Control Number: 35077

Item Number: 828

Addendum StartPage: 0

Project No. 35077

Amended and Restated

INTERCONNECTION AGREEMENT

Between

City of Austin – dba Austin Energy

and

LCRA Transmission Services Corporation

Dated
April 17, 2018

828

AMENDED AND RESTATED INTERCONNECTION AGREEMENT

BETWEEN

CITY OF AUSTIN – dba AUSTIN ENERGY

AND

LCRA TRANSMISSION SERVICES CORPORATION

DATED: 04/17/2018

AMENDED AND RESTATED INTERCONNECTION AGREEMENT
BETWEEN
CITY OF AUSTIN – dba AUSTIN ENERGY
AND
LCRA TRANSMISSION SERVICES CORPORATION

This Amended and Restated Interconnection Agreement ("this Agreement") is made and entered into this 17th day of APRIL, 2018, by and between the City of Austin, acting by and through its Electric Utility Department doing business as Austin Energy ("Austin Energy") and LCRA Transmission Services Corporation ("LCRA TSC"), a nonprofit company of the Lower Colorado River Authority, a conservation and reclamation district of the State of Texas each sometimes hereinafter referred to individually as "Party" or both referred to collectively as "Parties".

WITNESSETH

WHEREAS, this Agreement is a restated and amended interconnection agreement from that certain Interconnection Agreement dated May 26, 1999 and that certain Interconnection Agreement dated December 17, 1999 between Austin Energy and the Lower Colorado River Authority ("the 1999 Interconnection Agreements");

WHEREAS, Austin Energy and the Lower Colorado River Authority also had numerous other previous agreements pertaining to interconnection of their facilities including the Fayette Power Project which was conceived as a joint, cooperative effort by vertically integrated utilities in the 1970's ("the Previous Agreements");

WHEREAS, LCRA Transmission Services Corporation is the assignee of the Lower Colorado River Authority for electric transmission ownership and operations at 60 kV and above as well as associated metering and transformation;

WHEREAS, the transmission owners (Austin Energy and LCRA TSC) associated with the transmission assets built as part of the Fayette Power Project agreements have coordinated their efforts to identify jointly owned transmission assets that would be better served if wholly owned by only one utility;

WHEREAS, the Parties each own and operate electric utility systems in Texas for the transmission of electric power and energy;

WHEREAS, the Parties are both members of ERCOT and are subject to regulation by the PUCT;

WHEREAS, the wholesale electricity market in Texas has been changed significantly by the State of Texas, PUCT, and ERCOT since the Previous Agreements and the 1999 Interconnection Agreements;

WHEREAS, the Parties recognize that neither the Previous Agreements nor the 1999 Interconnection Agreements reflect either the changes in the Texas wholesale electricity market or the terms and conditions that they now desire in an interconnection agreement;

WHEREAS, this Interconnection Agreement is necessary because the Parties desire to add a new Point of Interconnection at the Winchester Substation; and

WHEREAS, the Parties desire to amend and restate the 1999 Interconnection Agreements in a single

document in their entirety and provide for the interconnection of their respective electric systems under the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and conditions herein set forth, the Parties agree as follows:

ARTICLE I – EFFECTIVE DATE AND TERM

1.1 This Agreement and any subsequent addendum to this Agreement shall become effective on the date of execution by both Parties. Unless terminated sooner by agreement of the Parties, this Agreement shall remain in effect for so long as the Parties have interconnected electrical facilities. A Party may unilaterally terminate this Agreement by providing at least thirty-six (36) months written notice to the other Party of its intentions.

ARTICLE II – OBJECTIVE AND SCOPE

2.1 It is the intent of the Parties, by this Agreement, to state the terms and conditions under which the Parties' transmission and/or distribution systems will be interconnected and to identify the initial facilities and equipment provided by each Party at the points of interconnection between their systems. This Agreement will not be amended to reflect equipment changes at the POIs or PODs unless otherwise required under the terms of this Agreement.

2.2 This Agreement shall apply to the ownership, control, construction, general operation, and maintenance of those facilities which are identified and described in the Facility Schedules which are attached hereto and incorporated herein.

2.3 This Agreement, including all attached Facility Schedules, constitutes the entire agreement and understanding between the Parties with regard to the interconnection of the facilities of the Parties at the Points of Interconnection expressly provided for in this Agreement. The Parties are not bound by or liable for any statement, representation, promise, inducement, understanding, or undertaking of any kind or nature (whether written or oral) with regard to the subject matter hereof if not set forth or provided for herein. This Agreement replaces all other agreements and undertakings, oral and written, including the 1999 Interconnection Agreements and Previous Agreements, between the Parties with regard to the subject matter hereof. It is expressly acknowledged that the Parties may have other agreements covering other services not expressly provided for herein; such agreements are unaffected by this Agreement.

ARTICLE III – DEFINITIONS

For purposes of this Agreement, the following definitions shall apply:

3.1 Agreement shall mean this Agreement with all schedules and attachments applying hereto, including any schedules and attachments hereafter made and any amendments hereafter made.

3.2 Cyber Assets shall have the meaning defined in the most current NERC Glossary of Terms used in NERC Reliability Standards.

3.3 Distributed Generation shall mean an electrical generating facility connected at a voltage below 60-kV that may be connected in parallel with the utility system. Distributed Generation includes but is not limited to combustion engine generators, gas turbine generators, batteries/fuel cells, or inverter-based renewable generation resources (i.e. solar or wind).

3.4 Demonstrated adverse impact (adverse impact) shall mean any change implemented by a Party that impairs the ability of the other Party to comply with NERC Reliability Standards or ERCOT Protocols or that imposes significant costs on the other Party.

3.5 ERCOT shall mean the Electric Reliability Council of Texas, Inc., or its successor in function.

3.6 ERCOT Protocols shall have the same definition provided by PUCT Substantive Rule 25.5, as amended from time to time.

3.7 ERCOT Requirements shall mean the documents adopted by ERCOT, and approved by the PUCT, including any attachments or exhibits referenced in the ERCOT Requirements, as amended from time to time, that contain the scheduling, operating, planning, reliability, and settlement (including customer registration) policies, rules, guidelines, procedures, standards, and criteria of ERCOT.

3.8 Facility Connection Requirements shall mean the NERC Transmission Owner requirements for interconnection of facilities, as documented by that Transmission Owner in accordance with applicable NERC Reliability Standards.

3.9 Facility Schedule(s) shall mean the addendum(s) to this Agreement that describe the ownership, control, general operation, and maintenance responsibilities of the Parties at the POIs and PODs.

3.10 Good Utility Practice shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region. Good Utility Practice may include, but not be limited to, conformance with the applicable and consistently applied reliability criteria, standards and operating guides of ERCOT and the NERC, or successor organization(s).

3.11 Independent System Operator shall mean the ERCOT Independent System Operator as defined in the PUCT Substantive Rules.

3.12 NERC shall mean the North American Electric Reliability Corporation or its successor in function.

3.13 NERC Reliability Standards shall mean the mandatory electric reliability standards enforced by NERC.

3.14 Point(s) of Interconnection (POI) shall mean the points where the electrical transmission systems of the Parties are connected or may, by the closure of normally open switches, be connected.

3.15 Point(s) of Delivery (POD) shall mean the points where the Austin Energy electrical distribution system is connected to the LCRA TSC transmission system or may, by the closure of normally open switches, be connected.

3.16 Protection System shall have the meaning defined in the most current NERC Glossary of Terms used in NERC Reliability Standards.

3.17 PUCT shall mean the Public Utility Commission of Texas or its successor in function.

3.18 Strong Breaker Tripping Scheme shall mean a relay protection strategy that, upon a fault in the zone of protection, trips the transmission line supplying the highest fault current while delaying an under-rated fault duty breaker or circuit switcher from operating until the fault current is below the fault duty rating of the equipment.

3.19 Transient Cyber Asset shall have the meaning defined in the most current NERC Glossary of Terms used in NERC Reliability Standards.

ARTICLE IV – ESTABLISHMENT AND TERMINATION OF POINTS OF INTERCONNECTION AND POINTS OF DELIVERY

4.1 The Parties agree to comply with NERC Reliability Standards as they currently exist, as they may be revised or amended from time to time, and as they relate to the interconnection of their facilities at the locations identified and described in the Facility Schedules which are attached hereto and incorporated herein.

4.2 The Parties agree to interconnect their facilities in accordance with the Parties' Facility Connection Requirements at the locations and in accordance with the terms and conditions described in the attached Facility Schedule(s). All POIs and PODs shall be specified in Exhibit "A" and the Facility Schedule(s) attached hereto and made a part hereof. The Facility Schedule(s) shall specify the responsibilities of the Parties with respect to ownership, control, construction, general operation, and maintenance of the interconnection facilities.

4.3 Unless otherwise provided in a Facility Schedule, each Party shall, at each POI and POD, at its own risk and expense, design, install, or cause the design and installation of the transmission or distribution facilities (including all apparatus and necessary protective devices) on its side of the POI or POD, so as to reasonably minimize the likelihood of voltage and frequency abnormalities originating in the system of one Party from affecting or impairing the system of the other Party, or other systems to which the system of such Party is interconnected. Each Party's equipment installed after the date hereof shall be adequately rated for the anticipated voltage level, duty cycle, continuous current capacity, and fault interrupting capacity. Previously installed equipment that is not adequately rated for the fault interrupting capacity must utilize a Strong Breaker Tripping Scheme or equivalent protection scheme. The protection schemes used by the Parties at each POI or POD will be determined by both Parties in a cooperative effort to achieve system coordination. Prior to commissioning each POI and POD, both Parties will perform a complete calibration test and functional trip test of their respective system protection equipment including communication circuits between facilities. The Parties agree that all POIs and PODs will be established in conformance with the ERCOT Protocols, ERCOT Requirements and NERC Reliability Standards, as amended from time-to-time. The Parties agree to cause their systems to be constructed in accordance with specifications at least equal to those provided by the National Electrical Safety Code, approved by the American National Standards Institute, in effect at the time of construction. Except as otherwise provided in the Facility Schedules, each Party will be responsible for the equipment and facilities it owns on its side of the POI or POD.

4.4 If either Party proposes to make equipment changes to (a) its equipment at a POI (including its system protection equipment) or (b) its system protection equipment at any other location that may affect the operation or performance of the other Party's facilities at a POI, such Party agrees to notify the other Party, in writing, at least six (6) months in advance of making such proposed changes, and the Parties will coordinate and cooperate on the assessment of the impact of such changes on the electric systems of the Parties and the identification of any required mitigation measures (including but not limited to new or upgraded facilities). Unless the Parties agree otherwise, those changes having

adverse impacts will not be made until agreed upon mitigation measures have been implemented. Any such change shall be recorded in an amendment to this Agreement incorporating a Facility Schedule in such a way that the numbering of the other Facility Schedules is not changed. Changes not having a demonstrated adverse impact do not require an amendment. The Parties will communicate with each other with respect to other equipment changes in accordance with the ERCOT Requirements and NERC Reliability Standards.

4.5 With at least six (6) months written notification, a POI may be added or deleted from this Agreement as agreed by the Parties (not to be unreasonably withheld) and/or as ordered by a regulatory authority having jurisdiction. Unless the Parties agree otherwise, POI additions or deletions having adverse impacts will not be made until agreed upon mitigation measures have been implemented. Any such addition or deletion shall be recorded in an amendment to this Agreement incorporating a Facility Schedule in such a way that the numbering of the other Facility Schedules is not changed. Such POI will not be connected or disconnected until all required mitigating measures have been implemented, any required regulatory approval has been obtained by the Party seeking the addition or deletion of a POI, and the appropriate Facility Schedule has been added or deleted, none of which shall be unreasonably delayed. Upon termination of a POI, each Party shall discontinue the use of the facilities of the other associated with that POI and shall disconnect from that POI. The Parties agree to use reasonable efforts to coordinate the termination of a POI to minimize any disruption in service to either Party.

4.6 From time to time, a POD may be added or deleted from this Agreement as agreed by the Parties. Any such addition or deletion shall be recorded in an amendment to this Agreement incorporating an Exhibit A and a Facility Schedule in such a way that the numbering of the other Facility Schedules is not changed. Upon termination of a POD, each Party shall discontinue the use of the facilities of the other Party associated with the use of that POD and shall disconnect from that POD. The Parties agree to use reasonable efforts to coordinate the termination of a POD to minimize any disruption in service to either Party.

4.7 If either Party proposes to make changes to its equipment at a POD such Party agrees to notify the other Party, in writing, six (6) months in advance of making such proposed changes and to provide the other Party engineering design drawings showing the changes to be implemented as soon as such design drawings become available.

4.8 Subject to regulatory approval, if required, and unless agreed, neither party shall have the right to disconnect from the other Party at any POI specified on Exhibit A and a Facility Schedule originally attached to this Agreement or added subsequent to the execution of this Agreement except as set forth in this Agreement, or for reason of a material violation of the terms of this Agreement, for which opportunity to correct such violation was given under Paragraph 15.1 of this Agreement and such violation was not corrected in accordance with said Paragraph 15.1.

4.9 Each party agrees to provide to the other Party upon request the latest as-built drawings of the facilities owned by that Party at each POI or POD.

4.10 The Parties agree to coordinate and cooperate on assessments of the reliability impacts to the interconnected transmission system for new facilities requesting connection to their distribution or transmission facilities in accordance with the NERC Reliability Standards. This includes the addition of Distributed Generation by a Party or its end-use customer.

4.11 Notwithstanding the provisions of Section 15.1 herein, if the operation of any POI between the Parties results in a synchronous or asynchronous interconnection between ERCOT and any other transmission facilities operated outside the ERCOT Region, the Parties agree that either Party shall have the right to immediately disconnect the POI directly affected without further advance notice. The

disconnection shall remain in effect until such synchronous or asynchronous interconnection outside the ERCOT Region has been permanently disconnected.

ARTICLE V - OTHER SERVICES

5.1 This Agreement is applicable only to the interconnection of the facilities of the Parties at the POIs and does not obligate either Party to provide, or entitle either Party to receive, any service not expressly provided for herein. Each Party is responsible for making the arrangements necessary to receive any other service that either Party may desire from the other Party or any third party.

5.2 All transmission, transformation, distribution, metering, operations, and maintenance, engineering, billing or other miscellaneous services will be provided and charged under agreements separate from this Agreement.

ARTICLE VI - SYSTEM OPERATION AND MAINTENANCE

6.1 Unless otherwise provided by the Facility Schedules, each Party shall, at each POI or POD, at its own risk and expense, operate and maintain the facilities (including all apparatus and necessary protective devices) it owns or hereafter may own, so as to reasonably minimize the likelihood of voltage and frequency abnormalities originating in the system of one Party from affecting or impairing the system of the other Party, or other systems to which the Party is interconnected. The Parties agree that all POIs and PODs will be operated and maintained in conformance with the ERCOT Protocols, ERCOT Requirements and NERC Reliability Standards, as amended from time-to-time.

6.2 Operational responsibility for facilities owned by one Party but installed in another Party's substation or transmission line will be identified in the Facility Schedule for that particular POI or POD. Where there are jumpers owned by one Party at the POI that connect to switches, breakers, bus, line, or other such equipment owned by the other Party, the Parties agree that the physical removal (and subsequent replacement) of the jumpers can be performed by either Party, provided that reasonable advance notice shall be given to the other Party.

6.3 The Parties will, consistent with maintaining good operating practices, coordinate their operations to maintain continuity of services to their respective customers to the extent practicable. Planned facility maintenance by either Party that will cause a deviation from the normal power and energy flow at a POI will be scheduled at an agreeable time. No changes will be made in the normal operation of a POI without the agreement of the Parties. The Parties will, to the extent necessary to support continuity of operations, coordinate the operation of protective devices on the facilities they operate in the proximity of the POIs which might reasonably be expected to affect the operation of facilities on the other Party's system.

6.4 A Party may interrupt service at a POI in accordance with applicable laws, regulations, and ERCOT Requirements.

6.5 Each Party will provide the reactive requirements for its own system in accordance with ERCOT Requirements and NERC Reliability Standards. Each Party will provide the reactive requirements for its own system so as not to impose a burden on the other Party's system.

6.6 As applicable, each Party will determine the operating limits of the facilities that it owns and make such limits known to the Party operating those facilities. The operating Party of those facilities will not exceed those limits without prior approval of the Party owning the facilities. If such operating limits are exceeded, the operating Party must take steps to remove the violation in accordance with ERCOT Requirements.

6.7 To the extent applicable to a Party, that Party shall be responsible for complying with any ERCOT Protocol or other operating requirement as well as any applicable NERC Reliability Standard.

6.8 All equipment installed at the POIs shall be tested by the Party owning such equipment in accordance with Good Utility Practice and applicable ERCOT Requirements and NERC Reliability Standards.

6.9 Maintenance and testing of the equipment installed at the POIs that is owned by one Party but is used to protect facilities owned by the other Party, including circuit breakers and Protection Systems, will be subject to review by the other Party. Upon request, each Party shall provide the other Party such equipment maintenance or test reports.

ARTICLE VII - RIGHTS OF ACCESS, EQUIPMENT INSTALLATION, AND REMOVAL

7.1 At jointly-occupied substations, the Parties shall implement physical security and cybersecurity in such a way as to not restrict the other Party's personnel in carrying out their duties contemplated in this Agreement and shall not act in any way to intentionally cause either Party to violate compliance obligations. Physical security measures at a substation jointly occupied by the Parties shall be communicated and coordinated with the other Party's staff responsible for security matters before changing or implementing new physical security measures. When a risk assessment by one Party identifies a substation jointly-occupied by the Parties as in-scope for NERC Reliability Standards requirements, the identifying Party shall communicate and discuss criteria used in that determination with the other Party.

7.2 Each Party shall permit duly authorized representatives and employees of the other Party to enter upon its premises, subject to the Party's physical and cybersecurity access practices, procedures and requirements, for inspecting, testing, repairing, renewing, or exchanging any or all of the equipment owned by such other Party that is located on such premises or for the purpose of performing any work necessary in the performance of this Agreement. A Party shall not plug or otherwise connect Transient Cyber Assets or Removable Media into the other Party's Cyber Assets at jointly-occupied substations.

7.3 Each Party grants to the other Party permission to install, maintain, and/or operate, or cause to be installed, maintained, and or operated, on its premises, the necessary equipment apparatus, and devices required for the performance of the Agreement, except that a Party shall not connect Transient Cyber Assets or Removable Media into the other Party's Cyber Assets. Any such installation, maintenance and operation to be performed, except in case of emergencies, shall be coordinated with the other Party.

7.4 All equipment, apparatus, and devices placed or installed, or caused to be placed or installed by one Party on, or in, the premises of the other Party, shall be and remain the property of the Party owning and installing such equipment, apparatus, devices, or facilities, regardless of the mode and manner of annexation or attachment to real property. Upon the termination of any POI under this Agreement, the Party owning and installing such equipment, apparatus, devices, or facilities on the property of the other Party, shall 1) have the right to sell such equipment, apparatus, devices, or facilities to the other Party if the other Party wishes to purchase such equipment, apparatus, devices, or facilities or 2) to enter the premises of the other Party and, within a reasonable time, remove such equipment, apparatus, devices, or facilities, at no cost to the owner of the premises. If, upon the termination of any POI under this Agreement, equipment of a Party that is installed on the premises of the other Party is either not sold to the other Party or removed by the owning Party within a reasonable time, it shall be considered abandoned by the owning Party and may be disposed of by the other Party in the manner it

shall determine appropriate; provided, however, that any net cost incurred by the disposing Party shall be reimbursed by the abandoning party.

7.5 Each Party shall clearly mark its respective equipment, apparatus, devices, or facilities with ownership identification, as practical.

7.6 Either Party may request the other Party to upgrade or modify its terminal facilities at a POI in accordance with the other Party's standard design of equipment.

ARTICLE VIII – EPS METERING AND RECORDS

8.1 All ERCOT-polled settlement (EPS) metering equipment (metering equipment) required herein shall be selected, installed, tested, operated, and maintained by the Party owning such metering equipment in accordance with Good Utility Practice, applicable ERCOT operating and metering guidelines, the ERCOT Protocols, and ERCOT Requirements.

8.2 The Party that does not own the metering equipment shall be permitted to witness any testing, inspection, maintenance, or alteration of such metering equipment owned by the other Party. The owner of such equipment shall give reasonable notice of all tests and inspections so that representatives of the other Party may be present. After proper notification to the other Party, the owner may proceed with the scheduled tests or inspections regardless of whether a witness is present.

8.3 If any test or inspection of metering equipment shows that it does not meet the accuracy requirements established by ERCOT operating or metering guidelines, whichever is applicable, the meter or other equipment found to be inaccurate or defective shall be promptly repaired, adjusted, or replaced by the owner. Should metering equipment fail to register, the power and energy delivered and received shall be determined in accordance with ERCOT operating or metering guidelines, the ERCOT Protocols, and ERCOT Requirements.

ARTICLE IX – COMMUNICATION AND TELEMETERING FACILITIES

9.1 Each Party shall provide, at its own expense, the necessary communication and telemetering facilities needed for the control and operation of its transmission and/or distribution system.

9.2 All communication and telemetering facilities required herein shall be selected, installed, tested, operated, and maintained by the Party owning such equipment in accordance with Good Utility Practice, applicable ERCOT operating and metering guidelines, the ERCOT Protocols, and ERCOT Requirements.

ARTICLE X - INDEMNIFICATION

10.1 **TO THE EXTENT ALLOWED BY TEXAS LAW, EACH PARTY AGREES THAT IT IS RESPONSIBLE TO THE EXCLUSION OF ANY SUCH RESPONSIBILITY OF THE OTHER PARTY FOR ITS OWN PROPORTIONATE SHARE OF LIABILITY FOR ITS NEGLIGENT ACTS AND OMISSIONS FOR CLAIMS, SUITS, AND CAUSES OF ACTION, INCLUDING CLAIMS FOR PROPERTY DAMAGE, PERSONAL INJURY AND DEATH, ARISING OUT OF OR CONNECTED THIS AGREEMENT AND AS DETERMINED BY A COURT OF COMPETENT JURISDICTION, PROVIDED THAT THE EXECUTION OF THIS AGREEMENT WILL NOT BE DEEMED A NEGLIGENT ACT.**

ARTICLE XI –NOTICES

11.1 Notices of an administrative nature, including but not limited to a notice of termination, a request for amendment, a change to a POI or POD, or a request for a new POI or POD, shall be forwarded to the designees listed below for each Party and shall be deemed properly given if delivered in writing to the following:

(a) AUSTIN ENERGY
Vice President – Electric Service Delivery
721 Barton Springs Road
Austin, Texas 78704

(b) LCRA TRANSMISSION SERVICES CORPORATION
LCRA Vice President, Transmission Design and Protection
P.O. Box 220
Austin, TX 78767-0220

11.2 The above-listed names, titles, and addresses of either Party may be changed upon written notification to the other Party.

ARTICLE XII - SUCCESSORS AND ASSIGNS

12.1 Subject to the provisions of Section 12.2 below, this Agreement shall be binding upon and inure to the benefit of the permitted successors and assigns of the respective Parties.

12.2 Neither Party shall assign its interest in this Agreement in whole or in part without the prior written consent of the other Party. Such consent shall not be unreasonably withheld, provided that neither Party will be required to consent to any assignment which would, in its sole judgment and among other reasons, subject it to additional federal or state regulation, result in the imposition of additional costs of administration which the Party requesting assignments does not agree to reimburse, or in any way diminish the reliability of its system, enlarge its obligations or otherwise create or maintain an unacceptable condition. The respective obligations of the Parties under this Agreement may not be changed, modified, amended, or enlarged, in whole or in part, by the sale, merger, or other business combination of either Party with any other person or entity. Notwithstanding the foregoing, a Party may assign, without the consent of the other Party, its interest in this Agreement, in whole or in part (1) to a successor that has an in interest to all or a substantial portion of the Party's transmission and distribution business; or (2) in connection with any financing or financial arrangements.

12.3 The several provisions of this Agreement are not intended to and shall not create rights of any character whatsoever in favor of any persons, corporations, or associations other than the Parties to this Agreement, and the obligations herein assumed are solely for the use and benefit of the Parties to this Agreement.

ARTICLE XIII – GOVERNING LAW AND REGULATION

13.1 This Agreement was executed in the State of Texas and must in all respects be governed by, interpreted, construed, and enforced in accordance with the laws thereof except as to matters exclusively controlled by the Constitution and statutes of the United States of America. This Agreement is subject to all valid applicable federal, state, and local laws, ordinances, rules, and regulations of duly constituted regulatory authorities having jurisdiction.

13.2 This Agreement and all obligations hereunder, are expressly conditioned upon obtaining approval or authorization or acceptance for filing by any regulatory body, whose approval, authorization

or acceptance for filing is required by law. Both Parties hereby agree to support the approval of this Agreement before such regulatory authority and to provide such documents, information, and opinions as may be reasonably required or requested by either Party in the course of approval proceedings.

13.3 If a regulatory authority having jurisdiction over the Parties orders a change in the terms of this Agreement, the Parties agree to negotiate in good faith a replacement term that will most nearly accomplish the purpose and intent of the original term consistent with the regulatory order. If the Parties cannot reach an agreement over the new term, and if the old term is an essential provision of this Agreement, either Party may elect to terminate this Agreement by providing sixty (60) days prior written notice to the other Party. An election to terminate under this provision shall not affect either Party's duty to perform prior to the effective date of termination.

13.4 In the event any part of this Agreement is declared invalid by a court of competent jurisdiction, the remainder of said Agreement shall remain in full force and effect and shall constitute a binding agreement between the Parties provided, however, that if either Party determines, in its sole discretion, that there is a material change in this Agreement by reason of any provision or application being finally determined to be invalid, illegal, or unenforceable, that Party may terminate this Agreement upon sixty (60) days prior written notice to the other Party. An election to terminate under this provision shall not affect either Party's duty to perform prior to the effective date of termination.

ARTICLE XIV – DEFAULT AND FORCE MAJEURE

14.1 Neither Party shall be considered in default with respect to any obligation hereunder, other than the payment of money, if prevented from fulfilling such obligations by any cause beyond its reasonable control, including, but not limited to, outages or interruptions due to weather, accidents, equipment failures or threat of failure, strikes, civil unrest, injunctions, or order of governmental authority having jurisdiction ("Force Majeure"). If performance by either Party has been prevented by such event, the affected Party shall promptly and diligently attempt to remove the cause of its failure to perform, except that neither Party shall be obligated to agree to any quick settlement of any strike or labor disturbance, which, in the affected Party's opinion, may be inadvisable or detrimental, or to appeal from any administrative or judicial ruling.

ARTICLE XV - TERMINATION ON DEFAULT

15.1 Should either of the Parties hereto violate any material provisions of this Agreement, the other Party shall give written notice to the violating Party specifying the violation. Upon actual receipt of such notice, the Party shall have one calendar year to correct such violation. In the event such violation of this Agreement is not corrected by the expiration of said one calendar year, this Agreement, subject to the applicable regulations of any jurisdictional regulatory authority, may be terminated by giving no less than sixty (60) days written notice, but no other remedy or remedies available under the law for such violation shall be limited in any way because of this provision or the exercise of the right conferred hereunder.

15.2 The failure of a Party to this Agreement to insist, on any occasion, upon strict performance of this Agreement will not be considered to waive the obligations, rights, or duties imposed upon the Parties by this Agreement.

ARTICLE XVI- MISCELLANEOUS PROVISIONS

16.1 Any undertaking by a Party to the other Party under this Agreement shall not constitute the dedication of the electrical system or any portion thereof of that Party to the public or to the other

Party, and it is understood and agreed that any such undertaking shall cease upon the termination of this Agreement.

16.2 The several provisions of this Agreement are not intended to and shall not create rights of any character in, nor be enforceable by, parties other than the signatories to this Agreement and their assigns.

16.3 **LIMITATION OF LIABILITY. NEITHER PARTY SHALL BE LIABLE TO THE OTHER FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTIAL, PUNITIVE OR EXEMPLARY DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOST REVENUE OR OTHER BUSINESS INTERRUPTION DAMAGES, WHETHER BASED IN WHOLE OR IN PART IN CONTRACT, TORT OR EQUITY, BY STATUTE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY.**

16.4 This Agreement shall not affect the obligations or rights of either Party with respect to other agreements. Both Parties to this Agreement represent that there is no agreement or other obligation binding upon it, which, as such Party is presently aware, would limit the effectiveness or frustrate the purpose of this Agreement.

16.5 This Agreement may be amended only upon agreement of the Parties, such amendment will not be effective until reduced to writing and executed by the Parties.

16.6. Within 30 days of being fully executed, LCRA TSC will file a copy of this Agreement or any subsequent amendment with the PUCT to comply with applicable regulatory requirements.

16.7 The descriptive headings of the various sections of this Agreement have been inserted for convenience of reference only and are to be afforded no significance in the interpretation or construction of this Agreement.

16.8 The invalidity of one or more phrases, sentences, clauses, Sections or Articles contained in this Agreement shall not affect the validity of the remaining portions of this Agreement so long as the material purposes of this Agreement can be determined and carried out.

16.9 This Agreement will be executed in two or more counterparts, each of which is deemed an original, but all constitute one and the same instrument.

(SIGNATURE PAGE TO FOLLOW)

IN WITNESS WHEREOF, the Parties have caused this Interconnection Agreement between LCRA Transmission Services Corporation and the City of Austin to be executed in two (2) counterparts, each of which shall constitute an original, on the day and year first written above.

CITY OF AUSTIN dba AUSTIN ENERGY

By: _____
Dan Smith, P.E.

LAW DEPT

Title: Vice-President, Electric Service Delivery

Date: 10 Apr 2018

LCRA TRANSMISSION SERVICES CORPORATION

By: _____
Sergio Garza, P.E.

Title: Vice President, Transmission Design and Protection
Lower Colorado River Authority Transmission Services

Date: _____

IN WITNESS WHEREOF, the Parties have caused this Interconnection Agreement between LCRA Transmission Services Corporation and the City of Austin to be executed in two (2) counterparts, each of which shall constitute an original, on the day and year first written above.

