BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	))))))))	**Docket No. 26-00___**

EL PASO ELECTRIC COMPANY,
Applicant

APPLICATION FOR APPROVAL OF CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY AND RIGHT OF WAY WIDTH

El Paso Electric Company ("EPE" or "Company") hereby submits its Application with the New Mexico Public Regulation Commission ("NMPRC" or "Commission") for a Certificate of Public Convenience and Necessity ("CCN") and Right-of-Way Width Approval in accordance with the New Mexico Public Utility Act ("NMPUA") NMSA 1978, Sections 62-9-1 and 62-9-6, and 17.1.2.9 NMAC and NMSA 1978, Section 62-9-3.2, respectively. EPE is seeking these approvals in order to construct a new, approximately 14.4 mile long 345 kilovolt ("kV") transmission line that will follow a single right-of-way ("ROW") corridor, starting at an upgraded Afton North Substation, located north of the Afton Generating Station, and ending at EPE's existing Airport Substation in Las Cruces, New Mexico (the "Project"). The Project is necessary to support electrical grid reliability, resiliency, and operational performance, and will enable EPE to continue to provide adequate and reliable service without unnecessary duplication or economic waste. The Project is a foundational component of EPE's long-term transmission plans to develop the Western 345 kV Transmission Path, which includes four additional 345 kV transmission lines, several 115 kV lines, as well as upgrades to existing substations and construction of new

substations to enable EPE to continue serving its customers in the New Mexico and Texas area given projected load growth. If approved, the Project is scheduled to be in service to meet the summer peak season of 2028.

NMSA 1978, Section 62-9-1 provides that the Commission issue an order on a CCN Application within nine months from the date the Application is filed. Section 62-9-3.2 requires the Commission to issue its order granting or denying the right-of-way width approval application within six months from the date of filing.

In support of this Application, EPE respectfully states as follows:

1. EPE is certified and authorized to conduct the business of providing public utility service within the State of New Mexico and is a public utility subject to the jurisdiction of the Commission under the NMPUA.

2. EPE generates, transmits, and distributes electricity through an interconnected system to customers in southern New Mexico and Texas. EPE owns, operates, leases, or controls the plant, property, and facilities used by it for the generation, transmission, distribution, sale, or furnishing of electricity to or for the public within New Mexico and Texas.

3. EPE's principal business address and telephone number for its New Mexico service area are:

El Paso Electric Company
100 N. Stanton Street
El Paso, Texas 79901
(915) 543-5711

4. Given that lead times for equipment purchasing, permitting, and construction are lengthy, a prompt review and determination by the Commission is necessary for EPE to timely begin construction.

5. The proposed transmission line is approximately 14.4 miles long, with 12.79 of

those miles on U.S. Bureau of Land Management land, with a maximum disturbance of 233.40 acres of Bureau of Land Management land. The total proposed project area is 241.7 acres.

6. The proposed line will be located in Doña Ana County, New Mexico. EPE's Airport Substation is located west of Las Cruces, about one mile west of the U.S. Highway 10 and Crawford Boulevard intersection. From the existing Airport Substation, the line will head south for approximately 8.6 miles then turn southeast, continuing approximately 5.7 miles and terminating at the Afton North Substation, which is a planned new 345 kV switching station. Afton North Substation will be located approximately eight miles west of La Mesa, New Mexico, just northeast of the Afton Generating Station.

7. The Project is a part of a larger planned transmission path from the West to the East of EPE's transmission system, consisting of five 345kV connected segments. A map of the overall plan is included as Figure ARB-1, attached to the direct testimony of EPE witness Abel Bustillos. The plan will create an additional import path to increase EPE's Southern New Mexico Import Capability ("SNMIC") and El Paso's Import Capability ("EPIC"), which are explained in the direct testimony of EPE witness Abel Bustillos. The Project will create redundancy, alleviate N-1 constraints, and improve import reliability in the region.

8. Section 62-9-1 of the NMPUA requires public utilities to obtain a CCN from the Commission prior to beginning the construction, operation or extension of any public utility plant or system outside of the ordinary course of business. Historically, the Commission has required CCN applications for construction of 345 kV transmission lines. The Commission must render a determination on the CCN application within nine months.

9. Section 62-9-3.2 of the NMPUA requires that utilities obtain a determination from the Commission of the necessary ROW width to construct and maintain a transmission line if the

proposed width is greater than one hundred feet, unless otherwise agreed to by the parties. This Section of the NMPUA requires a decision to be issued within six months of filing an application for ROW determination. In this filing, EPE also seeks the Commission's approval of ROW width because one approximately 5.6 mile long segment of the Project requires a ROW width of greater than 100 feet.

10. No Commission approval of location for the Project is required under Section 62-9-3 of the NMPUA, because the Project is not being constructed in connection with and to transmit electricity from a new generation plant. Therefore, this Section does not apply to this Application.

11. EPE previously acquired all necessary rights-of-way for the Project as proposed in 2015 for a 115kV transmission line in the same location as the proposed Project. The rights-of-way grants from the Bureau of Land Management and New Mexico State Land Office have been amended to reflect the current proposed Project for a 345kV line.

12. The estimated cost of the Project is approximately $43.23 million, which estimate includes the costs associated with engineering, material, procurement, construction and project management but does not include allowance for funds used during construction, or AFUDC. This cost estimate is reasonable and consistent with current market conditions and comparable transmission projects of similar scope.

13. EPE explored multiple alternatives as a part of its prudent planning practices, as explained in Mr. Bustillos' testimony. The proposed Project is the only feasible alternative.

14. EPE's Application and supporting testimony supports the need for the Project. EPE's current infrastructure is meeting demand but is reaching its capacity. The proposed Project will prevent voltage constraints and limitation of import capacity due to insufficient import capability. EPE is experiencing increases in native system load and higher system peak demands,

as explained in its 2025 Integrated Resource Plan ("IRP"). The Project will alleviate the need for EPE to rely on other utilities for additional purchases under normal conditions. EPE anticipates that the Project is necessary for it to continue to provide uninterrupted service to its customers.

15. The proposed Project will directly benefit EPE's retail customers in New Mexico by enhancing reliability and service quality, through ensuring that EPE's transmission and distribution system has the capacity and resiliency needed to meet both current and future load requirements.

16. EPE is not seeking authorization for recovery of the costs of this Project in this filing. Instead, EPE will seek to recover the New Mexico-jurisdictional associated costs of this Project (approximately 20 percent of the total cost of the Project) through base rates in a future general rate case.

17. Results of the environmental assessments conducted indicate that the proposed Project is not expected to result in significant impacts to environmental resources or cultural resources. EPE has incorporated appropriate mitigation measures and best industry practices into all stages of the Project and will conduct periodic environmental inspections to ensure that these measures are properly implemented. Further detail on this subject is provided in the direct testimony of EPE witness Andrea McArdle.

18. EPE's supporting testimony and exhibits demonstrate that the proposed Project is required by the public convenience and necessity and will not result in unnecessary duplication or economic waste. The testimonies and exhibits are incorporated by reference herein. EPE's witnesses and the subjects they address are as follows:

> James Schichtl – James Schichtl is EPE's Vice President of Revenue and Regulatory Strategy. His testimony supports EPE's request for the CCN and ROW width approval for the Project. Further, his testimony describes the statutory and

regulatory requirements that EPE must meet and describes how EPE's Application complies with those requirements.

Abel R. Bustillos – Abel Bustillos is EPE's Director of Integrated System Planning. His testimony describes the Project in detail, outlines the need for the Project, including the necessity of the project to improve import capability of EPE's transmission system, and explains the benefits of the Project to EPE's customers. Further, his testimony describes EPE's evaluation of proposed alternatives to the Project.

Michelle Veloz – Michelle Veloz is EPE's Supervisor of Transmission Substation Relay for Transmission Line Engineering. Her testimony discusses the planned EPE transmission line design, including the selection of the conductor and proposed use of the 345kV transmission structures; describes the estimated Project cost; and provides support for the ROW width approval.

Andrea R. McArdle – Andrea McArdle is a lead environmental planner for SWCA Environmental Consultants, Inc. ("SWCA"), which has been engaged by EPE to provide an assessment of potential environmental impacts associated with the Project. Her testimony will explain that the Project will not unduly impair environmental values. Her testimony will discuss the 2015 Environmental Assessment prepared for EPE as part of the 2015 BLM right-of-way grant process, which is attached to her testimony as Exhibit AM-1.

Alejandro Galvis – Alejandro Galvis is a Professional Engineer, licensed in the State of New Mexico, with Coalesce Management Consulting and has been engaged by EPE to review the engineering basis for the Project's proposed ROW widths and to confirm that the Project's design and ROW corridor provide sufficient clearance and vegetation-management space. Mr. Galvis and provides the Professional Engineer-stamped engineering calculations and drawings supporting the ROW width.

19. Service of all notices, pleadings and other documents related to this Application should be made as follows:

Nancy B. Burns
El Paso Electric Company
300 Galisteo Street, Suite 206
Santa Fe, New Mexico 87501
Telephone (505) 982-7391
nancy.burns@epelectric.com

and

Jeffrey J. Wechsler
Post Office Box 2307

Santa Fe, New Mexico 87504-2307
(505) 982-3873
jwechsler@spencerfane.com

In addition to service on the above, EPE requests electronic service of all pleadings and documents as follows:

samantha.lamas@epelectric.com
nancy.burns@epelectric.com
leslie.padilla@epelectric.com
EPE_Reg_Mgmt@epelectric.com
jwechsler@spencerfane.com
kaolson@spencerfane.com
scatalano@spencerfane.com
tpacheco@spencerfane.com
ysandoval@spencerfane.com

20. EPE's proposed form of Notice is attached as **Exhibit A**. EPE will publish the approved Notice as may be issued by the Commission in the manner directed.

21. EPE has e-mailed a copy of its Application and supporting Direct Testimonies and Exhibits to parties to EPE's most recent general rate case (NMPRC Case No. 25-00082-UT).

22. If no protests are filed within sixty days of the date of notice, EPE respectfully requests that the Commission approve EPE's Application without a formal hearing. Otherwise, EPE requests that this matter be concluded within six months from the date of filing this Application, since that is the shorter of the two applicable deadlines (for CCN approval and for ROW width approval), or within nine months from filing if necessary to accommodate Commission resources and scheduling. NMSA 1978, § 62-9-l(C).

WHEREFORE, EPE respectfully requests that the Commission issue a notice of this Application, conduct any necessary hearings in accordance with pertinent statutory deadlines, and issue a final order within six to nine months from the filing date of this Application. EPE asks the Commission to approve the Application and among other things determine that:

A. EPE's request for a CCN is reasonably necessary to provide reliable service to

customers, will support economic development, and is in the public interest, and therefore EPE's request for a CCN should be granted;

B. EPE's request for a ROW width of greater than 100 feet is necessary to construct and maintain the Project;

C. Any ratemaking principles and cost recovery matters should be deferred to a future general rate case; and

D. EPE should be granted any other such approvals, authorizations, and relief necessary to construct the proposed Project in accordance with the requirements of the NMPUA and any other applicable Commission rules.

Respectfully submitted,

Nancy B. Burns, Deputy General Counsel
Leslie Padilla, Senior Attorney
El Paso Electric Company
300 Galisteo St. Ste. 206
Santa Fe, NM 87501
Telephone (505) 982-7391
Nancy.burns@epelectric.com
Leslie.padilla@epelectric.com

SPENCER FANE LLP

/s/Jeffrey J. Wechsler
Jeffrey J. Wechsler
Kari E. Olson
Samantha H. Catalano
Post Office Box 2307
Santa Fe, New Mexico 87504-2307
(505) 982-3873
jwechsler@spencerfane.com
kaolson@spencerfane.com
scatalano@spencerfane.com

ATTORNEYS FOR EL PASO ELECTRIC COMPANY

EXHIBIT A

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

EL PASO ELECTRIC COMPANY'S PROPOSED NOTICE TO CUSTOMERS

The New Mexico Public Regulation Commission ("Commission" or "NMPRC") hereby gives notice of the following:

1. On July 10, 2026, El Paso Electric Company ("EPE" or "Company") filed with the Commission an Application and Supporting Direct Testimony with Exhibits for a Certificate of Public Convenience and Necessity ("CCN") to construct a new 14.4 mile long 345 kilovolt ("kV") transmission line which will follow a single right-of-way ("ROW") corridor, starting at an upgraded Afton North Substation, located north of the Afton Generating Station, and ending at EPE's existing Las Cruces Airport Substation (the "Project"). EPE is also requesting Commission approval of a right-of-way width of 200 feet for a portion of the Project. The Project will be located approximately eight miles west of La Mesa, New Mexico. The Application is accessible online on EPE's website, at: https://www.epelectric.com/company/public-notices.

2. EPE's Application states that: (a) the Project is required for EPE to continue to provide reliable, consistent service to its customers; (b) construction of the Project is consistent with the

public convenience and necessity, and (c) EPE is not seeking any relief related to rates in this proceeding. EPE is requesting that the Commission issue a final order approving the CCN and ROW width within six months of filing, but in any case, no later than nine months after filing. EPE's application includes its best estimates of costs of the Project, but is not seeking any ratemaking treatment, which will instead be deferred to a future general rate case.

3. The Commission has assigned Docket No. 26-00_____ to this Application, and all inquiries and correspondence concerning this matter should refer to that case number.

4. The Commission's Rules of Practice and Procedure, 1.2.2 NMAC, apply to this case except as modified by Order. A copy of 1.2.2 NMAC may be obtained online at https://www.srca.nm.gov/nmac-home/nmac-titles/title-1-general-government-administration/ or from the office of the Commission.

5. The Commission has set the schedule for hearing of this case as follows:

A. Deadline for motions to intervene to become a party to this case: _____, 2026.

B. Deadline by which Commission Staff shall, and Intervenors may, file direct testimony regarding EPE's Application: _____, 2026

C. Deadline to file Rebuttal Testimony, if any: _____, 2026.

D. Public Evidentiary Hearing: _____, 2026 to _____, 2026.

These are not the only deadlines in this matter and potential intervenors are advised to read the complete procedural order that was issued on _____.

PUBLIC HEARING

6. A public hearing will be held beginning at _____ a.m. on _____, 2026, and will continue through _____, 2026. The public hearing is where the Commission receives

testimony, exhibits, and legal arguments about the Application. Members of the public can watch the hearing via a livestream on the Commission's YouTube channel and its website, https://www.prc.nm.gov/public-hearings/. Please contact the Commission for confirmation of the hearing because hearings are occasionally cancelled or rescheduled.

PUBLIC COMMENT

7. If you are interested in the case but do not wish to become a party, you may make oral and written comment as allowed by Rule 1.2.2.23(F) NMAC. The Commission will host a public comment session at which members of the public may make comments in person. The date, time, and place of the public comment session will be announced on the Commission's website.

8. Public comment can be provided at Commission open meetings. The open meetings schedule is available on the Commission website at www.prc.nm.gov/nmprc-open-meeting-agenda/.

9. Public comment will not be taken at the evidentiary hearing because comments are not evidence. You may send written comments before the Commission takes final action by sending the comment, which must specifically reference Docket No. 26-00_____, to prc.records@prc.nm.gov, or Commission Records Management Bureau, P.O. Box 1269, Santa Fe NM 87504. The Commission may be reached by telephone at 1-888-427-5772.

10. IF YOU ARE AN INDIVIDUAL WITH A DISABILITY WHO IS IN NEED OF A READER, AMPLIFIER, QUALFIED SIGN LANGUAGE INTERPRETER, OR ANY OTHER FORM OF AUXILIARY AID OR SERVICE TO ATTEND OR PARTICIPATE IN THE HEARING OR FOR A SUMMARY OR OTHER TYPE OF ACCESSIBLE FORMAT OF PUBLIC DOCUMENTS, PLEASE CONTACT THE DIRECTOR OF ADMINISTRATIVE

SERVICES OF THE COMMISSION AT (505) 827-8019 AS SOON AS POSSIBLE PRIOR TO THE HEARING.

11. Anyone needing more information about this case may contact the Commission by phone at (505) 827-4084 or 1-888-427-5772 or by email at Ryan.Jimenez@prc.nm.gov.

I S S U E D at Santa Fe, New Mexico this ____ day of _____, 2026.

NEW MEXICO PUBLIC REGULATION COMMISSION

_____

Hearing Examiner

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345 KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DIRECT TESTIMONY

OF

JAMES SCHICHTL

ON BEHALF OF

EL PASO ELECTRIC COMPANY

JULY 10, 2026

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EXHIBITS

Exhibit JS-1 EPE's NMPRC Rule 17.5.440 NMAC Filing No. 59 – Afton North Substation to Airport Transmission Line (filed November 19, 2015)

EL PASO ELECTRIC COMPANY
DIRECT TESTIMONY OF
JAMES SCHICHTL

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James Schichtl. My business address is 100 North Stanton Street, El Paso, Texas 79901-1341.

Q2. BY WHOM ARE YOU EMPLOYED?

A. I am employed by El Paso Electric Company ("EPE" or "Company").

Q3. WHAT IS YOUR CURRENT POSITION WITH EPE?

A. I am Vice President of Revenue and Regulatory Strategy.

Q4. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES AS VICE PRESIDENT OF REVENUE AND REGULATORY STRATEGY?

A. As Vice President of Regulatory Strategy, I am responsible for the oversight and direction of EPE's Load Research & Data Analytics, Rate Research, and Regulatory Case Management groups. Load Research performs load research, data analysis and forecasting functions. Rate Research encompasses EPE's rate research function, jurisdictional and class cost of service studies, rate design analysis, and the development of retail rate schedules and charges. The Regulatory Case Management group coordinates and oversees regulatory filings made by EPE with the New Mexico Public Regulation Commission ("Commission" or

"NMPRC"), the Public Utility Commission of Texas ("PUCT"), the Federal Energy Regulatory Commission ("FERC"), and local municipal regulators. My job duties require knowledge of the statutory and regulatory requirements of each jurisdiction. I was previously assigned responsibility for the Customer Care and Meter and Field Services groups in 2025. Customer Care includes EPE's billing, customer contact, and collections groups. The Meter and Field Services group handles AMI meter installations, other field services, and investigates energy diversion. Up until that time, I was also overseeing the Company's Market Development and Resource Management Department in 2024. In my role as Vice President of Revenue and Regulatory Strategy, I continue to regularly coordinate with the Customer Care and Resource Management groups.

Q5. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I graduated with a Bachelor of Science in Mechanical Engineering in 1987 from the University of Texas at El Paso, where I also studied graduate level finance, economics, and econometrics. Throughout my career at EPE, I have attended and presented material for numerous seminars and workshops related to cost of service, rate and program design, and regulation.

Q6. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.

A. Prior to joining EPE in February 2012, I spent 18 years in various regulatory functions at Southern California Edison Company ("SCE"), 12 of those years in a managerial capacity. As Manager of Pricing Design and Research, I was responsible for SCE's rates and tariffs during deregulation and changes required following the California power crisis in 2001. I was subsequently promoted to Manager of Tariffs and Advice Letters, with broad responsibility within regulatory for evaluating California statute, rules, and regulations and managing regulatory efforts at the California Public Utilities Commission ("CPUC").

I have been employed by EPE since February 2012. In June 2016, I was promoted from Director to Vice President of Regulatory Affairs. Prior to becoming Director, I was Manager of EPE's Economic & Rate Research group, responsible for EPE's jurisdictional cost of service, rate design analysis, and developing EPE's retail rate schedules and charges. Prior to that, I was a Senior Regulatory Case Manager, responsible for the production, filing, and execution of regulatory applications before both the Commission and the PUCT.

Q7. PRIOR TO THIS MATTER, HAVE YOU EVER PROVIDED TESTIMONY IN REGULATORY PROCEEDINGS?

