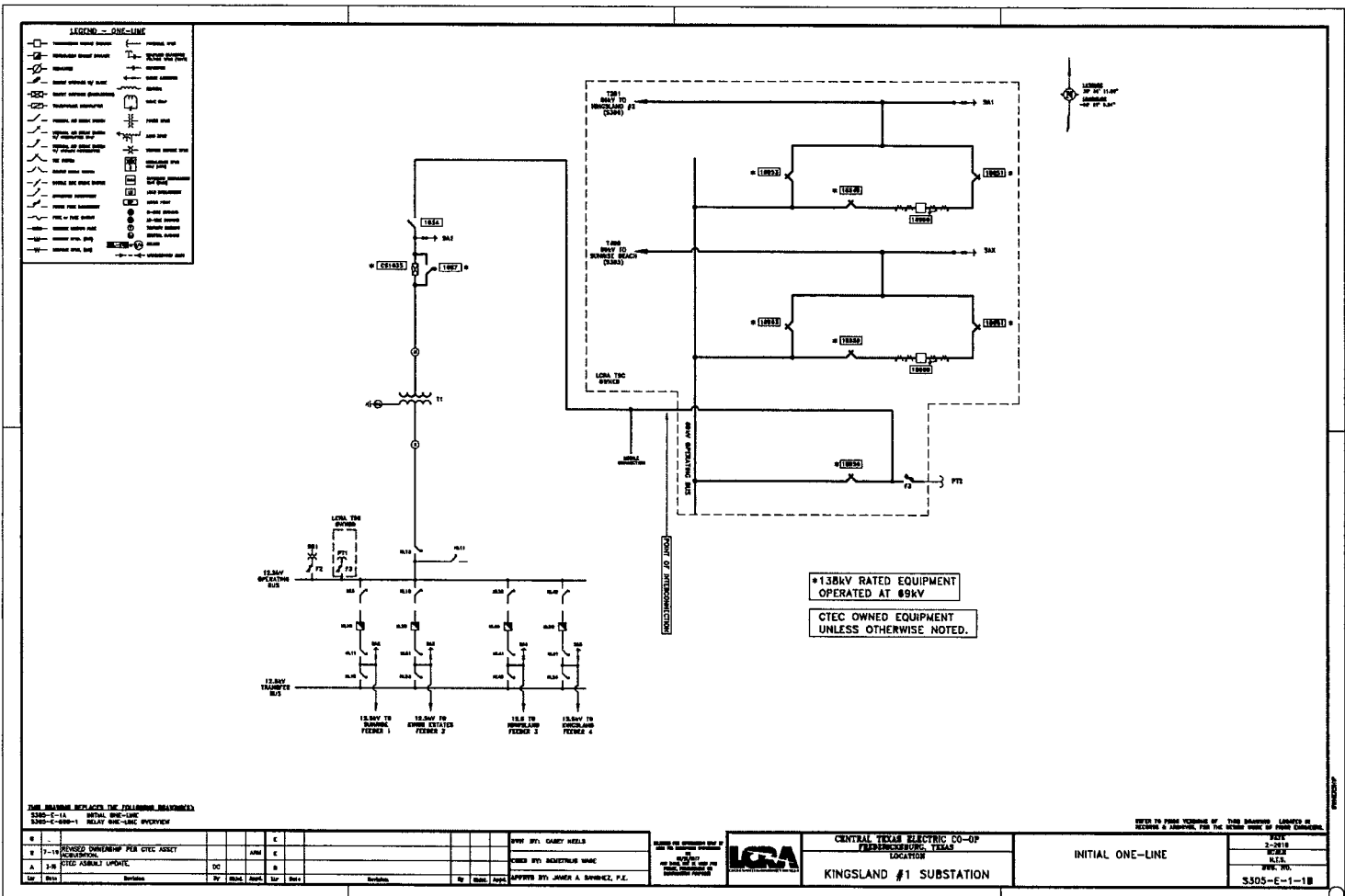
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in CTEC's control house door.
- LCRA TSC will provide tripping and close inhibit contacts from its 69kV bus differential relaying panel to the CTEC's relaying panel.
- CTEC will provide breaker failure initiate contacts from its circuit switcher 1035 relaying panel to the LCRA TSC's 69-kV bus differential relaying panel and breaker failure relaying scheme.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# KINGSLAND #1 ONE-LINE DIAGRAM