CITY OF AUSTIN dba AUSTIN ENERGY

By: _____
Dan Smith, P.E.

Title: Vice-President, Electric Service Delivery

Date: _____

LCRA TRANSMISSION SERVICES CORPORATION

By: _____
Sergio Garza, P.E.

Title: Vice President, Transmission Design and Protection
Lower Colorado River Authority Transmission Services

Date: APRIL 17, 2018

IN WITNESS WHEREOF, the Parties have caused this Interconnection Agreement between LCRA Transmission Services Corporation and the City of Austin to be executed in two (2) counterparts, each of which shall constitute an original, on the day and year first written above.

CITY OF AUSTIN dba AUSTIN ENERGY

By: _____
Dan Smith, P.E.

Title: Vice-President, Electric Service Delivery

Date: _____

LCRA TRANSMISSION SERVICES CORPORATION

By: _____
Sergio Garza, P.E.

Title: Vice President, Transmission Design and Protection
Lower Colorado River Authority Transmission Services

Date: _____

Exhibit A

FACILITY SCHEDULE NO.	LOCATION OF POINT(S) OF INTERCONNECTION (# of Points)	INTERCONNECTION VOLTAGE (KV)	EFFECTIVE DATE OF INTERCONNECTION
1	Howard Lane (1)	138 kV	Date of this Agreement
2	Trading Post (0)	N/A	Date of this Agreement
3	A.E. Garfield (2)	345 kV	Date of this Agreement
4	Jollyville (1)	138 kV	Date of this Agreement
5	Wells Branch (2)	138 kV	Date of this Agreement
6	Lytton Springs (10)	138 kV(4) and 345 kV(6)	Date of this Agreement
7	Elroy (1)	138 kV	Date of this Agreement
8	Lakeway (6)	138 kV	Date of this Agreement
9	FPP 345 kV Yard 1 (2)	345 kV	Date of this Agreement
10	FPP 345 kV Yard 2 (1)	345 kV	Date of this Agreement
11	Gilleland Creek (2)	138 kV	Date of this Agreement
12	Hidden Valley (1)	138 kV	Date of this Agreement
13	Winchester (4)	345 kV	Date of this Agreement
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FACILITY SCHEDULE NO. 1

1. **Name:** Howard Lane Substation

2. **Facility Location:** The Howard Lane Substation is located at 2305 Gardenia Street, Austin, Travis County, TX 78728.

3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Howard Lane Substation generally described as:

   - where the jumper from Austin Energy's switch HL-304 attaches to LCRA TSC's bundled 795 ACSR conductors.

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 138 kV potential and current metering accuracy instrument transformers. The current metering transformers are located inside Austin Energy's tie breaker HL-950. The potential metering transformer are located on Austin Energy's 138 kV Operating Bus #1.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

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

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Howard Lane to Jollyville 138 kV transmission line, Ckt 961
  - Howard Lane to Mc Neil 138 kV transmission line, Ckt 972
  - Howard Lane to Techridge 138 kV transmission line, Ckt 1004

- Three (3) 138 kV A-Frame dead end structures
- One (1) 138 kV Operating Bus #1 including structures, insulators, foundations and jumpers
- Four (4) 138 kV circuit breakers HL-950, HL-961, HL-972 and HL-1004 including foundations, jumpers and protective relay packages
- Fourteen (14) 138 kV switches HL-200, HL-201, HL-202, HL-300, HL-301, HL-302, HL-303, HL-304, HL-600M, HL-601M, HL-602M, HL-650, HL-651M and HL-652 including stands and foundations
- One (1) 138 kV Operating Bus #1, bus differential and breaker failure scheme
- Two (2) 138 kV current transformers CT1 and CT2
- One (1) 138 kV bus potential transformer PT2
- Two (2) power transformers HL-123 and HL-456 with associated surge arresters
- Two (2) station service SS1 and SS2 with fuses F1 and F2 and associated fused disconnect switches
- Control house and battery bank with battery charger
- Substation property ground grid, shielding, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Howard Lane to Wells Branch 138 kV transmission line, T387
  - Howard Lane to Mc Neil 138 kV transmission line, T163
- Two (2) 138 kV A-Frame dead end structures
- One (1) 138 kV Operating Bus #2 including structures, insulators, foundations and jumpers
- Bundled 795 ACSR conductor from the Point of Interconnection to LCRA TSC's 138 kV Operating Bus #2
- Three (3) 138 kV surge arresters SA1, SA6 and SA7
- Two (2) 138 kV coupling capacitor voltage transformers CCVT1 and CCVT2
- One (1) 138 kV bus potential transformer PT1
- Two (2) 138 kV circuit breakers 9840 and 9850 including foundations, jumpers and protective relay packages
- Four (4) 138 kV switches 9839, 9841, 9849 and 9851including stands and foundations
- One (1) 138 kV motor operated switch MO9852 with stand, foundation and motor operator
- One (1) 138 kV Operating Bus #2, bus differential and breaker failure scheme

8. Operational Responsibilities of Each Party:

- Each Party will be responsible for the operation of the equipment it owns.
- LCRA TSC will be able to trip Austin Energy's circuit breaker HL-950 as part of its 138 kV bus #2, bus differential and breaker failure scheme.

9. Maintenance Responsibilities of Each Party:

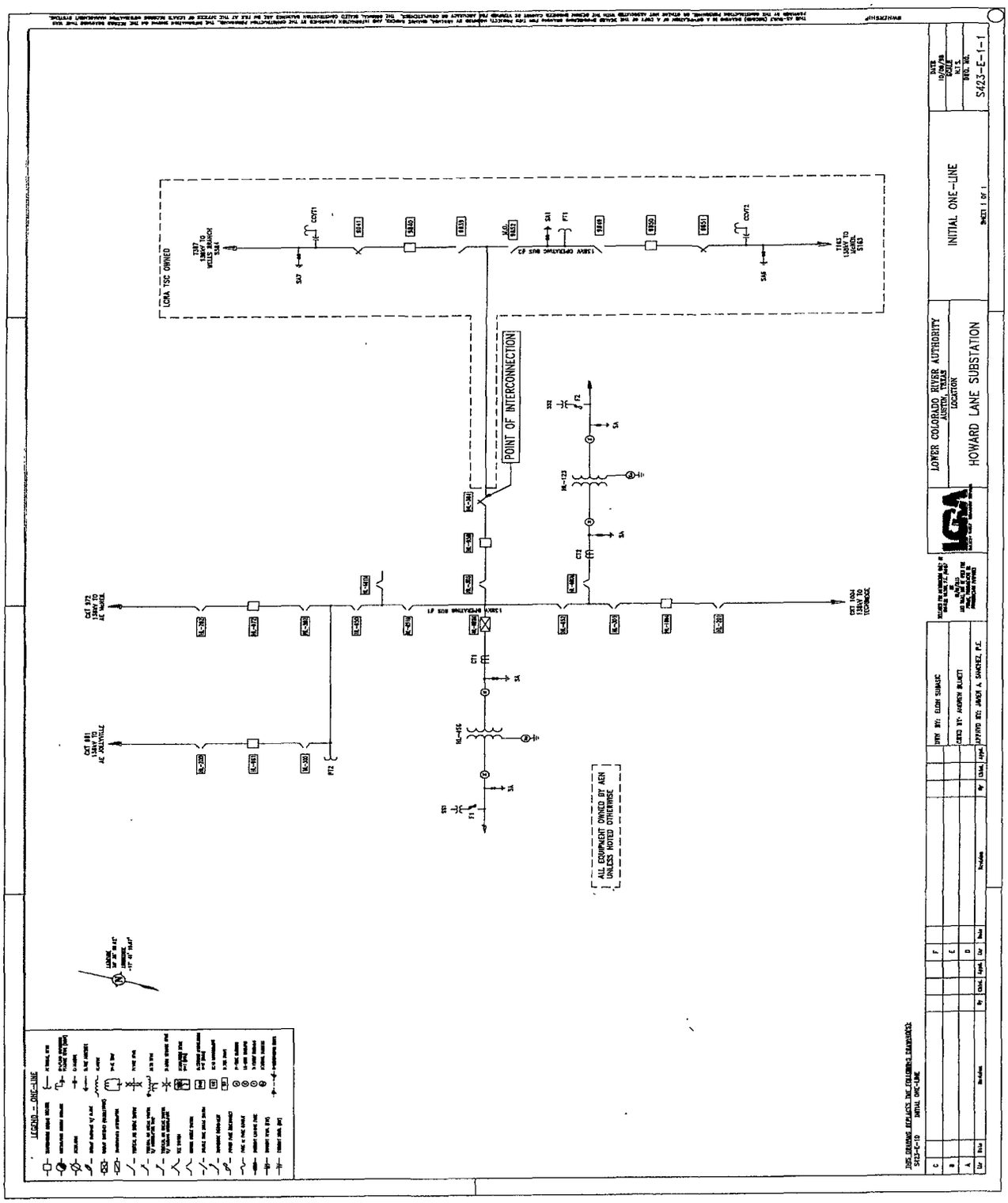
- Each Party will be fully responsible for the maintenance of the equipment it owns.
- Maintenance of any facilities by either Party, which will cause a deviation from normal power and energy flow at the Point of Interconnection, will be scheduled at a mutually agreeable time.

10. Other Terms and Conditions:

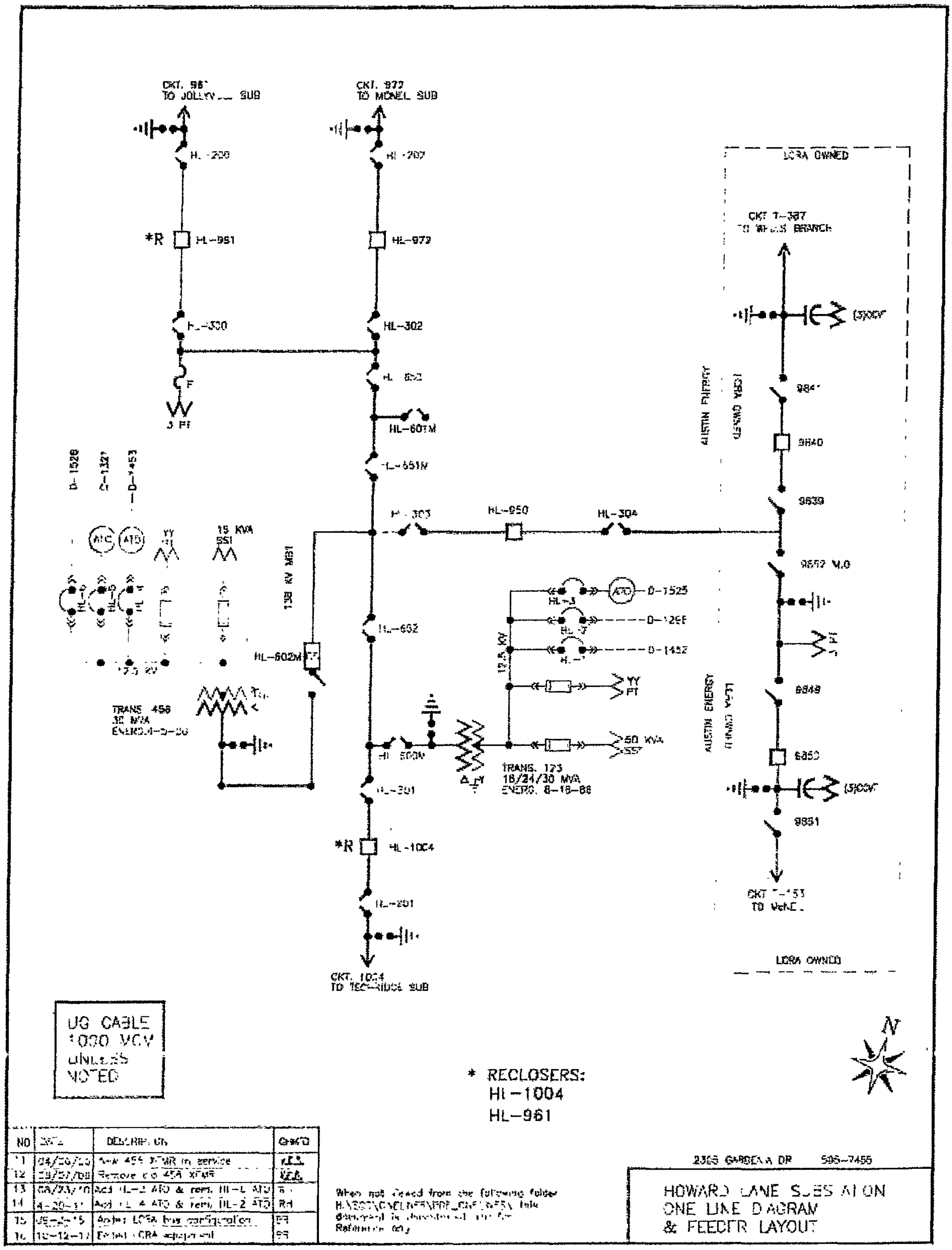
- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
- Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
- Austin Energy will supply and allow LCRA TSC use of circuit breaker HL-950 relaying bushing current transformers for its 138 kV bus differential relaying scheme.
- LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panel to Austin Energy's circuit breaker HL-950 relaying panel.
- Austin Energy will provide breaker failure initiate contacts from its circuit breakers HL-950 relaying panel to LCRA TSC's 138 kV bus differential and breaker failure panel.
- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- Austin Energy and LCRA TSC both have control houses at Howard Lane substation. However if either has a need to place panels or equipment in the others control house the control house owner will provide the required space (as available and as necessary) and access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy or LCRA TSC.

- Austin Energy will provide LCRA TSC access to its station service if needed.

HOWARD LANE SUBSTATION
LCRA TSC ONE LINE DRAWING



HOWARD LANE SUBSTATION
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 2

1. **Name:** Trading Post Substation – Deleted – There are no Points of Interconnection between LCRA TSC and Austin Energy at the Trading Post Substation.

FACILITY SCHEDULE NO. 3

1. **Name:** A.E. Garfield Switchyard

2. **Facility Location:** The A.E. Garfield Switchyard is located at 100 High Point Blvd., Cedar Creek, Bastrop County, TX 78612

3. **Points of Interconnection:** There are two (2) Points of Interconnection in the A.E. Garfield Switchyard generally described as:

   - where LCRA TSC's 345 kV bus hardware connects to Austin Energy's 345 kV switch GF-650.
   - where LCRA TSC's 345 kV bus hardware connects to Austin Energy's 345 kV switch GF-651.

4. **Delivery Voltage:** 345 kV

5. **Metered Voltage and Location:** LCRA TSC provided ERCOT-Polled Settlement metering will be accomplished using 345 kV potential and current metering accuracy instrument transformers located in the substation on LCRA TSC transmission lines T412, T182 and T352.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

The A.E. Garfield Switchyard including, but not limited to, the following items:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - A.E. Garfield to Stoney Ridge 138 kV transmission line, Ckt 962
  - A.E. Garfield to Hi-Cross 138 kV transmission line, Ckt 963
- Two (2) 138 kV A-frame dead end structures
- Two (2) 138 kV Operating Buses MB3 and MB4 including structures, insulators, foundations and jumpers
- Eight (8) 138 kV circuit breakers GF-950-1, GF-950-2, GF-951-1, GF-951-2, GF-962-1, GF-962-2, GF963-1 and GF-963-2 including foundations, jumpers and protective relay packages
- Twenty (20) 138 kV switches GF-201, GF-202, GF-203, GF-204, GF-301, GF-302, GF-303, GF-304, GF-305, GF-306, GF-307, GF-308, GF-309, GF-310, GF-311, GF-312, GF-321, GF-322, GF-323, GF-324
- Four (4) 138 kV coupling capacitor voltage transformers (not numbered)
- Two (2) 138 kV surge arresters (not numbered)
- Two (2) 138 kV potential transformers (not numbered)
- Two (2) 345kV – 138 kV auto transformers AT1 and AT2 with associated surge arresters and protective relay packages
- One (1) 345 kV bus MB1 including structures, insulators, foundations and jumpers
- One (1) 345 kV bus MB2 including structures, insulators, foundations and jumpers
- 345 kV bus differential relaying scheme
- 138 kV bus differential relaying scheme
- Four (4) 345 kV circuit breakers GF-1216, GF-1217, GF-1218 and GF-1219 including foundations, jumpers and protective relay packages

- Ten (10) 345 kV switches GF-313, GF-314, GF-315, GF-316, GF-317, GF-318, GF-319, GF-320, GF-650 and GF-651
- Station Service (not shown on one line diagrams)
- Control house and battery bank with battery charger
- Substation property ground grid, shielding, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following 345 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - A.E. Garfield to Austrop 345 kV transmission line, T182
  - A.E. Garfield to Lytton Springs 345 kV transmission line, T352
  - A.E. Garfield to Bastrop Energy 345 kV transmission line, T412
  - Austrop to Zorn 345 kV transmission line (passes through A.E. Garfield Switchyard), T185
- Five (5) 345 kV A-frame dead end structures
- Five (5) 345 kV circuit breakers 6870, 6880, 11380, 11390 and 11400 including foundations, jumpers and protective relay packages
- Ten (10) 345 kV switches 6869, 6871, 6879, 6881, 11379, 11381, 11389, 11391, 11399 and 11401
- Two (2) single phase 345 kV coupling capacitor voltage transformers CCVT5 and CCVT6
- Two (2) three phase 345 kV coupling capacitor voltage transformers CCVT1 and CCVT2
- Four (4) 345 kV surge arresters SA1, SA2, SA3 and SA4
- Two (2) 345 kV potential transformer PT3 and PT4
- One (1) 345 kV metering current transformer CT1
- Three (3) 345 kV current transformers CT2, CT3 and CT4

8. Operational Responsibilities of Each Party:

- Each Party will be responsible for the operation of the facilities it owns. No change will be made in the normal operations of the Point of Interconnection without the mutual agreement of the Parties.

9. Maintenance Responsibilities of Each Party:

- Each Party will be fully responsible for the maintenance of the equipment it owns.
- Maintenance of any facilities by either Party, which will cause a deviation from normal power and energy flow at the Point of Interconnection, will be scheduled at a mutually agreeable time.

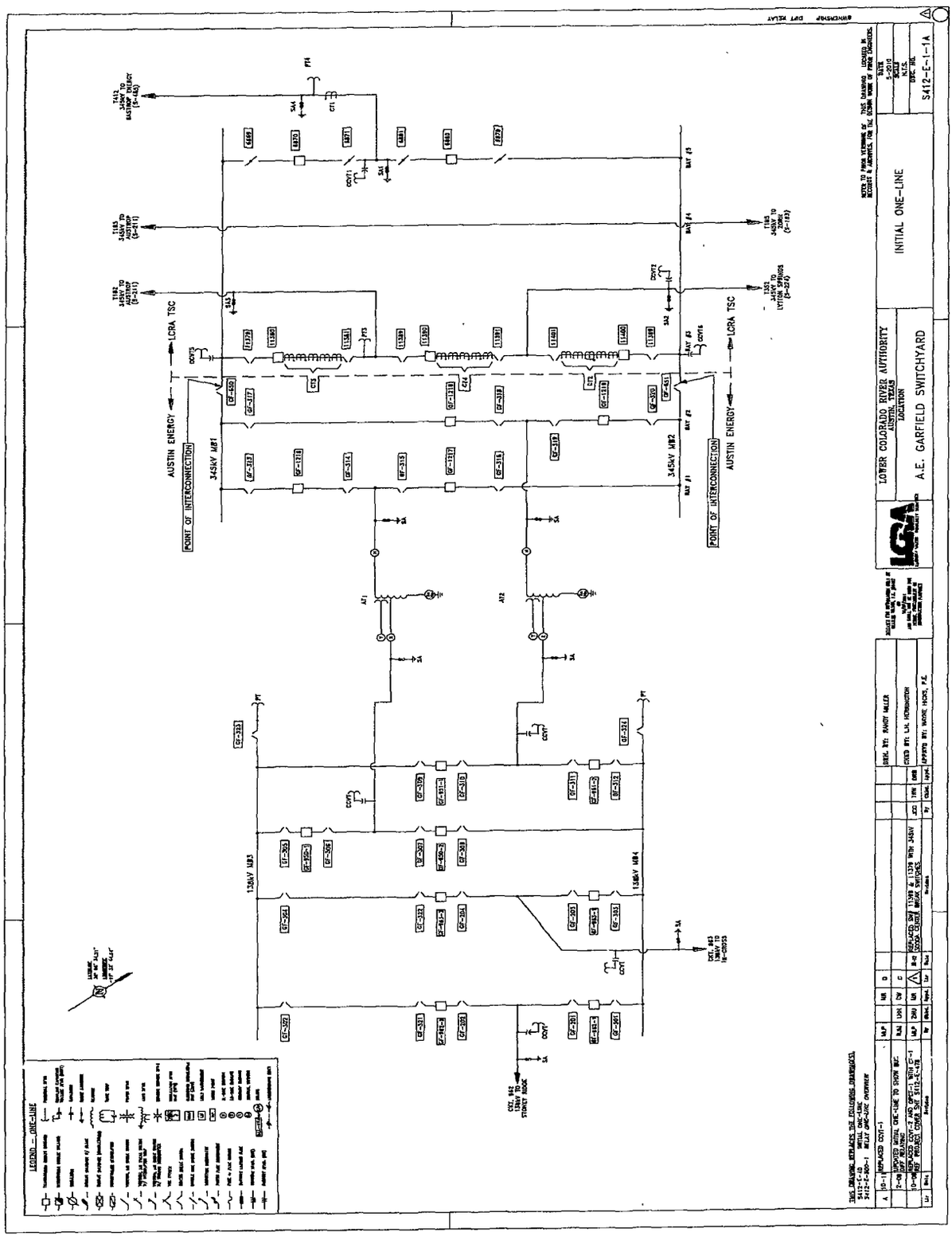
10. Other Terms and Conditions:

- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate;
- Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
- LCRA TSC will supply and allow Austin Energy use of circuit breakers 6870 and 6880 relaying bushing current transformers, and free-standing CT2, associated with circuit breaker 11400, and free-standing CT3, associated with circuit breaker 11380, for AE's 345 kV bus differential and breaker failure scheme.
- Austin Energy will provide tripping and close inhibit contacts from its 345 kV bus differential and breaker failure panel to LCRA TSC's circuit breakers 6870, 6880, 11380 and 11400 relaying panels.
- LCRA TSC will supply and provide breaker failure initiate contacts from its circuit breakers 6870, 6880, 11380 and 11400 relaying panels to Austin Energy's 345 kV bus

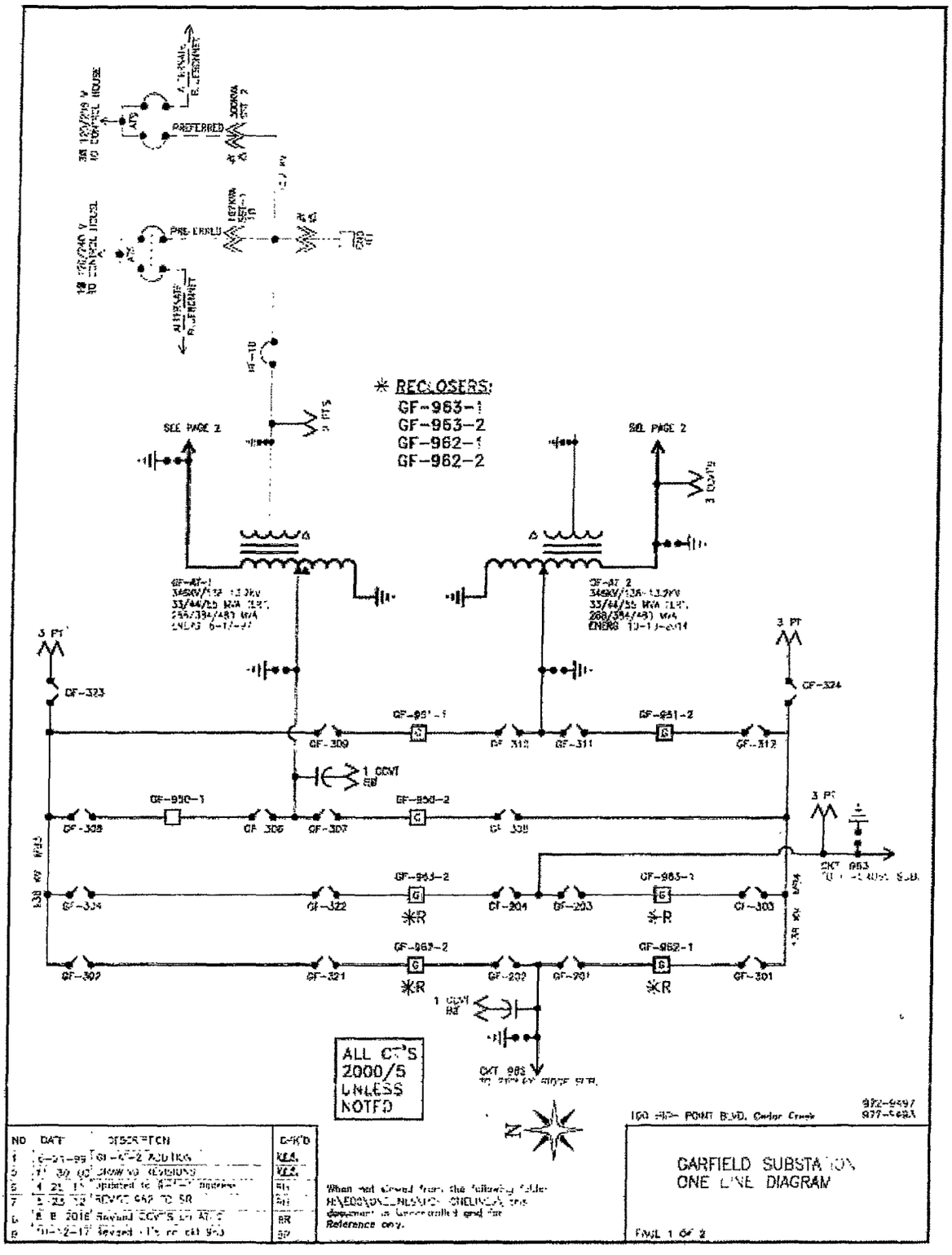
differential and breaker failure panel.

- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- Austin Energy will provide LCRA TSC access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.
- Austin Energy will provide LCRA TSC access to its station service if needed.

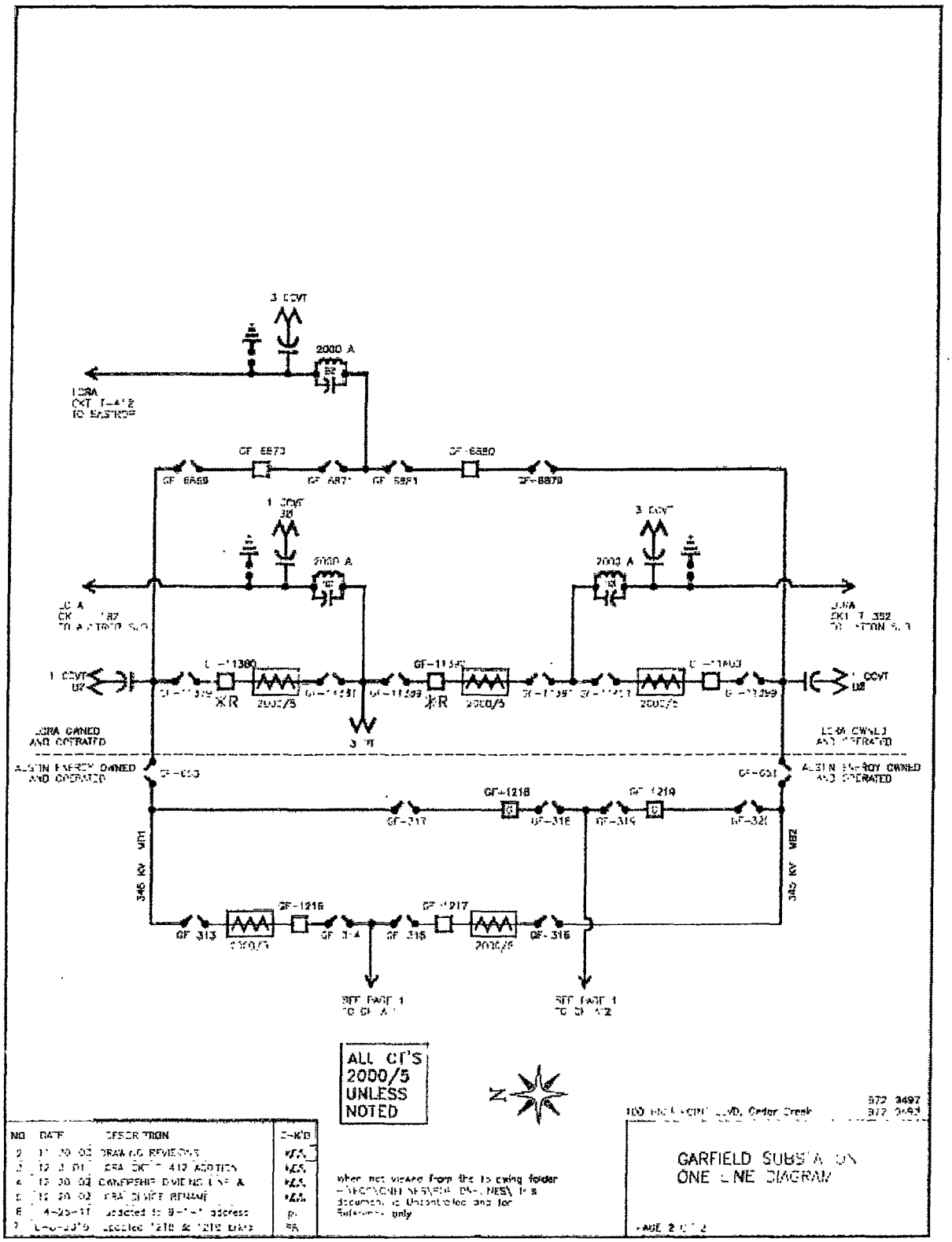
A.E.GARFIELD SWITCHYARD
LCRA TSC ONE LINE DRAWING



A.E.GARFIELD SWITCHYARD
AE ONE LINE DRAWING #1



A.E.GARFIELD SWITCHYARD
AE ONE LINE DRAWING #2



FACILITY SCHEDULE NO. 4

1. **Name:** Jollyville Substation

2. **Facility Location:** The Jollyville Substation is located at 13715 Rutledge Spur, Austin, Travis County, TX 78717.