A. Yes, I have previously filed testimony with and testified before the NMPRC, PUCT, CPUC, and FERC.

II. PURPOSE AND SUMMARY OF TESTIMONY

Q8. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony supports EPE's requests for a Certificate of Convenience and Necessity ("CCN") and right-of-way width approval for the Afton North to Airport 345 kV transmission project (the "Project"). The Project replaces a planned, but never constructed, 115kV transmission line connecting the Afton North and Airport substations with an approximately 14-mile, 345 kV line and access road. In concert with other system additions and upgrades currently planned by EPE, collectively referred to as the Western 345 kV Transmission Path, the new transmission line will enhance system reliability by strengthening EPE's 345 kV system and will increase load serving capacity. The Project will become one of the main serving points for the Airport substation, which supplies an area of increasing load growth. I will discuss the approvals EPE is seeking in this Application, describe the statutory and regulatory requirements that EPE must meet, explain how EPE's Application complies with those requirements, and introduce the other EPE witnesses in this proceeding.

Q9. WHAT IS THE TIMEFRAME EPE IS REQUESTING FOR APPROVAL OF THIS APPLICATION?

A. As I explain in more detail below, the relevant statutes for CCN approval and ROW width approval provide for final decisions within nine months and six months, respectively. EPE respectfully requests the Commission to develop a procedural schedule that would reasonably allow for a final decision within the shorter of these two timeframes-six months.

Q10. PLEASE IDENTIFY EPE'S OTHER WITNESSES IN THIS PROCEEDING AND SUMMARIZE THE SUBJECTS THEY ADDRESS.

A. Four other witnesses testify on behalf of EPE in this matter:

- Abel R. Bustillos, Director of Integrated System Planning, will describe the Project for which EPE is requesting a CCN. He provides an overview of EPE's transmission system and the transmission planning function, outlines the need for the proposed 345 kV transmission line, and explains the benefit of the line for EPE's customers. Mr. Bustillos also describes potential alternatives considered by EPE.
- Michelle Veloz, Supervisor of Transmission Substation Relay for Transmission Line Design, provides details on the Project and its expected cost, and describes the Right of Way ("ROW") for the line.

- Alejandro Galvis, a professional Electrical Engineer ("PE") licensed in New Mexico, describes the design and construction of the proposed transmission line to support the requested right-of-way width determination by the Commission.
- Andrea McArdle, Lead Environmental Planner for SWCA Environmental Consultants, discusses the environmental assessment and permitting for the Bureau of Land Management ("BLM") easement on which a portion of the transmission line will be constructed.

Q11. ARE YOU SPONSORING EXHIBITS TO YOUR TESTIMONY?

A. Yes, I sponsor EPE's NMPRC Rule 17.5.440 NMAC Filing No. 59 – Afton North Substation to Airport Transmission Line (filed November 19, 2015), which is attached as Exhibit JS-1.

III. EPE'S REQUESTED APPROVALS

Q12. WHAT IS THE COMPANY REQUESTING FROM THE COMMISSION WITH THIS APPLICATION?

A. EPE is requesting the Commission approve a CCN for a new 345kV transmission line connecting the planned Afton North and expanded Airport substations. EPE is also seeking right-of-way ("ROW") width approval, as the Commission deems

approval necessary, because a portion of the transmission line requires a ROW width greater than 100 feet. EPE is not requesting ratemaking treatment with this Application and will instead defer any ratemaking determinations to a future EPE general rate case.

Q13. PLEASE DESCRIBE THE ORIGINAL PLANNED 115KV LINE CONNECTING THE AFTON NORTH AND AIRPORT SUBSTATIONS.

A. In 2015, EPE filed a Rule 40 Report regarding a proposed transmission line consisting of 14.3 new miles of 115kV line; an upgrade of the Airport Substation, and construction of a new 345/l15kV substation at Afton North. The new 115kV transmission line was designed to connect the new Afton North Substation and EPE's existing Airport Substation. I have included Notice Filing No. 59 as Exhibit JS-1 to my testimony. In his direct testimony, EPE witness Bustillos briefly explains why the 115 kV line was not built and, instead, why EPE is seeking to build a 345 kV line at this time.

Q14. IS EPE SEEKING RIGHT OF WAY WIDTH APPROVAL FROM THE COMMISSION IN THIS APPLICATION?

A. Yes. To the extent the Commission determines it is necessary, EPE is requesting approval of a ROW width of 200 feet for a portion of the planned transmission line that requires more than 100 feet of ROW, pursuant to NMSA 1978, Section 62-9-

3.2. EPE's request for ROW determination is addressed in the Direct Testimony of EPE witness Veloz and is further supported by the Direct Testimony of Alejandro Galvis, P.E.

Q15. IS EPE SEEKING LOCATION APPROVAL FROM THE COMMISSION IN THIS APPLICATION?

A. No. Location approval is not required for the Project under NMSA 1978, Section 62-9-3 or 17.9.592 NMAC. The location control statute applies only to transmission lines greater than 230 kV when such lines are "constructed in connection with and to transmit electricity from a new plant for which approval is required." Location approval is not required for this project because the proposed transmission lines are not being constructed in connection with any new generating facilities.

IV. STANDARDS FOR CCN APPROVAL

Q16. PLEASE EXPLAIN THE STATUTORY AND REGULATORY STANDARDS THE COMMISSION APPLIES WHEN DECIDING WHETHER TO ISSUE A CCN FOR NEW ELECTRIC TRANSMISSION LINES.

A. The Commission applies the CCN statute found in the Public Utility Act, NMSA 1978, Section 62-9-1, which requires a public utility to obtain a CCN before

constructing or operating any public utility plant or system that is not in the ordinary course of business. In determining whether to issue a CCN, the Commission applies a public interest standard that requires a finding of a net benefit and takes into consideration the need for the additional capacity and whether the project is the most cost-effective among reasonable alternatives.

Q17. ARE THERE APPLICABLE STATUTORY DEADLINES FOR THIS FILING?

A. Yes. The earliest statutory deadline is six months from filing for the determination of ROW requiring a width of greater than 100 feet pursuant to NMSA 1978, Section 62-9-3.2(F). The statute requires that the Commission issue a final decision on a ROW width application within six months from the date the application is filed with the Commission, or the request is deemed to be approved by law.

Under the CCN statute, the Commission may approve an application for a CCN without a formal hearing if no protest is filed within 60 days of the date that notice of the application is given. A final decision must be issued within nine months from the date the application is filed with the Commission, or the application is deemed approved. The statute also allows the Commission to extend the time for granting approval for an additional six months for good cause shown.

EPE respectfully requests that, if no protests are filed within 60 days, the Commission act within six months, but in any case, no later than the nine-month deadline under the CCN statute.

Q18. WHAT ARE THE STANDARDS THAT THE COMMISSION APPLIES FOR APPROVAL OF A CCN FOR A TRANSMISSION PROJECT?

A. The Commission applies the CCN statute found in the Public Utility Act, NMSA 1978, Section 62-9-1, which requires a public utility to obtain a CCN before constructing or operating any public utility plant or system that is not in the ordinary course of business. In determining whether to issue a CCN, the Commission applies a public interest standard that requires a finding of a net benefit and takes into consideration the need for the additional capacity and whether the project is the most cost-effective among reasonable alternatives.

Q19. WHAT BENEFITS WILL THE PROPOSED TRANSMISSION LINE PROVIDE EPE AND ITS CUSTOMERS?

A. As discussed in the testimony of EPE witness Bustillos, the new transmission line is part of a comprehensive set of new transmission lines and related infrastructure that will comprise the Western 345 kV Transmission Path. The Project will improve system reliability by providing an alternate transmission source to the Airport Substation and complete infrastructure improvements to provide alternate

paths that reduce loads to existing facilities and provide emergency overload options. The available transfer capacity on the existing Public Service Company of New Mexico ("PNM") facilities at Afton limits EPE's potential to serve growing load in the area. Increasing the transmission capacity at the Airport Substation will relieve existing transmission congestion and accommodate load growth in the El Paso and Las Cruces areas. While growth has occurred throughout Doña Ana County, it has necessitated increased capacity at the Airport Substation, where EPE has replaced the original 20 Megavolt-Ampere (MVA) unit with a 50 MVA unit.

Q20. HAS THE COMMISSION'S UTILITY DIVISION STAFF ALSO ARTICULATED EXPECTATIONS OR CONSIDERATIONS FOR CCN APPLICATIONS?

A. Yes. In Case No. 17-00143-UT, Staff explained that it takes into consideration the following four sets of information when it reviews applications for CCNs:

1) information or studies showing the need or use for the facility being proposed;

2) information providing specific cost information for the facility being proposed;

3) environmental, ecological, and cultural impact studies for the facility being proposed; and

4) specific information demonstrating that the proposed facility is the most economical choice among any feasible alternatives.

Q21. HAS EPE ADDRESSED THESE FACTORS IN ITS APPLICATION?

A. Yes. The direct testimony and the associated exhibits included in EPE's Application specifically address the CCN standard and all four of the factors that Staff considers in evaluating a CCN application.

Q22. HAS EPE OBTAINED ALL REQUIRED EASEMENTS, RIGHTS-OF-WAY GRANTS, AND LAND-USE AUTHORIZATIONS FROM AFFECTED LANDOWNERS?

A. Yes. As explained in the Direct Testimony of EPE witness Andrea McArdle, EPE has obtained the necessary grant amendments from the U.S. Bureau of Land Management and the New Mexico State Land Office and the necessary easement from the City of Las Cruces.

V. FUTURE COST RECOVERY

Q23. IS EPE REQUESTING THE COMMISSION TO DETERMINE COST RECOVERY PROVISIONS FOR THE NEW TRANSMISSION LINE?

A. No. EPE is not seeking cost recovery in this proceeding. Although Section 62-9-1(B) of the CCN statute allows a utility to include a request for a determination of

the ratemaking principles and treatment that would be applied in the future, EPE is not requesting that the Commission authorize a specific ratemaking principle or treatment. EPE will seek authorization to recover the actual cost of the Project, including allowance for funds used during construction ("AFUDC") in a future general rate case, with the reasonableness of the final actual costs subject to Commission review and determination and subject to 17.3.580 NMAC.

Q24. HAS EPE ESTIMATED THE COST OF THE PROPOSED TRANSMISSION LINE?

A. Yes. The cost estimate for the Project is approximately $43.23 million, not including AFUDC. EPE witness Veloz provides a detailed breakdown of the Project costs and explains how EPE will ensure the costs are reasonable.

Q25. HOW DOES EPE PLAN TO ACCOUNT FOR ANY DIFFERENCE IN THE COST OF THE PROJECT FROM WHAT IS ESTIMATED IN THIS CASE?

A. If the actual cost of the Project is more than the estimated cost, EPE will include in any future request for rate recovery an explanation of any material differences between the estimated and actual costs of the Project and the prudence of those costs based on the Commission's Cost Overrun Rule (17.3.580 NMAC). Under the Commission's Cost Overrun Rule for new generating facilities, 17.3.580 NMAC, a utility may request that the Commission certify the estimated cost of a generation

project for which a CCN is granted. In instances where there is a cost overrun as defined in the rule, the utility then must demonstrate that the difference between the estimated and actual cost was prudently incurred.

Q26. IS IT REASONABLE TO APPLY THE COST OVERRUN RULE IN 17.3.580 NMAC TO THE ESTIMATED COST OF THIS PROJECT?

A. Yes, I believe so. While the Cost Overrun Rule is directed to generation, the Commission also has applied this principle for non-generation projects such as energy storage and transmission.

Q27. HOW WILL THE COSTS ASSOCIATED WITH THIS NEW TRANSMISSION LINE BE RECOVERED FROM EPE'S NEW MEXICO RETAIL CUSTOMERS?

A. Bulk Electric System transmission costs are included in EPE's FERC-regulated transmission costs and rates, which are paid by all wholesale transmission service customers. The portion of those costs that is allocated to EPE's New Mexico Native Load (or retail) customers for transmission service are ultimately recovered through EPE's NMPRC-established retail rates. EPE credits wholesale revenues to the allocated transmission revenue requirement for retail service in setting retail rates.

Q28. HOW IS THE PROJECT COST EXPECTED TO IMPACT CUSTOMERS?

A. EPE expects that the incremental rate impact to New Mexico customers will be modest when spread across its system-wide customer base. Transmission facilities of this type are long-lived assets, and their costs are recovered over an extended period of time, which mitigates the effect on individual customer bills. As a result, no sudden cost increase is expected for New Mexico customers as a result of the proposed project.

Q29. WILL EPE NEED TO PROVIDE ANY NOTICES RELATED TO THE PROPOSED PROJECT IN COMPLIANCE WITH RULE 440?

A. Yes. Rule 440 requires EPE to file a notice providing specific project information, including cost estimates, prior to the beginning of construction. Section 8.D (2) of that rule also requires a utility to amend a report to "accurately reflect the undertaking's materially altered character or purposes" prior to constructions.

Q30. WILL EPE COMPLY WITH THE NOTICE REQUIREMENTS?

A. Yes. As I discussed above, EPE's originally filed Rule 440 Report No. 59 for the Project included a 115 kV line and substation upgrades. EPE will be filing an amendment to the 2015 440 Report for the Afton North substation. Additionally, because the character of the undertaking has been materially altered to include a 345 kV line, EPE will provide the necessary new Rule 440 notices for the proposed project when it is timely to do so prior to the start of construction.

VI. SUMMARY AND CONCLUSION

Q31. WHAT IS EPE REQUESTING IN THIS CASE?

A. EPE is requesting that the Commission grant the Company's request for a CCN. The Project is a timely investment that directly responds to system reliability requirements and increasing customer demand. The Project is necessary for EPE to provide safe and reliable service to customers, provides benefits to customers, is in the public interest, and should be approved. Moreover, if necessary, EPE also requests that the Commission grant a ROW width determination for the project under NMSA 1978, Section 62-9-3.2(A).

Q32. PLEASE SUMMARIZE HOW EPE HAS MET THE COMMISSION'S REQUIREMENTS FOR THE APPROVALS LISTED IN THIS APPLICATION.

A. Through the supporting testimonies, EPE's Application meets the CCN requirements by providing detailed planning and engineering studies that demonstrate the need for and net public benefits of the Project. This includes offering cost estimates and planning to defer ratemaking until a general rate case. EPE's testimony also explains how the Project fits into the Western 345 kV Transmission Path and the necessity for that new path. EPE also explains its

evaluation of feasible alternatives and supports the necessary ROW, while documenting environmental and cultural considerations.

The Project will provide customer benefits such as reliability, resiliency, load-serving capability, and economic development benefits. The Project strengthens the grid by improving grid stability, deliverability, and reduces the risk of outages. The Project also provides additional reliability through redundancy and more capacity for the existing path into the Las Cruces industrial region by adding a new 345 kV transmission path.

Q33. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

LAW OFFICES
OF
RANDALL W. CHILDRESS, P.C.
300 GALISTEO STREET
SUITE 205
SANTA FE, NEW MEXICO 87501

RANDALL W. CHILDRESS
ALSO ADMITTED IN
CALIFORNIA, OREGON & COLORADO

TELEPHONE (505) 982-4147
FACSIMILE (505) 982-4402

November 19, 2015

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VIA HAND DELIVERY

Ms. Melanie Sandoval
New Mexico Public Regulation Commission
1120 Paseo De Peralta
Santa Fe, NM 87501-2013

Re: El Paso Electric's NMPRC Rule 17.5.440 NMAC Notice Filing No. 59
Afton North Substation to Airport Transmission

Dear Ms. Sandoval:

Enclosed for filing please find an original and two copies of El Paso Electric Company's ("EPE") Rule 440 Form 2, Notice of Extension of Electric Service, Filing No. 59. EPE submits the following information in support of Filing No. 59.

CHARACTER OF UNDERTAKING:

The project consists of constructing 14.3 miles of 115kV line, upgrading Airport Substation, and constructing a new 345/115kV substation - Afton North Substation. The new 115kV transmission line will connect the new Afton North Substation to EPE's existing Airport Substation.

BACKGROUND:

EPE has limited capacity available on the PNM Mimbres-Picacho line, and EPE has been investigating various means of addressing supply issues for increasing load in the areas in Doña Ana County and Las Cruces. Since 2006, EPE has undertaken a series of studies to improve system reliability and provide for increased loads. As a result of its system studies, EPE identified the need for a new autotransformer and substation near the existing Afton Substation. In its Rule 440 Filing No. 56, dated and submitted to the Commission's Records Bureau on December 2, 2014, EPE provided notice of the purchase and cost estimate for the autotransformer.
Additionally, System Planning identified the need to increase EPE's 345 kV to 115 kV injection points, for which this Project will serve as the foundation. EPE's Distribution Design and Delivery department also identified the need to add a second 30 MVA transformer at the Airport Substation to supply growing distribution load in the area.

PURPOSE TO BE ACCOMPLISHED:

Deliveries into the EPE load area are constrained by thermal capabilities of EPE's 345/115kV autotransformers and connecting underlying 115kV system. This project allows increased import

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capacity from the 345kV system and enhanced reliability with an additional interconnection point to EPE's underlying system.

MEANS BY WHICH PURPOSE IS TO BE REALIZED:

EPE intends to improve system reliability by providing an alternate transmission source to the Airport Substation and to provide alternate paths that reduce flows on the existing autotransformer to increase the delivery capacity to EPE's load area and provide emergency overload options.

ENGINEERING AND ECONOMIC FEASIBILITY INFORMATION:

EPE has conducted several studies to address supply issues related to the limited capacity available to EPE on the PNM Mimbres-Picacho Line. After evaluation of the studies performed by EPE, it was determined that a new autotransformer to be installed new the Afton North Substation and a new 115kV transmission line connecting the new Afton North Substation to EPE's existing Airport Substationwill help improve system reliability, allow for growth in Las Cruces and surrounding areas, and will help EPE implement options for future expansion on the west side of EPE's 115 kV transmission system. Facilities at Airport Substation will be modified to create a 115kV ring bus that will support the new 115kV transmission line and expanded distribution service capability.

ESTIMATED COSTS:

The estimated cost of the project is approximately **$21,130,495.76**

CONCLUSION:

The construction of a new 345/115kV substation - Afton North Substation and 14.3 milles of new 115 kV transmission connecting the new substation into EPE's existing Airport Substation, and upgrading EPE's Airport substation will assist in maintaining reliable service in an area of continuting load growth and will aid in EPE's necessary system expansion in the areas.

Please date stamp and return the two copies provided to EPE's messenger. Thank you for your assistance in this matter.

Very truly yours,

Randall W. Childress

Enclosure

cc: Charles Gunter
Bruno Carrara
Jack Sidler

FORM 2

ELECTRIC

EXTENSION OF SERVICE

Extension No. 59

Name of Utility: El Paso Electric Company

County: DONA ANA

Name/Distance of Nearest Utility: N/A

Starting Date of Project: January 3, 2017

ENGINEERING DATA

Length of extension 15 **miles.**
Voltage 345/115 **Kv.**
Phase _____ **1Ø** x **3Ø.**
Connection _____ **wye** x **Delta.**
Number of wires 5-8* see notes below

345 kV as follows:
Double bundled 795 ACSR per phase
1 – static (3/8 EHS)
1 – OPGW

115 kV as follows:
1 – 954 ACSR per phase
1 – static (3/8 EHS)
1 – OPGW

COST INFORMATION

Cost estimate (excluding transformer, service and meter).	**$21,130,495.76**
Estimated average monthly consumption.	
Estimated annual revenue.	
Contribution in aid of construction.	
Customer advance for construction.	
***Material, Labor and Equipment Costs.**	**$12,405,001.54**
Land, Contract and Other Costs.	**$7,829,817.16**
Overhead Costs.	**$895,677.06**
TOTAL PROJECT COSTS	**$21,130,495.76**

***The cost of the transformer for this project is not included with this filing. That cost in the amount of $1,933,062.00 was included in the 440 Form 2, Notice of Extension of Electric Service, Filing 56 dated and submitted to the Commission's Records Bureau on December 2, 2014.**

FORM 2

Location/Description of Project:

The project begins in an unincorporated area of Dona Ana County adjacent to Afton Generation Station. More specifically, the proposed substation, Afton North is located west of La Mesa, New Mexico, approximately 10.3 miles west/ northwest of the intersection of West Afton Rd. and Highway 28, south of La Mesa, NM. The new sub is located north of El Paso Electric Company's Afton Substation at 10100 Afton North. From this site, the proposed 115kV line will extend west and north to Interstate 10, terminating at EPE's Airport Substation, which is located at 9995 Robert Larsen Blvd, Las Cruces, NM.