Ninth Amendment



## FACILITY SCHEDULE NO. 25

### Ninth Amendment

1. **Name:** Kingsland 2 Substation
2. **Facility Location:** The Kingsland 2 Substation is located at 3808 Dicky Street, Kingsland in Llano County, TX 78639.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Kingsland 2 Substation generally described as:
  - where the LCRA TSC jumper from the LCRA TSC 69-kV bus from the LCRA TSC A-Frame connects to the CTEC 69-kV bus, located at the bus elevation change.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformers are located in the T1; 12.5-kV and T2; 12.5-kV transformer buses. The bus potential transformers are located on both of the 12.5-kV operating buses.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Kingsland 2 Substation including, but not limited to, the following items:

- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers from the point of interconnection to CTEC's substation equipment
- Three (3) 69-kV switches 1664, 19214 and mobile disconnect switch 1666
- One (1) 138-kV circuit switcher CS19215 with foundation, stand, protective relaying and bypass switch 19217
- One (1) power fuse
- Two (2) 69-kV surge arresters
- Two (2) power transformers T1 and T2 with associated surge arresters, foundations, jumpers and protective relaying
- Two (2) 12.5-kV voltage regulators REG1 and REG2 with associated disconnect

- and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structures, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including A-frames, trusses, insulators, disconnect switches, surge arresters, 12.5-kV operating and transfer bus, bus potential transformer and associated cabling
- Two (2) station service transformers SS1 with fuse and SS2 with fuse
- One (1) control house (24' x 30' ) with batteries, battery charger and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Kingsland 1 to Kingsland 2 69-kV transmission line
  - Kingsland 2 to Buchanan CTEC 69-kV transmission line
- 69-kV operating bus including structures, insulators, hardware, foundations and jumpers up to the point of interconnection at bus elevation change.
- One (1) 69-kV A-frame dead end structure with trusses and foundations
- Three (3) 69-kV motor operated switches 19209, 19213, and 19219
- One (1) meter panel with meters
- One (1) RTU with communications circuit

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

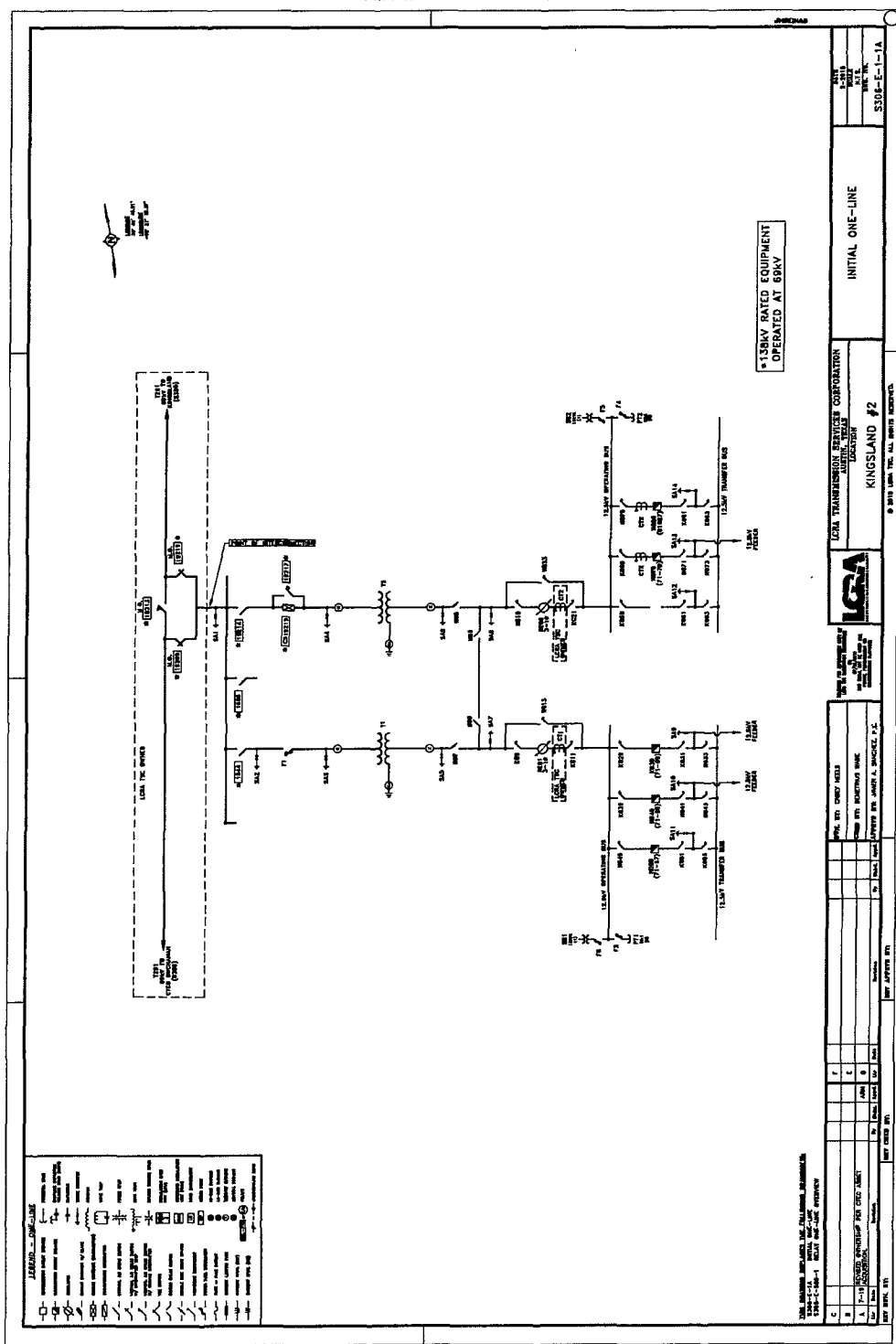
**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in CTEC's control house door.
- CTEC will allow LCRA TSC the use of the potential transformers (PT1 and PT2) for metering.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# KINGSLAND 2 ONE-LINE DIAGRAM