3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Jollyville Substation generally described as:

    - where the 4 hole pad on Austin Energy's 138 kV bus bolts to the 4 hole pad on LCRA TSC's switch number 9959.

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 138kV potential and current metering accuracy instrument transformers located on LCRA TSC transmission line T483.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

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

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
    - Jollyville to Northwest 138 kV transmission line, Austin Energy Ckt 1012
    - Jollyville to Howard Lane 138 kV transmission line, Austin Energy Ckt 961
- Three (3) 138 power transformers JV-123, JV-456, and JV-789 with associated surge arresters
- Two (2) 138 kV circuit breakers JV-1012 and JV-961 with foundations, jumpers and protective relay packages
- Two (2) 138 kV surge arresters (not numbered)
- Ten (10) 138 kV disconnect switches JV-200, JV-201, JV-300, JV-301, JV-302, , JV-612, JV-650, JV-651M, JV-652 and JV-501
- One (1) circuit switchers JV-602CS with foundation, jumpers, and protective relay package
- Two (2) integrated circuit switchers JV-600M and JV-601M with foundation, jumpers, and protective relay package
- One (1) 138 kV capacitor bank CP-1 with associated circuit breaker JV-900, current transformer, surge arrester and single phase potential transformer
- Two (2) 3-phase 138kV bus potential transformers
- One (1) 138 kV bus differential and breaker failure scheme
- Control house with 125 Vdc batteries and battery charger
- RTU with communications equipment
- Substation property, ground grid, shielding, graveling, fence and other appurtenances
- Fiber patch panel, fiber duct cable and splice enclosure at Jollyville substation (Austin Energy will make the splice between LCRA TSC's OPGW and Austin Energy's fiber duct cable at LCRA TSC's T483 H-Frame dead end structure at Jollyville substation.)

LCRA TSC owns:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Jollyville to Avery Ranch 138 kV transmission line, T483
- One (1) 138 kV dead-end H-frame inside the Substation
- One (1) 138 kV circuit breaker 9960 including foundation, jumpers, and protective relaying
- Two (2) 138 kV switches 9959 and 9961
- One (1) 138kV surge arrestor SA6
- One (1) coupling capacitor voltage transformer CCVT1
- 48 Fiber OPGW cable on T483 line section. (LCRA TSC's OPGW runs from the Austin Energy splice enclosure located on LCRA TSC's dead end H-Frame at Jollyville Substation to the LCRA TSC splice enclosure on the substation dead end at Avery Ranch Substation)
- RTU with communications equipment.

8. Operational Responsibilities of Each Party:

- Each Party will be responsible for the operation of the facilities it owns. No change will be made in the normal operations of the Point of Interconnection without the mutual agreement of the Parties.

9. Maintenance Responsibilities of Each Party:

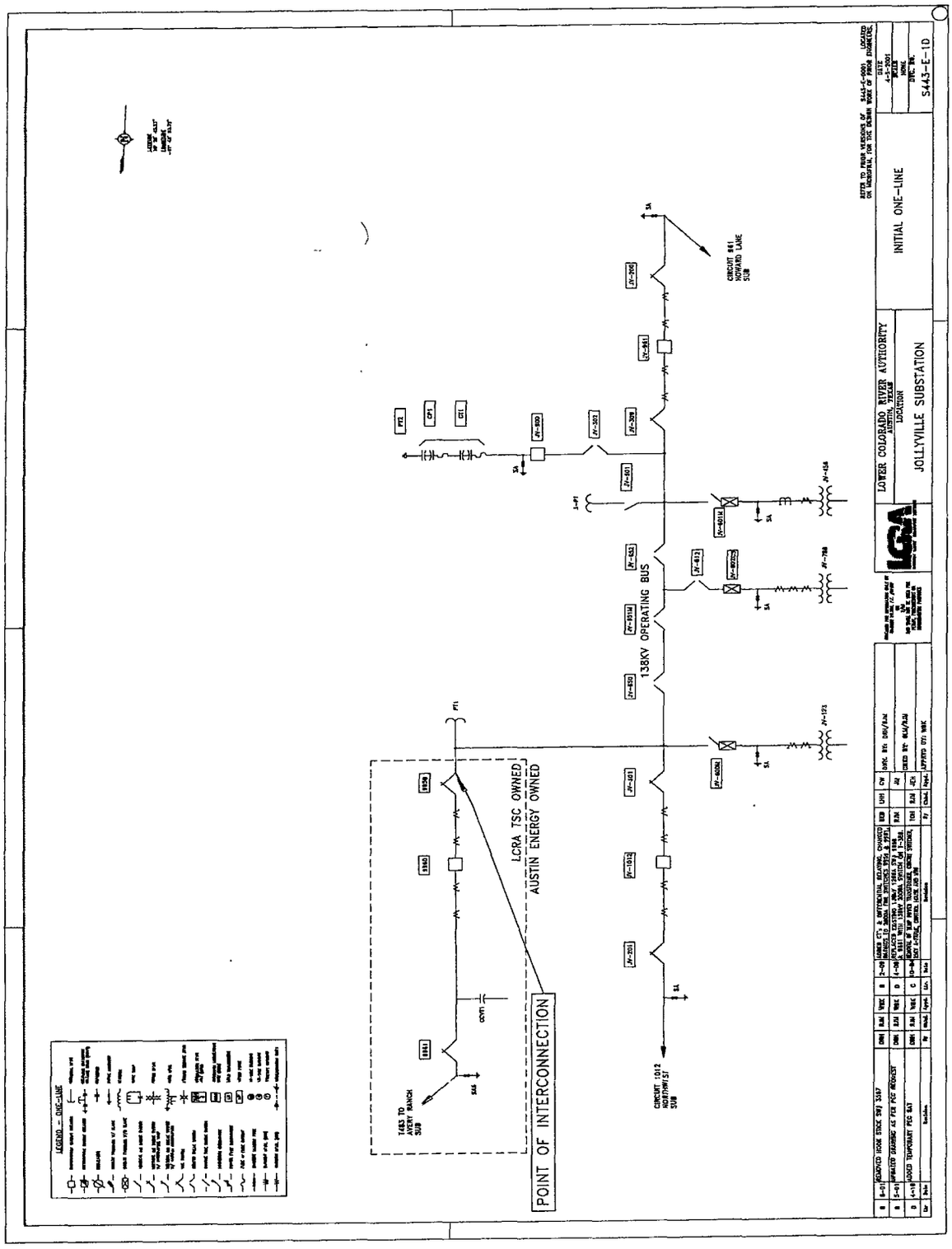
- Each Party will be fully responsible for the maintenance of the equipment it owns.
- Maintenance of any facilities by either Party, which will cause a deviation from normal power and energy flow at the Point of Interconnection, will be scheduled at a mutually agreeable time.

10. Other Terms and Conditions:

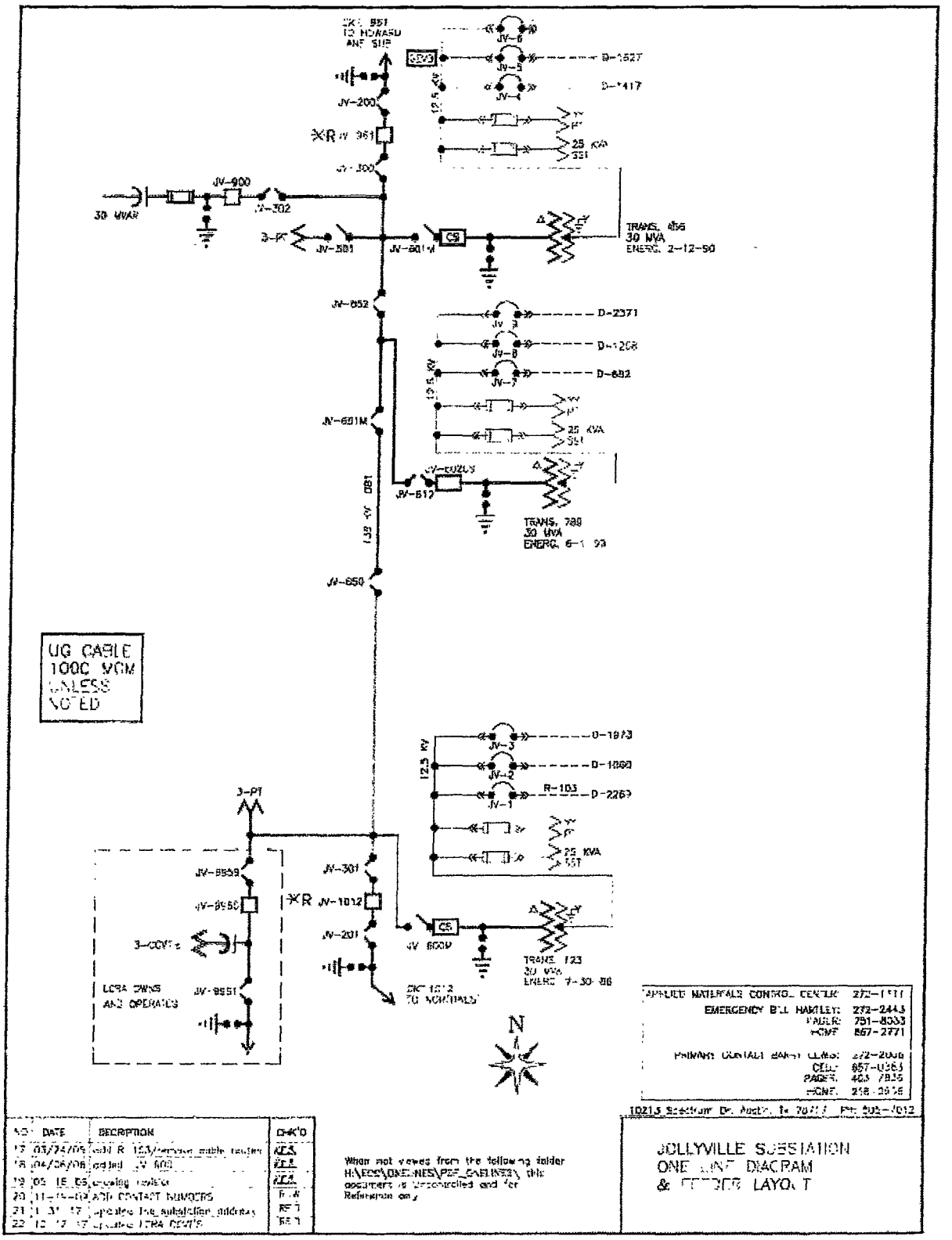
- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
- Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
- Coordination and response to the ERCOT under-frequency, under-voltage or emergency load shedding program for Austin Energy load served out of this Substation is the responsibility of Austin Energy.
- LCRA TSC will supply and allow Austin Energy use of circuit breaker 9960 relaying bushing current transformers for Austin Energy's 138 kV bus differential and breaker failure scheme.
- Austin Energy will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panel to LCRA TSC's circuit breaker 9960 relaying panel.
- LCRA TSC will supply and provide breaker failure initiate contacts from its circuit breaker 9960 relaying panel to Austin Energy's 138 kV bus differential and breaker failure panel.
- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- Austin Energy will provide LCRA TSC access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.
- Austin Energy will provide LCRA TSC access to its station service if needed.

- Austin Energy is responsible for reporting to ERCOT all required load data requests for Austin Energy load served out of this Substation.
- Each Party shall be responsible for submitting to ERCOT the required ICCP data for the equipment they own at this Substation.

JOLLYVILLE SUBSTATION
LCRA TSC ONE LINE DRAWING



JOLLYVILLE SUBSTATION
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 5

1. **Name:** Wells Branch Substation

2. **Facility location:** The Wells Branch Substation is located at 14608 ½ Single Trace, Austin, Travis County, TX 78728.

3. **Point of Interconnection:** There are two (2) Points of Interconnection in the Wells Branch Substation generally described as:

   - where the LCRA TSC jumper connects to Austin Energy 138 kV switch WB-611.
   - where the LCRA TSC jumper connects to Austin Energy 138 kV switch WB-612.

4. **Delivery voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 12.47 kV potential and current metering accuracy instrument transformers located in the Substation. The primary and backup meters will be equipped to compensate for losses to the Point of Interconnection.

6. **One line Diagram attached:** Yes

7. **Description of Facilities owned by each Party:**

Austin Energy owns:

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

- Two (2) 138 kV free-standing isolation switches WB-611 and WB-612
- Two (2) 138 kV circuit switchers WB-601CS and WB-602CS, with integrated disconnect switch, foundations, jumpers, and protective relay packages
- Two (2) 138/12.47 kV, 50 MVA power transformers WB-123 and WB-456 with associated surge arresters
- Two (2) 12.47 kV switchgear
- One (1) RTU with communications equipment
- SPCC plan
- Substation property, ground grid, shielding for AE owned equipment, gravel, fencing and other appurtenances
- Permitting, and grading provided by Austin Energy customer.

LCRA TSC owns:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Wells Branch to Round Rock South (TXU) 138 kV transmission line, T526
  - Wells Branch to Round Rock (TXU) 138 kV transmission line, T527
  - Wells Branch to Howard Lane 138 kV transmission line, T387
  - Wells Branch to McNeil 138 kV transmission line, T136
- One (1) 138 kV bus, including box structure, insulators, foundations, connecting hardware and jumpers to Austin Energy 138 kV switches
- Four (4) 138 kV surge arresters SA1, SA2, SA3 and SA4
- Two (2) wave traps WT1 and WT2 with tuners
- Six (6) 138 kV circuit breakers 19690, 19700, 19710, 19720, 19730 and 19740 including foundations, jumpers and protective relay packages

- Sixteen (16) 138 kV switches 19689, 19691, 19692, 19699, 19701, 19709, 19711, 19712, 19719, 19721, 19722, 19729, 19731, 19732, 19739 and 19741
- Four (4) transmission termination bays with associated structures, insulators and foundations
- Four (4) coupling capacitor voltage transformers CCVT1, CCVT2, CCVT3 and CCVT4
- Two (2) station service from PVT1 (both numbered the same)
- Control house with battery bank and battery charger
- Two (2) 138 kV bus differential and breaker failure schemes
- One (1) RTU with communications equipment
- Station shielding for LCRA TSC owned equipment

8. **Operational Responsibilities of each Party:** Each Party will be responsible for the operation and maintenance of the facilities it owns.
   - Austin Energy will direct and coordinate all switching for Austin Energy's facilities, including their 138 kV circuit switchers, associated 138 kV disconnect switches and distribution facilities. These facilities will not be locked or switched by LCRA TSC.
   - LCRA TSC will direct and coordinate all switching for LCRA TSC's facilities, including the 138 kV transmission lines, 138 kV circuit breakers and associated 138 kV disconnect switches, 138 kV bus and bus differential. These facilities will not be locked or switched by Austin Energy.

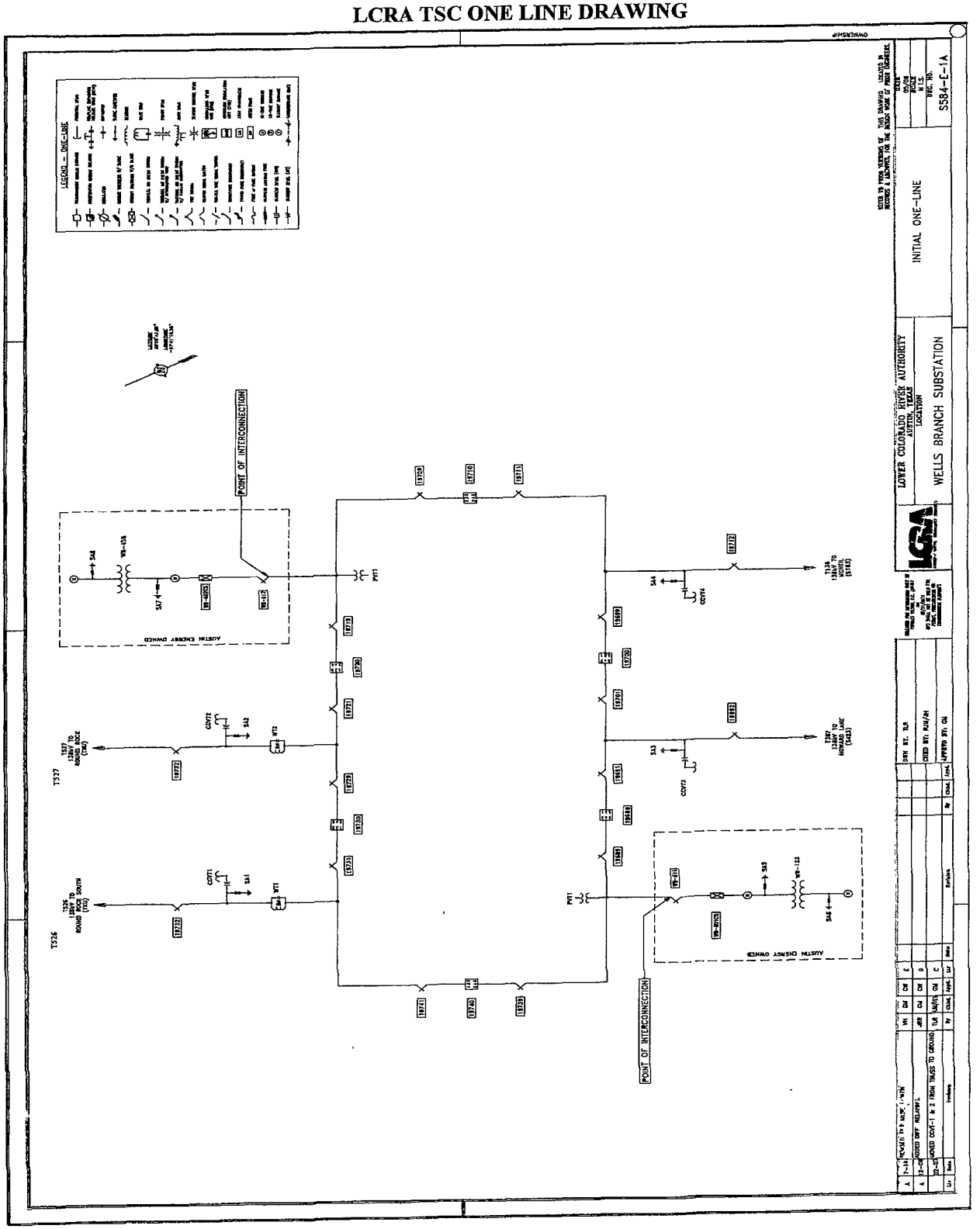
9. **Maintenance Responsibilities of each Party:**
   - Each Party will be fully responsible for the costs and liabilities associated with the facilities it owns.
   - Each Party will be responsible for all costs it incurs in connection with the establishment and maintenance of each point of interconnection in accordance with this Facility Schedule.

10. **Other Terms and Conditions:**
   - Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
   - Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
   - Austin Energy will acquire a substation easement, in a form acceptable to LCRA TSC, by November 1, 2006 on behalf of Austin Energy and LCRA TSC as joint grantees for the Wells Branch Substation.
   - LCRA TSC will jointly work with Austin Energy to submit data for the ERCOT model configuration, naming, and numbering convention for this Substation.
   - Coordination and response to the ERCOT under-frequency, under-voltage or emergency load shedding program for Austin Energy load served out of this Substation is the responsibility of Austin Energy.
   - Austin Energy will supply and allow LCRA TSC use of power transformer WB-123 and WB-456 relaying bushing current transformers for LCRA TSC's 138 kV bus differential and breaker failure schemes.
   - LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panels to Austin Energy's circuit switcher WB-601CS and WB-602CS relaying panels.
   - Austin Energy will supply and provide breaker failure initiate contacts from its circuit switcher WB-601CS and WB-602CS relaying panels to LCRA TSC's 138 kV bus differential and breaker failure panels.
   - LCRA TSC and Austin Energy shall design, provide, and coordinate their respective

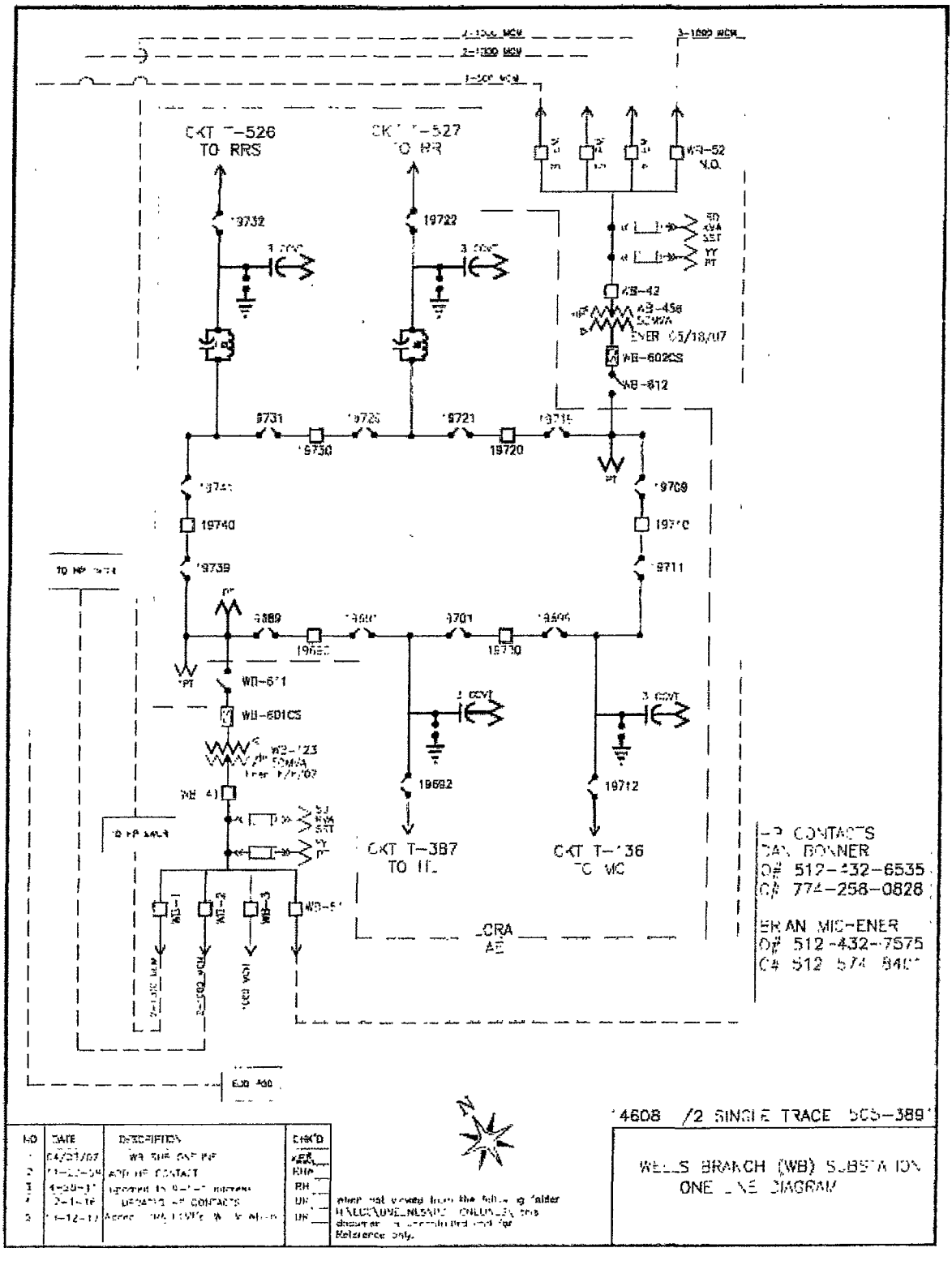
protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.

- LCRA TSC will provide Austin Energy access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either LCRA TSC (if space is available) or Austin Energy.
- LCRA TSC will provide Austin Energy access to its station service if needed.
- Austin Energy is responsible for reporting to ERCOT all required load data requests for Austin Energy load served out of this Substation.
- Each Party shall be responsible for submitting to ERCOT the required ICCP data for the equipment they own at this Substation.

WELLS BRANCH SUBSTATION
LCRA TSC ONE LINE DRAWING



WELLS BRANCH SUBSTATION
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 6

1. **Name:** Lytton Springs Substation

2. **Facility Location:** The Lytton Springs Substation is located at 1930 Williamson Road, Lockhart, Caldwell County, TX 78644.

3. **Points of Interconnection:** There are ten (10) Points of Interconnection at the Lytton Springs Substation generally described as:

   - where the 345 kV bus extension from switch LY300 (LCRA TSC) connects to the A-tap on the (Austin Energy) 345 kV bus MB#1
   - where the 345 kV bus extension from switch LY302 (LCRA TSC) connects to the A-tap on the (Austin Energy) 345 kV bus MB#1
   - where the 345 kV bus extension from switch LY303 (LCRA TSC) connects to the A-tap on the (Austin Energy) 345 kV bus MB#2
   - where the 345 kV bus extension from switch 21429 (LCRA TSC) connects to the A-tap on the (Austin Energy) 345 kV bus MB#1
   - where the 345 kV bus extension from switch 21439 (LCRA TSC) connects to the A-tap on the (Austin Energy) 345 kV bus MB#2
   - where the 345 kV pipe bus from switch LY212 (LCRA TSC) connects to the 4 hole pad on switch LY213 (Austin Energy)
   - where the 138 kV bus extension from switch 21379 (LCRA TSC) connects to the A-tap on the (Austin Energy) 138 kV bus MB#3
   - where the 138 kV bus extension from switch 21389 (LCRA TSC) connects to the A-tap on the (Austin Energy) 138 kV bus MB#4
   - where the 138 kV bus extension from switch 21399 (LCRA TSC) connects to the A-tap on the (Austin Energy) 138 kV bus MB#3
   - where the 138 kV bus extension from switch 21419 (LCRA TSC) connects to the A-tap on the (Austin Energy) 138 kV bus MB#4

4. **Delivery Voltage:** 138 kV and 345 kV

5. **Metered Voltage and Location:**
   - Austin Energy owns, operates, and maintains the ERCOT-Polled Settlement meter and panel associated with LCRA TSC T255, the 345 kV transmission line to FPP YD#2. This metering by Austin Energy uses metering current transformers located inside Austin Energy breaker LY1204 and LCRA TSC breaker LY1229, along with LCRA TSC's PT2 for the potentials.
   - LCRA TSC owns, operates, and maintains the ERCOT-Polled Settlement meter and panel associated with LCRA TSC T246, the 345 kV transmission line to Zorn. This metering by LCRA TSC uses metering current transformers located inside LCRA TSC breakers LY1207 and LY1208, along with LCRA TSC's PT1 for the potentials.
   - LCRA TSC owns, operates and maintains the meters and panel associated with LCRA TSC T382, the 138 kV transmission line to Turnersville. This metering by LCRA TSC uses metering current transformers located inside LCRA TSC breakers 21410 and 21420, along with PT3 for the potentials.
   - LCRA TSC owns, operates and maintains the ERCOT-Polled Settlement meters and panel associated with LCRA TSC T534, the 138 kV transmission line to Mendoza at the Mendoza substation. This metering by LCRA TSC for T534 at Mendoza uses metering current transformers located inside LCRA TSC breaker 6670, along with Mendoza bus

PT2 for the potentials. The 138 kV ERCOT-Polled Settlement meters at the Mendoza substation shall include transmission line loss compensation to effectively reflect the Point of Interconnection at the Lytton Springs 138 kV bus.

- All meters shall be installed and maintained in accordance with ERCOT-Polled Settlement Metering Design Proposals submitted to and approved by ERCOT.
- Each Party shall provide a direct connection to each primary and backup meter that it owns to the other Party for use by that Party's SCADA system.
- LCRA TSC shall provide Austin Energy with connection to the ERCOT-Polled Settlement meters at Mendoza by presenting the primary and backup meter communication ports at the Lytton Springs LCRA TSC communication channel banks.