The project consists of constructing 14.3 miles of 115kV line, upgrading Airport Substation, and constructing a new 345/115kV substation - Afton North Substation. The new 115kV transmission line will connect the new Afton North Substation to EPE's existing Airport Substation.

The transmission facilities consist of constructing 14.3 miles of a new single 115kV transmission line supported on 125 foot steel, H-frame structures, utilizing 1-954 kcmil (thousand circular mils) Aluminum Conductor Steel Reinforced (ACSR) conductor, per phase and two overhead shield wires, of which one is an overhead optical ground wire for system communication purposes. Typical span lengths between structures will range between 700 to 800 feet. The new 115kV transmission line will have the capacity to transmit 140 megawatts (MW) at normal operating and 200 MW under emergency conditions. It will be located on federal, state, and municipal lands within a 100 and 200-foot wide corridor.

Afton North Substation will be located north of EPE's Afton Substation, parallel to and north of EPE's existing Newman-Afton and Afton-Luna 345kV lines. The new substation will be constructed using a 345/115kV autotransformer as identified in 440 Form 2, Notice of Extension of Electric Service, Filing 56, dated and submitted to the Commission's Records Bureau on December 2, 2014. It will provide an additional source into the 115 kV system from EPE's 345kV system. The existing 345kV lines will be reconfigured to tap in and out of the new Afton North Substation. The Newman-Afton 345kV transmission line when reconfigured will tap into and out of Afton North Substation; the 345kV lines will be identified as Newman-Afton North and Afton North-Afton. The Afton-Luna 345kV transmission line will be reconfigured to tie into Afton North Substation, renamed Afton North-Luna. Facilities at Airport Substation will be modified to create a 115kV ring bus that will support the new 115kV transmission line and expanded distribution service capability.

Purpose & Need:

Deliveries into the EPE load area are constrained by thermal capabilities of EPE's 345/115kV autotransformers and connecting underlying 115kV system. This project allows increased import capacity from the 345kV system and enhanced reliability with an additional interconnection point to EPE's underlying system.

Since 2006, at least four planning studies have been conducted evaluating various scenarios to improve import capability and system reliability in the New Mexico jurisdiction of EPE's service territory and to strengthen EPE's transmission system as a whole. Upon evaluation of these studies, EPE determined that the scenario giving the most beneficial and consistent value is the placement of an autotransformer at Afton substation for connection to EPE's underlying 115 kV system.

Load growth and reliability are driving the need for the construction of the proposed facilities. EPE's

System Planning department has identified the need to address supply issues related to the fixed capacity available to EPE on the PNM Mimbres-Picacho Line. Additionally, System Planning identified the need to increase EPE's 345 kV to 115 kV injection points, for which this Project will serve as the foundation. EPE's Distribution Design and Delivery department also identified the need to add a second 30 MVA transformer at the Airport Substation to supply growing distribution load in the area.

EPE's objectives in constructing the two proposed projects are to:

- Improve system reliability by providing an alternate transmission source to the Airport Substation.
- Complete infrastructure improvements to provide alternate paths that reduce flows on the existing autotransformer and thus increase the delivery capacity to EPE's load area and provide emergency overload options. The available transfer capacity on the existing Public Service Company of New Mexico (PNM) facilities limits EPE's potential to serve a growing load in the Airport Substation area. Increasing the transmission capacity at the Airport Substation would relieve this existing and future transmission congestion.
- Establish the transmission infrastructure and interconnection capacity that will increase EPE's import capability to serve future load growth in the El Paso and Las Cruces areas. In general, population growth in the region has been rapid, with growth projections for Las Cruces and Doña Ana County of more than 30 percent over the next 20 years (Bureau of Business and Economic Research, 2008).

Benefit to EPE's Customers and System:

The primary purposes are to enhance system reliability and to meet customer demand load growth objectives due to increased loads in the EPE's service area. An objective of this project is to eliminate the load constraint placed on Airport Substation due to limited third-party transmission capacity. This constraint limits EPE's capacity to less than one quarter of the available transformer capacity at this location. Installation of the 345/115 kV autotransformer at Afton North and construction of the 115 kV line to Airport Substation will eliminate this constraint by placing this substation on EPE's transmission system. This autotransformer will also provide other significant benefits, including system operational flexibility and improved transmission service reliability to Airport Substation and increasing EPE's total system import capability by 80 to 150 MW. In addition, it provides the foundation for future options for 115 kV connections from Airport Substation to the existing EPE 115-kV system in the Las Cruces area to increase reliability.

Risk Associated with No Action:

Pursuing the no-action approach would place EPE in a position of not being able to effectively fulfill its obligation to provide adequate and reliable service to all new and existing customers in this area.

Without additional EPE capacity, growth in the Airport Substation area will continue to be limited to the Available Transfer Capability on the PNM-owned Mimbres-Picacho 115 kV line. Present installed capacity will remain underutilized, and future growth will have to be supported from other EPE substation sources. Additionally, EPE's total system import capacity will remain at its current levels, and alternate sources of power to substations located north of Las Cruces will not be available.

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DECLARATION OF JAMES SCHICHTL IN SUPPORT OF THE FOREGOING DIRECT TESTIMONY OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL

I ***James Schichtl***, pursuant to Rule 1-011 NMRA, state as follows:

1. I affirm in writing under penalty of perjury under the laws of the State of New Mexico that the following statements are true and correct.

2. I am over 18 years of age and have personal knowledge of the facts stated herein. I am employed by El Paso Electric Company ("EPE" or "the Company") as *Vice President of Revenue and Regulatory Strategy*.

3. The foregoing Direct Testimony of James Schichtl, together with all exhibits sponsored therein and attached thereto, is true and accurate based on my knowledge and belief.

4. I submit this Declaration, based upon my personal knowledge and upon information and belief, in support of EPE's ***Application for a Certificate of Convenience and***

Necessity to Construct, Own, and Operate a New 345kV Transmission Line Between the Afton North and Airport Substations and for Right-of-Way Width Approval.

FURTHER, DECLARANT SAYETH NAUGHT.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2026.

/s/ *James Schichtl*

JAMES SCHICHTL

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DIRECT TESTIMONY

OF

ABEL R. BUSTILLOS

ON BEHALF OF

EL PASO ELECTRIC COMPANY

JULY 10, 2026

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EXHIBITS

Exhibit ARB-1	EPE Transmission System Expansion Plan – 2027-2036
Exhibit ARB-2	Afton North-Airport 345kV Circuit from System Expansion Plan
Exhibit ARB-3	TOP-001-6
Exhibit ARB-4	FAC-011-4
Exhibit ARB-5	345kV Transmission System Import Capability Assessment

EL PASO ELECTRIC COMPANY
DIRECT TESTIMONY OF
ABEL R. BUSTILLOS

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Abel R. Bustillos. My business address is 100 North Stanton Street, El Paso, Texas 79901-1341.

Q2. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am employed by El Paso Electric Company ("EPE" or "Company"). I serve as Director of Integrated System Planning.

Q3. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES AS DIRECTOR OF INTEGRATED SYSTEM PLANNING?

A. As Director of Integrated System Planning, I am responsible for the oversight and direction of EPE's System Planning and Resource Planning departments, which include Engineering, System Planning, System Interconnections, Compliance, and System Resource Planning.

Q4. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND.

A. I graduated from the University of Texas at El Paso with a Bachelor of Science degree in Electrical Engineering in 2009. I then obtained my Master of Science in Electrical Engineering from the University of Texas at El Paso in 2010.

Q5. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.

A. Upon graduation, I was employed by the United States Department of Defense in 2011 as an Electronics Engineer. I first came to work for EPE in 2012 as a Real-Time Scheduler in its System Operations Department. In 2013, I was moved to the Distribution System Engineering department to oversee the design, construction, and maintenance of the Far East Distribution area. In late 2015, I returned to System Operations as an Outage Coordinator. In this position I oversaw and coordinated outages to ensure reliability of the EPE Bulk Electric System. In April 2018, I was promoted to Interim Manager of Grid Operations. This team is responsible for real-time operation and engineering for System Operations to help support the EPE Bulk Electric System. In April 2020, I was promoted to Manager of Grid Operations. In April 2021, I was promoted to Director of System Operations, where my duties expanded to oversee all areas of System Operations, including Engineering, Outage Coordination, Compliance, Scheduling, Energy Accounting, Balancing and Interchange, and Transmission. As of April 2026, my current role is Director of Integrated System Planning, in which capacity I oversee EPE's System Planning and Interconnections and Resource Planning Departments.

II. PURPOSE OF TESTIMONY

Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my Direct Testimony is to describe the need for the proposed 345-kilovolt ("kV") transmission line that will run from the new Afton North Substation in Doña Ana County, New Mexico, to the expanded Airport Substation in Doña Ana County, New Mexico (the "Project"), for which EPE seeks a Certificate of Public Convenience and Necessity ("CCN") in this docket. In describing the need for the Project, my testimony also addresses the EPE transmission planning process. I will also address feasible alternatives to the project and describe the benefits of the Project for customers.

Q7. ARE YOU SPONSORING EXHIBITS TO YOUR TESTIMONY?

A. Yes. I sponsor the exhibits listed in the Table of Contents to my testimony. Specifically, those include the following exhibits:

- Exhibit ARB-1 EPE Transmission System Expansion Plan – 2027-2036
- Exhibit ARB-2 Afton North-Airport 345kV Circuit from System Expansion Plan
- Exhibit ARB-3 TOP-001-6
- Exhibit ARB-4 FAC-011-4
- Exhibit ARB-5 345kV Transmission System Import Capability Assessment

III. TRANSMISSION PLANNING CONSIDERATIONS

Q8. PLEASE DESCRIBE EPE'S TRANSMISSION SYSTEM.

A. EPE is a member of and interconnected to the Western Electricity Coordinating Council ("WECC"), which is the regional entity that oversees the reliability and security of the Bulk Electric System in the western region. EPE is physically located in the far southeast corner of the Western Interconnection, often referred to as the Western Grid. The WECC footprint spans a geographic area that extends from EPE's Texas service territory north to include two Canadian provinces and westward to cover all or part of 14 western states, as well as northern Baja California, Mexico. Notably, EPE is not interconnected with the Electric Reliability Council of Texas ("ERCOT") but is connected to the Eastern Interconnection via an interconnection with the Southwest Power Pool ("SPP") through an asynchronous High Voltage Direct Current ("HVDC") tie located at the Eddy County Substation near Artesia, New Mexico. Overall, EPE owns approximately 989 miles of multiple 345 kV transmission lines, most of which are situated in New Mexico. EPE also owns 69 kV and 115 kV transmission facilities in New Mexico and Texas and 500 kV transmission facilities in Arizona.

EPE's integrated transmission system is comprised of several key components: a series of 345 kV alternating current lines that connect EPE's 115 kV and 69 kV transmission facilities in New Mexico and Texas to the larger

interconnected national electric grid; a single 345 kV line that connects EPE's transmission system to Southwestern Public Service Company ("SPS") in the SPP through the previously-mentioned HVDC terminal; 345 kV transmission lines that distribute power imported from the WECC and SPP (on the western and eastern boundaries, respectively) to EPE's service territory; and three 500 kV transmission lines in Arizona that are directly connected to EPE's generation resources in Arizona for import into the EPE service territory.

EPE's integrated transmission network is operated to ensure the reliability of the Bulk Electric System by allowing the power to re-route to other transmission lines during outages.

Q9. PLEASE PROVIDE AN OVERVIEW OF EPE'S TRANSMISSION PLANNING PROCESS.

A. The System Planning and Interconnections Department is responsible for assessing the continued operational capability of EPE's transmission and substation systems, which consist of EPE's transmission lines, interconnections with neighboring systems, studies that may impact the transmission system, and planning for any needed expansion. This planning process includes evaluation of the transmission system using power flow models and contingency analysis to identify upgrades and/or additions that may be needed to maintain the adequacy of the integrated

system and maintain the reliability of service to customers consistent with federal transmission planning requirements. EPE's System Planning and Interconnections Department plays a major role in the process of identifying needed transmission infrastructure improvement projects and developing the Company's transmission expansion plan. EPE's System Planning and Interconnections Department performs System Expansion Plan studies annually as described in EPE's Open Access Transmission Tariff ("OATT"), Attachment K ("Attachment K"). This process is a technical evaluation of EPE's Bulk Electric System performed for a ten-year planning horizon. The System Expansion Plan determines additions and upgrades necessary to comply with WECC and NERC reliability requirements. The most recent System Expansion Plan was issued on June 12, 2026, and reflects plans from 2027 through 2036. The System Expansion Plan is publicly available and is attached as my Exhibit ARB-1.

System planning is necessary to evaluate and identify the need for facilities to serve EPE's customers by meeting present load and future estimated loads and to comply with operational requirements mandated by WECC and NERC Reliability Standards.[1]

[1] Although the NERC Reliability Standards do not apply to 69 kV assets, it has been EPE's practice to extend the same treatment to its 69 kV system to achieve uniform reliability objectives across its integrated system.

IV. OVERVIEW OF THE PROJECT AND EPE'S PLANNED WESTERN 345 KV TRANSMISSION PATH

Q10. PLEASE SUMMARIZE THE PROPOSED PROJECT FROM A TRANSMISSION PLANNING PERSPECTIVE.

A. The Project includes a new single 345 kV transmission line. On the south side of the Project area, the proposed transmission line will connect at EPE's planned new Afton North 345 kV Substation. On the north side of the Project area, the new transmission line will connect to EPE's upgraded Airport 345 kV substation. The two substations will be connected via the construction of approximately 14.4 miles of new transmission line. The Project is one segment of an overall plan to increase EPE's import capacity that EPE will be implementing over the next 10 to 12 years, pursuant to EPE's System Expansion Plan. *See* Ex. ARB-1. EPE witness Michelle Veloz explains the technical aspects of the Project in her testimony.

Q11. PLEASE DESCRIBE YOUR INVOLVEMENT IN THE PROJECT.

A. In my role as Director of Integrated System Planning, I manage the System Planning & Interconnections Department, which develops the System Expansion Plan and identifies reliability issues on EPE's transmission system.

Q12. WHERE WILL THE PROPOSED TRANSMISSION LINE BE LOCATED?

A. The line will be located in Doña Ana County, New Mexico. Airport Substation is located west of Las Cruces, about one mile west of the U.S. Highway 10 and Crawford Boulevard intersection. From the Airport Substation, the line will head south for approximately 8.6 miles then turn southeast, continuing approximately 5.7 miles and terminating at the planned Afton North Substation. Afton North Substation will be located approximately eight miles west of La Mesa, New Mexico, just northeast of the Afton Generating Station.

Q13. IS EPE SEEKING TO ADD ANY NEW GENERATION FACILITIES ASSOCIATED WITH THE TRANSMISSION LINE?

A. No. No new generation facilities are associated with this transmission line. However, EPE has several current plans to add new substations, upgrade existing substations, and build other related transmission lines comprising the Western 345 KV Transmission Path that will be the subject of future regulatory filings with the Commission. *See* Ex. ARB-1.

Q14. IS EPE SEEKING RIGHT OF WAY WIDTH APPROVAL IN THIS CASE?

A. Yes. EPE witness Michelle Veloz describes the needed rights of way for the Project in her direct testimony.

Q15. PLEASE DESCRIBE THE TWO FACILITIES THAT THE PROPOSED TRANSMISSION LINE WILL CONNECT.

A. EPE's existing Airport substation, which is currently a 115 kV substation, connects to the Public Service Company of New Mexico ("PNM") -owned Mimbres-Picacho 115 kV line. EPE plans to upgrade the Airport substation to a 345 kV/115 kV substation with one 345/115, 224 MVA auto-transformer and three 115/23.9 kV 50 MVA transformers, in addition to necessary operating and control equipment. Afton North Substation is a planned new 345 kV switching station consisting of necessary breakers, switches and control equipment.

Q16. PLEASE DESCRIBE EPE'S OVERALL PLAN TO EXPAND ITS TRANSMISSION LINES THAT INCLUDES THIS PLANNED LINE AS THE FIRST STEP.

A. The overall plan is to create a new transmission path from the west to the eastern part of EPE's transmission system consisting of several 345 kV connected segments. In EPE's System Expansion Plan, this is referred to as the "Western 345 kV Transmission Path." At present, the initial phase of the new path configuration is expected to consist of the following newly constructed lines, all of which are identified in the System Expansion Plan (Ex. ARB-1): 1) Afton to Afton North, 2)

Mirage to Airport, 3) Airport to Afton North, (the subject of this application) 4) Afton North to Vado, and 5) Vado to McCloud West. Note that Mirage, Vado, and McCloud West are planned future 345 kV substations that have yet to be constructed. These new lines will 1) allow for alternative power flows to reach EPE consumers during outage situations, 2) direct load support to southern New Mexico, and 3) improve EPE's ability to import power from the Western Interconnection through improved Southern New Mexico Import Capability ("SNMIC") and El Paso's Import Capability ("EPIC").

This first phase of the Western 345 kV Transmission Path plan, which includes the 345 kV lines connecting to Afton North 345 kV substation, includes the Afton North to Vado line and the Afton North to Airport line (the subject of this application). Vado is a planned future substation that has yet to be constructed. In addition, see Figures ARB-1 and ARB-2 for an illustration of the description and location.

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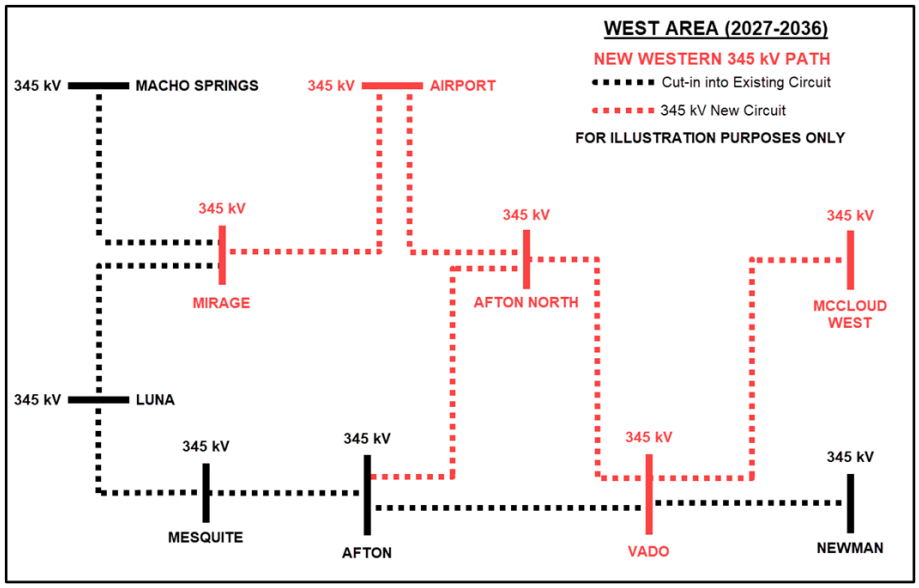
Figure ARB-1



EPE plans to file additional CCN applications for the other proposed new 345 kV lines.

Figure ARB-2

Q17. WHAT ARE SNMIC AND EPIC?

A. SNMIC and EPIC are two limitations or "ceilings" above which the existing 345 kV path which connects the EPE Balancing Authority Area ("BAA") to neighboring BAAs and to the Western Interconnection is prevented from importing power into the EPE service territory. The SNMIC is an outer limitation of power flow that stretches across southern New Mexico. EPIC, while still in southern New Mexico, is a limitation of imports closer to El Paso Electric's main load pockets.

Q18. WHAT LIMITATIONS PROVIDE CONSTRAINTS ON THESE IMPORT CAPACITIES?