Ninth Amendment



**FACILITY SCHEDULE NO. 26**  
Ninth Amendment

1. **Name:** Sunrise Beach Substation
2. **Facility Location:** The Sunrise Beach Substation is located at 3105 Ranch Road 2233, Llano in Llano County, TX 78643.
3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Sunrise Beach Substation generally described as:
  - where the CTEC jumper from the CTEC 69-kV power fuse F1 connects to the LCRA TSC 69-kV bus, located on the LCRA TSC box structure.
4. **Transformation Services Provided by LCRA TSC:** No
5. **Metering Services Provided by LCRA TSC:** Yes, per Wholesale Metering Services Agreement between the Parties.
6. **Delivery Voltage:** 69-kV
7. **Metered Voltage and Location:** The metering voltage is 12.5-kV. The metering current transformer is located inside transformer T1. The metering potential transformer PT1 is located on the 12.5-kV operating bus.
8. **One Line Diagram Attached:** Yes
9. **Description of Facilities Owned by Each Party:**

CTEC owns:

The Sunrise Beach Substation including, but not limited to, the following items:

- One (1) 69-kV surge arrester
- One (1) power fuse F1
- One (1) power transformer T1 with associated surge arresters, foundation, jumpers and protective relaying
- Three (3) single phase regulators REG1 with associated disconnect and bypass switches, foundations, insulators and jumpers
- All distribution circuits including dead end insulators that attach to the dead end structures, conductors, and hardware
- All distribution circuit breakers including jumpers, protective relay packages and foundations
- All distribution and total bays including A-frames, trusses, insulators, disconnect

- switches, surge arresters, 12.5-kV operating and transfer bus
- One (1) station service SS1 with fuse F2
- One (1) control house (24' x 30' ) with batteries, battery charger and appurtenances
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Kingsland 1 to Sunrise Beach 69-kV transmission line
  - Sandy Creek to Sunrise Beach 69-kV transmission line
- One (1) 69-kV dead end structure
- One (1) 69-kV box structure with insulators, hardware, foundations and jumpers
- Three (3) 69-kV switches 466, 19181, and 19191
- One (1) meter panel with meters

**10. Operational Responsibilities of Each Party:** Each Party is responsible for the operation of the equipment it owns.

**11. Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

**12. Other Terms and Conditions:**

- CTEC and LCRA TSC are to share access to the substation by LCRA TSC locks in the gate and in CTEC's control house door.
- LCRA TSC and CTEC shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap.

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# SUNRISE BEACH ONE-LINE DIAGRAM

Ninth Amendment