6. **One Line Diagrams Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

The Lytton Springs substation including, but not limited to:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Lytton Springs to Pilot Knob 138 kV transmission line, Ckt 943
  - Lytton Springs to Slaughter Lane 138 kV transmission line, Ckt 988
- Two (2) 138 kV dead-end structures including foundations, insulators, surge arresters and jumpers for Pilot Knob and Slaughter Lane transmission lines
- The following 345 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Lytton Springs to Holman 345 kV transmission line, Ckt 3121
- One (1) 345 kV dead-end structure including foundations, insulators, surge arresters and jumpers for Holman transmission line
- 345 kV buswork from disconnect switch LY213 to disconnect switch LY301 including support structures, foundations, insulators, jumpers and connectors
- 345 kV operating bus MB #1 and MB #2 including support structures, foundations, insulators, jumpers, A-taps, associated 345 kV buswork and connectors
- Six (6)345kV coupling capacitor voltage transformers, three (3) at AT-1, three (3) on Ckt 3121
- One (1) surge arrester on Ckt 3121
- Six (6) 345 kV circuit breakers LY-1204, LY-1205, LY-1209, LY-1210, LY-1211 and LY-1212 including foundations, jumpers and protective relay packages
- Twelve (12) 345 kV disconnect switches LY-200, LY-201, LY-213, LY-301, LY-304, LY-305, LY-306, LY-307, LY-316, LY-317, LY-318 and LY-319 including foundations, stands and jumpers
- Two (2) coupling capacitors on Pilot Knob Ckt 943 and Slaughter Lane Ckt 988
- 138 kV Operating Bus MB #3 and MB #4 including support structures, foundations, insulators, jumpers, A-taps, associated 138 kV buswork and connectors, including operating bus extensions for the LCRA TSC Auto addition project
- 345 kV and 138 kV Operating Bus differential protection panels with yard current transformer junction boxes
- Two (2) 138 kV bus potential transformers MB3 PT and MB4 PT
- Six (6) 138 kV circuit breakers LY-943-3, LY-943-4, LY-950, LY-951, LY-988-3 and LY-988-4 including foundations, jumpers and protective relay packages

- Fourteen (14) 138 kV switches LY-208, LY-209, LY-210, LY-211, LY-308, LY-309, LY-310, LY-311, LY-312, LY-313, LY-314, and LY-315, including foundations, stands and jumpers
- Two (2) auto transformers LYAT1 and LYAT2 with associated surge arresters and CCVTs, PTs and protective relay packages
- One (1) Tertiary switchgear associated with LYAT2 Auto
- One (1) ERCOT-Polled Settlement metering panel for T255
- One (1) wall mounted RTU in the LCRA TSC control house
- Oil containment for the two (2) existing auto transformers
- One (1) Control house and battery bank with battery charger
- Three phase station service (300KVA SST) from LY-AT2 Auto
- Alternate three phase station service from distribution circuit and 225KVA transformer
- One (1) automatic transfer switch for station service and associated main and distribution panels
- Substation land, site grading, ground grid, shielding, substation gravel, and substation fence including expansion for the LCRA TSC Auto addition project and other appurtenances

LCRA TSC owns:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
    - Lytton Springs to Turnersville 138 kV transmission line, T382
    - Lytton Springs to Mendoza 138 kV transmission line, T534
- The following 345 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
    - Lytton Springs to Zorn 345 kV transmission line, T246
    - Austrop to Zorn 345 kV transmission line, T185 (which passes through but does not terminate at Lytton Springs substation)
    - Lytton Springs to AE Garfield 345 kV transmission line, T352
    - Lytton Springs to FPP Yard #2 345 kV transmission line, T255
- Three (3) 345 kV dead end structures including foundations, insulators, surge arresters and jumpers for FPP yard #2, Garfield and Zorn 345 kV transmission lines
- Three (3) 345 kV coupling capacitor voltage transformer CCVT1, CCVT2 and CCVT4 at each of the three (3) LCRA TSC 345 kV line terminations
- Six (6) 345 kV surge arresters SA1, SA2, SA4, SA6, SA13 and SA14
- Two (2) 345 kV EPS metering potential transformers PT1 and PT2
- Two (2) 345 kV dead end structures including foundations, insulators and jumpers for Zorn to Austrop transmission line which passes through but does not terminate at Lytton Springs substation
- Six (6) 345 kV circuit breakers LY1206, LY1207, LY1208, LY1229, 21430 and 21440 including foundations, jumpers and protective relay packages
- Twelve (12) 345 kV disconnect switches LY202, LY203, LY204, LY205, LY212, LY300, LY302, LY303, 21429, 21431, 21439 and 21441 including foundations, stands and jumpers
- One (1) auto transformer AT3 with associated surge arresters
- One (1) 138kV coupling capacitor voltage transformer CCVT 6
- One (1) single phase,345kV coupling capacitor voltage transformer CCVT5
- Two (2) 138 kV dead end structures including foundations, insulators, surge arresters and jumpers for Turnersville and Mendoza transmission lines
- Two (2) 138 kV surge arresters SA11 and SA12
- One (1) 138 kV transmission line potential transformer PT3

- One (1) 138 kV CCVT7 at the 138 kV Mendoza transmission line termination
- Five (5) 138 kV circuit breakers 21380, 21390, 21400, 21410 and 21420 including foundations, jumpers and protective relay packages
- Ten (10) 138 kV switches 21379, 21381, 21389, 21391, 21399, 21401, 21409, 21411, 21419 and 21421 including foundations, stands and jumpers
- One (1) power PT, PVT1 for backup station service to the LCRA TSC control house
- One (1) annunciator panel (in the Austin Energy control house)
- One (1) DFR Panel (in the Austin Energy control house)
- One (1) wall mounted ac panelboard (in the Austin Energy control house)
- One (1) wall mounted dc panel board (in the Austin Energy control house)
- One (1) RTU (in the Austin Energy control house)
- Two (2) SIP panels (in the Austin Energy control house)
- Two (2) line relay panels for T255 (in the Austin Energy control house)
- One (1) control house with two (2) battery banks and two (2) battery chargers
- One (1) automatic transfer switch for station service
- Three phase station service SS2 from LCRA TSC Auto with a 3 phase pad mount transformer next to LCRA control house
- Single phase primary station service SS1 to LCRA TSC control house
- Two (2) ERCOT-Polled Settlement metering panels for T246 and T382
- Fiber optic, facility entry cable and fiber patch panel for the LCRA TSC control house

8. Operational Responsibilities of Each Party:

Austin Energy shall be responsible for the operation of the following:

- Breakers and associated switches for LY-1209, LY-1210, LY-1211, LY-1212, LY-943-3, LY-943-4, LY-988-3, LY-988-4,
- Breakers and associated switches for LY-950 and LY-951, which terminate the 345/138 kV auto transformers LY-AT1, LY-AT2
- Breakers and associated switches for LY-1204 and LY-1205 which terminates the 345 kV Lytton Springs to Holman transmission line
- All auto tap changers (LY-AT1, LY-AT2, and AT3) for maintaining voltage profile
- All bus differentials

LCRA TSC shall be responsible for the operation of the following:

- Breakers and associated switches for LY1206, LY1207 and LY1208, which terminate the 345 kV Lytton Springs to Zorn and Lytton Springs to Garfield transmission lines
- Breakers and associated switches for 21380, 21390, 21430 and 21440, which terminate the 345/138 kV auto transformer LY-AT3
- Breaker and associated switches for LY1229 which terminates the 345 kV Lytton Springs to FPP Yard #2 transmission line
- Breakers and associated switches for 21400, 21410 and 21420, which terminate the 138 kV Lytton Springs to Turnersville and Lytton Springs to Mendoza transmission lines

9. Maintenance Responsibilities of Each Party:

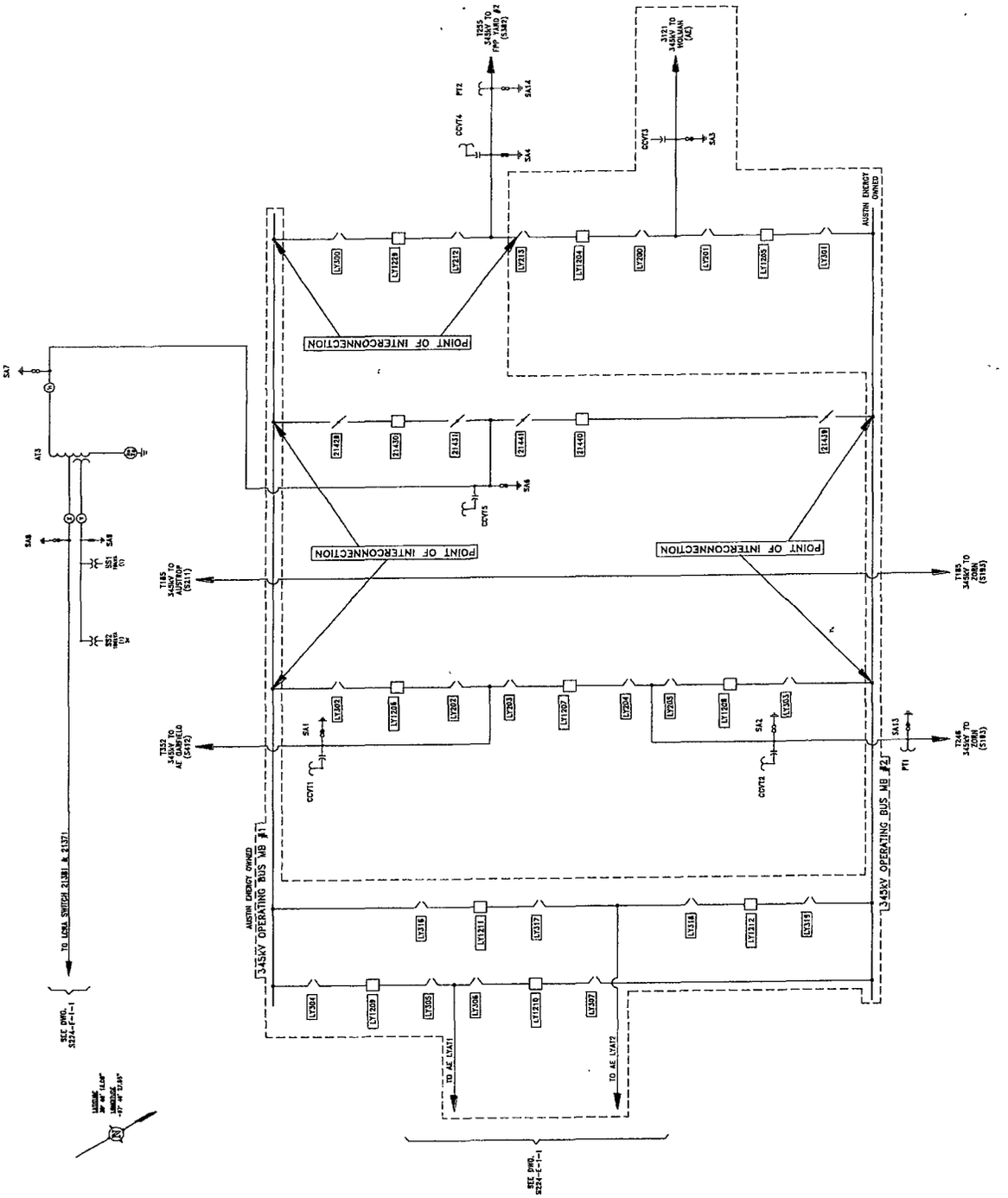
- Each Party will be fully responsible for the maintenance of the equipment it owns.

10. Other Terms and Conditions:

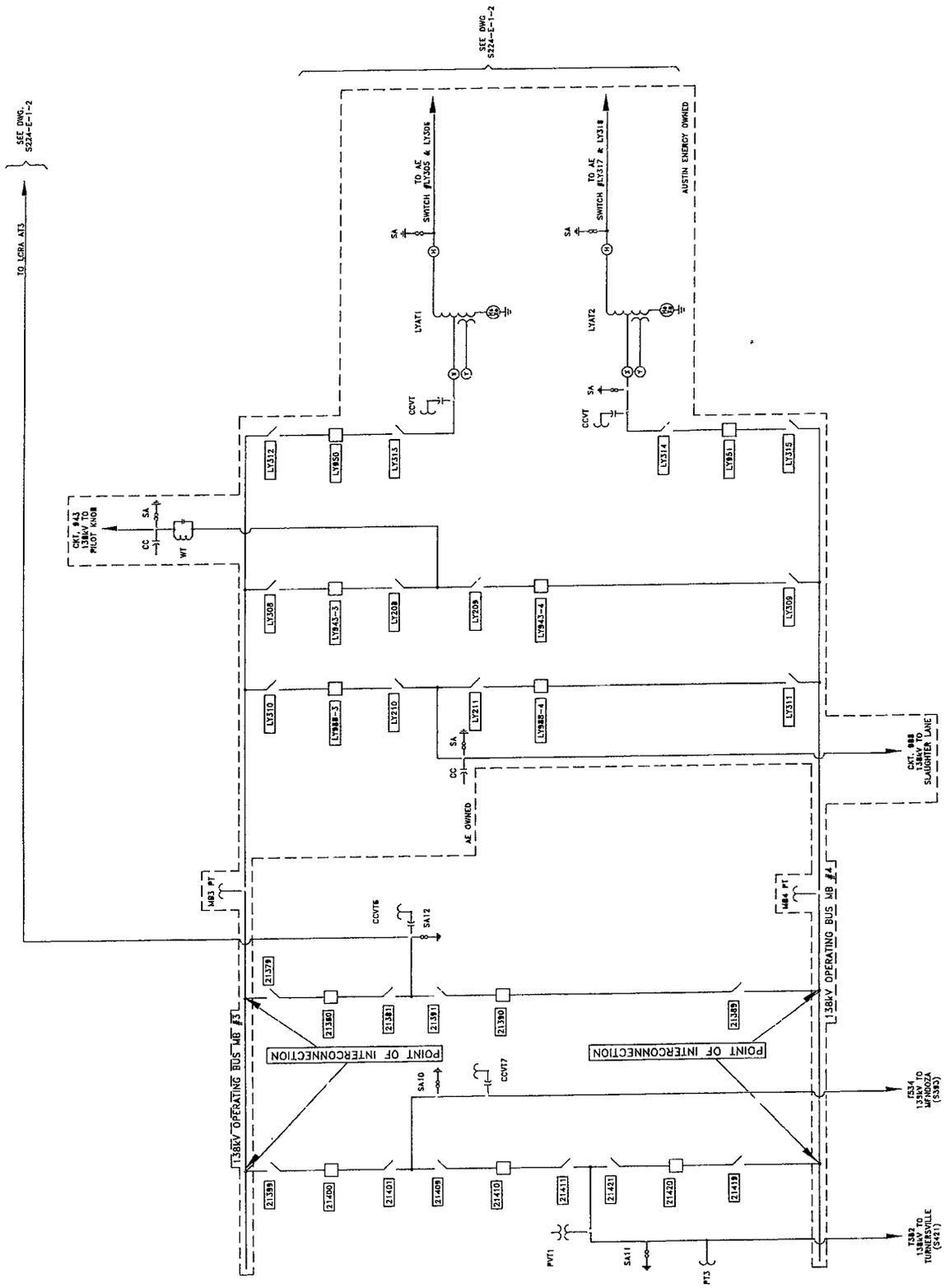
- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
- Austin Energy and LCRA TSC are to share access to the two (2) control houses by Austin Energy and LCRA TSC locks on the control house doors.

- Austin Energy will supply and provide tripping and close inhibit contacts from its primary and secondary 345 kV bus differential and breaker failure panels to LCRA TSC's circuit breakers LY1229, CB21430, CB21440, LY1206 and LY1208 relaying panels.
- LCRA TSC will supply and provide breaker failure initiate contacts from its circuit breakers LY1229, CB21430, CB21440, LY1206 and LY1208 relaying panels to Austin Energy's primary and secondary 345 kV bus differential and breaker failure panels.
- LCRA TSC will supply and provide current transformers for use by Austin Energy in Austin Energy's primary and secondary bus differential relaying scheme for 345 kV Operating Bus MB1 and 345 kV Operating Bus MB2 from circuit breakers LY1229,CB21430, CB21440, LY1206 and LY1208.
- Austin Energy will supply and provide tripping, close inhibit contacts from its 138 kV bus differential and breaker failure panel to LCRA TSC's circuit breakers 21400, 21420, 21380 and 21390 relaying panels.
- LCRA TSC will supply and provide breaker failure initiate contacts from its circuit breakers 21400, 21420, 21380 and 21390 relaying panels to Austin Energy's 138 kV bus differential and breaker failure panels.
- LCRA TSC will supply and provide current transformers for use by Austin Energy in Austin Energy's bus differential relaying scheme for 138 kV Operating Bus MB3 and 138 kV Operating Bus MB4 from circuit breakers 21400, 21420, 21380 and 21390.
- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- LCRA TSC will provide Austin Energy access to 125 VDC and 120 VAC power in LCRA's control house. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either LCRA TSC (if space is available) or Austin Energy.
- LCRA TSC will provide Austin Energy with floor space (as available and as necessary) in its control house for the installation of Austin Energy required control, communications and SCADA equipment.
- Austin Energy will provide LCRA TSC access to 125 VDC and 120 VAC power in Austin Energy's control house. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.
- Austin Energy will provide LCRA TSC with floor space (as available and as necessary) in its control house for the installation of LCRA TSC required control, communications and SCADA equipment.
- Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns or operates.
- Austin Energy agrees to grant to LCRA TSC a license, at no cost to LCRA TSC, to accommodate the LCRA TSC facilities to be constructed in Austin Energy's Lytton Springs Substation site pursuant to this Agreement.

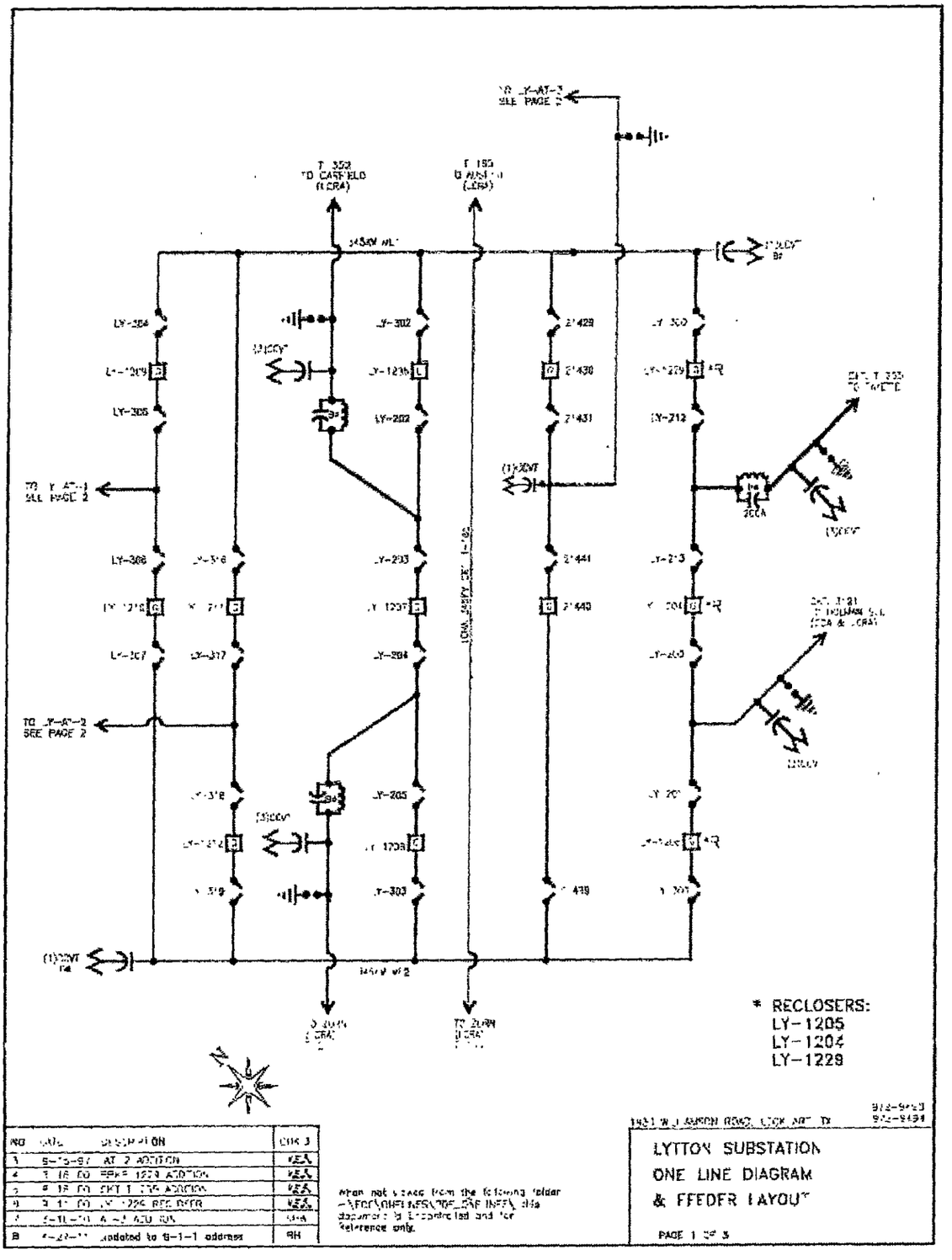
LYTTON SPRINGS 345 kV
LCRA TSC ONE LINE DRAWING



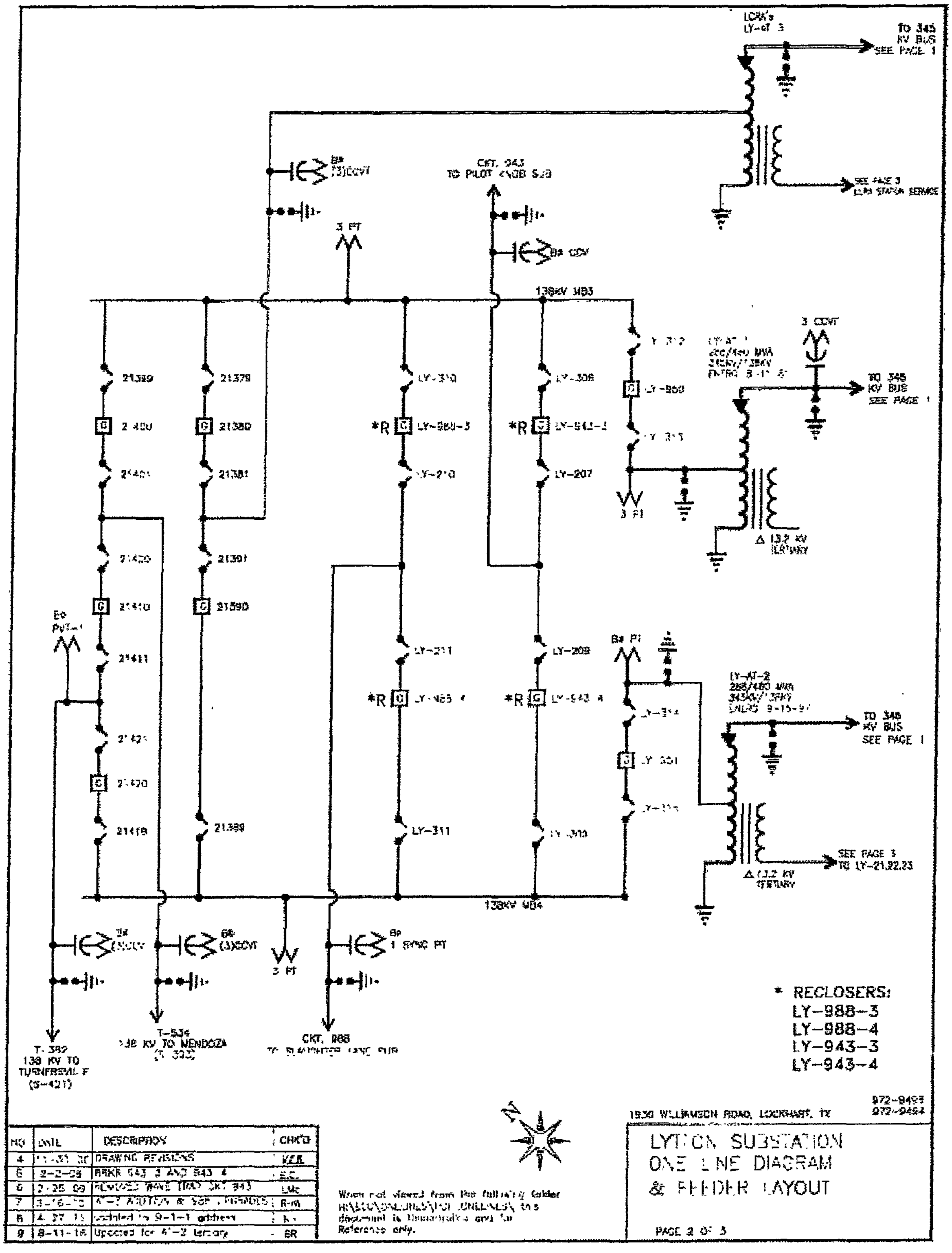
LYTTON SPRINGS 138 kV
LCRA TSC ONE LINE DRAWING



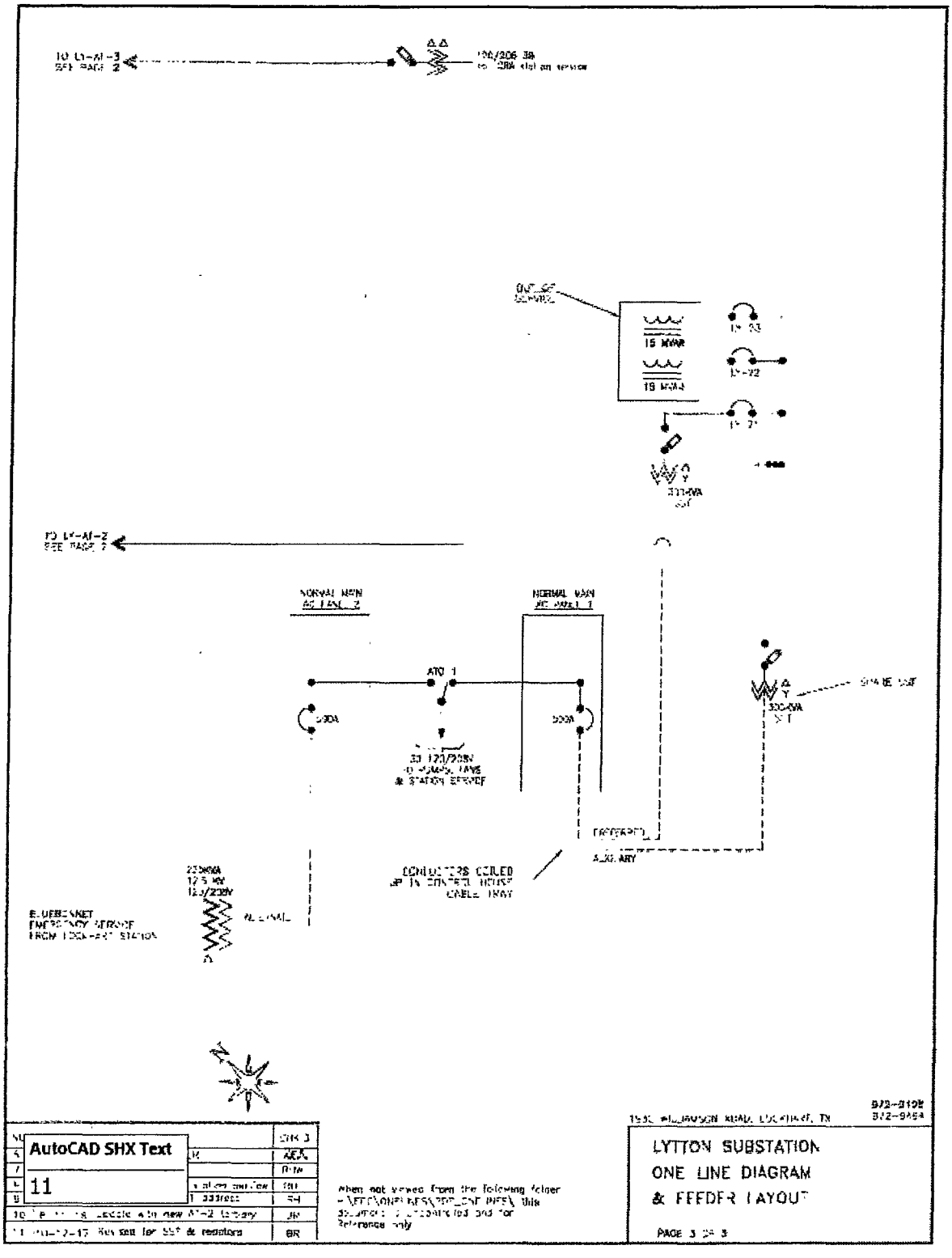
LYTTON SPRINGS
AE ONE LINE DRAWING #1



LYTTON SPRINGS
AE ONE LINE DRAWING #2


TO 345 KV BUS SEE PAGE 1
138KV MB3
138KV MB4
3 PT
CKT. 943 TO PILOT KNOB SUB
21380
21379
21381
21391
21390
21389
LY-988-3
LY-943-3
LY-207
LY-960
LY-211
LY-209
LY-311
LY-AT-2
TO 345 KV BUS SEE PAGE 1
SEE PAGE 3 TO LY-21,22,23
1 SYNC PT
T-534 138 KV TO MENDOZA
CKT. 988
* RECLOSERS:
LY-988-3
LY-988-4
LY-943-3
LY-943-4
1930 WILLIAMSON ROAD, LOCKHART, TX
972-9493
972-9494
LYTTON SUBSTATION
ONE LINE DIAGRAM
& FEEDER LAYOUT
PAGE 2 OF 3
NO
DATE
DESCRIPTION
CHK'D
DRAWING REVISIONS
BRKR 943 3 AND 943 4
8-11-16
Updated for AT-2 tertiary
Reference only.

LYTTON SPRINGS
AE ONE LINE DRAWING #3



FACILITY SCHEDULE NO. 7

1. **Name:** Elroy Substation

2. **Facility Location:** The Elroy Substation is located at 8111 Circuit of the Americas Boulevard, Del Valley, Travis County, TX 78617.

3. **Points of Interconnection:** There is one (1) Point of Interconnection at the Elroy Substation generally described as:

    - where the LCRA TSC jumpers connect to Austin Energy 138 kV switch ER-611.

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 12.47 kV potential and current metering accuracy instrument transformers located in the Substation. The primary and backup meters will be equipped to compensate for losses to the Point of Interconnection.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

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

- Two (2) 138 kV disconnect switch ER- 611 and ER-612
- One (1) 138 kV circuit switcher ER-601CS with foundation, jumpers, and protective relay package
- One (1) 138/12.47 kV, 30 MVA power transformer ER-123 with associated surge arresters
- One (1) 12.47 kV switchgear with associated control power transformer (CPT) and metering potential transformers (PTs)
- One (1) station service with fused disconnect switch on secondary (LCRA TSC to provide cables from the disconnect switch to the control house)
- SCADA and associated communications equipment
- SPCC plan and secondary containment for Austin Energy oil-filled equipment
- Austin Energy customer will provide a heavy haul access road
- ERCOT metering devices
- Substation property, ground grid, shielding for AE owned equipment, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following 138 kV transmission lines comprised of conductors, insulators and connecting hardware:
    - Elroy to Colton 138 kV transmission line, T397
    - Elroy to Wolf Lane 138 kV transmission line, T582
- One (1) 138 kV ring bus including structures, insulators, foundations and jumpers to Austin Energy 138 kV switches ER-611and ER-612
- Three (3) 145 kV (operated at 138 kV) circuit breakers 23490, 23510 and 23520 including foundations, jumpers and protective relay packages

- Ten (10) 138 kV disconnect switches 23489, 23491, 23499, 23501, 23509, 23511, 23512, 23519, 23521 and 23522
- Two (2) 138 kV surge arresters SA1 and SA2
- One (1) 138 kV single phase surge arrester SA3
- One (1) 138 kV power PT, PVT1
- Two (2) transmission line termination bays
- Two (2) coupling capacitor voltage transformers CCVT1 and CCVT2
- Cables from Austin Energy station service fused disconnect to the automatic transfer switch in the control house
- One (1) 138 kV bus differential and breaker failure scheme
- One (1) control house with 125 Vdc batteries and battery charger
- One (1) RTU
- Station shielding for LCRA TSC owned equipment

8. **Operational Responsibilities of Each Party:** Each Party will be responsible for the operation of the facilities it owns.
   - Austin Energy will direct and coordinate all switching for Austin Energy's facilities, including their 138 kV high side interrupting device, associated 138 kV disconnect switches and 12.5 kV distribution facilities. These facilities will not be locked or switched by LCRA TSC.