A. There are import limitations in southern New Mexico over the existing 345 kV transmission lines due to physical constraints, thermal limitations, voltage drop and voltage instability. These are physical or geographical constraints due to the physical location of El Paso Electric's service area in relation to the Western Interconnection. EPE is at the far southeastern corner of the Western Interconnection. The Western Interconnection and the Eastern Interconnection of the United States intersect at the eastern edge of the EPE transmission system in New Mexico. The eastern side of the EPE transmission system has no firm path to and from the Eastern Interconnection at present. Those facilities are limited by frequency offset and must connect via a very limited High Voltage Direct Current tie at Eddy County in Artesia, New Mexico, a tie that does not currently support

firm service across it. The main connection of EPE's transmission system to the national electric grid is the Western Interconnection via the WECC-assigned "Path 47" which consists of three major 345 kV lines and one 115kV line into southern New Mexico. Due to the presence of import limitations from the west, and the lack of facilities that could support firm transfers of power to and from the Eastern Interconnection, EPE is limited in its capacity to import power.

EPE operates on what is called an N-1 condition, which requires EPE to account and prepare for the loss of the next single element. Evaluations are performed constantly and identify thermal limitations if EPE were to lose a transmission line or generator, for example. EPE then configures its system in real time as if that contingency has occurred, which would allow for recovery of that respective contingency.

Q19. PLEASE EXPLAIN WECC PATH 47 IN MORE DETAIL.

A. During the historical evolution of the BES, aggregates of transmission segments or "paths" were observed and identified areas of constraints and congestion to monitor for reliability. WECC established a list of legacy paths, including Path 47. WECC Path 47 is comprised of the West Mesa to Arroyo 345 kV line, the Greenlee to Hidalgo 345 kV line, the Macho Springs to Springerville 345 kV line, and the Belen to Bernardo 115 kV line. As mentioned above, Path 47, of which EPE is the path

operator, is EPE's main pain to import power from the Western Interconnection into the EPE BAA. Path 47 is owned by, and rights are partitioned among, EPE, Tri-State, and PNM with respective ownership interests of 68.62 percent, 11.7 percent, and 19.68 percent.

Q20. ARE THE IMPORT LIMITATIONS DESCRIBED ABOVE OF CONCERN TO EPE, GIVEN FORECASTED LOAD GROWTH?

A. Yes. Based on projected load growth in the EPE service area, EPE is reaching import limitations very quickly. EPE must find solutions to increase import capacity to serve native load.

Q21. WHO REGULATES AND MONITORS THESE CONSTRAINTS?

A. The North American Electric Reliability Corporation ("NERC") is the reliability organization that is responsible for setting and enforcing mandatory standards for the Bulk Electric System. All constraints are monitored by both the Transmission Operator (EPE) and the Reliability Coordinator (SPP) in real time as identified by NERC standards. Of the many standards which are mandatory and subject to enforcement, TOP-001-6 and FAC-011-4 (Exhibit ARB-3 and Exhibit ARB-4 respectively) are two examples that directly address the requirements to maintain

power flow under import limitations, also known as System Operating Limits ("SOLs").

Q22. WHAT WOULD HAPPEN IF EPE WERE TO EXCEED THESE LIMITATIONS?

A. EPE has maintained a high standard of excellence to ensure our customers are provided with consistent and reliable electric energy and adheres with all the NERC standards that guide electric reliability. EPE performs numerous operational procedures to prepare for adverse situations, so that instances outside of normal operations do not cause EPE to exceed import constraints. As stated earlier, EPE, in conjunction with its respective Reliability Coordinator ("RC"), would have to immediately take action to lower imports to fall under the limitations within 30 minutes to avoid exceedances or other issues. Such immediate steps would include: generation redispatch, turning on available generation, outage recall, interruptible customer and/or demand response activation and up to load shed to maintain system balance. If the exceedance has a longer duration than 30 minutes, then the Company would be in violation of the respective NERC standard(s). NERC has authority to perform an analysis to evaluate the situation in areas such as magnitude, frequency of violations, risk of exceedance, capability of the utility, actions taken or not taken,

any potential negligence, and other factors to determine if a financial penalty would be imposed and the amount of such penalty.

Q23. HAS EPE ANALYZED THE NEED FOR NEW TRANSMISSION AT THE WESTERN EDGE OF ITS SYSTEM?

A. Yes. EPE conducted an analysis of the area to confirm the need for the project and other related transmission projects. *See* Exhibit ARB-5, entitled "345kV Transmission System Import Capability Assessment." The assessment performed numerous sensitivities to evaluate system conditions and the capability of the current transmission system to perform at forecasted load levels into the future. The results of this assessment demonstrate that additional import capability is needed. At this time, transmission system improvements are necessary to serve EPE load at its forecasted levels in a manner that does not cause the system to exceed allowable tolerances. Therefore, EPE is planning for system improvements that will support forecasted load growth. This project is an important part of EPE's overall planned improvements.

Without the Afton-Airport 345kV transmission line and the related components of the planned Western 345 kV Transmission Path, the analysis shows a direct reduction in current import capability. This would limit the ability of EPE to directly serve its growing native load. Due to the previously discussed import

limitations on WECC Path 47, EPE would be required to build or otherwise acquire new generation within EPE's service territory that could serve consumers without reliance on imported power. Without the new transmission projects, EPE would be forced to shed load so that load consumption does not exceed the power supplies available.

Q24. WHAT IS THE EXPECTED IMPACT OF THE PROPOSED PROJECT TO THESE CAPABILITIES?

A. As mentioned previously, and as further explained in Exhibit ARB-5, EPE's overall goal is to create a 345 kV path to support native load growth, to sustain and increase import parameters, and to increase reliability. The new path will increase the amount of power flow through SNMIC by approximately 175 MW (from 940 MW to 1,115 MW), and through EPIC by approximately 400 MW (from 1100 MW to 1500 MW) to support this load growth as demonstrated in my Exhibit ARB-5, which was completed using power flow analysis composed of numerous sensitivity cases. If constructed, the new facilities will improve import capability and reliability, and will allow power flow to move around adjacent lines if a transmission line is lost, avoiding potential loss of service.

Q25. WHAT IS THE EXPECTED IN-SERVICE DATE FOR THE PROPOSED PROJECT?

A. As per EPE's System Expansion Plan 2026-2035, Exhibit ARB-1, the projected in-service date for this line is May 2028.

V. EPE'S NEED FOR THE PROPOSED PROJECT

Q26. PLEASE SUMMARIZE THE NEED FOR THE PROPOSED PROJECT.

A. Load growth, the need for reliability, and the need for additional resiliency are driving the need for the construction of this new 345 kV transmission line. Airport Substation is currently served radially from a PNM circuit with a very limited capacity. Connecting the Afton North-Airport 345 kV Line will allow EPE to serve the current and future load at Airport Substation from EPE's facilities. Additionally, as explained above, this circuit is part of the Western 345 kV Transmission Path that will improve EPE's import capability. Increasing import capability into southern New Mexico will increase reliability substantially. Not only will the improvement in import capability allow for resources to be brought in to keep up with forecasted load growth, but it also improves the ability of the transmission network to operate as an integrated whole. If there is a sudden drop in internal generation, for example, it could be easily replaced through a purchase from the west, while keeping the system balanced.

The 2026 El Paso Electric Company Long-term Forecast predicts 10- and 20-year compound annual growth rates of 5.9 percent and 3.5 percent, respectively, for native system peak demand, which rates are significantly higher than recent historical growth rates. In addition to the actual and projected load growth described above, the Doña Ana County area has continued to experience load growth over the past several years, and this growth is expected to continue with planned development expanding into the project area.

Q27. HAS EPE PREVIOUSLY IDENTIFIED THE NEED FOR THE PROJECT TO THE COMMISSION?

A. Yes. EPE filed NMPRC Rule 17.5.440 Report No. 59 Afton North Substation to Airport Transmission on November 19, 2015. At that time, the project included upgrading Airport Substation, constructing a new 345/115 kV Afton North Substation, and building a new 115 kV transmission line connecting these two substations. Based on a series of studies dating back to 2006, this project had been identified to improve system reliability and provide for increased loads in the Airport Substation vicinity. Currently, the Afton North-Airport project is identified in EPE's Transmission System Expansion Plan as a new 345 kV transmission line.

Q28. WHY DID EPE NOT BUILD THE PLANNED 115kV TRANSMISSION LINE AFTER IT FILED 440 NO. 59?

A. During the relevant time period I was not involved in system planning. However, I understand that load growth in this particular area did not accelerate as quickly as load demand experienced elsewhere in EPE's service territory.

Q29. WHY IS THE LINE NOW BEING PROPOSED AS A 345 kV LINE?

A. EPE's recent consistent load growth has necessitated the need for new 345 kV transmission lines in the area to accommodate a greater capacity. New 345 kV transmission lines creating a path from the future Mirage 345 kV substation to Airport to Afton North to Vado 345 kV substations have been identified to serve this increased load growth and maintain the reliability of EPE's transmission system. A 115 kV circuit would not be able to carry enough power to reliably serve the forecasted load growth.

In addition to load growth requirements, another important reason is that the continuation of the path past Airport substation and into northern New Mexico and into the West will create another line in the WECC-established Path 47 that serves southern New Mexico and feeds into the rest of EPE's BAA. An additional

tie point to the overall WECC interconnection will greatly improve import capacity into southern New Mexico.

Q30. HOW DOES WECC PATH 47 DELIVER POWER INTO EPE'S BAA?

A. As previously mentioned, the main connection of the EPE transmission system to the national electric grid is through WECC Path 47, which consists of three major 345 kV lines and one 115kV line into southern New Mexico. For clarification, EPE's BAA consists of providing reliable electric service to approximately 465,000 customers from Hatch, New Mexico to Van Horn, Texas as shown below in Figure ARB-3. WECC Path 47 enters EPE's BAA through the southern New Mexico territory and is the main import path. Power is then able to flow into all areas of the service territory load servicing all New Mexico and Texas customers in the EPE BAA.

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FIGURE ARB -3

Q31. WHAT OTHER PROJECTS WERE INCLUDED IN THE 2015 440 REPORT AND WHAT IS THE STATUS OF THOSE PROJECTS?

A. The original NMPRC 440 Report No. 59 included upgrading Airport Substation and constructing a new 345/115kV Afton North Substation. However, Airport Substation was not upgraded at that time, and EPE is now actively planning to upgrade this substation. Civil construction activities began at Afton North Substation in 2015 and are now scheduled to resume.

Q32. HAS EPE FILED AMENDMENTS TO THE 2015 440 REPORT OR NEW 440 REPORTS FOR THE SUBSTATION PROJECTS?

A. No, but EPE will be filing an amendment to the 2015 NMPRC 440 report for Afton North Substation in advance of the initiation of construction. At least 30 days prior to the beginning of construction, new Rule 440 reports will be filed for the undertakings of the Airport Substation and the Afton North-Airport 345kV transmission line that is the subject of this application.

Q33. HOW DOES EPE'S CURRENT TRANSMISSION INFRASTRUCTURE IN DOÑA ANA COUNTY ADDRESS THE CURRENT CAPACITY NEEDS?

A. EPE's current transmission infrastructure is meeting demand but is quickly reaching its capacity. The need for upgrades to existing lines and new transmission lines are constantly being identified on EPE's Transmission System Plan (Exhibit ARB-1). As previously mentioned, currently, limitations are imposed on imports due to voltage drop and voltage instability issues as a result of lack of transmission interconnections west of Airport substation into the WECC interconnection and east of Airport substation into southern New Mexico, respectively. For example, upon a loss of the Luna-Afton 345 kV line due to a contingency, the Luna-Diablo 345 kV line would be voltage-constrained due to the redirected flow. As a result, the total import capacity would be limited due to the possibility of this event. The

restriction or capacity limitation is directly dependent on system conditions. The proposed infrastructure improvements would alleviate these types of voltage concerns and import restrictions.

Q34. IS ENERGY USE AND DEMAND WITHIN EPE'S SERVICE TERRITORY INCREASING?

A. Yes. EPE has experienced significant year-over-year increases in native system load and higher system peak demands relative to historical norms, based on observed load data. EPE's 2025 Integrated Resource Plan ("IRP") explains that, since its prior IRP, the Company has experienced higher-than-expected growth in retail load along with increased interest from new customers, resulting in an increased need for capacity and system infrastructure.

Q35. IS EPE'S CURRENT INFRASTRUCTURE IN THE DOÑA ANA COUNTY AREA SUFFICIENT TO CONTINUE TO PROVIDE ITS SYSTEM WITH CONSISTENT, RELIABLE POWER, GIVEN THE ANTICIPATED INCREASED CAPACITY AND LOAD REQUIREMENTS?

A. No. EPE's current transmission and substation infrastructure needs to be upgraded to address forecasted load demand and increase reliability. If not addressed, load demand will exceed import capability and imported power will not be available. As

previously addressed, the voltage reliability constraints will be exacerbated and will be a choke point in the ability to consistently serve load, requiring EPE to trigger mitigation actions leading up to and including load shed.

Q36. HOW WILL THE PROPOSED PROJECT ENSURE THAT EPE IS ABLE TO PROVIDE CONSISTENT, RELIABLE POWER TO EPE'S CUSTOMERS?

A. In addition to the reliability improvements into southern New Mexico previously discussed, the new 345kV line will increase reliability by providing a direct path to Airport substation from the EPE Balancing Authority Area. At present, Airport substation is not directly connected to EPE's transmission system. This will change with the Project proposed in this application. Larger increases in load in the Airport area will be unsustainable with new load growth as the available transmission capacity would most likely not be available. The proposed Afton North-Airport 345 kV line will provide a direct and unrestricted path that will allow EPE to directly support the load as it grows. The existing PNM-owned Picacho-Mimbres line tap will be maintained but will not be utilized in normal conditions. This new line will also provide resiliency due to its construction with new steel structures able to withstand and reduce the magnitude and duration of severe events.

VI. EVALUATION OF FEASIBLE ALTERNATIVES

Q37. WHAT STUDIES DID EPE PERFORM TO DETERMINE HOW TO CONNECT THE AFTON NORTH SUBSTATION TO THE AIRPORT SUBSTATION?

A. EPE performs System Expansion Plan ("Plan") studies annually as described in EPE's OATT, Attachment K. This process is a technical evaluation of EPE's Bulk Electric System performed for a ten-year planning horizon.

Q38. PLEASE EXPLAIN WHY THE ORIGINALLY PROPOSED 115 KV TRANSMISSION LINE IS NO LONGER SUFFICIENT FOR EPE'S PURPOSES?

A. The 115 kV line can only provide 184.8 MVA of power when using 954 MCM ACSR conductor, the EPE standard conductor. EPE has concluded that this amount of power is insufficient to meet the expected load demand. By contrast, using a 345 kV line with the same conductor type can provide 580 MVA of power to the same service area, tripling the capacity of a 115 kV line.

Q39. WAS RECONDUCTORING EVALUATED AS AN ALTERNATIVE?

A. Yes, reconductoring is always evaluated as an alternative to new construction projects. However, as detailed in Exhibit ARB-5, this was not a feasible solution.

For example, under one assessment described below, numerous overloads were observed under N-1 conditions with EPIC observed at 1100MWs. All of the facilities identified, shown below in ARB-4, would have to be reconductored, if possible, or upgraded.

Figure ARB-4

EPIC at 1100 MW | N-1 Conditions – Transmission System Elements

- Afton-Lava 345 kV Line
- Ascarate-Durazno 115 kV Line
- Diablo 345/115 kV Power Transformer #1
- Diablo 345/115 kV Power Transformer #2
- Diablo 345/115 kV Power Transformer #3
- Diablo-Rio Grande 115 kV Circuit 1
- Diablo-Rio Grande 115 kV Circuit 2
- Domenici-Montoya 115 kV Line
- Durazno-Sunset North 115 kV Line
- Lava-T_W1 345 kV Line
- Lava-Vado 345 kV Line
- Luna-Lava 345 kV Line
- Mesa-Austin 115 kV Line
- Mesa-Montecillo 115 kV Line
- Mimbres-Airport 115 kV In-Line Tap
- Montecillo-Rio Grande 115 kV Line

Under this preliminary portion of the assessment, the approximate 16 facility elements consisting of transmission lines and transformers were overloaded based on an N-1 observation. Some of these lines are not candidates for reconductoring as they are already constructed at their highest capacities. Referring again to Exhibit ARB-5, it is apparent that these issues are only exacerbated by the IOS condition sensitivities which includes many additional lines that would need to be addressed through upgrades.

Q40. WAS ADDITIONAL REACTIVE SUPPORT, SUCH AS STATIC OR DYNAMIC REACTIVE DEVICES, CONSIDERED AS AN ALTERNATIVE?

A. Yes, reactive support is always considered as an alternative to projects. However, as conveyed in Exhibit ARB-5, this is not a feasible mitigation in this case. Reactive devices are primarily utilized to address voltage concerns such as low or high voltages, voltage drop and/or voltage instability. These are important issues to observe and can have cascading effects if not addressed. However, voltage issues were not observed in the assessment. N-1 contingencies are limiting elements, and reactive devices would not fully mitigate contingencies, would not allow for alleviated import constraints, and would not assist with import capacity limitations. Some voltage needs are still required through the planned path and reactive devices are called for in specific locations. Additionally, EPE's current practice is to allow substation bay space in each new substation to accommodate a reactive device if needed for future growth. Finally, if any more load growth is projected in the Airport substation load pocket of New Mexico, then the ability to serve customers will not be feasible as this load develops. The Picacho-Mimbres 115kV line is owned by PNM and EPE does not have the ability to upgrade it. Additionally, since the PNM-owned Picacho-Mimbres line is the only connection currently available, redundancy is needed for the Airport load because outages on that line or in

adjacent facilities would not be mitigated by a second line. Once the Project is completed, EPE will have a direct path to Airport from Afton substation.

Q41. IN YOUR PROFESSIONAL OPINION, IS THE CURRENTLY PROPOSED 345 KV TRANSMISSION LINE THE ONLY REASONABLE OPTION AVAILABLE TO EPE?

A. Yes. Due to load growth, import constraints and reliability issues, there are no feasible alternatives.

VII. BENEFIT TO NEW MEXICO CUSTOMERS OF THE PROJECT

Q42. PLEASE DESCRIBE EPE'S COMMITMENT TO ITS CUSTOMERS AND COMMUNITIES.

A. EPE is committed to making investments needed to serve our customers and communities in an affordable, reliable, and sustainable manner. EPE understands this commitment is crucial to our customers who rely on EPE to keep the lights on no matter what, through strong winds, thunderstorms, or any other unpredictable event. EPE will always strive to provide uninterrupted service or to restore it as soon as possible when needed.

Q43. PLEASE DESCRIBE HOW EPE'S SERVICE ECONOMICALLY BENEFITS NEW MEXICO CUSTOMERS AND COMMUNITIES.

A. EPE delivers significant economic benefits to New Mexico customers and communities by maintaining an electric system that is affordable, reliable, and capable of supporting continued regional growth. EPE invests in transmission, distribution, and generation resources to ensure dependable service across its 10,000 square mile service area, enabling local governments, employers, educational institutions, and military installations to operate with confidence in the stability of the electric grid.

Q44. HOW DOES THE PROPOSED PROJECT SUPPORT THE CONTINUING ECONOMIC GROWTH IN EPE'S NEW MEXICO SERVICE AREA?

A. This project responds to the increasing amount of power required by economic development projects in the southern New Mexico area. For example, the Las Cruces Innovation & Industrial Park is serviced by the Airport Substation, which has a feeder at capacity. As mentioned previously, the Airport substation is currently fed by a radial line from a line owned by PNM. As previously discussed, this line has no ATC until capacity is freed up by the other transmission obligations. Only then could it be subscribed to by EPE.

Q45. DOES THE PROPOSED PROJECT DIRECTLY BENEFIT EPE'S RETAIL CUSTOMERS?

A. Yes, the proposed project directly benefits EPE's retail customers by enhancing reliability and service quality by ensuring that EPE's transmission and distribution system has the capacity and resiliency needed to meet current and future load requirements. Second, the project also enables continued economic development, which benefits retail customers through job creation, increased commercial activity, and community investment. Third, by improving system efficiency and reducing operational constraints, the project helps EPE manage system costs, supporting long-term affordability for retail customers.

Q46. PLEASE DESCRIBE THE ECONOMIC BENEFITS EPE EXPECTS WILL RESULT FROM THE INVESTMENTS PROPOSED IN THIS APPLICATION.