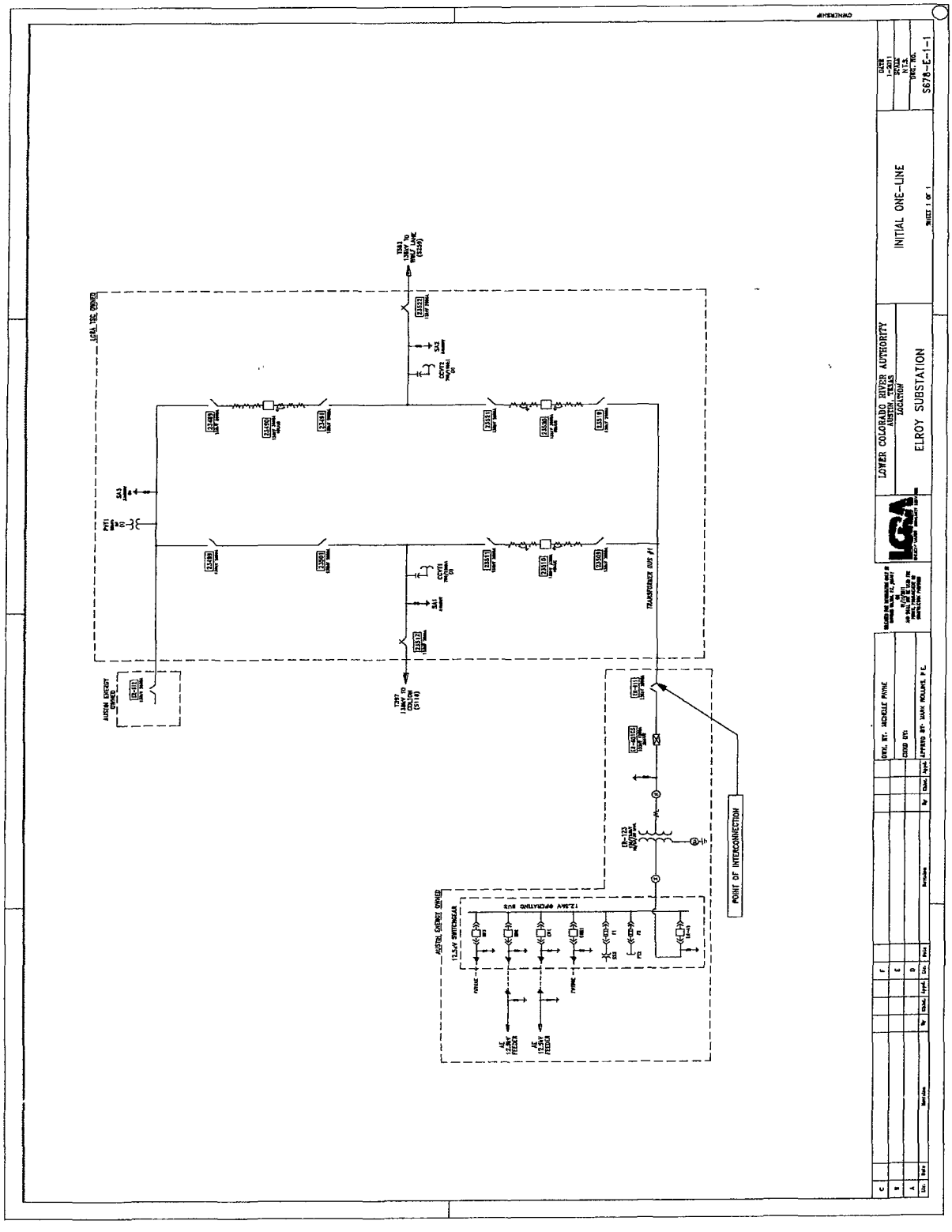
   - LCRA TSC will direct and coordinate all switching for LCRA TSC's facilities, including the 138 kV transmission lines, 138 kV circuit breakers and associated 138 kV disconnect switches, 138 kV bus and bus differential. These facilities will not be locked or switched by Austin Energy.

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

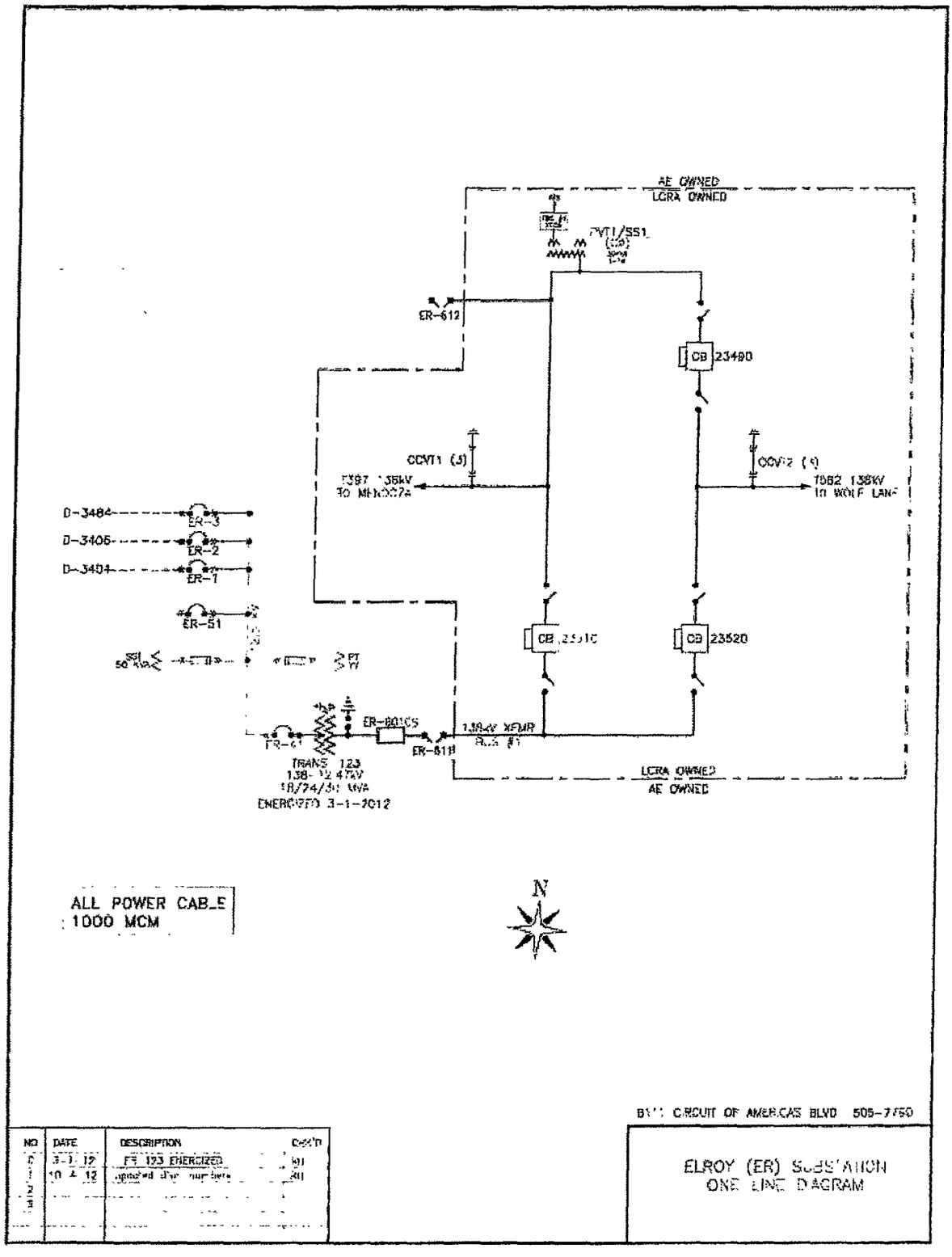
10. **Other Terms and Conditions:**
   - Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
   - Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
   - LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panels to Austin Energy's circuit switcher ER-601CS relaying panel.
   - Austin Energy will supply and provide breaker failure initiate contacts from its circuit switcher ER-601CS relaying panel to LCRA TSC's 138 kV bus differential and breaker failure panel.
   - Austin Energy will supply and allow LCRA TSC use of power transformer ER-123 relaying bushing current transformer for LCRA TSC's 138 kV bus differential and breaker failure schemes.
   - LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
   - LCRA TSC will provide Austin Energy access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either LCRA TSC (if space is available) or Austin Energy.

- LCRA TSC will provide Austin Energy with floor space (as available and as necessary) in its control house for the installation of Austin Energy required control, communications and SCADA equipment.
- Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns or operates.
- Coordination and response to the ERCOT under-frequency or under-voltage load shedding program for Austin Energy load served out of this facility is the responsibility of Austin Energy.
- Austin Energy is responsible for reporting to ERCOT all load data requests for Austin Energy load served out of this facility.
- The Parties shall coordinate modeling information before submitting it to ERCOT.
- Austin Energy shall provide a SPCC plan and secondary containment for Austin Energy oil-filled equipment

ELROY SUBSTATION
LCRA TSC ONE LINE DRAWING



ELROY SUBSTATION
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 8

1. **Name:** Lakeway Substation

2. **Facility Location:** The Lakeway Substation is located at 15310 Kollmeyer Drive, Austin, Travis County, TX 78734.

3. **Points of Interconnection:** There are six (6) Points of Interconnection at the Lakeway Substation generally described as:

   - where the LCRA TSC jumper, from the LCRA TSC 138 kV bus, connects to the four hole pad on Austin Energy's 138 kV circuit switcher LW600M.
   - where the LCRA TSC jumper, from the LCRA TSC 138 kV bus, connects to the four hole pad on Austin Energy's 138 kV circuit switcher LW601M.
   - where the jumper connector, on LCRA TSC's jumper from LCRA TSC's 138 kV transmission line, connects to Austin Energy's 138 kV transmission line, near LCRA TSC structure #15C, approximately .43 miles from the Substation.
   - where the LCRA TSC jumper connector, on LCRA TSC's jumper from LCRA TSC's 138 kV transmission line, connects to Austin Energy's 138 kV transmission line, near LCRA TSC structure #15E approximately .43 miles from the Substation.
   - where the LCRA TSC jumper connector, on LCRA TSC's jumper from LCRA TSC's 138 kV substation bus, connects to Austin Energy's138 kV transmission line, at Austin Energy's dead-end structure ("Austin Energy Structure #7") inside the Substation.
   - where the LCRA TSC jumper connector, on LCRA TSC's jumper from LCRA TSC's 138 kV substation bus, connects to the Austin Energy 138 kV transmission line, at LCRA TSC's dead-end structure #25 inside the Substation.

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 12.47 kV potential and current metering accuracy instrument transformers located in the Substation. The primary and backup meters will be equipped to compensate for losses to the Point of Interconnection.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

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

- 138 kV T179 transmission line section including structures, conductors, dead-end insulators and hardware from the Lakeway Tap box structure, through the point of interconnection at LCRA TSC's structure #15C, to the point of interconnection at LCRA TSC's dead–end structure #25 inside the Substation
- 138 kV T525 transmission line section including structures, conductors, dead-end insulators and hardware from the point of interconnection at LCRA TSC's structure #15E to the point of interconnection at Austin Energy Structure #7 inside Substation
- One (1) 138 kV 3-phase dead-end pole structure, (Austin Energy Structure #7), inside the Substation
- Two (2) 138 kV circuit switchers LW600M and LW601M, with integrated disconnect switch, foundations, jumpers, and protective relay packages

- Two (2) 138/12.47kV, 30 MVA power transformers LW-123 and LW-456 with associated surge arresters
- Two (2) PWT bushing slip-over set multi-ratio current transformers, CT1 and CT2 for bus differential relaying scheme
- Two (2) 12.47 kV switchgear
- One (1) control house with 125 Vdc batteries and battery charger
- One (1) RTU with communications equipment
- 48 Fiber OPGW cable on T525 line section. Austin's OPGW runs from LCRA TSC's structure 15 to Austin Energy Structure #7 and then jumpers to LCRA TSC's Lakeway Substation H-frame bus structure
- Substation property, ground grid, gravel, fencing and other appurtenances

LCRA TSC owns:

- Two (2) x 3-poles, 138 kV single phase dead-end structures (structures 15C & 15E) including dead-end insulators for LCRA TSC's conductors and jumpers to the Lakeway Point of Interconnection near Lakeway Tap
- One (1) box structure at Lakeway Tap
- Three (3) 138 kV 3-phase dead-end pole structures (str # 25 plus 2 un-numbered structures) including 138 kV substation bus, dead-end insulators for LCRA TSC's conductors and jumpers to Austin Energy's 138 kV transmission lines at the Lakeway Point of Interconnection inside the Substation
- Two (2) 138 kV dead-end H-frame bus structures inside the Substation
- One (1) 138 kV dead-end A-frame inside the Substation
- One (1)138 kV Operating Bus, including jumpers to Austin Energy's 138 kV circuit switchers
- Three (3) 138 kV circuit breakers 19920, 19930 and 19940 including foundations, jumpers and protective relay packages
- Nine (9) 138 kV switches 19919, 19921, 19924, 19926, 19928, 19929, 19931, 19939 and 19941
- Three (3) 138kV surge arrestors SA5, SA6 and SA7
- One (1) 138 kV bus differential and breaker failure scheme
- Two (2) coupling capacitor voltage transformers CCVT1 and CCVT2
- One (1) RTU with communications equipment, splice cans and coil brackets at
  - LCRA TSC's structure 15 and
  - LCRA TSC's Lakeway Substation H-frame bus structure, facility entry cable from splice can to control house and patch panel.
- Station shielding

8. **Operational Responsibilities of Each Party:**

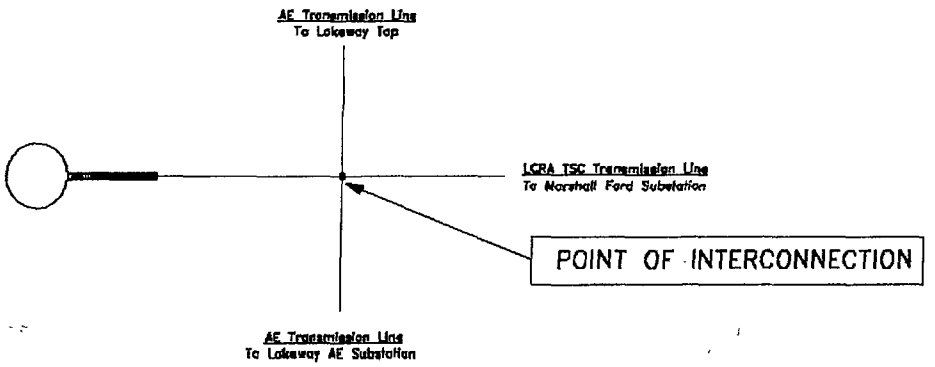
- Austin Energy will direct and coordinate all switching for Austin Energy's Substation facilities, including their 138 kV circuit switchers with integrated 138 kV disconnect switches and distribution facilities. These facilities will not be locked or switched by LCRA TSC.
- LCRA TSC will direct and coordinate all switching for LCRA TSC's facilities which include the 138 kV transmission lines, 138 kV circuit breakers and associated 138 kV disconnect switches, 138 kV bus and bus differential. These facilities will not be locked or switched by Austin Energy.
- LCRA TSC will direct and coordinate all switching for, the approximately .43 mile section of Austin Energy transmission line from the Substation point of interconnection to the point of interconnection near Lakeway Tap. These facilities will not be locked or switched by Austin Energy.

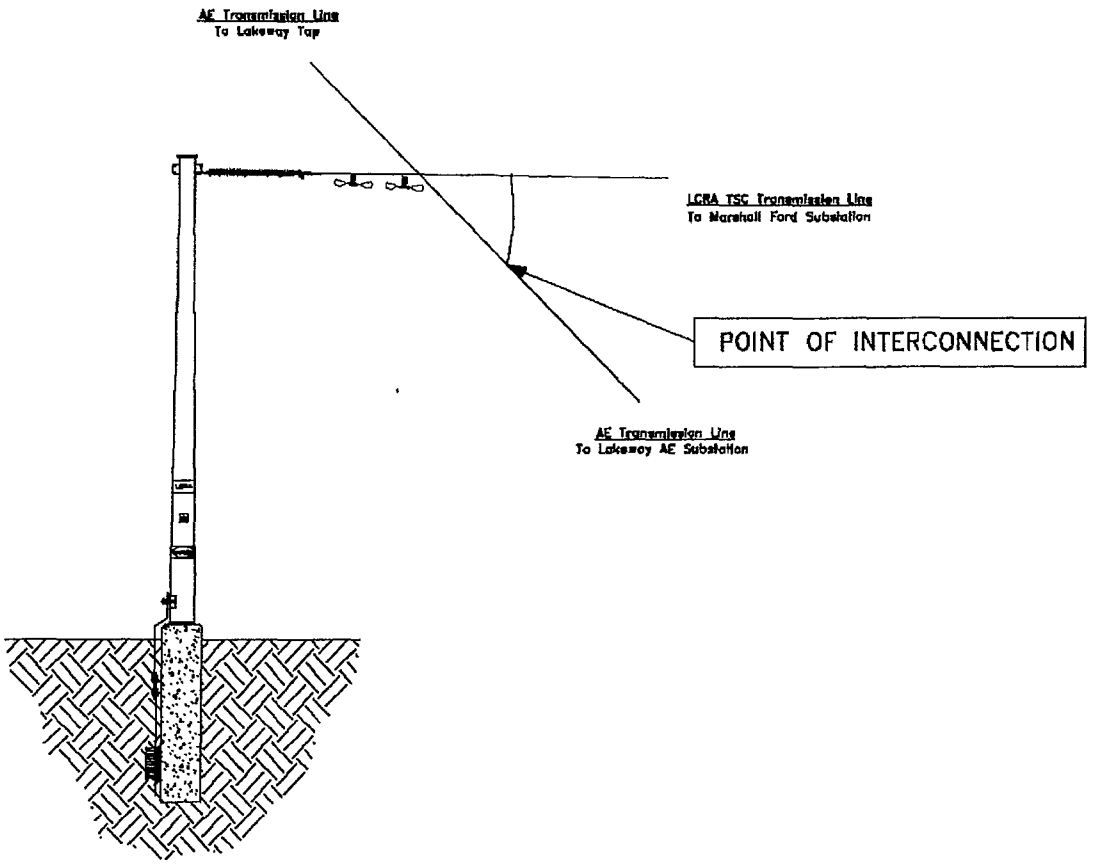
9. **Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

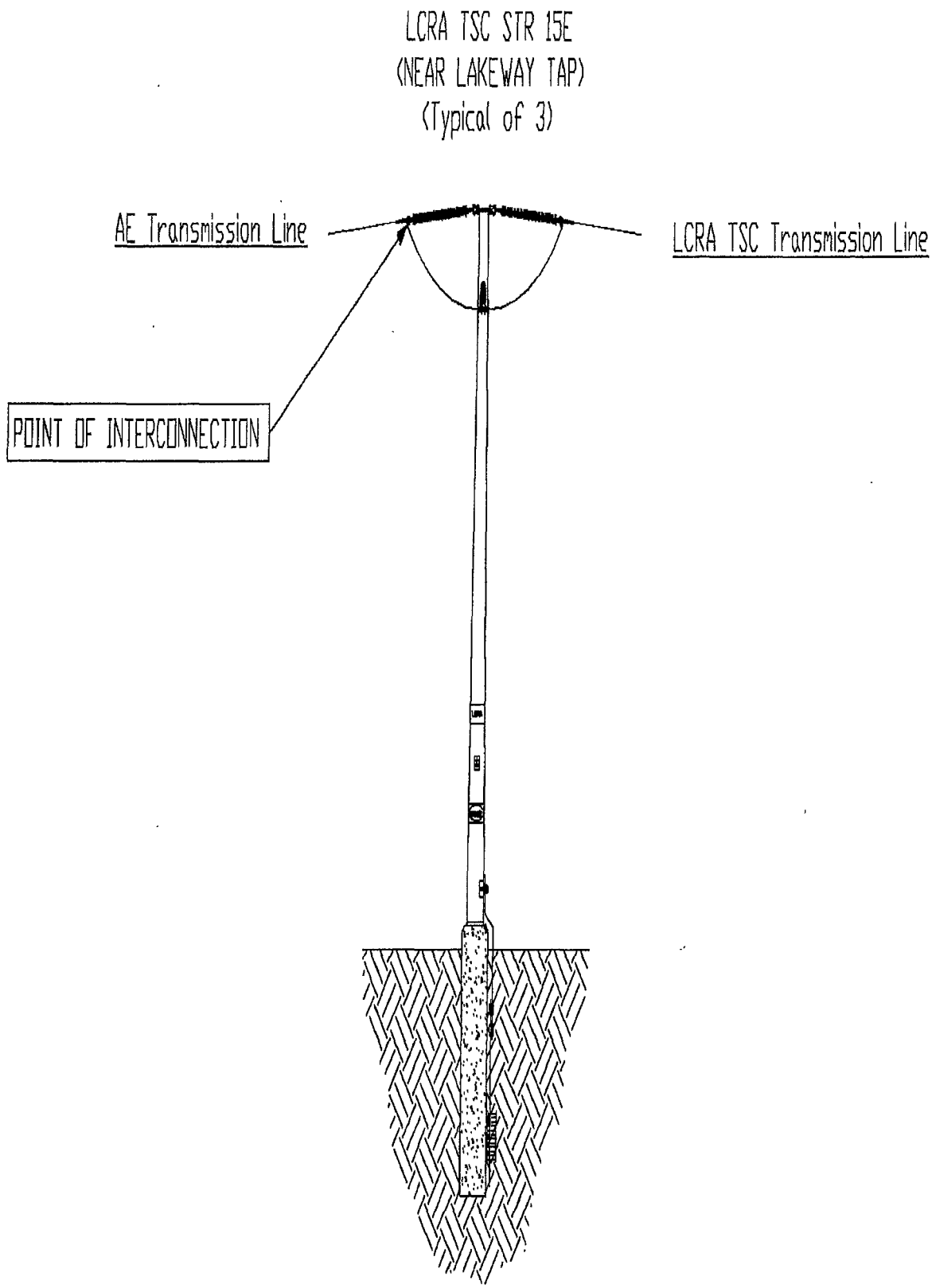
10. **Other Terms and Conditions:**

- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
- Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
- Austin Energy will supply and allow LCRA TSC use of slip over dual core bushing current transformers CT1 and CT2 for LCRA TSC's 138 kV bus differential and breaker failure scheme.
- LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panel to Austin Energy's circuit switchers LW600M and LW601M relaying panels.
- Austin Energy will supply and provide breaker failure initiate contacts from its circuit switcher LW600M and LW601M relaying panels to LCRA TSC's 138 kV bus differential and breaker failure panel.
- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- Austin Energy will provide LCRA TSC access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.
- Austin Energy will provide LCRA TSC access to its station service if needed.
- Austin Energy is responsible for reporting to ERCOT all required load data requests for Austin Energy load served out of this Substation.
- Coordination and response to the ERCOT under-frequency, under-voltage or emergency load shedding program for Austin Energy load served out of this Substation is the responsibility of Austin Energy.
- LCRA TSC will jointly work with Austin Energy to submit data for the ERCOT model configuration, naming, and numbering convention for this Substation.
- Each Party shall be responsible for submitting to ERCOT the required ICCP data for the equipment they own at this Substation.

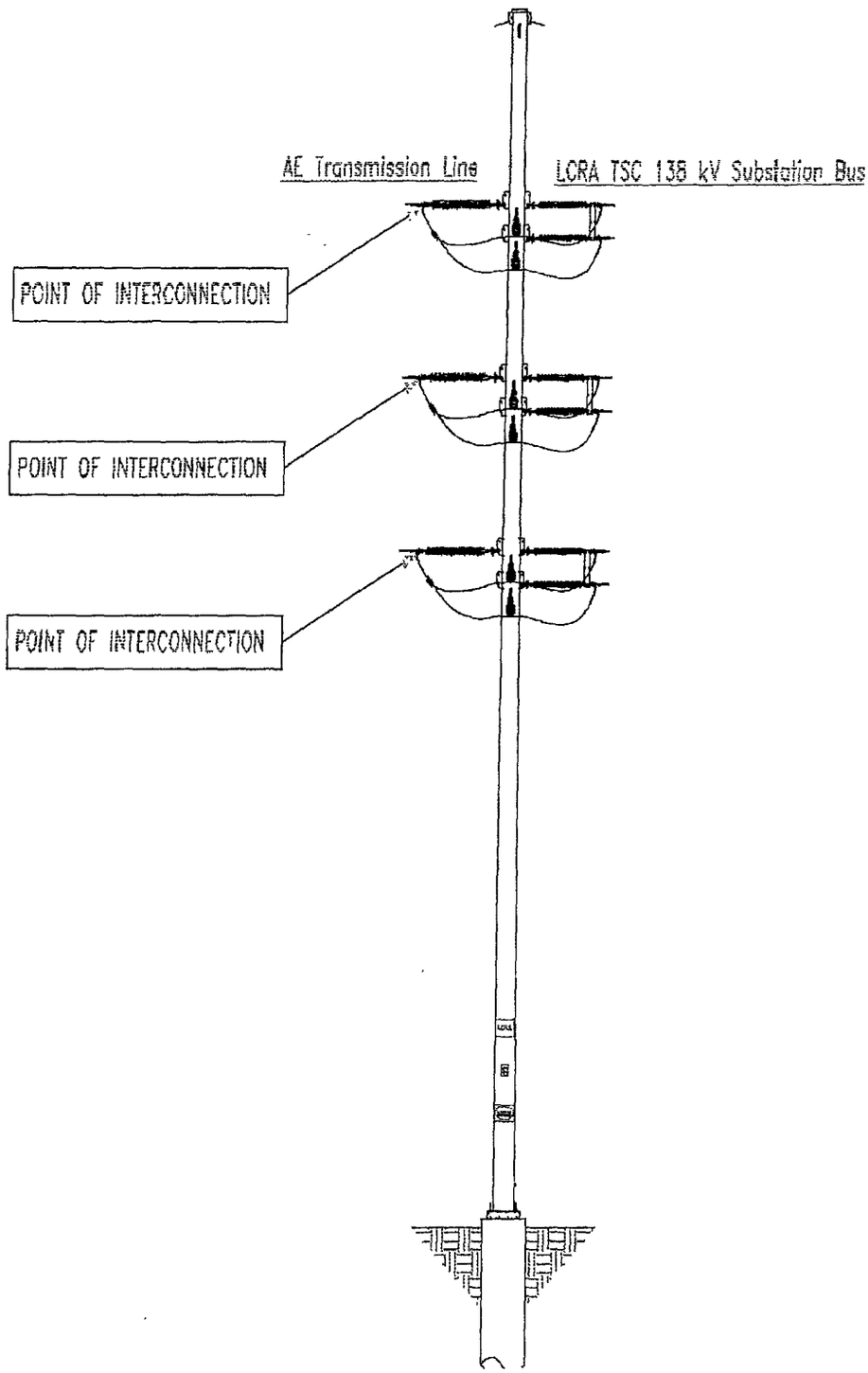
LCRA TSC STR 15C
(NEAR LAKEWAY TAP)
(Typical of 3)



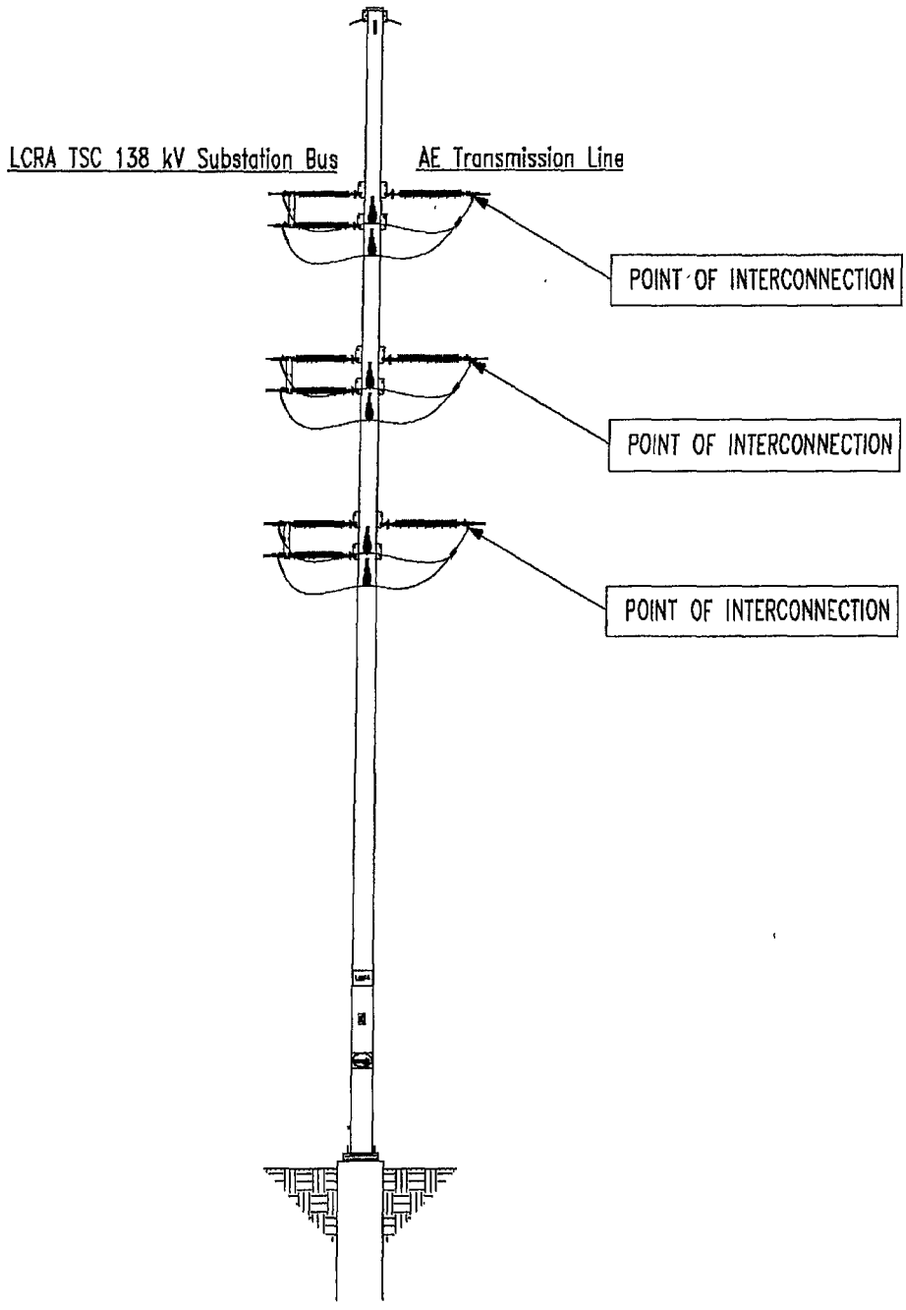



LCRA TSC STR 15E
(NEAR LAKEWAY TAP)
(Typical of 3)
AE Transmission Line
LCRA TSC Transmission Line
POINT OF INTERCONNECTION

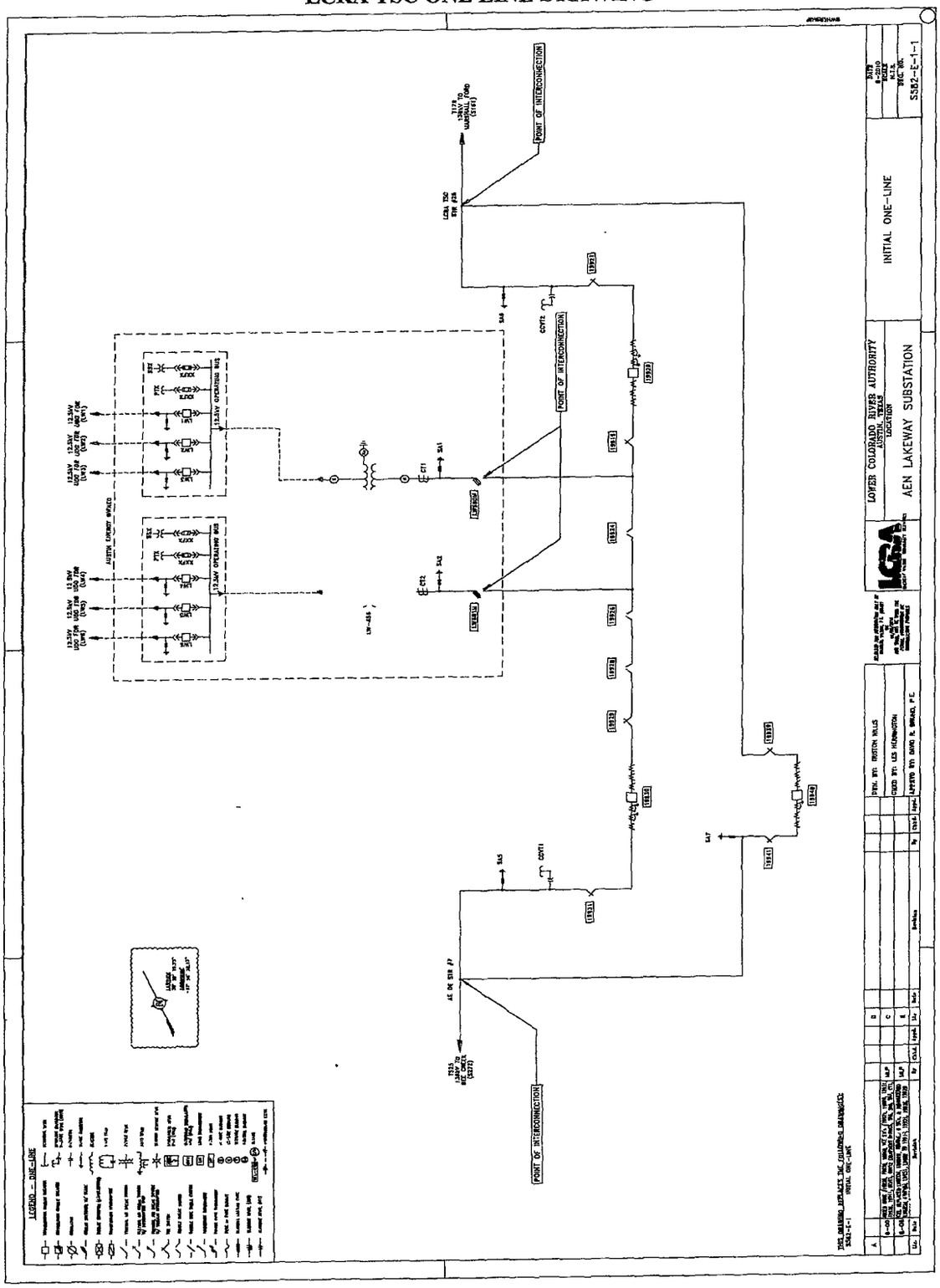
LCRA TSC DEAD-END STR #25
(INSIDE THE SUBSTATION)



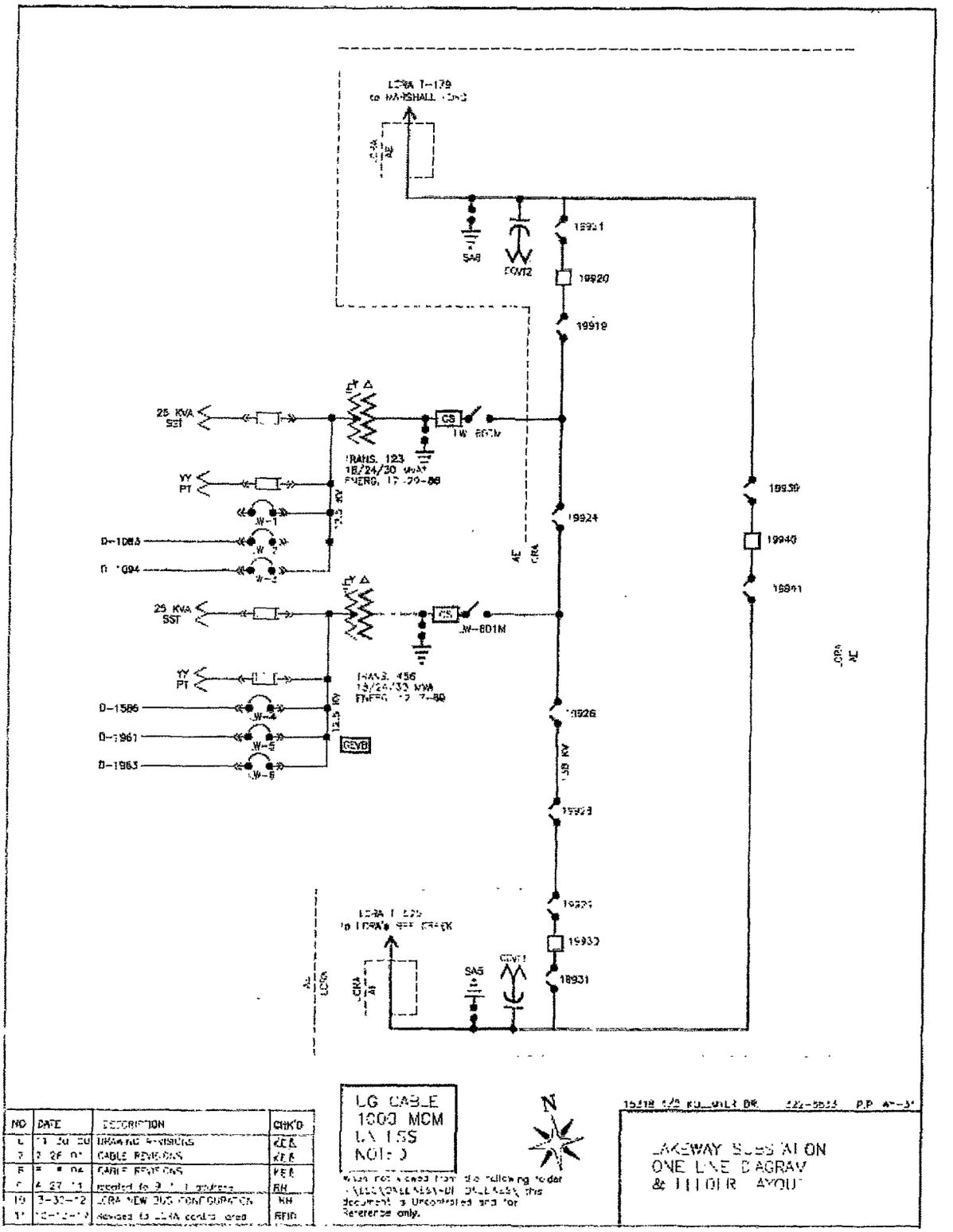
AE DEAD-END STRUCTURE
Designated "AE Structure #7
(INSIDE THE SUBSTATION)



LAKEWAY SUBSTATION
LCRA TSC ONE LINE DRAWING



LAKEWAY SUBSTATION
AE ONE LINE DRAWING



NO	DATE	DESCRIPTION	CHK'D
6	11-30-00	DRAWING REVISIONS	KEB
7	2-26-01	CABLE REVISIONS	KEB
8	4-04-02	CABLE REVISIONS	KEB
9	4-27-11	revised to 3-1 1 scheme	RH
10	3-30-12	LCRA NEW BUS CONFIGURATION	RH
11	10-11-12	revised to LCRA conductors	RFIR

When not viewed from the following folder \\LCRA\DFSA\AE\Public\AE_Public\, this document is Uncontrolled and for Reference only.

LAKEWAY SUBSTATION
ONE LINE DIAGRAM
& FLOOR LAYOUT

FACILITY SCHEDULE NO. 9

1. **Name:** FPP 345 kV Switchyard No. 1

2. **Facility Location:** The FPP 345 kV Switchyard No. 1 is located at 6549 E. State Hwy 71 La Grange, Fayette County, Texas 78945.

3. **Points of Interconnection:** There are two (2) Points of Interconnection at the FPP 345 kV Switchyard No. 1 generally described as:

   - where LCRA TSC's jumpers from 345 kV Operating Bus No. 1 connects to Austin Energy's 345 kV switch 7129.
   - where LCRA TSC's jumpers from 345 kV Operating Bus No. 2 connects to Austin Energy's 345 kV switch 7229.

4. **Delivery Voltage:** 345 kV

5. **Metered Voltage and Location:** LCRA TSC provided ERCOT-Polled Settlement metering will be accomplished using 345 kV potential PT1, PT2 and current CT1, CT2 metering accuracy instrument transformers located in the substation on the 345 kV bus.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

- The following 345 kV transmission lines comprised of conductors, insulators and connecting hardware:
  - FPP 345 kV Switchyard No. 1 to Lost Pines Switchyard 345 kV transmission line, Austin Energy Ckt 3131
  - FPP 345 kV Switchyard No. 1 to Lost Pines Switchyard 345 kV transmission line, Austin Energy Ckt 3132
- 345 kV buswork from the Points of Interconnection at Austin Energy switches 7129 and 7229 to the 345 kV transmission line dead end structures for Austin Energy's Ckts 3131 and 3132
- Two (2) 345 kV transmission line surge arresters SA3 and SA9
- Two (2) 345 kV coupling capacitor voltage transformers CCVT3 and CCVT7
- Six (6) 345 kV disconnect switches 7129, 7131, 7229, 7231, 7329 and 7331
- Three (3) 345 kV circuit breakers 7130, 7230 and 7330 including foundations, jumpers and protective relay packages
- One (1) RTU, and communications equipment

LCRA TSC owns:

The FPP 345 kV Switchyard No. 1 including, but not limited to, the following items:

- The following 345 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - FPP 345 kV Switchyard No. 1 to Salem Switchyard 345 kV transmission line, T211
  - FPP 345 kV Switchyard No. 1 to Fayetteville Switchyard 345 kV transmission line, T210

    - FPP 345 kV Switchyard No. 1 to FPP 345 kV Switchyard No. 2 345 kV transmission line, T405
- 345 kV Operating Bus No. 1 and 345 kV Operating Bus No. 2 including structures, insulators, foundations and jumpers up to Points of Interconnection with Austin Energy at Austin Energy's switches 7129 and 7229
- 345 kV buswork, structures, insulators, foundations and jumpers between all LCRA TSC owned circuit breakers and disconnect switches
- Two (2) 345 kV bus differential and breaker failure panels for 345 kV bus No. 1 and 345 kV bus No. 2
- Three (3) coupling capacitor voltage transformers CCVT1, CCVT2 and CCVT6
- Two (2) 345 kV transmission line surge arresters SA1 and SA2
- Two (2) 345 kV bus potential transformers PT1 and PT2
- Two (2) 345 kV bus surge arresters SA5 and SA6
- Five (5) 345 kV circuit breakers 7140, 7240, 7290, 7300 and 7340 including foundations, jumpers and protective relay packages
- Eight (8) 345 kV disconnect switches 7139, 7141, 7239, 7241, 7291, 7301, 7339 and 7341
- Two (2) 345 kV motor operated disconnect switches MO7289 and MO7299
- One (1) RTU
- One (1) control house with 125 VDC batteries and charger
- Two (2) battery houses, No 1 and No 2, with all installed equipment and appurtenances
- Substation property, ground grid, shielding, graveling, fence and other appurtenances

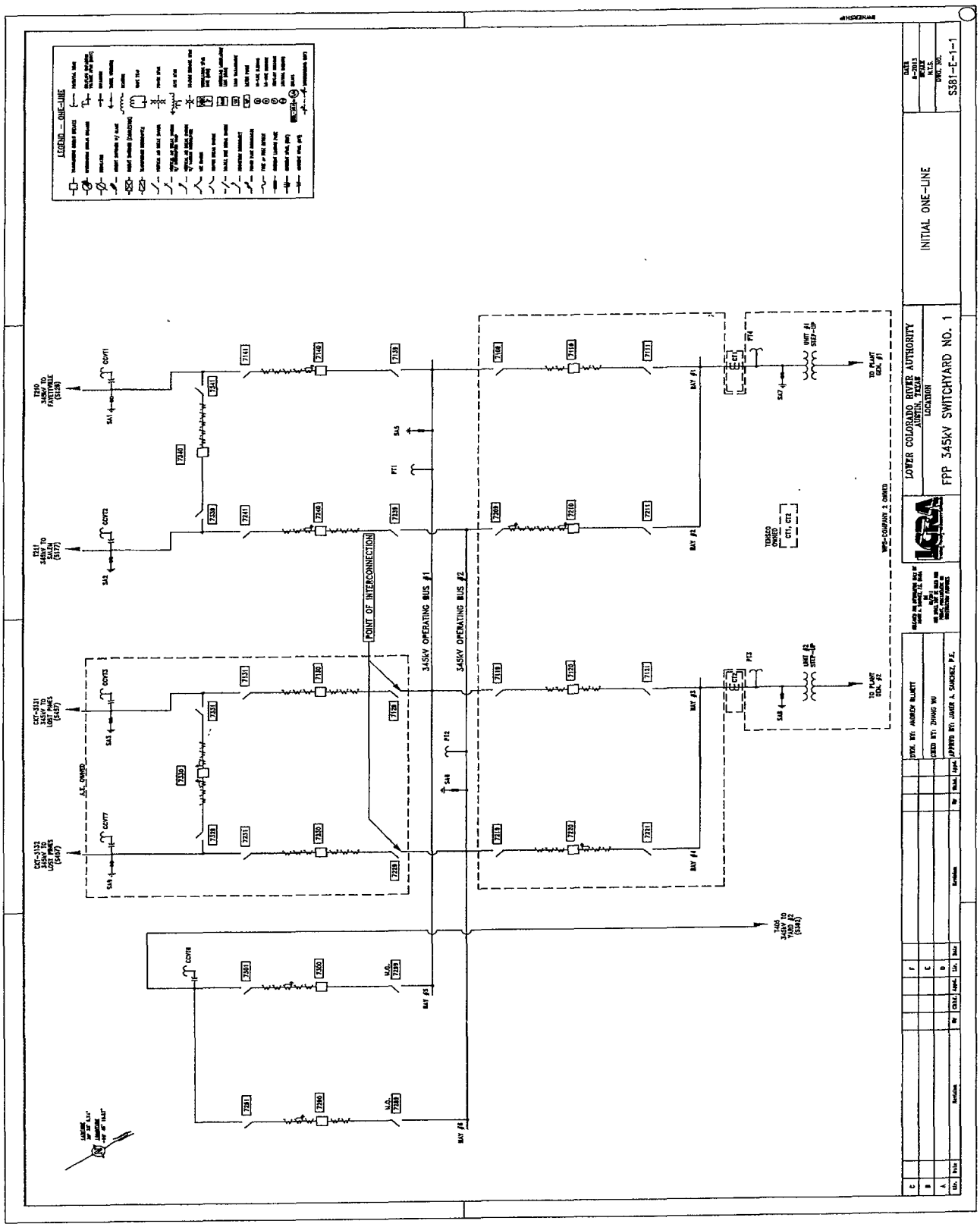
8. **Operational Responsibilities of Each Party:** Each Party will be responsible for the operation of the facilities it owns.

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

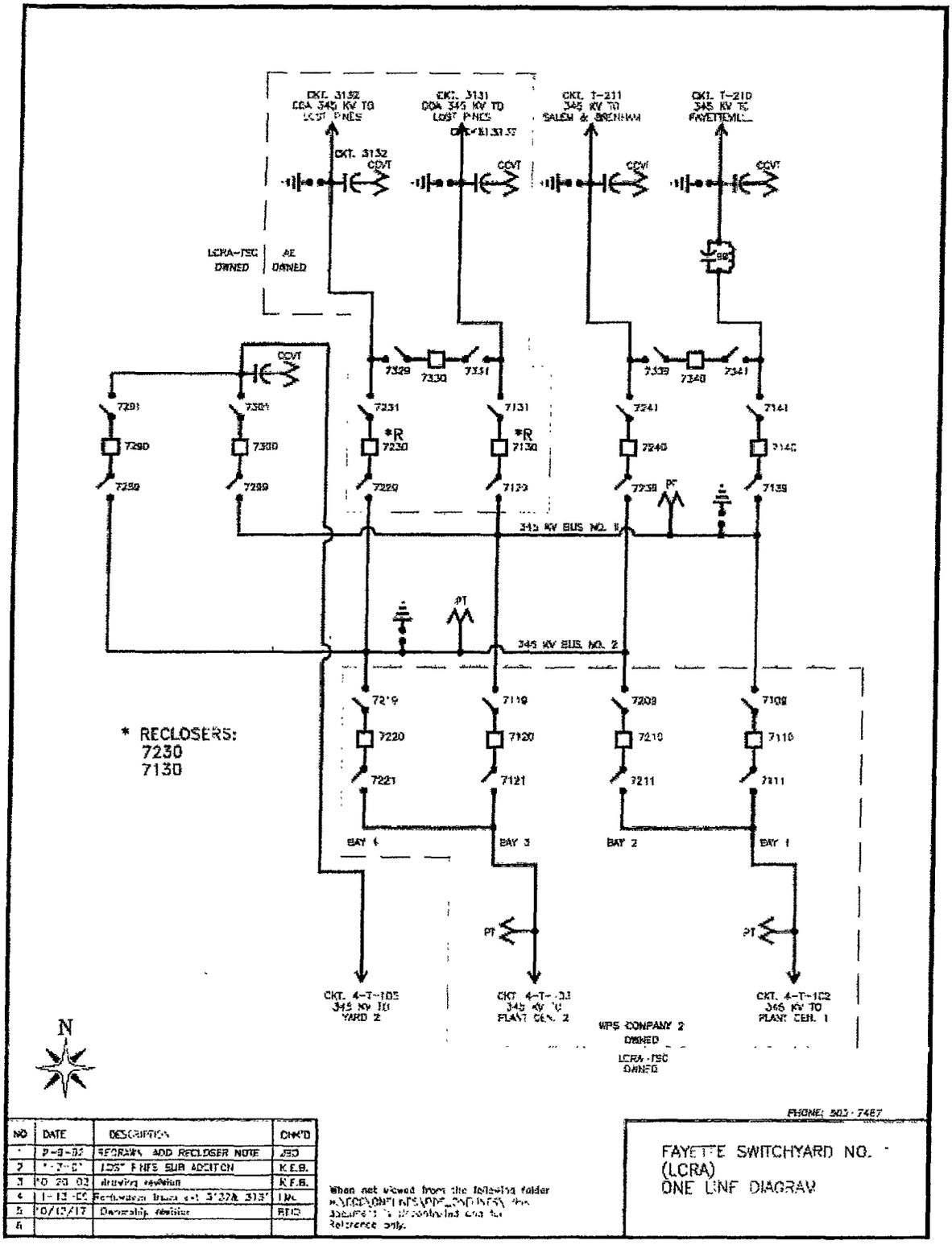
10. **Other Terms and Conditions:**
    - Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
    - Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
    - LCRA TSC will supply and provide tripping and close inhibit contacts from its 345 kV bus differential and breaker failure panel to Austin Energy's circuit breakers 7130 and 7230 relaying panels.
    - Austin Energy will supply and provide breaker failure initiate contacts from its circuit breakers 7130 and 7230 relaying panels to LCRA TSC's 345 kV bus differential and breaker failure panel.
    - Austin Energy will supply and provide relaying current transformers for use by LCRA TSC in LCRA TSC's bus differential relaying scheme for 345 kV Operating Bus No. 1 and 345 kV Operating Bus No. 2.
    - LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
    - LCRA TSC will provide Austin Energy access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.

- LCRA TSC will provide Austin Energy with floor space (as available and as necessary) in its control house for the installation of Austin Energy required control, communications and SCADA equipment.
- Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns.

FPP 345 KV YARD #1
LCRA TSC ONE LINE DRAWING



FPP 345 KV YARD #1
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 10

1. **Name:** FPP 345 kV Switchyard No. 2

2. **Facility Location:** The FPP 345 kV Switchyard No. 2 ("Switchyard") is located at 6549 E. State Hwy 71, La Grange, Fayette County, Texas 78945.

3. **Points of Interconnection:** There is one (1) Point of Interconnection at the FPP 345 kV Switchyard No. 2 generally described as:

   - where LCRA TSC'S jumper connects to Austin Energy's Ckt 3122 transmission line at the transmission line dead end structure.

4. **Delivery Voltage:** 345 kV

5. **Metered Voltage and Location:** LCRA TSC provided ERCOT-Polled Settlement metering will be accomplished using 345 kV potential and current metering accuracy instrument transformers located in the substation internal to circuit breakers 7400 and 7250.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

LCRA TSC owns:
The FPP 345 kV Switchyard including, but not limited to, the following items:

- The following 345 kV transmission lines comprised of conductors, insulators and connecting hardware:
  - FPP 345 kV Switchyard No. 2 to Lytton Springs Switchyard 345 kV transmission line, T255
  - FPP 345 kV Switchyard No. 2 to FPP 345 kV Switchyard No. 1 345 kV transmission line, T405
- Two (2) 345 kV Operating Bus No. 1 and 345 kV Operating Bus No. 2 including structures, insulators, foundations and jumpers
- 345 kV buswork, structures, insulators, foundations and jumpers between all LCRA TSC owned circuit breakers and disconnect switches
- Two (2) coupling capacitor voltage transformers CCVT1 and CCVT2
- Two (2) 345 kV transmission line surge arresters SA3 and SA5
- Three (3) 345 kV potential transformers PT2, PT4 and PT5
- Two (2) 345 kV bus surge arresters SA1 and SA2
- Five (5) 345 kV circuit breakers 7150, 7160, 7250, 7260 and 7400
- Eight (8) 345 kV disconnect switches 7149, 7151, 7161, 7249, 7251, 7261, 7399 and 7401
- Two (2) 345 kV motor operated disconnect switches MO7159 and MO7259
- One (1) wave trap and tuner WT1
- One (1) ERCOT-Polled Settlement metering current transformer CT1
- Line relaying, bus differential relaying, breaker failure relaying, and associated panels, RTU, and communications equipment
- Control house with 125 VDC batteries and charger
- Ground grid, shielding, graveling, fence and other appurtenances

Austin Energy owns:

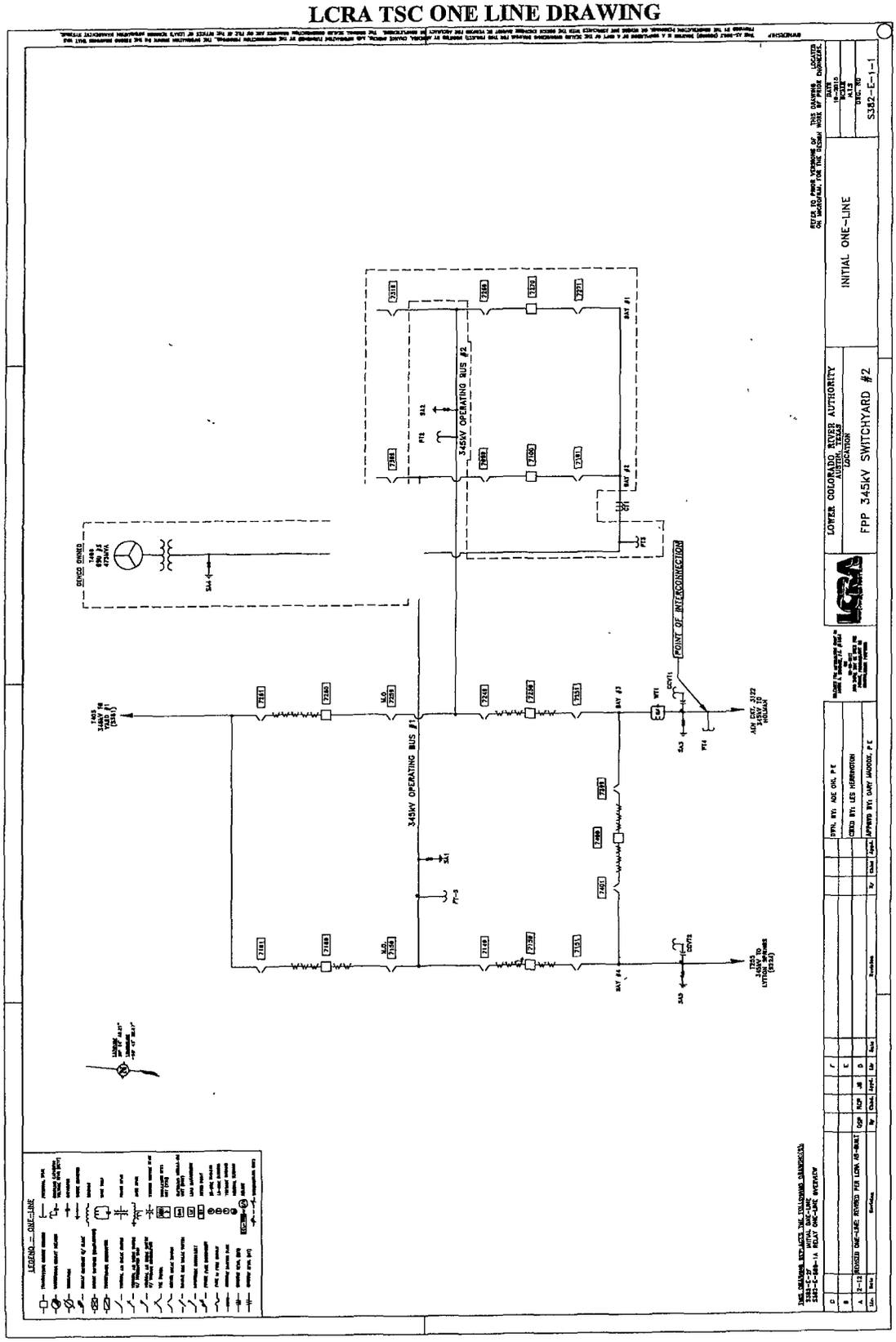
- The following 345 kV transmission lines comprised of conductors, insulators and connecting hardware:
  - FPP 345 kV Switchyard No. 2 to Holman Switchyard 345 kV transmission line, Austin Energy Ckt 3122
- Line relaying and associated panels, RTU, and communications equipment

8. **Operational Responsibilities of Each Party:** Each Party will be responsible for the operation of the facilities it owns.