A. EPE expects that the investments proposed in this Application will produce economic benefits for its customers and for the regional economy in southern New Mexico. First, the proposed Afton North–Airport 345kV transmission line will increase the capacity, efficiency, and resilience of EPE's bulk transmission system. By increasing transmission capability into the Airport Substation and strengthening

the transmission network, the project will support load growth, provide additional operational flexibility, and create alternate power flow paths that will allow consumers to be served even during system contingencies. These improvements reduce the likelihood and severity of outage events, which in turn lowers the economic costs associated with service interruptions to residential, commercial, and industrial customers.

Second, the project supports long-term cost containment for customers by enabling EPE to access a broader and more diverse portfolio of generation resources. Increased transmission capacity improves EPE's ability to import lower-cost energy from external markets when economically advantageous and enhances participation in regional power markets. Improved access to competitive energy supplies helps moderate energy costs over time and reduces overall system production costs, directly benefiting customers through lower and more stable rates than would otherwise occur absent the project.

Third, the investment facilitates continued economic development and load growth in the project area. Reliable, high-capacity transmission infrastructure is a prerequisite for attracting and retaining commercial and industrial customers, including large energy-intensive users. The proposed facilities will support future development and employment opportunities by ensuring that adequate electric infrastructure is available to serve new and expanding loads in a safe, reliable, and

timely manner.

Fourth, construction of the transmission line will generate short-term economic benefits in the form of job creation and local spending. Project development will require engineering, construction, and related professional services, provide employment opportunities and stimulate economic activity in the communities near the project corridor.

Finally, by strengthening system reliability and reducing operational risks, the proposed investment helps avoid higher future costs associated with emergency system upgrades and other emergency system expenditures. Proactive investment in transmission infrastructure represents the most economical long-term solution for meeting forecasted demand and maintaining reliable electric service for EPE's customers.

For these reasons, EPE believes that the proposed transmission investment will produce significant and enduring economic benefits that outweigh its costs and serve the public interest.

VIII. SUMMARY AND CONCLUSION

Q47. PLEASE SUMMARIZE YOUR TESTIMONY.

A. My direct testimony supports EPE's application for a CCN to construct, own, and operate the new 345 kV transmission line between the new Afton North substation

and the new Airport Substation in Doña Ana County, New Mexico. This testimony identifies future load growth that EPE will need to serve and explains that reliability and resiliency requirements are the primary drivers for the project. Additionally, my testimony addresses the planning and analysis that EPE conducted that helped identify the need for the proposed transmission project and how it fits into the larger transmission build-out being planned by EPE, and how this project benefits customers.

Q48. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

The Electric Company®

El Paso Electric

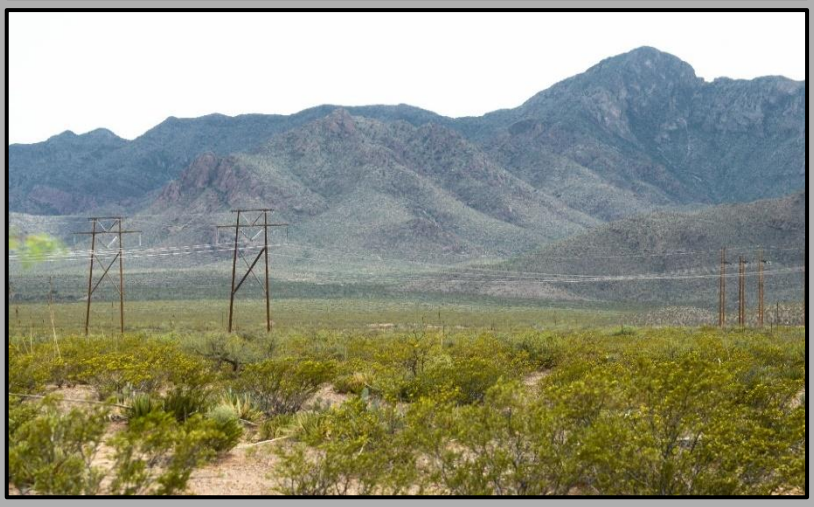
System Expansion Plan

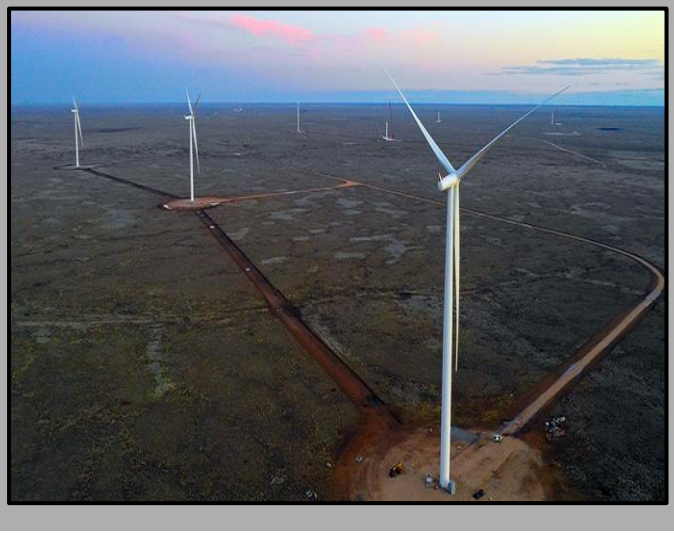
2027-2036

Prepared By:

System Planning
&
Interconnections

2026





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June 12, 2026

FROM: Juan C. Vicente, Engineer | System Planning & Interconnections

TO: Omar Gallegos, VP | System Planning & Construction

CC: Abel Bustillos, Director | Integrated System Planning
Donna Enriquez, Supervisor | System Planning & Interconnections
Ivan Guerrero, Engineer | System Planning & Interconnections

SUBJECT: 2026 System Expansion Plan – 2027-2036

Enclosed is the El Paso Electric Company ("EPE") System Expansion Plan ("The Plan") 2027-2036. The Plan is a forecast of recommended electrical transmission and substation capital additions and/or modifications which, from an internal system planning perspective, are deemed necessary for maintaining adequate system reliability.

The Plan has been prepared by System Planning & Interconnections in collaboration and coordination with multiple EPE departments and is presented here to provide formal recommendations to appropriate management, engineering, and operational personnel for implementation in an economical and timely fashion. System expansion projects have been identified with regards to implementation dates, descriptions, and justifications.

Please acknowledge through your signature your approval for dissemination of the Plan to all external and internal stakeholders.

X Omar Gallegos

Omar Gallegos
VP | SYS PLAN & CONST

1 EXECUTIVE SUMMARY

El Paso Electric Company's ("EPE") System Planning & Interconnections Department performs System Expansion Plan ("Plan") studies annually as described in EPE's Open Access Transmission Tariff ("OATT") Attachment K ("Attachment K"). This process is a technical evaluation of EPE's Bulk Electric System performed for a ten-year planning horizon (currently from 2027 through 2036). The Plan determines system facility additions and upgrades necessary to comply with Western Electricity Coordinating Council ("WECC") and the North American Electric Reliability Corporation ("NERC") reliability requirements under these conditions:

- Equipment will not be loaded more than its normal facility limits for All Facilities in Service ("AFIS").
- Equipment will not be loaded more than its emergency facility limits for any single-element ("N-1") contingency.
- Real-time violations that have been identified because of actual system conditions or real- time contingency analysis will be addressed.
- Conformance with NERC Standard TPL-001-5.1 criteria, as applicable, will be applied to certain planning events.
- Equipment voltage limits (high or low) will not be exceeded.
- System Expansion Projects Scheduled for Completion before Peak of 2027, and Project Schedule for 2027-2036 System Expansion Plan Projects. Future local generation resources serving native load have been identified by EPE Resource Planning input and/or in a 2025 EPE L&R (with updates as of September 2, 2025) as detailed in the Generation Resources are summarized in Table 2. Input from EPE's Resource planning on future generation was taken as modeling assumed this took first assumptions and modeling priority. Second, modeling and assumptions priority for generation retirements and additions were taken from the 2025 EPE L&R (with updates as of September 2, 2025) assumptions.

This Plan's content has been organized as follows:

- An Introduction Section briefly summarizes requirements and scope of the EPE System Expansion Plan
- A Planning Organizations Section lists and summarizes all regional and subregional planning groups that EPE participates in.
- A General Assumptions Section that addresses Load Projections, Demand Side Management, Generation Resources, Reliability Criteria, System Operating Limit ("SOL") Methodology for the Operating Horizon, Open Planning Meetings, and Base Case System Assumptions.
- The Tables Section consists of:
  - Table 1. identifies Peak Energy Efficiency Adjustment assumed for the current System Expansion Plan.
  - Table 2. identifies Projected EPE Local Generation assumed for the current System Expansion Plan.

- Table 3. identifies projects (driven by Transmission System Needs) scheduled for completion before the peak of 2027.
- Table 4. lists new or modified projects driven by Transmission System needs for the current System Expansion Plan's first five (5) years: 2027-2031.
- Table 5. lists new or modified projects driven by Transmission System needs for the current System Expansion Plan's last five (5) years: 2032-2036.
- Table 6. identifies reactive support projects identified in the current System Expansion Plan.

- A description of major EPE planned projects, driven by Transmission System Needs, for each year is provided under the Transmission Project Summary. Information includes the Project Name, Operating Voltage, Planned in Service Date, Project Description, and Project Justification.

The basis for native system peak demand projections has historically been set by EPE's annual Long-Term Forecast Report. Typically, EPE System Planning applies the forecasted native system MW demand for each future year by starting with the expected value from the most recent Long-Term Forecast Report and adding 50% of the difference between the upper bound and the expected value (i.e., modeled within peak/summer powerflow cases). Incorporated within EPE's 2025 Long-Term Forecast Report and the 2025 Loads and Resources with updates as of September 2, 2025 ("L&R") are EPE Public Policy requirements. It is in this manner that Public Policy requirements are considered in the Plan. Based on EPE's historical peak load growth in the last five (5) years, there were several years with an average load growth above 100 MW. Therefore, in this year's plan, EPE System Planning used the following approach:

- Planning years 1-5 were increased by 100 MW of annual load.
- For planning years 6-7, the system load growth was increased by 50 MW.
- For planning years 8-10, the system load growth was increased by 30 MW.
- For all planning years, the system load growth was scaled by zones.

EPE System Planning, in coordination with Distribution Planning & other Departments, identified the high growth areas and decided on this load methodology to more accurately reflect the rapidly growing areas in EPE's service territory.

The system performance analyses presented in this Plan include an assessment of outage impacts, generator interconnection impacts, and economic planning evaluations. The major projects identified within this report are represented in Section 6 – EPE Transmission Planned Project Maps by geographical area and estimated in-service year.

2 INTRODUCTION

El Paso Electric Company's ("EPE") System Planning & Interconnections Department performs System Expansion Plan ("Plan") studies annually as described in EPE's Open Access Transmission Tariff ("OATT") Attachment K ("Attachment K"). This process is a technical evaluation of EPE's Bulk Electric System performed for a ten-year planning horizon (currently from 2027 through 2036). The Plan determines system facility additions and upgrades necessary to comply with Western Electricity Coordinating Council ("WECC") and the North American Electric Reliability Corporation ("NERC") reliability requirements under these conditions:

- Equipment will not be loaded more than its normal facility limits for All Facilities in Service ("AFIS").
- Equipment will not be loaded more than its emergency facility limits for any single- element ("N-1") contingency.
- Real-time violations that have been identified because of actual system conditions or real-time contingency analysis will be addressed.
- Conformance with EPE's Planning Criteria for NERC Standard TPL-001-5.1 will be applied to certain planning events.
- Equipment voltage limits (high or low) will not be exceeded.

The projects presented within El Paso Electric Company System Expansion Plan 2027-2036 are a result of technical analyses performed by the System Planning & Interconnections Department. This new Plan updates and replaces EPE's previous 2026-2035 System Expansion Plan.

3 PLANNING ORGANIZATIONS

EPE engages in regional and subregional planning organizations. EPE's participation in these planning organizations facilitates EPE's coordination of its transmission plans with the plans of the other transmission providers/entities. See EPE's OATT, Attachment K for more details on how these activities relate to EPE's planning process.

3.1 Regional Planning Organizations

3.1.1 Western Electricity Coordinating Council (WECC)

EPE actively participates in WECC committees.

WECC is a non-profit corporation approved by the Federal Energy Regulatory Commission (FERC) to serve as the Regional Entity tasked with assuring a reliable Bulk Electric System in the Western Interconnection geographical area of the United States of America.

3.1.2 WestConnect

EPE actively participates in the WestConnect regional transmission planning process.

WestConnect members collaboratively assess stakeholder needs and may develop cost-effective transmission projects. EPE is an active member participant in the WestConnect regional transmission planning process established by FERC Order No. 1000.

3.2 Subregional Planning Group

3.2.1 Southwest Area Transmission (SWAT) Subregional Planning Group

EPE actively participates in the activities of the Southwest Area Transmission (SWAT) Subregional Planning Group that is comprised of transmission regulators/governmental entities, transmission users, transmission owners, transmission operators, and environmental entities.

The SWAT addresses future transmission needs on a subregional basis.

4 GENERAL ASSUMPTIONS

4.1 Load Projections

EPE's Long-Term Forecast Report provides energy and native system peak demand projections. The 2025 Forecast predicted a 10-year CAGR of 3.8% for native system peak demand. The 2025 Forecast predicted a Native System Energy increase for 2025 of 4.1% compared to the year 2024. The 2025 Forecast also predicted that Native System Peak Demand in 2025 will increase 1.3% compared to the 2024 peak. The Forecast includes demand side management and energy efficiency programs as detailed in the next section.

The basis for native system peak demand projections has historically been set by EPE's annual Long-Term Forecast Report. Typically, EPE System Planning applies the forecasted native system MW demand for each future year by starting with the expected value from the most recent Long-Term Forecast Report and adding 50% of the difference between the upper bound and the expected value (i.e., modeled within peak/summer powerflow cases). Incorporated within EPE's 2025 Long-Term Forecast Report and the 2025 Loads and Resources with updates as of September 2, 2025 ("L&R") are EPE Public Policy requirements. It is in this manner that Public Policy requirements are considered in the Plan. However, in this year's plan, EPE System Planning used the following approach:

- Planning Years 1-5 were increased by 100 MW of annual load.
- For Planning Years 6-7, the system load growth was increased by 50 MW.
- For Planning Years 8-10, the system load growth was increased by 30 MW.
- For all planning years, the system load growth was scaled by zones.

EPE System Planning, in coordination with Distribution Planning & other Departments, identified the high growth areas and decided on this load methodology to more accurately reflect the rapidly growing areas in EPE's service territory.

Each substation load was projected for the planning years based on available historical 2025 coincident peak load, Distribution System's monthly (non-coincident) load reports, load projections from the latest 2025 Distribution Expansion Plan Report update ("2025 Distribution Plan Update"), plus other input from EPE Distribution planning, and input from EPE's Load Forecasting and Commercial Services departments. EPE System Planning & Interconnections Group forecasts future substation loads by substation transformers based on these inputs.

4.2 Demand Side Management

In Attachment K within EPE's OATT (posted on EPE's website at www.epelectric.com), EPE includes demand side resources through energy efficiency programs to mitigate the need for new transmission. Mandated energy efficiency goals accounted for in the Forecast are shown on Table 1.

EPE expects an increase in its total cumulative energy efficiency load adjustments compared to the previous forecast. The 2025 Forecast shows a continuous increase in the energy efficiency demand adjustment with a projected peak of 101 MW by 2034.

Demand savings achieved through the EPE Energy Efficiency Programs are across all customer classes and across the whole transmission system. No single project or customer provides a significant amount of demand savings to dramatically impact the transmission system.

4.3 Generation Resources

EPE's Resource Planning Department ("RP") identified future generation resources and purchased power to serve native load in its 2025 Loads & Resources 2026-2045 document ("L&R") dated September 2, 2025, and from further input from EPE's Resource Planning Department to this document. This document compares owned resources and power purchases against forecasted load to determine new resources that may be needed. Furthermore, the document provides future resources and by resource fuel types that will be required to satisfy the demand forecast.

System Planning & Interconnections modeled generation based on the L&R and other documents while developing the Plan. The resource generation mix consists of photovoltaic ("PV"), battery energy storage system ("BESS"), gas, and/or steam turbines. The generation reflected in Table 2 – Projected EPE Local Generation was assumed in the System Expansion Plan modeling.

4.4 Reliability Criteria

The Plan follows Good Utility Practice and planning as described in EPE's OATT Attachment K. It uses a deterministic approach for transmission system planning. Each annual review verifies that modeling, assumptions, and planned facilities meet WECC and NERC compliance requirements under normal (N-0), and single contingency (N-1) conditions for EPE's transmission area. Under these two conditions, the network must be operated within WECC, NERC and EPE's Planning Criteria for NERC Standard TPL-001-5.1 to supply projected customer loads and firm transmission services over the ten-year planning horizon. In addition, for this 2026 Plan, there was some consideration to study results for initially-out-of-service (IOS) single bulk electric system (BES) element conditions. The Plan uses steady state powerflow analyses to identify transmission projects (facility upgrades and/or additions) required to mitigate any criteria violations with the goal of providing sufficient lead time to incorporate them. The Plan summarizes each

individual expansion project's scope, in- service date, justification, and purpose. Additionally, EPE reviews operational planning cases to determine transmission line loading conditions, mitigation practices, and the need to upgrade transmission lines to facilitate operational needs and practices.

The Plan focuses on facilities under heavy summer coincidental peak demand conditions which are typically considered worst case scenarios for EPE's system since EPE is a summer peaking utility. Heavy Winter cases are examined as well.

EPE strives to complete all system improvements in a prudent, safe, and timely fashion. Nevertheless, scheduling factors may delay projects, forcing EPE to apply temporary alternatives or measures to mitigate potential overloads.

4.5 Southwest Power Pool Reliability Coordinator Area System Operating Limit Methodology Western Interconnection Revision 2.1

On April 1, 2026, Revision 3.1 of the Southwest Power Pool Reliability Coordinator Area System Operating Limit Methodology Western Interconnection went into effect. The latest revision of these methodology documents requires that EPE operate its system in the pre-contingency state (All-Facilities-in-Service, AFIS) so that all facilities shall be within their normal (continuous) facility (thermal) ratings and that for the post-contingency state for single (element) contingencies, all facilities shall be within their emergency facility (thermal) ratings.

4.6 Open Planning Meetings

The transmission planning process, per Attachment K, includes Open Planning meetings while developing this Plan. Two meetings were held -- one in September 2025 and the second in March 2026 -- to allow third party participants to review or submit data and request studies of potential Stakeholder needs. Stakeholders are allowed to submit data up to the posted due dates to be incorporated into EPE's Plan case models. Data submitted after the due dates will not be incorporated into the current Plan, although they will be considered in the next year's planning cycle, if applicable. To date, no applicable Stakeholder data has been submitted to EPE that was incorporated into the Plan. The purpose of the Plan is to identify and evaluate, on a regular basis, future electric transmission system modifications and additions or alternatives that may be required to serve the anticipated area load growth, existing third-party customers' transmission needs, Public Policy requirements and NERC/WECC reliability requirements in the EPE service territory for a ten-year planning horizon.

4.7 Plan Case System Assumptions

System expansion analyses utilize powerflow studies and stability studies for each Plan year from 2027 through 2036. These analyses incorporated in-progress system expansion projects assumed to be completed before the peak of 2027. System modeling also includes the following assumptions:

- The forecasted substation load for each Plan year was adjusted to the modified projected coincidental peak loads using the Forecast and historical load data.
- Generation, system configuration, imports, and interchange schedules -- including contractual agreements with third-party entities -- were set according to load demand in each Plan case.
- Plan cases modeled PNM's Afton G1 and Afton S1 as "Off" when the Arroyo PST power flow was set to 151 MW north to south.
- Eddy County flow from the DC tie was modeled at zero (0) MW open ended at the Artesia bus in each of the Plan cases.
- EPE's share of Southern New Mexico Imports ("SNMI") was set at a schedule of 645 MW (per contractual rights) and EPE imports ("EPI") at 747 MW in all Plan cases.
- No on-line generation was modeled at Lordsburg. Luna Energy Facility ("LEF") was left as scheduled in the WECC cases used with the assumption that 100 MW scheduled to EPE under the Phelps Dodge (Freeport) Exchange Agreement and additional power from LEF to EPE, if needed, to meet EPI of 747 MW.
- The rebuilding of 69 kV lines will be designed to operate at 115 kV to support conversion of the EPE 69 kV systems to 115 kV future operational use. Lines will operate at their planned voltage until future conversions are implemented.
- The 59 MVAR line shunt reactor at the Hidalgo 345 kV Substation bus end of the Hidalgo-Greenlee 345 kV Line, the 49 MVAR line shunt reactor at the Macho Springs 345 kV Substation bus end of the Macho-Springerville 345 kV Line, and the 80 MVAR line shunt reactor at the Amrad 345 kV Substation bus end of the Amrad-Empire 345 kV Line are "must-on" line shunt reactors for every Plan case. However, the Luna 345 kV Line shunt reactors were modeled on or off as needed; these reactors can be switched off during an outage of a Path 47 345 kV line.

Note that the final generation sites may have not yet been determined for the resource additions called for in the L&R to be phased in from 2027 to 2036. Therefore, the transmission configuration used in the Plan studies may change requiring different upgrades assumed in future interconnection and facility studies, per FERC's Large Generator Interconnection Procedures ("LGIP").

4.8 Case Development

4.8.1 WECC-Approved Cases

Plan cases were developed with the General Electric Positive Sequence Load Flow ("GE- PSLF") program, which was used for the numerous powerflow, and contingency studies performed for the Plan. Each case

is a "database" of the WECC transmission system -- originating from the latest "WECC cases" for the appropriate year. These WECC-approved Heavy Summer and Light Winter base cases contain system configurations and conditions from other nearby Transmission Planners. System Planning & Interconnections then incorporates EPE's latest forecasted loads, expected generation resources, both of which incorporate EPE's Public Policy requirements, and any topology changes not already included in the WECC-supplied cases. Many projects listed in the previous plan are removed (or reverted to the existing topology) to re-verify their needs and schedule in the current Plan.

4.8.2 Topology Changes

In addition to the most current load and generation updates, System Planning & Interconnections incorporates topology changes not already included in the WECC-supplied cases such as planned substation- level and transmission changes. Substation changes, such as those detailed in EPE's latest 2025 Distribution Plan Update with updates document, include capacity upgrades, additions, deletions, location changes, and/or postponements. Planned transmission changes typically include capacity upgrades, additions, deletions, location changes, and postponements that are usually driven by the substation-level changes, generation changes, other studies (e.g., those in the LGIP), or routing changes due to regulatory orders or right-of-way issues or other input.

If a newly planned substation is postponed, any transmission changes associated with that substation may also be postponed. This may affect study results since many future projects depend on previously identified improvements. Factors such as those identified above may affect completion dates. Where completion targets are not achieved, or in instances in which EPE experiences more rapid load growth than forecasted, EPE evaluates and identifies short-term corrective measures to mitigate impacts, as necessary.

Table 3 shows expansion projects that were called for and budgeted in the last Plan (2026-2035) but are now re-scheduled to be completed before the peak of 2027. These projects have been modeled in the 2027 Plan cases and beyond to help mitigate potential contingency overloads.

New or modified Plan projects are summarized in Tables 4 & 5 and detailed in each year's project descriptions.

4.9 System Improvement Methodology

After Plan cases were modified as outlined above, contingency analyses are performed for each Plan year to identify reliability criteria violations on EPE facilities within EPE's service area. If violations were identified, mitigating improvements (e.g., Plan projects) were added to EPE's transmission system. Each year's Plan cases carried over the previous year's system improvements. These upgrades will be reflected in the following year's assessment.

Some Plan projects are a result of studies performed outside of System Planning & Interconnections, such as those from the LGIP, third-party generators or Transmission Service Requests while others are incorporated from the latest EPE capital budget. Projects listed in the Plan are specific to the expansion of the EPE internal electrical transmission system. Any projects outside the local electrical system planning area may be evaluated in separate studies.

Additionally, the Plan does not normally include maintenance projects nor external system expansion projects other than those in the WECC-approved base cases. Furthermore, projects associated with non-EPE large generator interconnections are not included unless a Large Generator Interconnection Agreement (LGIA) has been executed.

4.10 Project's Summary Explained

Tables 4 and 5 identify each year's system improvements. It also includes generic projects as "Additional Future Capital Improvements" added in each year to serve as placeholders in areas of the system where it is difficult, at present, to identify whether and how much specific transmission infrastructure may be necessary. In most cases, System Planning & Interconnections recommends a completion date by May of the given year (unless otherwise noted), to support peak summer load.

The Plan also contains a brief description and justification for each planned system improvement broken down by year (included in Section 7 – Transmission Project Summary). The planned in-service date of the recommended system improvement projects reflects the date the project was modeled to meet planning requirements, and it does not represent the construction completion date of the project.

Table 6 lists reactive devices needed in various locations of EPE's system scheduled for 2027-2036. This is to improve EPE's reactive capability and voltages profiles.

4.11 Acknowledgements

This document was prepared by EPE System Planning & Interconnections in collaboration with contributions from the following EPE departments: Distribution Systems, TSR Engineering, Asset Management Services, Load Research & Data Analytics, Resource Planning, System Operations, and other EPE departments or personnel. Supporting documentation for the numerous studies is not included in this document due to space constraints.

5 TABLES

Table 1. Yearly Peak Energy Efficiency Adjustment

Calendar Year	Total Energy Efficiency Demand Adjustment (MW)	Calendar Year	Total Energy Efficiency Demand Adjustment (MW)
2025	10	2030	62
2026	21	2031	72
2027	31	2032	83
2028	41	2033	93
2029	52	2034	101

Table 2. Projected EPE Local Generation

Generator	Type	Capacity (MW)	Recent/Planned In-Service Date (Month-YY)	Planned Retirement	Notes
In-Service					
Airport	Photovoltaic (PV)	12		Dec.36	1
Chihuahuan Solar	Photovoltaic (PV)	10			1
Chaparral	Photovoltaic (PV)	10		Dec.36	1
Patriot	Photovoltaic (PV)	10			1
Hatch	Photovoltaic (PV)	5		Dec.35	1
Roadrunner	Photovoltaic (PV)	20		Dec.30	1
Macho Springs	Photovoltaic (PV)	50		Dec.33	
Buena Vista	PV/Battery Storage	120 (120 Solar 50 Battery)			
Carne	PV/Battery Storage	130 (130 Solar, 65 Battery)			
Copper	Gas Combustion Turbine	63		Dec.30	
Felina	Photovoltaic (PV)	150			
Milagro	PV/Battery Storage	150 (150 Solar, 75 Battery)			
MPS 1	Gas Combustion Turbine	90			
MPS 2	Gas Combustion Turbine	90			
MPS 3	Gas Combustion Turbine	90			
MPS 4	Gas Combustion Turbine	90			

Generator	Type	Capacity (MW)	Recent/Planned In-Service Date (Month-YY)	Planned Retirement	Notes
Newman G1	Gas Fired Steam Turbine	74			
Newman G2	Gas Fired Steam Turbine	74		Dec.-27	
Newman G3	Gas Fired Steam Turbine	93		Dec.-31	
Newman 4 GT1	Gas Combustion Turbine	70		Dec.-31	
Newman 4 GT2	Gas Combustion Turbine	70		Dec.-31	
Newman 4 ST1	Combined Cycle HRSG	80		Dec.-31	
Newman 5 GT3	Gas Combustion Turbine	70			
Newman 5 GT4	Gas Combustion Turbine	70			
Newman 5 ST2	Combined Cycle HRSG	148			
Newman 6 GT5	Gas Combustion Turbine	228			
Rio Grande G6	Gas Fired Steam Turbine	45			2
Rio Grande G7	Gas Fired Steam Turbine	44			
Rio Grande G8	Gas Fired Steam Turbine	139		Dec.33	
Rio Grande G9	Gas Combustion Turbine	88			
Santa Teresa	PV/Battery Storage	150 (150 Solar, 150 Battery)			
2026					
NMCS	PV/Battery Storage	30 (30 Solar, 30 Battery)	May-26		1,3
2027					
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	100	Feb-27		3
Renewable Generation Stand-alone Battery	Battery Storage	100	Feb-27		3
Buena Vista III	PV/Battery Storage	100 (100 Solar, 100 Battery)	Apr-27		3
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	100	Dec-27		3

Generator	Type	Capacity (MW)	Recent/Planned In-Service Date (Month-YY)	Planned Retirement	Notes
Renewable Generation Stand-alone Battery	Battery Storage	50	Dec-27		3
2028					
Renewable Generation Solar & Battery	PV/Battery Storage	250 (250 Solar, 125 Battery)	Dec-28		3
2029					
Renewable Generation Stand-alone Battery	Battery Storage	200	May-29		3
Renewable Generation Solar & Battery	PV/Battery Storage	150 (150 Solar, 150 Battery)	May-29		3
2030					
CTR1	Gas Combustion Turbine	488	May-30		3,4
Renewable Generation Stand-alone Wind	Wind	24	May-30		3,4
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	139	May-30		3,4
Renewable Generation Stand-alone Battery	Battery Storage	655	May-30		3,4
2031					
CTR2	Gas Combustion Turbine	67	May-31		3,4
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	92	May-31		3,4
2032					
CTR3	Gas Combustion Turbine	183	May-32		3,4
Renewable Generation Stand-alone Wind	Wind	234	May-32		3,4

Generator	Type	Capacity (MW)	Recent/Planned In-Service Date (Month-YY)	Planned Retirement	Notes
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	168	May-32		3,4
2033					
CTR4	Gas Combustion Turbine	40	May-33		3,4
Renewable Generation Stand-alone Wind	Wind	8	May-33		3,4
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	31	May-33		3,4
2034					
CTR5	Gas Combustion Turbine	159	May-34		3,4
Renewable Generation Stand-alone Wind	Wind	5	May-34		3,4
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	173	May-34		3,4
2035					
CTR6	Gas Combustion Turbine	54	May-35		3,4
Renewable Generation Stand-alone Wind	Wind	6	May-35		3,4
Renewable Generation Stand-alone Solar	Photovoltaic (PV)	57	May-35		3,4
Renewable Generation Stand-alone Battery	Battery Storage	5	May-35		3,4
2036					
CTR7	Gas Combustion Turbine	48	May-36		3,4
Renewable Generation Stand-alone Wind	Wind	6	May-36		3,4

Generator	Type	Capacity (MW)	Recent/Planned In-Service Date (Month-YY)	Planned Retirement	Notes
Renewable Generation Stand-alone Battery	Battery Storage	23	May-36		3,4

Notes:

1. This photovoltaic generation connects into EPE's Distribution System.
2. Classified as Retired.
3. LGIA Ratings.
4. Planned Facilities Pending Studies to determine location.

5.1 Project Changes from 2026 EPE Plan

5.1.1 Completed Projects & Projects Nearing Completion

Summarized in Table 3 are EPE's System Expansion Projects scheduled for completion before the peak of year 2027 (in-service date expected prior to or on June 1, 2027, subject to engineering judgement on exceptions).

Table 3. System Expansion Projects Scheduled for Completion Before Peak of 2027

All projects below are modeled in the 2027 Plan Case

System Upgrade Needed	Location of Upgrade	Improvement Identification	Planned/Actual In-Service Date
2026			
115 kV Substation & Related 115 kV Line Reconfiguration	McCloud East Substation	New substation to help address expected load growth and mitigate potential N-1 overloads.	Jan-26
Rebuild, Reconductor, Voltage Conversion from 69 kV to 115 kV	San Felipe-Sparks 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads.	Jan-26
Reconductor	Pellicano-Montwood 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads.	May-26
Rebuild, Reconductor	Rio Grande-Sunset 69 kV Lines (5500/5600)	Improve system reliability by addressing and mitigating N-1 overloads.	May-26

System Upgrade Needed	Location of Upgrade	Improvement Identification	Planned/Actual In-Service Date
New 115 kV Capacitors (2x15.9 MVAR)	Eastlake Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-26
New 115 kV Capacitors (2x15.9 MVAR)	San Felipe Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-26
115/69 kV Substation & Related 69 kV Line Reconfiguration	Bovee Substation	New substation to help address expected load growth in the area.	Dec-26
115 kV Substation & Related 115 kV Line Reconfiguration	Eastwind Substation	New substation to help address expected load growth in the area.	Dec-26
New 115 kV Capacitors (2x15.9 MVAR)	Bovee Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	Dec-26
New 115 kV Capacitors (2x15.9 MVAR)	Eastwind Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	Dec-26
2027			
Reconductor	Caliente-Vista 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads expected due to expected Generation increase in the area.	Jan-27
Reconductor & Line Reconfiguration	Chaparral-Escondido 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads expected due to expected generation & load increase in the area.	Jan-27

System Upgrade Needed	Location of Upgrade	Improvement Identification	Planned/Actual In-Service Date
115 kV Substation & Related 115 kV Line Reconfiguration	Marvin Substation	New substation to help address expected load growth in the area.	May-27
115 kV Substation & Related 115 kV Line Reconfiguration	Seabeck Substation	New substation to help address expected load growth in the area.	May-27
115 kV New Circuit	Marvin-Seabeck 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads caused by expected load growth in the area.	May-27
Reconductor	Caliente-Diamond Head 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads expected due to expected generation increase in the area.	May-27
Reconductor	Rio Grande-Ripley 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads expected due to expected Load increase in the area.	May-27
Rebuild, Reconductor	Thorn-Ripley 115 kV Line	Improve system reliability by addressing and mitigating N-1 overloads.	May-27
Reconductor	Americas-Bovee 69 kV Line	Improve system reliability by addressing and mitigating N-1 overloads.	May-27
Reconductor	Lane-Americas 69 kV Line	Improve system reliability by addressing and mitigating N-1 overloads.	May-27
New 115 kV Capacitors (2x15.9 MVAR)	Dieter (EA-1) Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27

System Upgrade Needed	Location of Upgrade	Improvement Identification	Planned/Actual In-Service Date
New 115 kV Capacitors (2x15.9 MVAR)	Domenici (WS-3) Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27
New 115 kV Capacitors (1x15.9 MVAR)	Firestone (EA-2) Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27
New 115 kV Capacitors (2x15.9 MVAR)	Marvin Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27
New 115 kV Capacitors (2x15.9 MVAR)	Montecillo (CE-2) Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27
Additional 69 kV Capacitors (1x15.9 MVAR)	Rio Bosque Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27
New 115 kV Capacitors (3x15.9 MVAR)	Windermere (FE-7) Substation	Increase reactive capacitive support in the area to improve voltage profile in the area during high load conditions.	May-27

5.1.2 Planned EPE Bulk Electric System Transmission Projects:

Planned EPE Bulk Electric System Projects driven by transmission system needs with projected in-service dates between 2027-2036 as needed to support the local EPE transmission system are summarized in Tables 4 & 5 that follow. Transmission Projects in-service dates shown in Section 7 may differ from the completion dates identified in Tables 4 and 5 due to budgetary constraints.

Table 4. Project Schedule (2027-2031)

Year	Project Description	Expected/Target Completion Date Month-Year
2027	Caliente-Vista 115 kV Line (Reconductor)	Jan-27
	Chaparral-Escondido 115 kV Line (Reconductor) & Line Reconfiguration	Jan-27
	Marvin (FE-6) Switching Station 115 kV (New) & Related 115 kV Line Reconfigurations	May-27
	Seabeck 115 kV Switching Station (New) & Related 115 kV Line Reconfiguration	May-27
	Marvin-Seabeck 115 kV Line (New)	May-27
	Caliente-Diamond Head 115 kV Line (Reconductor)	May-27
	Rio Grande-Ripley 115 kV Line (Reconductor)	May-27
	Thorn-Ripley 115 kV Line (Rebuild, Reconductor)	May-27
	Americas-Bovee 69 kV Line (Reconductor)	May-27
	Lane-Americas 69 kV Line (Reconductor)	May-27
	Dieter (EA-1 Substation 115 kV 2x15.9 MVAR Capacitor Bank	May-27
	Domenici (WS-3) Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
	Firestone (EA-2) Substation 115 kV 1x15.9 MVAR Capacitor Bank (New)	May-27
	Marvin Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
	Montecillo (CE-2) Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
	Rio Bosque 69 kV 1x15.9 MVAR Capacitor Bank (New)	May-27
	Windermere (FE-7) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)	May-27
	Lava 345 kV Substation (New) & Related 345 kV Line Reconfiguration	Oct-27
	Eastlake-Sparks 115 kV Line Reconfiguration (In-and-Out at Wiwynn 115 kV Substation)	Oct-27
	Wiwynn-Sparks 115 kV Line (Reconductor)	Oct-27
2028	McCloud Central 345 kV Substation (New) & Related 345 kV Line Reconfiguration	Jan-28
	McCloud West 345 kV Substation (New) & Related 345 kV Line Reconfiguration	Jan-28
	Afton North 345 kV Switching Station (New)	May-28
	Airport 345/115 kV Substation (New)	May-28

Year	Project Description	Expected/Target Completion Date Month-Year
	Vado 345/115 kV Substation (New) & Related 345 kV Line Reconfiguration	May-28
	Rattlesnake 115 kV Substation (New) & Related 115 kV Line Reconfiguration	May-28
	Dyer Substation (Voltage Conversion) 69 kV to 115 kV	May-28
	Afton North-Airport 345 kV Line (New)	May-28
	Afton-Afton North 345 kV Line (New)	May-28
	Afton North-Vado 345 kV Line (New)	May-28
	Eastwind-Rattlesnake 115 kV Line (New)	May-28
	Anthony-Vado 115 kV Line (Rebuild, Reconductor)	May-28
	Jornada-Leasburg 115 kV Line (Reconductor)	May-28
	Salopek-Vado 115 kV Line (Rebuild, Reconductor)	May-28
	Airport 345/115 kV Power Transformer (New)	May-28
	Vado 345/115 kV Power Transformers T1 & T2 (New)	May-28
	Airport Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)	May-28
	Leasburg Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
	McCloud Central Substation ± 200 MVAR STATCOM (New)	May-28
	New MPS Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
	West Mesa-Arroyo 345 kV Line Shunt Reactor (50-100 MVAR) (New)	May-28
	Woodrow (WS-4) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)	May-28
	WS-2 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
2029	Wellman 115 kV Substation (New) & Related 115 kV Line Reconfiguration	Mar-29
	Pine 345/115 kV Substation (New) & Related 115 kV Line Reconfiguration	May-29
	Tornillo 345/115/69 kV Switching Station (New) & Related 69 kV Line Reconfiguration	May-29
	Caliente-Pine 345 kV Line (New)	May-29
	McCloud Central-Pine 345 kV Line (New)	May-29
	Luna-Diablo 345 kV Line Reconfiguration (In-and-Out at Lava 345 kV Substation)	May-29
	Americas Substation (Voltage Conversion) 69 kV to 115 kV	May-29
	Americas-Bovee (Voltage Conversion, Rebuild, Reconductor) 69 kV to 115 kV	May-29

Year	Project Description	Expected/Target Completion Date Month-Year
	Americas-Lane (Voltage Conversion, Rebuild, Reconductor) 69 kV to 115 kV	May-29
	Americas-Bovee 115 kV Line Reconfiguration (In-and-Out at Wellman 115 kV Substation)	May-29
	Americas-Lane 115 kV Line Reconfiguration (In-and-Out at Wiwynn 115 kV Substation)	May-29
	Bovee-Tornillo 115 kV Line (New)	May-29
	San Felipe-Tornillo 115 kV Line (New)	May-29
	Tornillo-Wicked 115 kV Line (New)	May-29
	Wellman-Wiwynn 115 kV Line (New)	May-29
	Clint-San Felipe 69 kV Line (Reconductor)	May-29
	Pine 345/115 kV Power Transformer (New)	May-29
	Pine Substation 115kV 2x15.9 MVAR Capacitor Bank (New)	May-29
	Thorn Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-29
2030	Mirage 345 kV Switching Station (New) & Related 345 kV Line Reconfiguration	May-30
	Tuskegee 345/115 kV Substation (New)	May-30
	T_W1 345/115 kV Switching Station (New) & Related 345 kV Line Reconfiguration	May-30
	Airport-Mirage 345 kV Line (New)	May-30
	McCloud West-Vado 345 kV Line (New)	May-30
	Tornillo-Tuskegee 345 kV Line (New)	May-30
	Tuskegee-Pine 345 kV Circuit 1 (New)	May-30
	T_W1-Domenici (WS-3) 115 kV Line (New)	May-30
	Rio Bosque-Ascarate 69 kV Line (Reconductor)	May-30
	Socorro-Valley 69 kV Line (Reconductor)	May-30
	Tornillo 345/115 kV Power Transformer (New)	May-30
	T_W1 345/115 kV Power Transformer (New)	May-30
	Enchantment (WS-1) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)	May-30
	McCombs Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-30
2031	Airport-Arroyo 115 kV Line (New)	May-31
	Escondido-Oro Grande 115 kV Line (Reconductor)	May-31
	Oro Grande-Amrad 115 kV Line (Reconductor)	May-31

Year	Project Description	Expected/Target Completion Date Month-Year
	Bovee-Valley 69 kV Line (Reconductor)	May-31
	HVDC Tie Replacement (New)	May-31
	Amrad 345/115 kV Power Transformer (New)	May-31

Notes:

1. Table does not include maintenance projects except for transmission line rebuilds and or conductor upgrades.
2. System Planning & Interconnections recommends completion prior to May for the given to aid with the summer peak period.