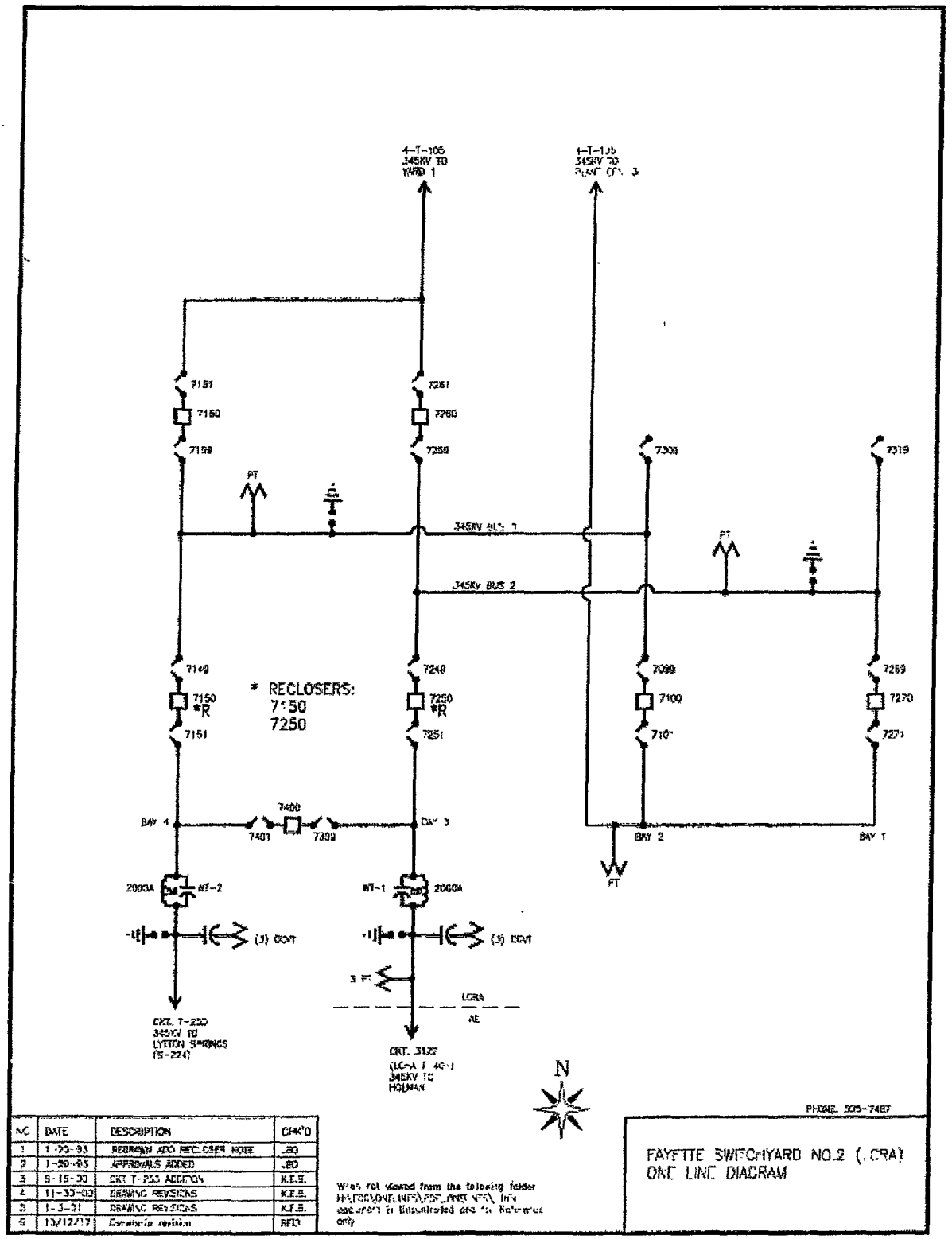
9. **Maintenance Responsibilities of Each Party:** Each Party will be fully responsible for the maintenance of the equipment it owns.

10. **Other Terms and Conditions:**
    - Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
    - Austin Energy and LCRA TSC are to share access to the control house by Austin Energy and LCRA TSC locks on the control house doors.
    - LCRA TSC and Austin Energy will both have control over LCRA TSC circuit breakers 7250 and 7400 and will share contacts between their close, trip, direct transfer trip and breaker failure circuits.
    - LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
    - LCRA TSC will provide Austin Energy access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy (if space is available) or LCRA TSC.
    - LCRA TSC will provide Austin Energy with floor space (as available and as necessary) in its control house for the installation of Austin Energy required control, communications and SCADA equipment.
    - Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns.
    - TADS reporting for Austin Energy's Ckt 3122 is the responsibility of Austin Energy.

FPP 345 KV YARD #2
LCRA TSC ONE LINE DRAWING



FPP 345 KV YARD #2
AE ONE LINE DRAWING



NO	DATE	DESCRIPTION	CHK'D
1	1-29-93	REDRAWN ADD REC.CSER NOTE	JBD
2	1-29-93	APPROVALS ADDED	JBD
3	9-15-20	CKT T-253 ADDITION	K.E.E.
4	11-30-00	DRAWING REVISIONS	K.E.E.
5	1-3-01	DRAWING REVISIONS	K.E.E.
6	10/12/17	Corrected revision	RFD

FACILITY SCHEDULE NO. 11

1. **Name:** Gilleland Creek Substation

2. **Facility Location:** Gilleland Creek Substation is located at 16275 Cameron Road, Pflugerville, Travis County Texas, 78660.

3. **Points of Interconnection:** There are two (2) Points of Interconnection located in 138 kV bay 3 at Gilleland Creek Substation generally described as:

   - where Austin Energy's jumper from switch GL-300 attaches to LCRA TSC's four hole pad on LCRA TSC's 138 kV Operating Bus 1.

   - where Austin Energy's jumper from switch GL-301 attaches to LCRA TSC's four hole pad on LCRA TSC's 138 kV Operating Bus 2 .

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 138 kV potential transformers located on the 138 kV Austin Energy transmission line and metering accuracy current instrument transformers located internal to circuit breakers GL-1030-1 and GL-1030-2.

6. **One line diagram attached:** Yes

7. **Description of Facilities Owned by Each Party:**

   LCRA TSC owns:
   a) all facilities, property, ground grid, gravel and other appurtenances in Gilleland Creek Substation (345kV switchyard section) (not included in this facility schedule)
   b) all facilities in Gilleland Creek Substation (138 kV switchyard section) including, but not limited to, the following facilities

   - The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
     - Gilleland Creek to McNeil 138 kV transmission line, T147
     - Gilleland Creek to Elgin Switch 138 kV transmission line, T421
   - All 138 kV A-frame dead end structures including foundations, insulators, surge arresters and jumpers for LCRA TSC and Oncor 138 kV transmission line bays
   - Two (2) A-Frame dead-end structures, trusses, mounting plates and foundations in bay 3 for Austin Energy's Gilleland Creek to Techridge Substation 138 kV transmission line (Ckt-1030)
   - Two (2) 138 kV auto transformer A-frame dead end structures including foundations, insulators, conductor and jumpers for the conductor running from 138 kV bay 5 (approximately) to auto transformer AT1
   - Four (4) 138 kV surge arresters SA4, SA6, SA8 and SA9

- Five (5) 138 kV capacitor coupled voltage transformers CCVT4, CCVT6, CCVT8, CCVT9 and CCVT10
- Three (3) wave traps with tuners WT6, WT8 and WT9
- Two (2) 138 kV potential transformers PT1 and PT2
- One (1) single phase power voltage transformer PVT1
- Seven (7) 138 kV circuit breakers 10140, 10150, 10160, 10170, 10180, 22190 and 22200 including foundations, jumpers and protective relay packages
- Fourteen (14) 138 kV disconnect switches 10139, 10141, 10149, 10151, 10159, 10161, 10169, 10171, 10179, 10181, 22189, 22191, 22199 and 22201
- Two (2) 138 kV operating buses including bus supports, A-taps, insulators, foundations and jumpers (except jumpers in bay 3 which belong to Austin Energy)
- Two (2) 138 kV bus differential and breaker failure relaying schemes
- Two (2) Control houses (24' x 39' and 36' x 66') with associated control, communications, and SCADA equipment, 125 Vdc batteries, battery chargers and other appurtenances
- Substation property (by easement from Texas Utilities Electric Co) ground grid, shielding, gravel, cable trough, fencing and other appurtenances

Facilities owned by Austin Energy:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Gilleland Creek to Techridge Substation 138 kV transmission line, Ckt-1030
- 138 kV conductor between 138 kV transmission line dead end structure and the 138 kV operating bus dead end structure (138 kV bay 3)
- One (1) 138 kV circuit breaker GL-1030-1 and two (2) 138 kV disconnect switches GL-300 and GL-200 including foundations, jumpers and protective relay packages
- One (1) 138 kV circuit breaker GL-1030-2 and two (2) 138 kV disconnect switches GL-301 and GL-201 including foundations, jumpers and protective relay packages
- Two (2) sets of jumpers from Austin Energy's switches GL-300 and GL-301 to the Points of Interconnection at LCRA TSC's four hole pads on 138 kV Operating Bus 1 and 138 kV Operating Bus 2
- One (1) set of three phase 138 kV surge arresters
- One (1) set of three phase 138 kV line potential transformers
- One (1) single phase power voltage transformer SSVT (for AE station service) including foundation and jumper
- Control house (21' x 40') with associated control, communications, and SCADA equipment, 125 Vdc batteries, battery charger and other appurtenances

Facilities owned by Oncor:

- A 7.618 acres tract of land occupied by the 138 kV switchyard section of LCRA TSC Gilleland Creek Substation (see Other Terms and Conditions concerning the LCRA TSC easement for this tract of land)

- The Oncor Transmission Lines to Pflugerville and Round Rock SE with associated insulator strings and attachment hardware to terminate the Oncor Transmission Lines on the LCRA TSC deadend structures located in the 138 kV switchyard section of LCRA TSC's Gilleland Creek Substation

8. **Operational Responsibilities of Each Party:** Each Party will be fully responsible for the operation of the facilities it owns.

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

10. **Other Terms and Conditions:**

- LCRA TSC has an Electric Substation Easement and Right of Way from Texas Utilities Electric Co. (predecessor to Oncor) for the 7.618 acres tract of land occupied by the Gilleland Creek Substation (138 kV switchyard section).

- ERCOT-Polled Settlement metering equipment for Ckt 1030 will be provided by Austin Energy.

- Austin Energy and LCRA TSC are to share access to the substation by LCRA TSC and Austin Energy hardened locks in the gate.

- Austin Energy will supply and allow LCRA TSC use of circuit breakers GL-1030-1 and GL-1030-2 relaying bushing current transformers for LCRA TSC's 138 kV bus differential relaying schemes.

- LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panels to Austin Energy's circuit breakers GL-1030-1 and GL-1030-2 relaying panels.

- Austin Energy will supply and provide breaker failure initiate contacts from its circuit breakers GL-1030-1 and GL-1030-2 relaying panels to LCRA TSC's 138 kV bus differential and breaker failure panels.

- LCRA TSC will provide B-phase bus potentials for Austin Energy breaker synchronization.

- Austin Energy will provide LCRA TSC with two pair of communication fibers between the Austin Energy Gilleland Creek control house and the Austin Energy Howard Lane control house. LCRA TSC will extend the fibers between: a) the Austin Energy Gilleland Creek control house and the LCRA TSC Gilleland Creek control house; and b) the Austin Energy Howard Lane control house and the LCRA TSC Howard Lane control house. The parties will coordinate fiber connections at

Howard Lane sub.

- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.

- LCRA TSC will construct a new A-frame structure in bay 3 and will add the necessary trusses and mounting plates to accommodate Austin Energy's surge arresters, PTs and vertical switches.

- LCRA TSC will remove its existing switches and switch stands in bay 3.

- Austin Energy will install conduits for 138 kV bus differential and breaker failure cabling requirements from the Austin Energy control house to the existing LCRA TSC cable trough.

- Austin Energy will supply and install an AE interface junction box in the AE control house to allow termination and color code transition of the following cables: bus differential relaying, bus breaker failure relaying and AE breaker synchronization using 138 kV Bus #1 and Bus #2 B-phase bus potentials.

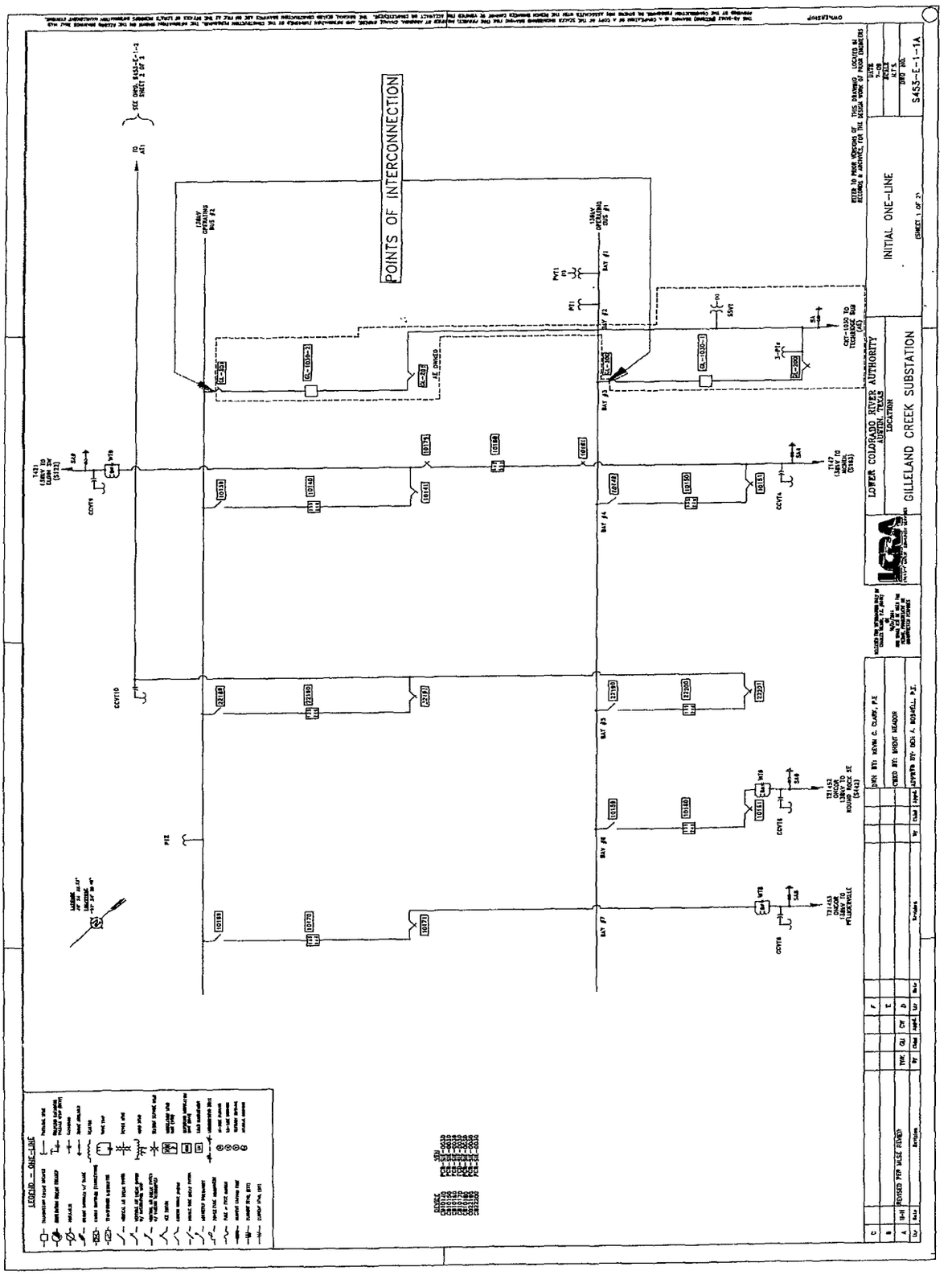
- Austin Energy will supply and have installed (AE will terminate the cables in the AE interface junction box while LCRA TSC will terminate the cables at the LCRA TSC panels) the following cables to interface to existing LCRA TSC equipment:
  - One (1) LCRA TSC color coded 12/c #10 cable (for AE Circuit Breaker GL-1030-1) from the AE interface junction box to the LCRA TSC 138 kV Bus #1 Differential/Breaker Failure Panel 2 in the LCRA TSC 138kV control house
  - One (1) LCRA TSC color coded 12/c #10 cable (for AE Circuit Breaker GL-1030-2) from the AE interface junction box to the LCRA TSC 138 kV Bus #2 Differential/Breaker Failure Panel 22 in the LCRA TSC 138kV control house.
  - Two (2) LCRA TSC color coded 4/c #10 cables (for 138 kV Bus #1 and Bus #2, B-phase potentials) from the AE interface junction box to LCRA TSC's Panel 21 in the LCRA TSC 138kV control house
  - Upon commissioning, LCRA TSC shall own the control cables from the AE interface junction box to the LCRA TSC control house.

- Austin Energy will supply and have installed (AE will terminate the cables in the AE breakers while LCRA TSC will terminate the cables at the LCRA TSC CT Junction Boxes) the following LCRA TSC color coded cabling for bus differential CT circuits.
  - One (1) 4/c#10 cable from AE's Circuit Breaker GL-1030-1 directly to the LCRA TSC 138kV Bus #1 Differential CT Junction Box
  - One (1) 4/c#10 cable from AE's Circuit Breaker GL-1030-2 directly to the LCRA TSC 138kV Bus #2 Differential CT Junction Box

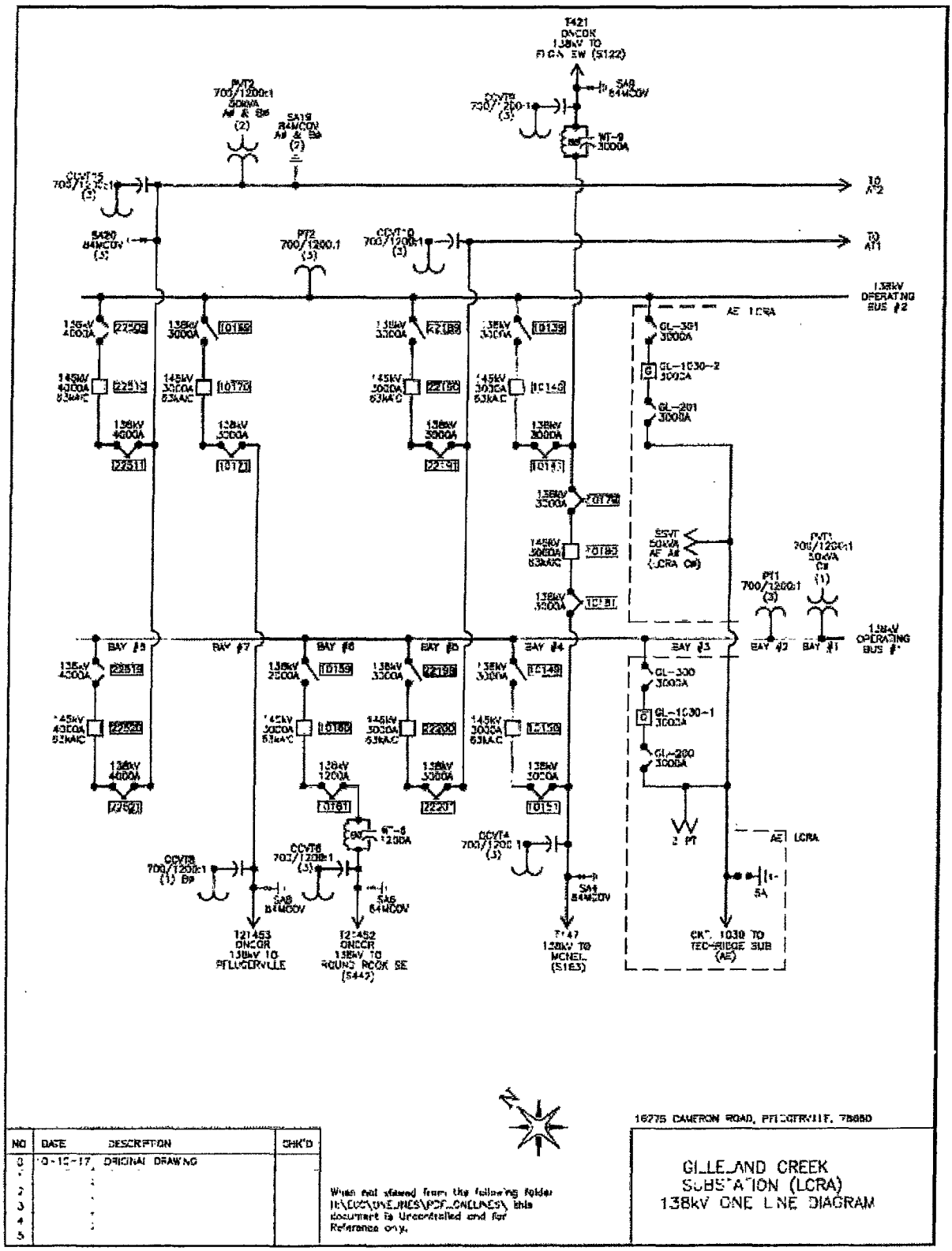
- Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns or operates.

- LCRA TSC and Austin Energy will obtain necessary analog, status and alarm information by ICCP circuits to ERCOT.

GILLELAND CREEK SUBSTATION
LCRA TSC ONE LINE DRAWING



GILLELAND CREEK SUBSTATION
AE ONE LINE DRAWING



FACILITY SCHEDULE NO. 12

1. **Name:** Hidden Valley Substation

2. **Facility Location:** The Hidden Valley Substation is located at 13919 ½ Low Water Crossing, Austin, Travis County, TX 78732.

3. **Points of Interconnection:** There is one (1) Point of Interconnection in the Hidden Valley Substation generally described as:

   - where LCRA TSC's jumper from LCRA TSC's 138 kV bus attaches to AE's switch HV304.

4. **Delivery Voltage:** 138 kV

5. **Metered Voltage and Location:** Austin Energy provided ERCOT-Polled Settlement metering will be accomplished using 138 kV potential and current metering accuracy instrument transformers. The current metering transformers are located within AE's 138kV circuit breaker HV950. The potential metering transformers are located on AE's 138 kV Operating Bus.

6. **One Line Diagram Attached:** Yes

7. **Description of Facilities Owned by Each Party:**

Austin Energy owns:

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

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Hidden Valley Substation to Riverplace Substation 138 kV transmission line, Ckt 965
  - Hidden Valley Substation to Commons Ford Substation 138 kV transmission line, Ckt 933
- Two (2) 138 kV A-Frame dead end structures
- Two (2) 138 kV surge arresters (not numbered)
- One (1) 138 kV Operating Bus including structures, insulators, foundations and jumpers
- Four (4) 138 kV circuit breakers HV933, HV965, HV900, and HV950 including foundations, jumpers and protective relay packages
- Twelve (12) 138 kV switches HV200, HV201, HV300, HV301, HV302, HV303, HV304, HV611, HV612, HV650, HV651, and HV652 including stands and foundations
- One (1) 138 kV Operating Bus, bus differential and breaker failure scheme
- Two (2) 138 kV circuit switchers HV601CS and HV602CS, with integrated disconnect switch, foundations, jumpers, and protective relay packages
- Three (3) 138 kV bus potential metering transformer PTs
- One (1) capacitor bank CP with associated controls and protection devices
- Two (2) 138/12.47kV, 30 MVA power transformers HV-123 and HV-456 with associated surge arresters
- Two (2) 12.5 kV switchgear with bus potential transformers, station service, breakers, surge arresters, enclosures and distribution circuits
- Control house and battery bank with battery charger
- Substation property ground grid, shielding for AE owned equipment, gravel, fencing and other appurtenances

LCRA TSC owns:

- The following 138 kV transmission lines comprised of structures, conductors, insulators, and connecting hardware:
  - Hidden Valley Substation to Marshall Ford Substation 138 kV transmission line, T160
  - Hidden Valley Substation to Mc Neil Substation 138 kV transmission line, T626
- Two (2) 138 kV A-Frame dead end structures
- One (1) 138 kV Operating Bus including structures, insulators, foundations and jumpers
- Three (3) 138 kV surge arresters SA1, SA2 and SA3
- Three (3) 138 kV coupling capacitor voltage transformers CCVT1, CCVT2 and CCVT3 (single phase BØ)
- One (1) power voltage transformer PVT1 for primary station service to the LCRA TSC control house
- One (1) backup distribution station service
- Two (2) 138 kV circuit breakers 26050, and 26060 including foundations, jumpers and protective relay packages
- Six (6) 138 kV switches 26049, 26051, 26053, 26059, 26061, and 26063 including stands and foundations
- One (1) 138 kV Operating Bus, bus differential and breaker failure scheme
- One (1) jumper from LCRA TSC's 138 kV Operating Bus to the Point of Interconnection at AE's switch HV304
- OPGW for communications and pilot relay between Hidden Valley Substation and Marshall Ford Substation
- One (1) control house with battery bank, charger and appurtenances
- Station shielding for LCRA TSC owned equipment

8. Operational Responsibilities of Each Party:

- Each Party will be responsible for the operation of the equipment it owns.
- LCRA TSC will be able to trip Austin Energy's circuit breaker HV950 as part of its 138 kV bus differential and breaker failure scheme.

9. Maintenance Responsibilities of Each Party:

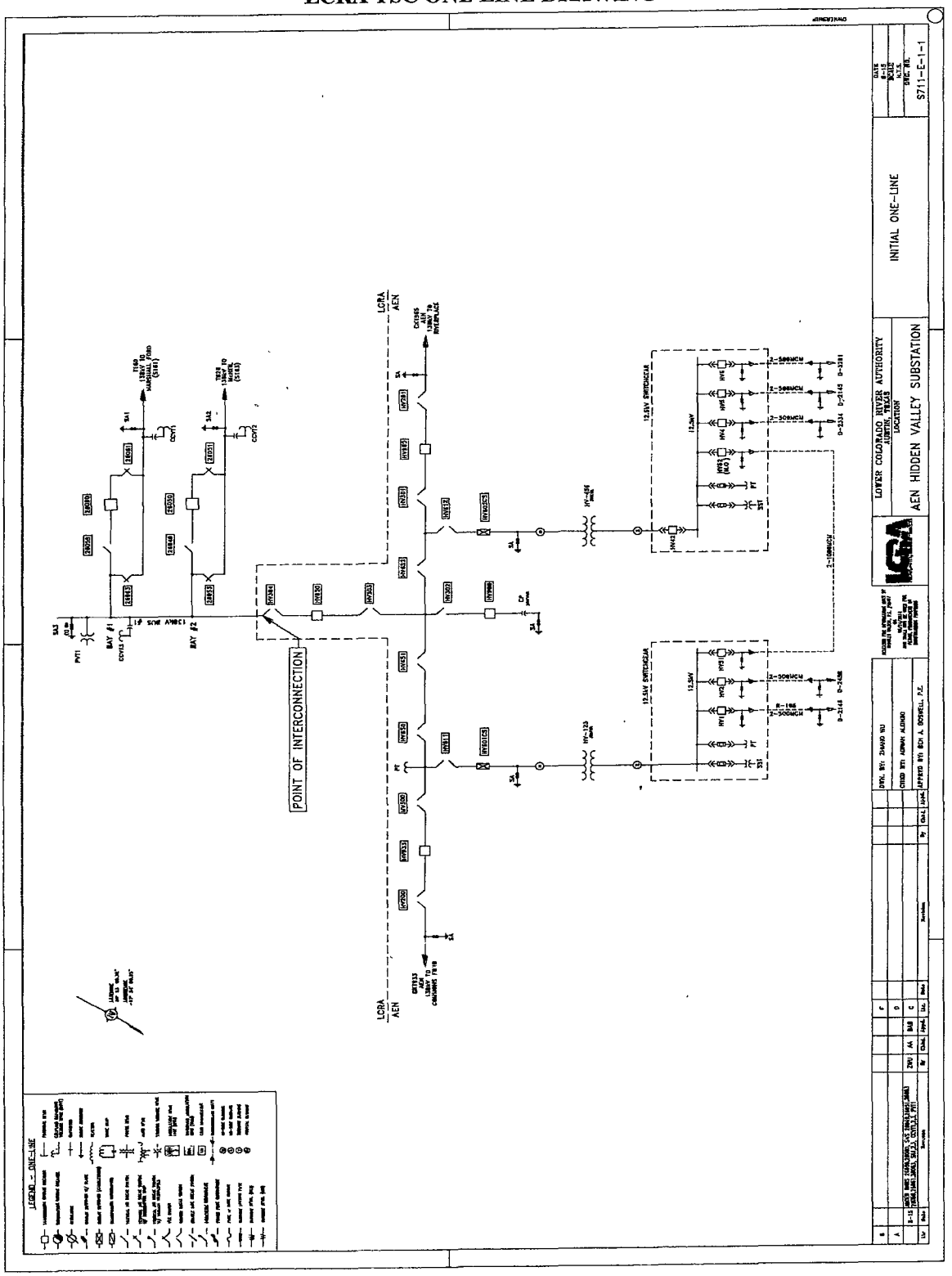
- Each Party will be fully responsible for the maintenance of the equipment it owns.
- Maintenance of any facilities by either Party, which will cause a deviation from normal power and energy flow at the Point of Interconnection, will be scheduled at a mutually agreeable time.