Table 5. Project Schedule (2032-2036)

Year	Project Description	Expected/Target Completion Date Month-Year
2032	Ascarate-Trowbridge 115 kV Line (Reconductor)	May-32
	Rattlesnake-Tuskegee 115 kV Line (New)	May-32
	Newman-Milagro 115 kV Line (Reconductor)	May-32
	Tuskegee 345/115 kV Power Transformer (New)	May-32
	CE-3 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-32
2033	Bovee-North Loop 115 kV Line (New)	May-33
	Anthony-Newman 115 kV Line (Reconductor)	May-33
	Jornada-Arroyo 115 kV Line (Reconductor)	May-33
	Alamo-Neely 69 kV Line Reconfiguration (In-and-Out at Tornillo 69 kV Substation)	May-33
	Tornillo 115/69 kV Power Transformer (New)	May-33
2034	Tuskegee-Pine 345 kV Circuit 2 (New)	May-34
	Anthony-Talavera 115 kV Line (Reconductor)	May-34
	Arroyo-Apollo 115 kV Line Reconfiguration (In-and-Out at Moongate 115 kV Substation)	May-34
	Apollo-Moongate 115 kV Line (Reconductor)	May-34
	Arroyo-Moongate 115 kV Line (Reconductor)	May-34
	Diablo-Verde 115 kV Line (Reconductor)	May-34
	Marlow-Trowbridge 115 kV Line (Rebuild, Reconductor)	May-34
	Newman - McCombs 115 kV Line Circuit 1 (Reconductor)	May-34

Year	Project Description	Expected/Target Completion Date Month-Year
	Newman - McCombs 115 kV Line Circuit 2 (Reconductor)	May-34
	EA-3 69 kV 2x15.9 MVAR Capacitor Bank (New)	May-34
2035	Future-4 345/115 kV Substation (New)	May-35
	Future-4-Tuskegee 115 kV Line (New)	May-35
	Future-4-Wiwynn 115 kV Line (New)	May-35
	Arroyo-Talavera 115 kV Line (Reconductor)	May-35
	Montoya-Thorn 115 kV Line (Reconductor)	May-35
	Newman - Roberts 115 kV Line Circuit 1 (Reconductor)	May-35
	Santa Teresa-Verde 115 kV Line (Reconductor)	May-35
	Future-4 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-35
2036	Future-4-Tornillo 345 kV Line (New)	May-36
	Future-4-Tuskegee 345 kV Line (New)	May-36
	Caliente-MPS 115 kV Circuit 1 (Partial Reconductor)	May-36
	Caliente-MPS 115 kV Circuits 2&3 Common Structure Separation	May-36
	Montoya-Nuway 115 kV Line (Reconductor)	May-36
	Rio Grande-Executive-Sunset North 115 kV Path (Rebuild, Reconductor)	May-36
	Escondido 345/115 kV Power Transformer #2	May-36
	Future-4 345/115 kV Power Transformer (New)	May-36

Notes:

1. Table above does not include maintenance projects except for transmission line rebuilds and or conductor upgrades.
2. System Planning & Interconnections recommends completion prior to May for the given to aid with the summer peak period.

5.2 Planned EPE Reactive Device Projects

Planned EPE reactive device projects with projected in-service dates between 2027-2036 needed to support the local EPE transmission system are summarized in Table 5 below. The in-service dates shown in Section 7 may differ from the completion dates identified in Table 5 due to budgetary or procurement constraints.

Table 6. Reactive Project Schedule

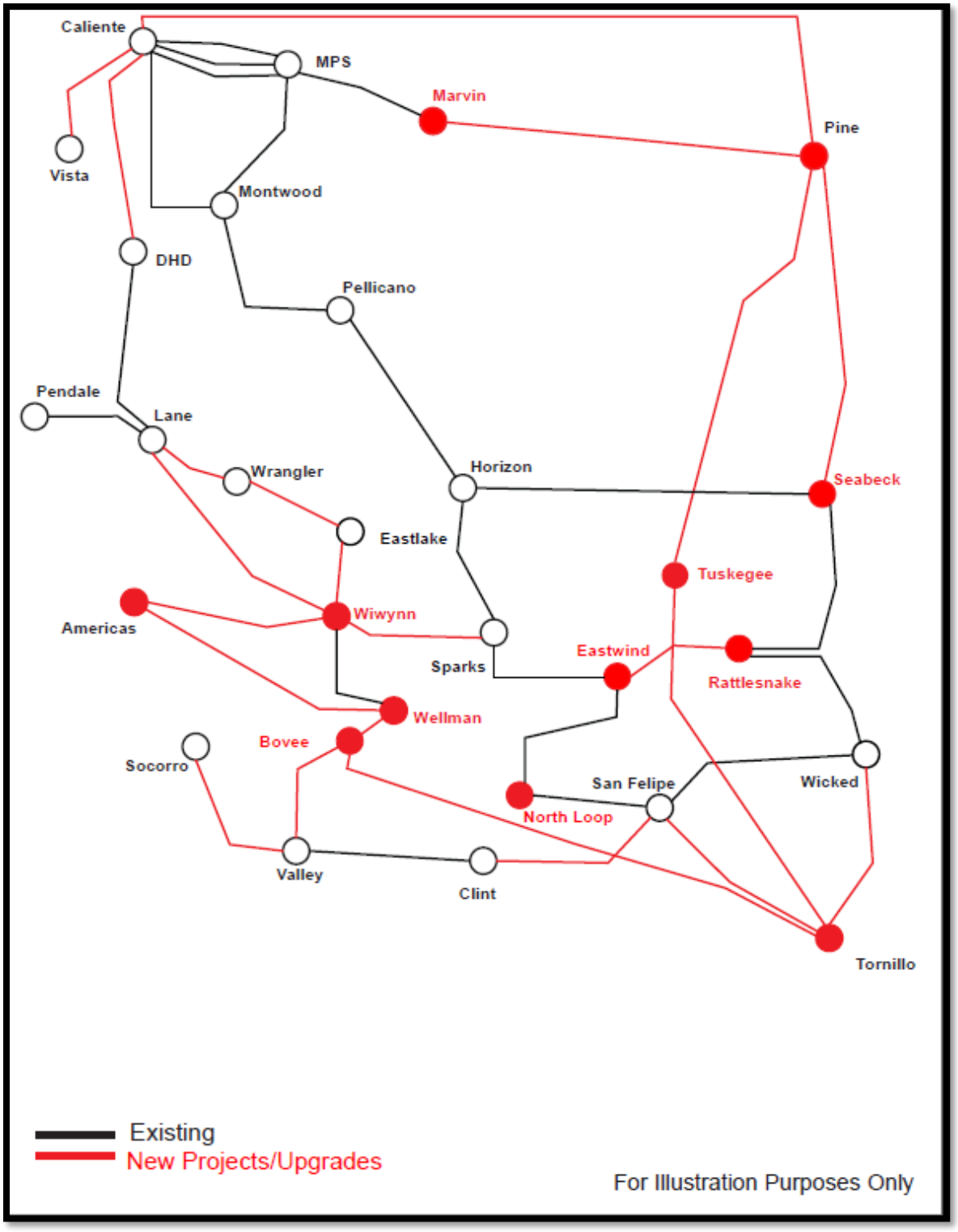
Year	Project Description	System Upgrade Needed	Expected/Target Completion Date Month-Year
2026	Eastlake	New 115 kV Capacitors (2x15.9 MVAR)	May-26
	San Felipe	New 115 kV Capacitors (2x15.9 MVAR)	May-26
	Bovee	New 115 kV Capacitors (2x15.9 MVAR)	Dec-26
	Eastwind	New 115 kV Capacitors (2x15.9 MVAR)	Dec-26
2027	Dieter (EA-1) Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-27
	Domenici (WS-3) Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-27
	Firestone (EA-2) Substation	New 115 kV Capacitors (1x15.9 MVAR)	May-27
	Marvin Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-27
	Montecillo (CE-2) Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-27
	Rio Bosque Substation	New 69 kV Capacitor (1x15.9 MVAR)	May-27
	Windermere (FE-7) Substation	New 115 kV Capacitors (3x15.9 MVAR)	May-27
2028	Airport Substation	New 115 kV Capacitors (3x15.9 MVAR)	May-28
	Leasburg Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-28
	McCloud Central	New STATCOM (±200 MVAR)	May-28
	New MPS Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-28
	Arroyo Substation West Mesa-Arroyo 345 kV Line	New 345 kV Shunt Reactor (50-100 MVAR)	May-28

Year	Project Description	System Upgrade Needed	Expected/Target Completion Date Month-Year
	Woodrow (WS-4) Substation	New 115 kV Capacitors (3x15.9 MVAR)	May-28
	WS-2 Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-28
2029	Pine Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-29
	Thorn Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-29
2030	Enchantment (WS-1) Substation	New 115 kV Capacitors (3x15.9 MVAR)	May-30
	McCombs Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-30
2032	CE-3 Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-32
2034	EA-3 Substation	New 69 kV Capacitors (2x15.9 MVAR)	May-34
2035	Future-4 Substation	New 115 kV Capacitors (2x15.9 MVAR)	May-35

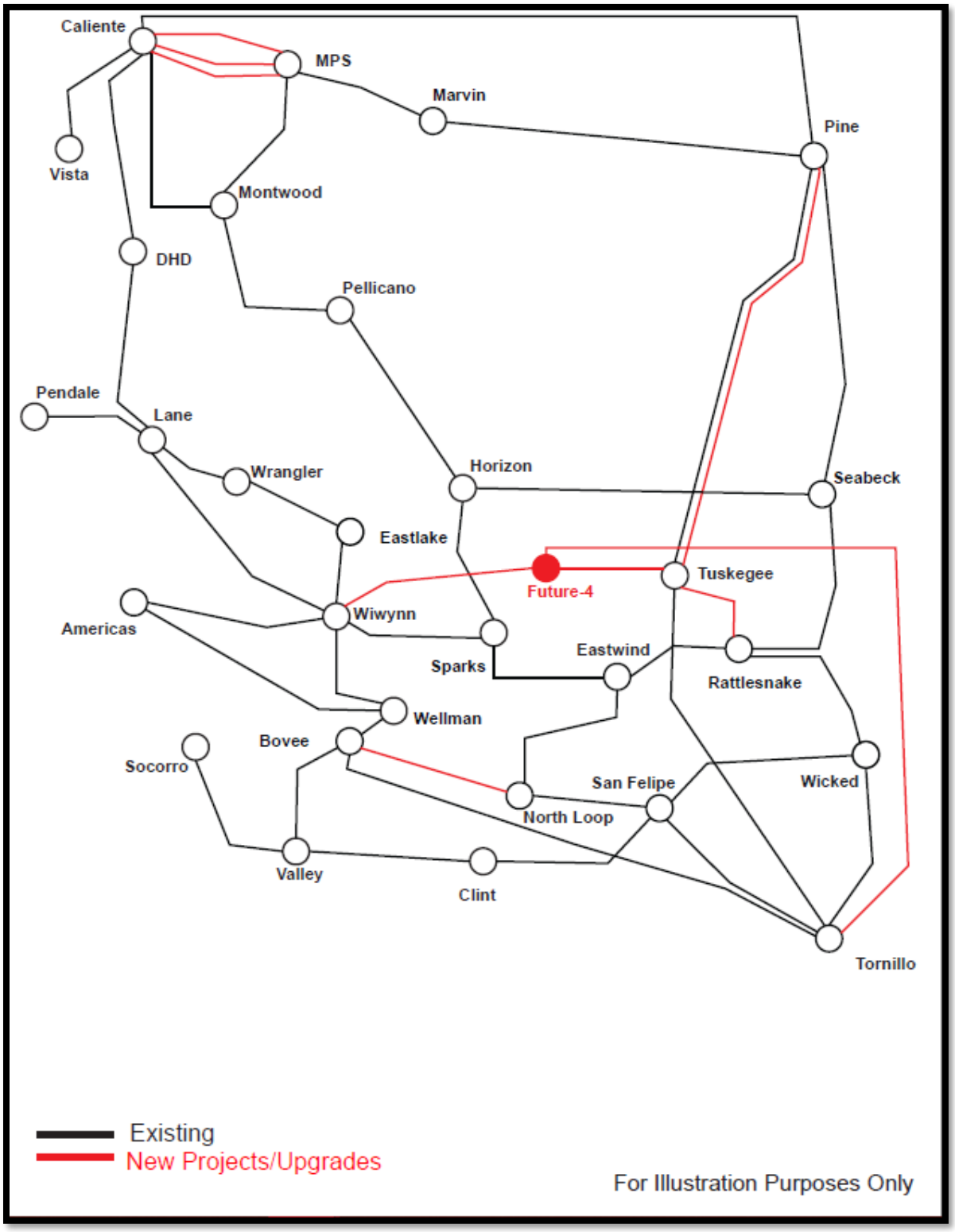
6 EPE TRANSMISSION PLANNED PROJECTS MAPS

6.1 NEW TRANSMISSION PROJECTS MAPS

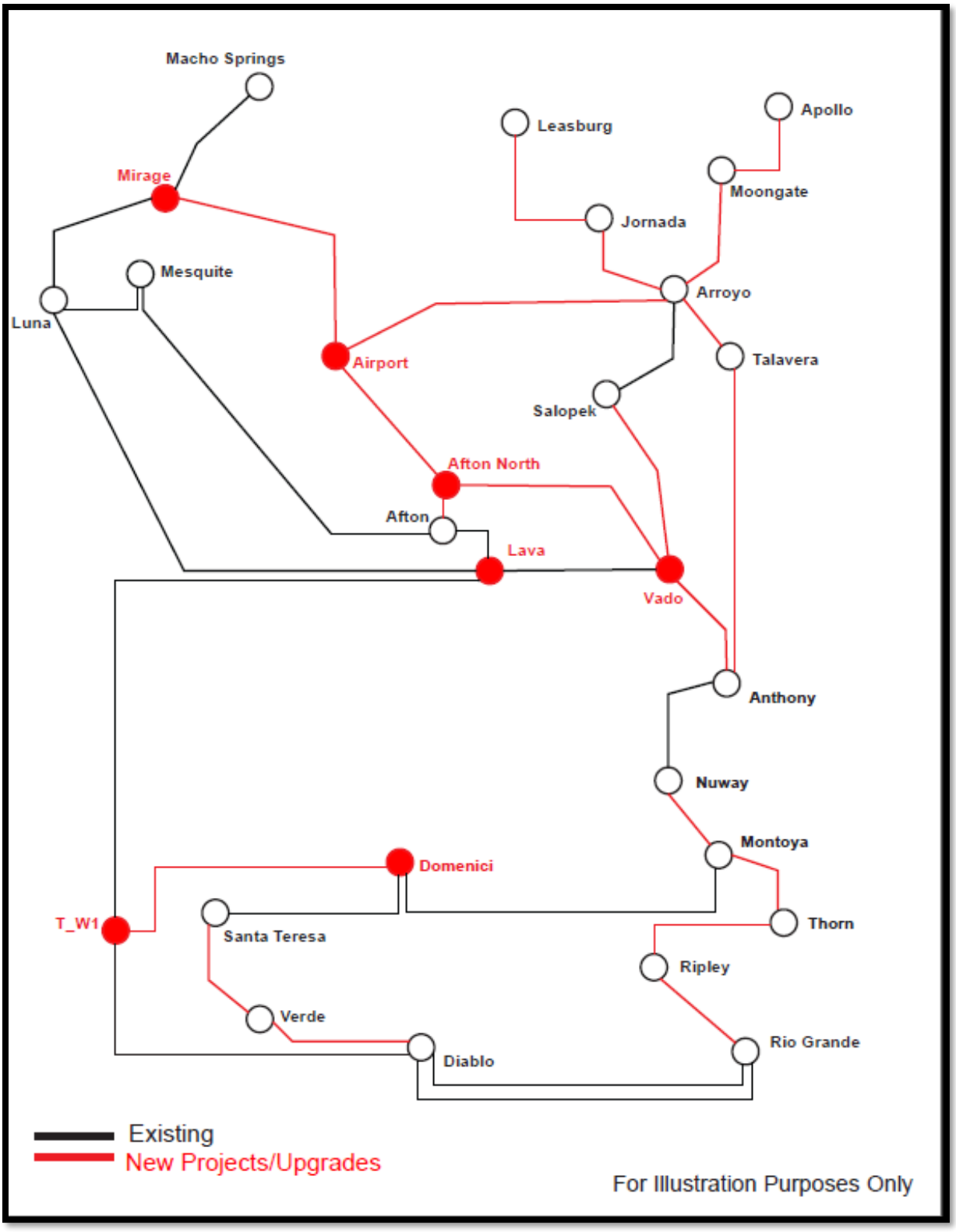
MAP 1. EAST & FAR EAST AREA (2027-2031)



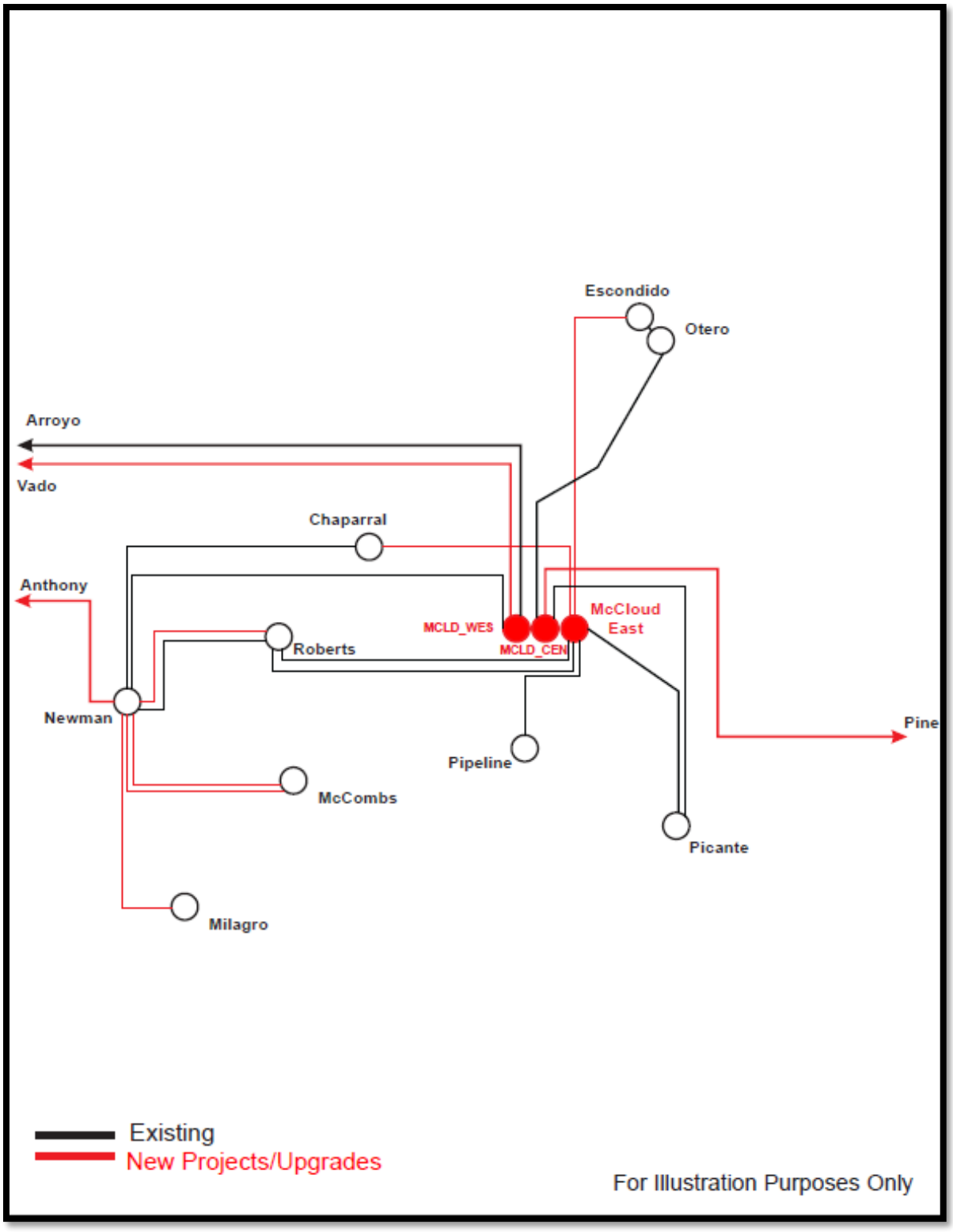
MAP 2. EAST & FAR EAST REGION (2032-2036)



MAP 3. WEST AREA (2027-2036)



MAP 4. NORTHEAST AREA (2027-2036)



7 TRANSMISSION PROJECT SUMMARY

7.1 Transmission Project Summary Template

TRANSMISSION PROJECT SUMMARY

Transmission Projects will be identified with the following format.