10. Other Terms and Conditions:

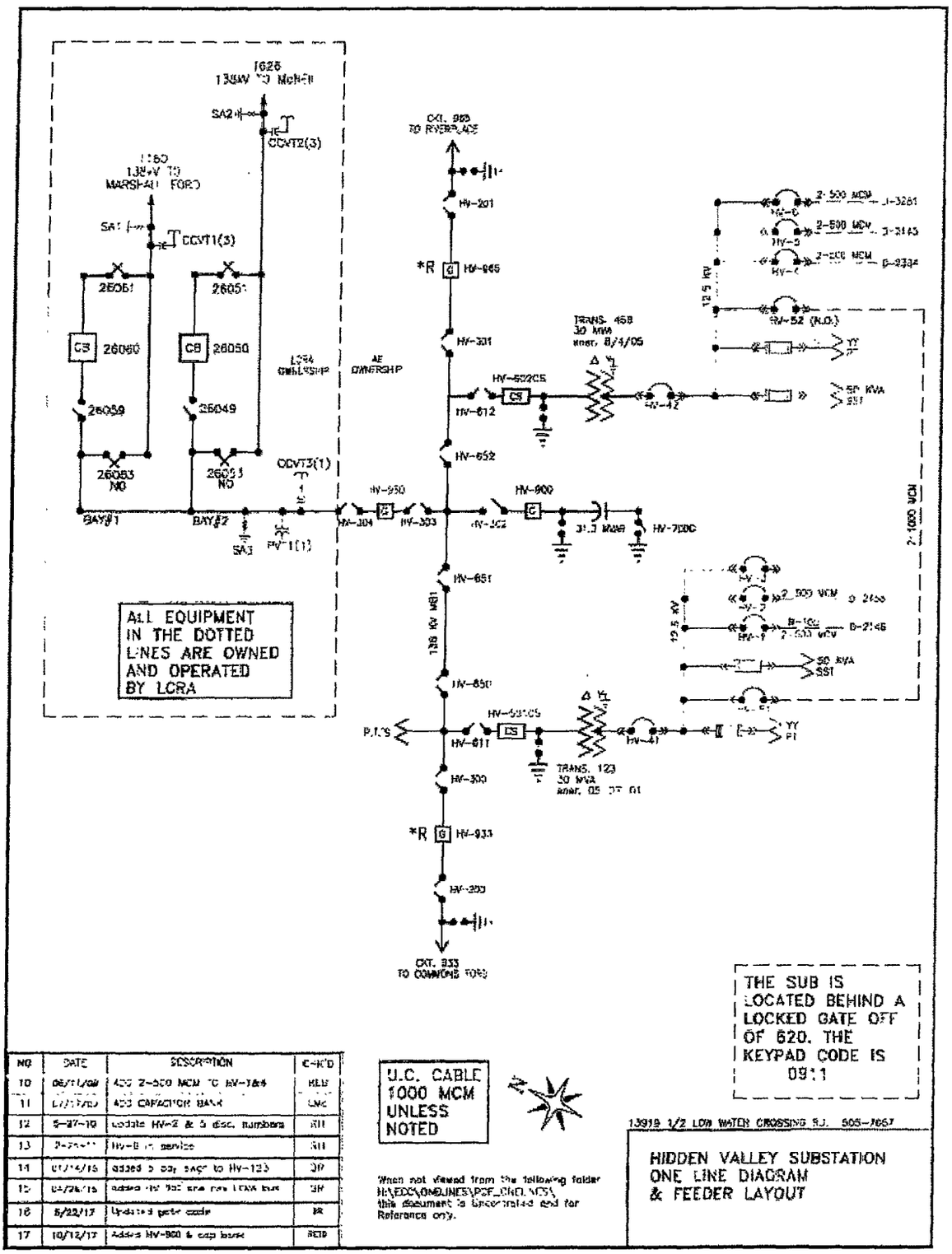
- Austin Energy and LCRA TSC are to share access to the substation by Austin Energy and LCRA TSC locks in the substation entrance gate.
- Austin Energy and LCRA TSC control houses are not shared but entry may be requested by the other party.
- Austin Energy will supply and allow LCRA TSC use of circuit breaker HV950 relaying bushing current transformers for its 138 kV bus differential relaying scheme.
- LCRA TSC will provide tripping and close inhibit contacts from its 138 kV bus differential and breaker failure panel to Austin Energy's circuit breaker HV950 relaying panel.
- Austin Energy will provide breaker failure initiate contacts from the circuit breaker HV950 relaying panel to LCRA TSC's 138 kV bus differential and breaker failure panel.

- LCRA TSC will protect its 138kV operating bus with an LCRA TSC bus differential and breaker failure relaying scheme.
- LCRA TSC and Austin Energy shall design, provide, and coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides.
- Austin Energy and LCRA TSC both have control houses at Hidden Valley Substation. However if either has a need to place panels or equipment in the other's control house the control house owner will provide the required space (as available and as necessary) and access to 125 VDC and 120 VAC power. Circuits must have over current protection devices (OCPD) sized according to NEC standards. Panel boards containing the OCPD may belong to either Austin Energy or LCRA TSC.
- Austin Energy will upgrade the ground grid, gravel, fencing and grading at Hidden Valley Substation yard and provide space for LCRA TSC's equipment and control house.
- LCRA TSC will obtain backup station service with a distribution feed.
- LCRA TSC will provide B-phase bus potentials for Austin Energy breaker synchronization.
- Austin Energy will provide B-phase bus potentials for LCRA TSC breaker synchronization.

HIDDEN VALLEY SUBSTATION
LCRA TSC ONE LINE DRAWING



HIDDEN VALLEY SUBSTATION
AE ONE LINE DRAWING



NO	DATE	DESCRIPTION	CHK'D
10	06/11/08	ADD 2-500 MCM TO HV-7&9	KEB
11	12/17/09	ADD CAPACITOR BANK	SMC
12	5-27-10	Update HV-2 & 5 disc. numbers	KH
13	3-24-11	HV-8 in service	KH
14	01/16/15	added 5 bay SAS to HV-123	JP
15	04/28/15	added HV 900 and new LCRA bus	JP
16	5/22/17	Updated gate code	JR
17	10/12/17	Added HV-900 & cap bank	KEB

When not viewed from the following folder H:\EDC\ONELINES\PDF_ONELINES\ this document is Uncontrolled and for Reference only.

13919 1/2 LOW WATER CROSSING RD. 505-7657

FACILITY SCHEDULE NO. 13

1. **Name:** Winchester Substation

2. **Facility Location:** The Winchester Substation is located at 3234 FM 448, La Grange, Fayette County, Texas 78945.

3. **Points of Interconnection:** There are four (4) POI at the Winchester Substation (see attached typical POI sketch) generally described as:

   - where Austin Energy's 345 kV bay #1 jumper, from switch WH-300, attaches to LCRA TSC's 345 kV Operating Bus 1.
   - where Austin Energy's 345 kV bay #1 end of bus jumper attaches to LCRA TSC's 345 kV Operating Bus 2.
   - where Austin Energy's 345 kV bay #2 end of bus jumper attaches to LCRA TSC's 345 kV Operating Bus 1.
   - where Austin Energy's 345 kV bay #2 jumper, from switch WH-303, attaches to LCRA TSC's 345 kV Operating Bus 2.

4. **Delivery Voltage:** 345 kV

5. **Metered Voltage and Source Location:** Austin Energy provided ERCOT Polled Settlement (EPS) meters on 345 kV interconnection if needed and determined by Austin Energy

6. **Point of Interconnection Sketch Attached:** Yes (typical of 4)

7. **One Line Diagram Attached:** Yes (partial)

8. **Description of Facilities Owned by Each Party:**
   Austin Energy owns:
   - The following transmission lines comprised of structures, conductors, insulators, and connecting hardware:
     - Winchester Substation to Lost Pines Substation 345 kV transmission line, Austin Energy Ckt 3135
     - Winchester Substation to FPP 345kV YD1 Substation 345 kV transmission line, Austin Energy Ckt 3132
   - Two (2) transmission line poles to turn one circuit (AE Ckt 3132) of the double-circuit 345 kV transmission line between Lost Pines Substation and FPP 345 kV YD1 Substation into and out of Winchester Substation.
   - Two (2) 345 kV substation A-frame dead end structures to terminate the Austin Energy 345 kV transmission lines
   - Two (2) 345 kV wire wound voltage transformers PT1 and PT2
   - Two (2) 345 kV surge arresters SA1 and SA2
   - Eight (8) 345 kV switches WH-200, WH-201, WH-202, WH-203, WH-206, WH-207, WH-300 and WH-303,
   - Four (4) 345 kV circuit breakers WH-1240, WH-1241, WH-1242 and WH-1243 with foundations, jumpers and protective relaying

- CT cables and conduits from Austin Energy's circuit breakers to the LCRA TSC 345 kV bus differential CT junction boxes in the yard
- Four (4) sets of 345 kV jumper connections (see attached typical Point of Interconnection Diagram), two (2) from Austin Energy's switches WH-300 and WH-303 and two (2) from bus ends at AE Bay 1 bus and AE Bay 2 bus to the Points of Interconnection at LCRA TSC's 345 kV Operating Bus 1 and 345 kV Operating Bus 2
- EPS meters (if needed as determined by Austin Energy)
- One (1) control house (21' x 40') with associated control, communications, and SCADA equipment, 125 Vdc batteries, battery charger and other appurtenances
- Control cable and conduit from AE control house to the LCRA TSC control cable junction box in the yard
- Station Service cables and conduits from the AE control house to the LCRA TSC AC power house
- Substation lighting on AE owned A-frames
- Two (2) static poles with foundations and Austin Energy substation equipment static protection connecting to Austin Energy A-frame structures
- Fiber optic communication cable connecting to the Austin Energy communications network

LCRA TSC owns:

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

- Two (2) 345 kV Operating Buses; 345 kV Operating Bus 1 and 345 kV Operating Bus 2; each with conductors, insulators, supports, foundations, and primary and secondary bus differential and breaker failure protective relaying schemes
- Four (4) total 345 kV bus differential CT junction boxes in the yard; a primary junction box and a secondary junction box for each 345 kV Operating Bus 1 and 345 kV Operating Bus 2.
- Eight (8) 345 kV switches 29099, 29101, 29109, 29111, 29119, 29121, 29129 and 29131
- Four (4) 345 kV circuit breakers 29100, 29110, 29120 and 29130 with foundations, jumpers and protective relaying
- Two (2) 345 kV coupling capacitor voltage transformers (single phase)
- One (1) control cable junction box in the yard for connections between LCRA TSC and Austin Energy's control panels in their respective control houses
- Two (2) 345/138 kV Autotransformers
- All 138 kV equipment, facilities, and transmission lines at Winchester Substation
- Four (4) 138-kV, 100kVA PVTs for station service
- One (1) control house (36' x 66') with batteries, battery charger and appurtenances
- One (1) AC power house (8' x 12')
- Fiber optic communication cable connecting to the LCRA TSC communications network
- One (1) 110-ft communication tower
- All substation property, grading, gravel, access roads, ground grid, and all substation fencing, and other appurtenances
- LCRA TSC substation equipment overhead static protection connecting to LCRA TSC structures
- Cable trough between the LCRA TSC control house and certain LCRA TSC yard equipment

9. **Facility Establishment and Modification Responsibilities of Each Party:** Each Party will be fully responsible for the design, installation, and commissioning of the equipment it owns, as well as any modifications.

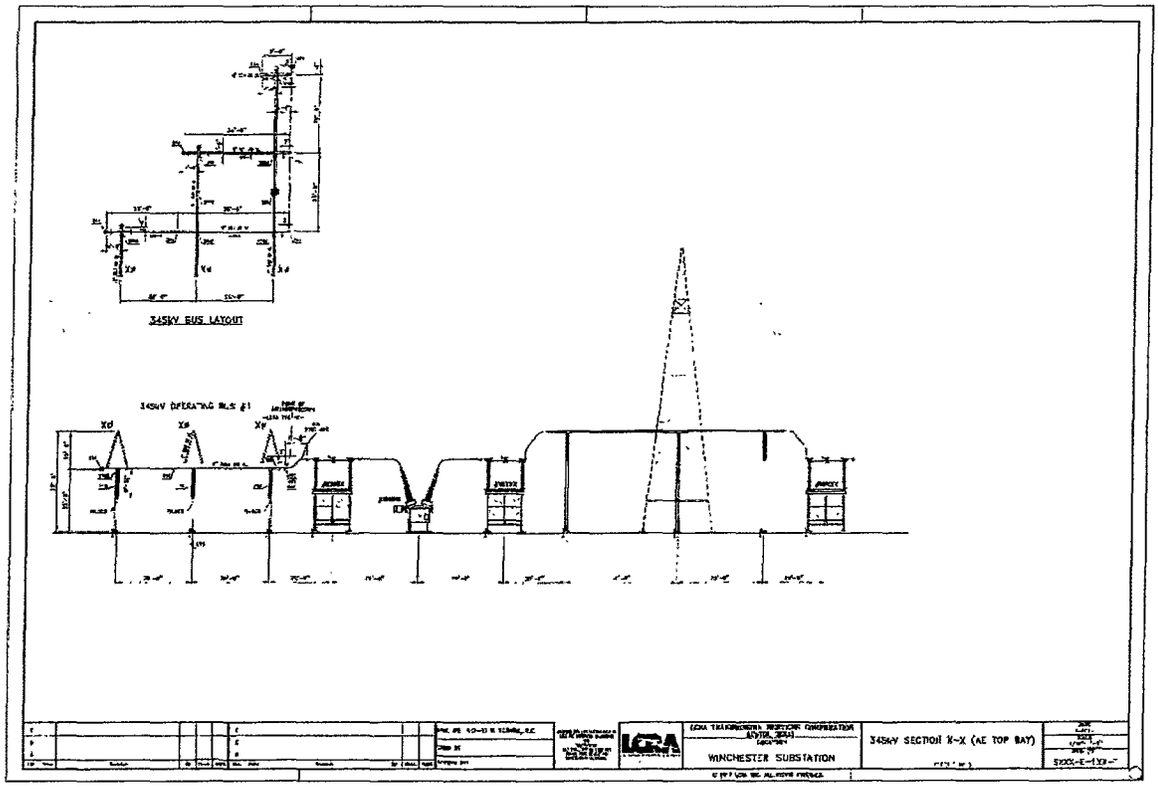
10. **Operational Responsibilities of Each Party:** Each Party will be fully responsible for the operation of the equipment it owns.

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

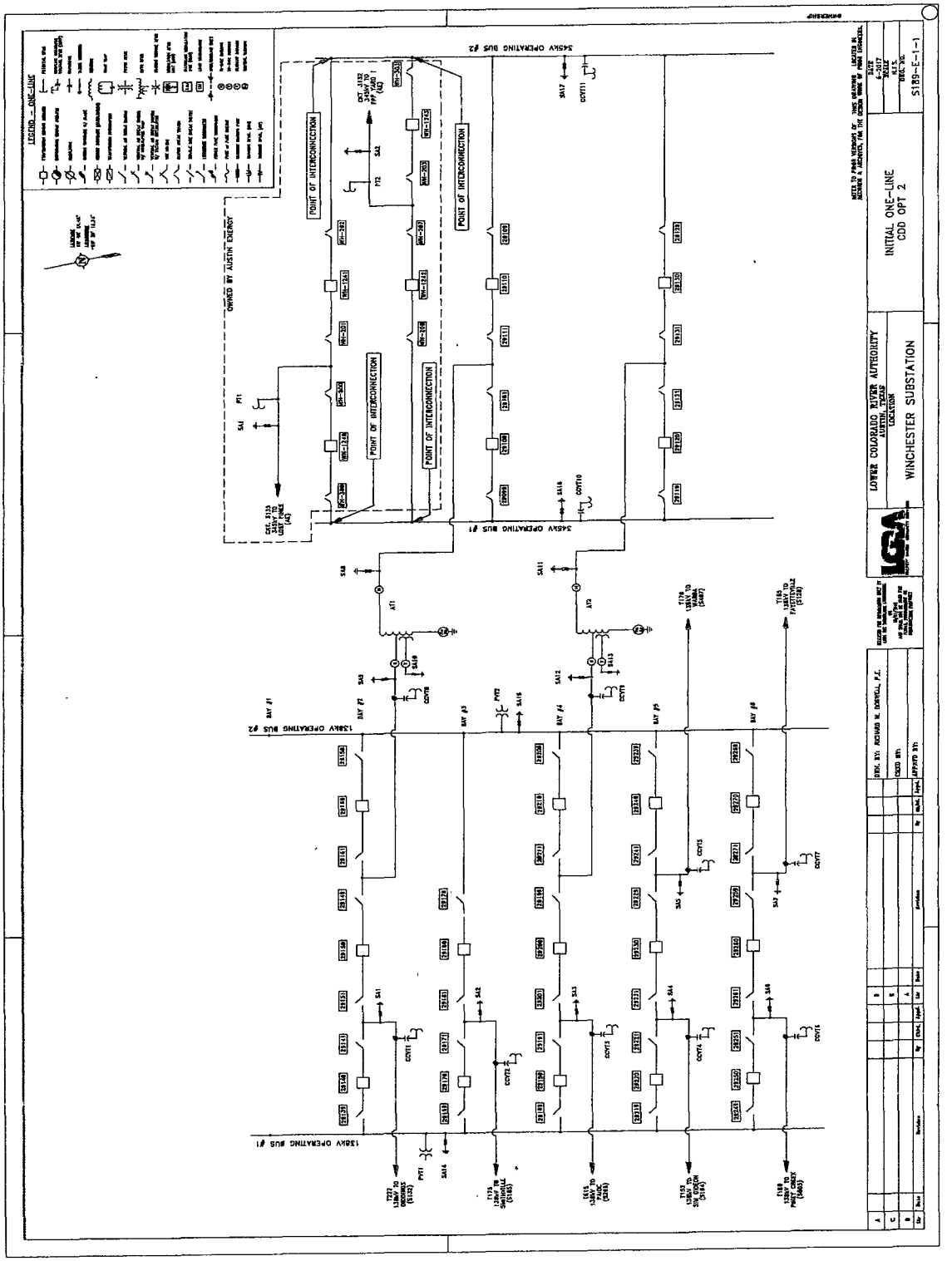
12. **Other Terms and Conditions:**

- LCRA TSC and Austin Energy will share access to the substation by using LCRA TSC and Austin Energy hardened chains and locks at the gates.
- LCRA TSC's substation access and physical security for the entire Winchester Substation yard and for the LCRA TSC control house (but not the Austin Energy control house) will be conducted in accordance with LCRA TSC procedure No. 5000.1 , Physical Security Design Guideline
- Each Party is responsible for its own costs for any work necessary to comply with the NERC Reliability Standards and any physical security measures it implements at the Winchester Substation.
- Austin Energy will provide primary and secondary 3000:5 C800 relaying accuracy, current transformers in its circuit breakers for LCRA TSC's 345 kV bus differential relaying schemes.
- LCRA TSC will provide tripping and close inhibit contacts from its 345 kV bus differential and breaker failure relaying panels to Austin Energy's circuit breakers relaying panels by each Parties' connection to the LCRA TSC control cable junction box in the yard.
- Austin Energy will provide breaker failure initiate contacts from its circuit breaker relaying panels to LCRA TSC's 345 kV bus differential and breaker failure relaying panels by each Parties' connection to the LCRA TSC control cable junction box in the yard.
- LCRA TSC will allow Austin Energy use of its station service transformers, with Austin Energy supplying the conduit and cable from the LCRA TSC low-side fused disconnect switches in the LCRA TSC AC power house to the Austin Energy control house. A maximum of 25 kVA from primary and 25 kVA from secondary station service to be supplied to Austin Energy.
- LCRA TSC and Austin Energy shall coordinate their respective protection system equipment so that adjacent zones of protection overlap, in accordance with ERCOT Nodal Operating Guides and NERC Reliability Standards.
- LCRA TSC will provide B-phase 345 kV bus 1 and 345 kV bus 2 potentials for Austin Energy breaker synchronization.
- Austin Energy will provide B-phase line potentials from each of its circuits for LCRA TSC breaker synchronization.
- Each Party shall be responsible for the ICCP data to ERCOT, ERCOT model configuration, equipment ratings, naming, and numbering convention for the equipment it owns or operates.
- LCRA TSC and Austin Energy will obtain necessary analog, status and alarm information by ICCP circuits to ERCOT.

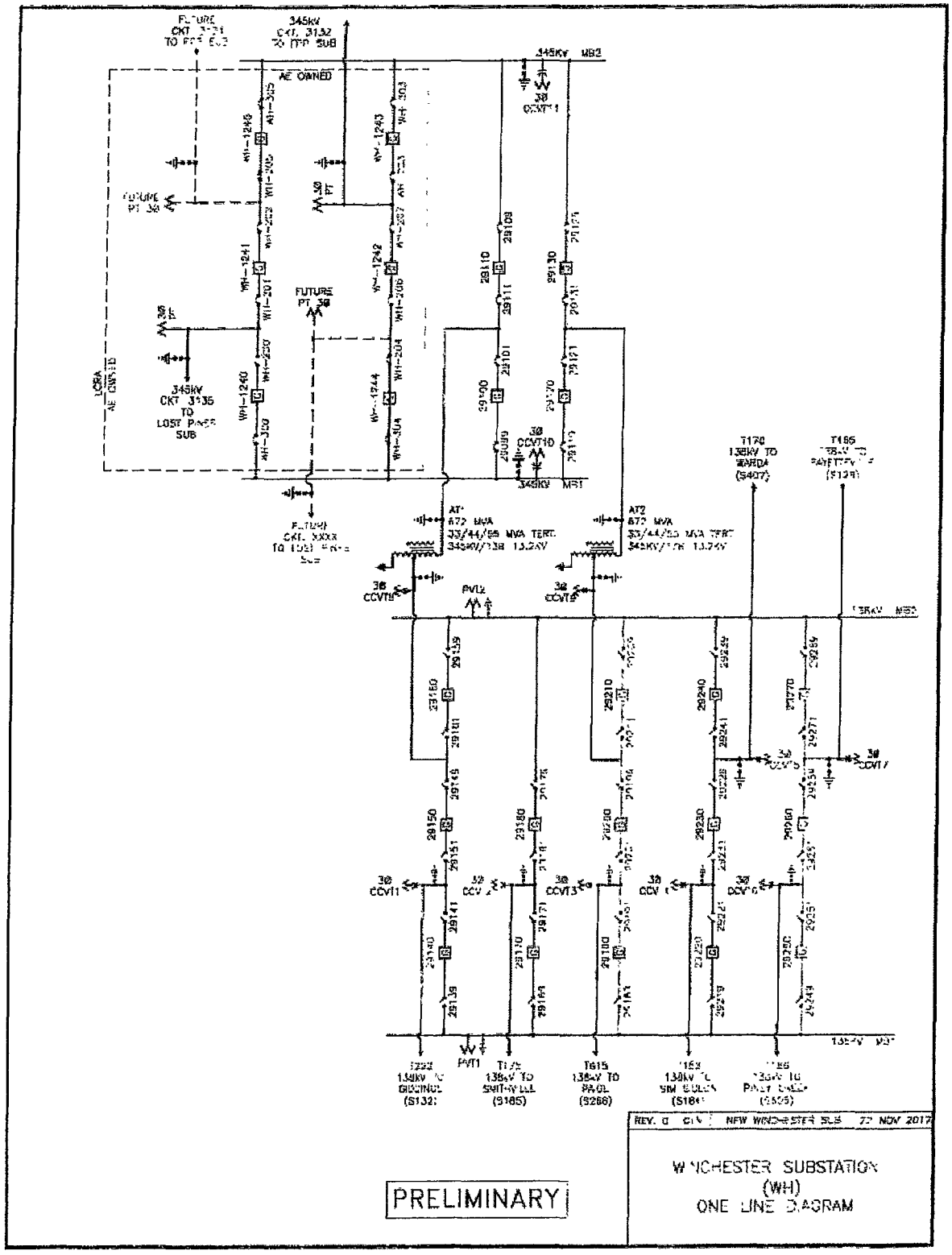
WINCHESTER
POINT OF INTERCONNECTION SKETCH
(TYPICAL FOR ALL FOUR WINCHESTER POINTS)



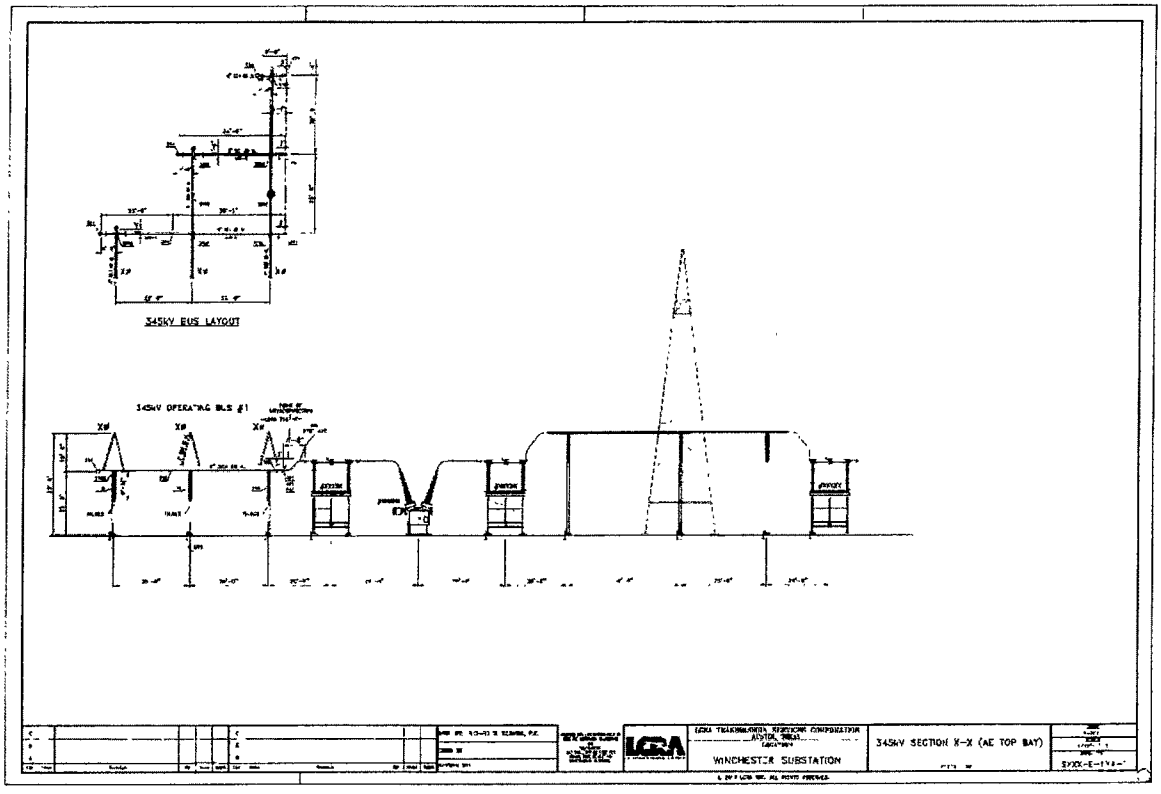
WINCHESTER SUBSTATION
LCRA TSC ONE-LINE DIAGRAM



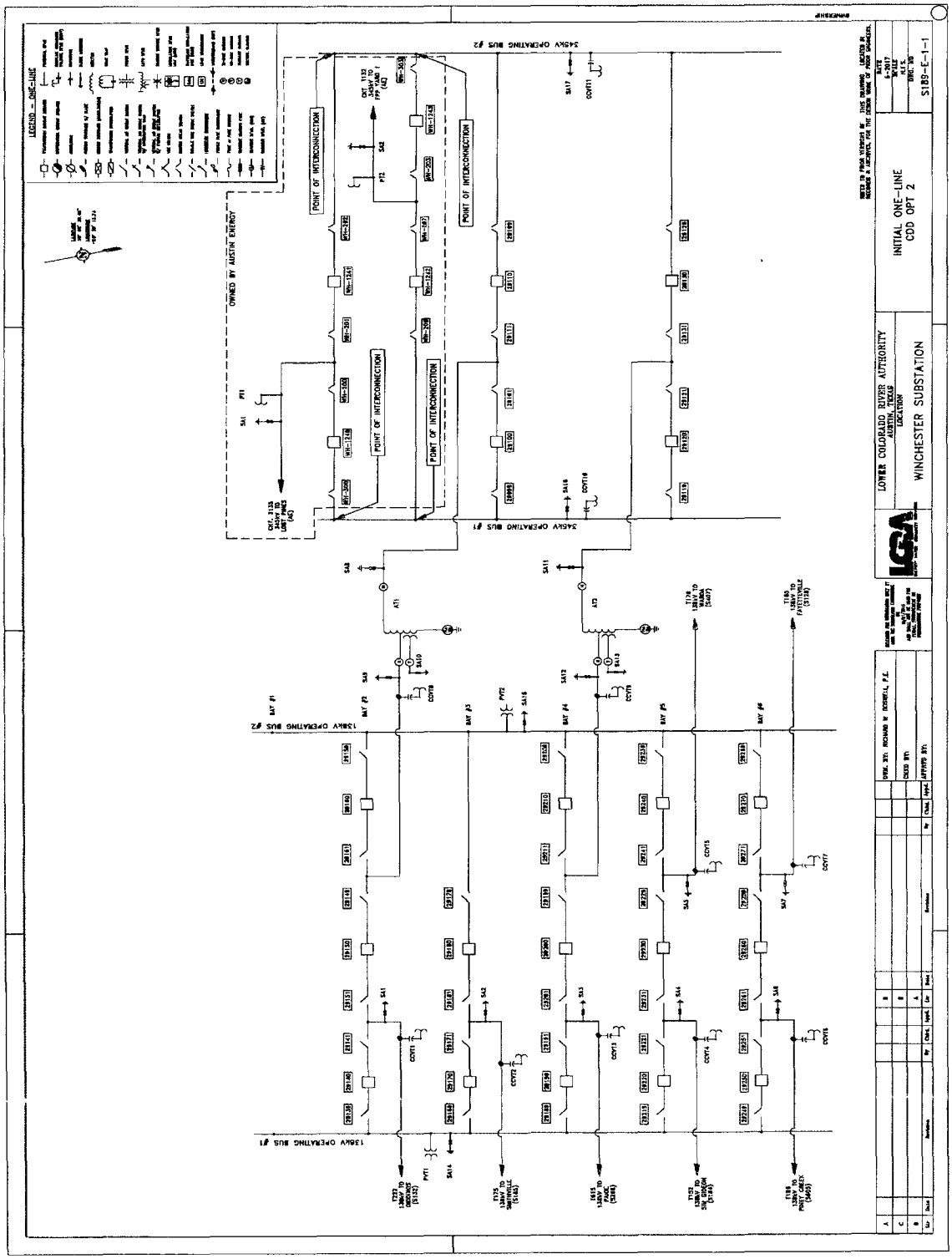
WINCHESTER SUBSTATION
AE ONE-LINE DIAGRAM



WINCHESTER
POINT OF INTERCONNECTION SKETCH
(TYPICAL FOR ALL FOUR WINCHESTER POINTS)



WINCHESTER SUBSTATION
LCRA TSC ONE-LINE DIAGRAM



WINCHESTER SUBSTATION
AE ONE-LINE DIAGRAM