PLANNED PROJECTS
YEAR XXXX

Project Name: Commonly used name by El Paso Electric Company for a transmission or substation system expansion capital project. Projects of a normal maintenance nature and those located external to the EPE's transmission network are normally not included here.

Operating Voltage: The operational voltage level(s) of the system element(s).

In-Service Date: This is recommended project completion date. In general, it is recommended that projects be completed by May of the installation year, so that the anticipated system peak load demand is met.

Project Description: A general description of the project.

Project Justification: Project need is identified.

7.2 Transmission Projects in 2027

PLANNED PROJECTS
YEAR 2027

Project Name: Caliente-Vista 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: January 2027

Project Description: This project consists of the reconductoring of a 115 kV transmission line from Caliente to Vista with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation increase in the East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Chaparral-Escondido 115 kV Line (Reconductor) & Line Reconfiguration

Operating Voltage: 115 kV

In-Service Date: January 2027

Project Description: This project consists of the reconductoring of a 115 kV transmission line from Chaparral to Escondido with a minimum normal and emergency capacity rating of 760 MVA. Additionally, the reconfiguration will consist of cutting the Chaparral to Escondido 115 kV Line to introduce the McCloud East 115 kV Substation. With the introduction of McCloud East 115 kV Substation, the new 115 kV path is Chaparral to McCloud East to Escondido.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation and large load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Marvin (FE-6) Switching Station 115 kV (New) & Related 115 kV Line Reconfigurations

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: This project involves the construction of a new Marvin (FE6) 115 kV Substation, which will be replacing the Coyote & Coyote Temp Substations. The replacement consists of the following: A reconfiguration of transmission and distribution circuits to the new Marvin Substation. The existing 115 kV Circuits that will be rerouted to the new Marvin Substation are as follows: Coyote to Triumph, Coyote to MPS, and Coyote to Dell City. The new 115 kV Circuits will be: Marvin to Triumph, Marvin to MPS, and Marvin to Dell City. Additionally, there will be a removal of the Coyote Temp Substation that is currently tapped off the Montwood to MPS 115 kV Line. This substation will be part of the East Side Loop Expansion Project.

Project Justification: This project is a part of the East Side Loop Expansion Project and is needed to address expected development and load growth in the East and Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Seabeck 115 kV Switching Station (New) & Related 115 kV Line Reconfiguration

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: This project involves the construction of a new Seabeck 115 kV Switching Station that will be part of the East Side Loop Expansion Project. The 115 kV Line Reconfiguration will consist of splitting the existing Horizon to Wicked 115 kV Line to introduce Seabeck Substation. The new Path will consist of Horizon to Seabeck to Wicked 115 kV Circuits.

Project Justification: This project is a part of the East Side Loop Expansion Project and is needed to address expected development and load growth in the East and Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Marvin-Seabeck 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: This project consists of constructing a new 115 kV transmission line from Marvin to Seabeck with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project is a part of the East Side Loop Expansion Project and is needed to address expected development and load growth in the East and Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Caliente – Diamond Head 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of reconductoring the Caliente to Diamond Head 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation increase in the East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Rio Grande-Ripley 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of reconductoring the Rio Grande to Ripley 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected large load growth in the West El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Thorn-Ripley 115 kV Line (Rebuild, Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: This project consists of reconductoring the Thorn to Ripley 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Americas-Bovee 69 kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2027

Project Description: The project consists of reconductoring the future Americas to Bovee 69 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2027

Project Name: Lane-Americas 69kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2027

Project Description: The project consists of reconductoring the Lane to Americas 69 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads. This transmission circuit will be converted to 115 kV in later years. It is suggested that the reconductoring and/or rebuild of the Lane to Americas 69 kV Line considers this future voltage conversion.

PLANNED PROJECTS
YEAR 2027

Project Name: Dieter (EA-1) Substation 115 kV 2x15.9 MVAR Capacitor Bank

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Domenici (WS-3) Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Firestone (EA-2) Substation 115 kV 1x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a single-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Marvin Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Far East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Montecillo (CE-2) Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Rio Bosque 69 kV 1x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 69 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of an additional single-stage 15.9 MVAR to the existing bus shunt capacitor bank connected to the 69 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Windermere (FE-7) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2027

Project Description: The project consists of the addition of a three-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Far East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2027

Project Name: Lava 345 kV Substation (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345 kV

In-Service Date: Oct 2027

Project Description: This project consists of the construction of a new Lava 345 kV Substation. The reconfiguration will consist of cutting into the Afton to Newman 345 kV Line to introduce the new Lava 345 kV Substation. The new 345 kV Path will now become the Afton to Lava to Newman 345 kV Path.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation increase in the West area.

PLANNED PROJECTS
YEAR 2027

Project Name: Eastlake-Sparks 115 kV Line Reconfiguration (In-and-Out at Wiwynn 115 kV Substation)

Operating Voltage: 115 kV

In-Service Date: Oct 2027

Project Description: The Eastlake to Sparks 115 kV Line Reconfiguration consists of several elements. The Reconfiguration will consist of splitting the Eastlake to Sparks 115 kV Line to introduce the Wiwynn 115 kV Substation. The Path will now become the Eastlake to Wiwynn to Sparks 115 kV Path.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial growth in the Far East El Paso area.

PLANNED PROJECTS
YEAR 2027

Project Name: Wiwynn-Sparks 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: Oct 2027

Project Description: This project consists of reconductoring the Wiwynn to Sparks 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

7.3 Transmission Projects in 2028

PLANNED PROJECTS
YEAR 2028

Project Name: McCloud Central 345 kV Substation (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345 kV

In-Service Date: January 2028

Project Description: This project consists of the construction of a new McCloud Central 345 kV Substation. The reconfiguration will consist of cutting into the existing Otero to Picante 345 kV Line to introduce the new McCloud Central 345 kV Substation. The new 345 kV Path will now become the Otero to McCloud Central to Picante 345 kV Path.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected large load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: McCloud West 345 kV Substation (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345 kV

In-Service Date: January 2028

Project Description: This project involves the construction of a new McCloud West 345 kV Substation. The 345 kV Line Reconfigurations consists of splitting the Newman to Arroyo 345 kV Line to introduce the McCloud West 345 kV Substation. The new 345 kV Path will now become the Newman to McCloud West to Arroyo 345 kV Path.

Project Justification: This project has been identified as part of facilities required to address expected large load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Afton North 345 kV Switching Station (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: This project involves the construction of a new Afton North 345 kV Switching Station. The Afton North 345 kV Bus will be used to connect multiple 345 kV Circuits to increase the reliability and strength of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area, has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of the 345 kV System by having the 345 kV Lines out of Afton North address contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Airport 345/115 kV Substation (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2028

Project Description: This project involves the construction of a new Airport 345/115 kV Substation. The Airport 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels to increase the reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area, has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will provide the ability to serve increasing load in the west Las Cruces area and will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Vado 345/115 kV Substation (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345/115 kV

In-Service Date: May 2028

Project Description: The addition of Vado 345/115 kV Substation involves several elements. First, the 345 kV Line Reconfiguration involves an in-and-out connection on the existing Lava to Newman 345 kV transmission line. With new terminations into Vado 345 kV, the 345 kV Path will now become Lava to Vado 345 kV Line and the Vado to Newman 345 kV Line. It is also planned to add an additional Afton North to Vado 345 kV Line and two new Vado 345/115 kV power transformers to connect the Vado 345 kV system with the 115 kV System. With the addition of Vado Substation in 2028, there will also be an in-and-out connection on the Anthony to Salopek 115 kV Line resulting in the Anthony to Vado 115 kV and Vado to Salopek 115 kV Lines thereafter.

Project Justification: This project, along with the 345 kV & 115 kV in the area, has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of the Transmission System by having the 345 & 115 kV circuits out of Vado address contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Rattlesnake 115 kV Substation (New) & Related 115 kV Line Reconfiguration

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: This project involves the construction of a new Rattlesnake 115 kV Substation. The 115 kV Line Reconfiguration consists of splitting the Seabeck to Wicked 115 kV Line to introduce Rattlesnake Substation. The new path will now become the Seabeck to Rattlesnake to Wicked 115 kV path.

Project Justification: This project is needed to address expected generation and load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Dyer Substation (Voltage Conversion) 69 kV to 115 kV

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: This project involves the conversion of the Dyer 69 kV Bus to 115 kV. This involves the conversion of the following elements from 69 kV to 115 kV: Dyer to Austin Transmission Line, Distribution Transformers T1 & T2.

Project Justification: The conversion from 69 kV to 115 kV results in increased reliability by addressing and mitigating existing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Afton North-Airport 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: A new 345 kV transmission line is planned to be built from Afton North Substation to Airport Substation with a minimum normal and emergency capacity rating of 2320 MVA. The Afton North to Airport connection will become one of the main serving points for the Airport Substation. Additionally, this 345 kV Circuit is part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will provide the ability to serve increasing load in the west Las Cruces area and will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Afton-Afton North 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: A new 345 kV transmission line is planned to be built from Afton Substation to Afton North Substation with a minimum normal and emergency capacity rating of 2320 MVA. Additionally, this 345 kV Circuit is part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Afton North-Vado 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: A new 345 kV transmission line is planned to be built from Afton North Substation to Vado Substation with a minimum normal and emergency capacity rating of 2320 MVA. Additionally, this 345 kV Circuit is part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Eastwind-Rattlesnake 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: This project consists of the construction of a new 115 kV transmission line from Eastwind to Rattlesnake with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Anthony-Vado 115 kV Line (Rebuild, Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: With the addition of Vado Substation in 2028, there will be an in-and-out connection on the Anthony to Salopek 115 kV Line resulting in the Anthony to Vado 115 kV and Vado to Salopek 115 kV Lines thereafter. By this year, with the addition of Vado Substation and these connections, additional capacity will be needed on the 115 kV lines out of Vado Substation. The new capacity of the Anthony to Vado 115 kV Line will have a minimum of 380 MVA under normal and emergency conditions.

Project Justification: The increased capacity of this line will allow EPE to serve West El Paso load from the Afton and Vado area increasing reliability and adding system flexibility under contingency and maintenance situations. This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC).

PLANNED PROJECTS
YEAR 2028

Project Name: Jornada-Leasburg 115 kV (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: Leasburg 115 kV Substation is part of a cut-in that consists of the reconfiguration of the existing Jornada to Hatch 115 kV Circuit. The new 115 kV Path will now become the Jornada to Leasburg to Hatch 115 kV Path. This project also consists of reconductoring the Jornada to Leasburg 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Salopek-Vado 115 kV Line (Rebuild, Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: With the addition of Vado Substation, there will be an in-and-out connection on the Anthony to Salopek 115 kV Line resulting in the Anthony to Vado 115 kV and Vado to Salopek 115 kV Lines thereafter. With the addition of Vado Substation and these connections, additional capacity will be needed on the 115 kV lines out of Vado Substation. The new capacity of the Vado to Salopek 115 kV Line will have a minimum of 380 MVA under normal and emergency conditions.

Project Justification: The increased capacity of this line will allow EPE to serve West El Paso load from the Afton and Vado area, increasing reliability and adding system flexibility under contingency and maintenance situations. This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC).

PLANNED PROJECTS
YEAR 2028

Project Name: Airport 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2028

Project Description: The addition of this 345/115 kV Power Transformer is part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System. This 345/115 kV power transformer will serve as the connection point from the load at Airport to its serving point through the 345 kV Line from Airport to Afton North.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will provide the ability to serve increasing load in the west Las Cruces area and will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2028

Project Name: Vado 345/115 kV Power Transformers T1 & T2 (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2028

Project Description: The addition of these two 345/115 kV Power Transformers are part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of EPE's Transmission System by adding system flexibility under contingency and maintenance situations. Each of these autotransformers will be a backup for each other under planned or unplanned out-of-service conditions of one of them.

PLANNED PROJECTS
YEAR 2028

Project Name: Airport Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a three-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West area under peak load conditions.

PLANNED PROJECTS
YEAR 2028

Project Name: Leasburg Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Las Cruces area under peak load conditions.

PLANNED PROJECTS
YEAR 2028

Project Name: McCloud Central ±200 MVAR STATCOM (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a new ±200 MVAR STATCOM connected to the 345 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Northeast area.

PLANNED PROJECTS
YEAR 2028

Project Name: New MPS Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Far East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2028

Project Name: West Mesa – Arroyo 345 kV Line Shunt Reactor (50-100 MVAR) (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a new 50 to 100 MVAR in-line reactor on the West Mesa to Arroyo 345 kV Line.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Southern New Mexico area of EPE's Service Territory.

PLANNED PROJECTS
YEAR 2028

Project Name: Woodrow (WS-4) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a three-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2028

Project Name: WS-2 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2028

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

7.4 Transmission Projects in 2029

PLANNED PROJECTS
YEAR 2029

Project Name: Wellman 115 kV Substation (New) & Related 115 kV Line Reconfiguration

Operating Voltage: 115 kV

In-Service Date: Mar 2029

Project Description: This project involves the construction of the new Wellman 115 kV Substation. The reconfiguration will consist of cutting into what will be the Americas to Bovee 115 kV Line to introduce the new Wellman 115 kV Substation. The new 115 kV Path will now become the Americas to Wellman to Bovee 115 kV Path.

Project Justification: This project is needed to address expected development and load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Pine 345/115 kV Substation (New) & Related 115 kV Line Reconfiguration

Operating Voltage: 345/115 kV

In-Service Date: May 2029

Project Description: This project involves the construction of a new Pine 345/115 kV Substation. The 115 kV Line Reconfiguration consists of splitting the Seabeck to Marvin 115 kV Line to introduce Pine Substation. The new 115 kV Path will now become the Marvin to Pine to Seabeck 115 kV Path. The Pine 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. It has been identified to increase the reliability of EPE's Transmission System. The additional 345 & 115 kV circuits out of Pine will address and mitigate any contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Tornillo 345/115/69 kV Switching Station (New) & Related 69 kV Line Reconfiguration

Operating Voltage: 345/115/69 kV

In-Service Date: May 2029

Project Description: This project involves the construction of a new Tornillo 345/115/69 kV Substation. The 69 kV Line Reconfiguration consists of splitting the Alamo to Neely 69 kV Line to introduce the 69 kV Tornillo Bus. The new 69 kV Path will now become the Alamo to Tornillo to Neely 69 kV Path. The Tornillo 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System. The additional 345 & 115 kV circuits out of Tornillo will address and mitigate any contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Caliente-Pine 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2029

Project Description: A new 345 kV transmission line is planned to be built from Caliente Substation to Pine Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: McCloud Central-Pine 345 kV (New)

Operating Voltage: 345 kV

In-Service Date: May 2029

Project Description: A new 345 kV transmission line is planned to be built from McCloud Central Substation to Pine Substation with a minimum normal and emergency capacity rating of 2320 MVA.

Project Justification: This project has been identified as a facility upgrade needed to address expected development and commercial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Luna-Diablo 345 kV Line Reconfiguration (In-and-Out at Lava 345 kV Substation)

Operating Voltage: 345 kV

In-Service Date: May 2029

Project Description: The Luna to Diablo 345 kV Line Reconfiguration consists of cutting into this line to connect to the Lava 345 kV Substation. The new 345 kV Path will now become the Luna to Lava to Diablo 345 kV Path. Additionally, this 345 kV Reconfiguration has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Americas Substation (Voltage Conversion) 69 kV to 115 kV

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: This project involves the conversion of the Americas 69 kV Bus to 115 kV. This involves the conversion of the following from 69 kV to 115 kV: Americas to Lane & Americas to Bovee Transmission Line, and Distribution Transformer T1.

Project Justification: The conversion from 69 kV to 115 kV results in increased reliability by addressing and mitigating existing contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Americas-Bovee (Voltage Conversion, Rebuild, Reconductor) 69 kV to 115 kV

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: This project involves the conversion of the Americas-Bovee 69 kV Line to 115 kV. This project also consists of a reconductoring of the Americas to Bovee 115 kV transmission line with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The conversion from 69 kV to 115 kV results in increased reliability by addressing and mitigating existing contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Americas-Lane (Voltage Conversion, Rebuild, Reconductor) 69 kV to 115 kV

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: This project involves the conversion of the Americas-Lane 69 kV Line to 115 kV. This project also consists of reconductoring the Americas to Lane 115 kV transmission line with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The conversion from 69 kV to 115 kV results in increased reliability by addressing and mitigating existing contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Americas-Bovee 115 kV Line Reconfiguration (In-and-Out at Wellman 115 kV Substation)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: The reconfiguration will consist of cutting into the existing Americas to Bovee 115 kV Line to introduce the new Wellman 115 kV Substation. The new 115 kV Path will now become the Americas to Wellman to Bovee 115 kV Path.

Project Justification: This project is needed to address expected development and load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Americas-Lane 115 kV Line Reconfiguration (In-and-Out at Wiwynn 115 kV Substation)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: The reconfiguration will consist of cutting into the existing Americas to Lane 115 kV Line to introduce the Wiwynn 115 kV Substation. The new 115 kV Path will now become the Americas to Wiwynn to Lane 115 kV Path.

Project Justification: This project is needed to address expected development and load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Bovee-Tornillo 115kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: A new 115 kV transmission line is planned to be built from Bovee Substation to Tornillo Substation with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation and load increase in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: San Felipe-Tornillo 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: A new 115 kV transmission line is planned to be built from San Felipe Substation to Tornillo Substation with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation and load increase in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Tornillo-Wicked 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: A new 115 kV transmission line is planned to be built from Tornillo Substation to Wicked Substation with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation increase in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Wellman-Wiwynn 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: A new 115 kV transmission line is planned to be built from Wellman Substation to Wiwynn Substation with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as a need under the current plan procedures. This project is needed to address expected development and load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Clint-San Felipe 69 kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2029

Project Description: The project consists of reconductoring the Clint to San Felipe 69 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation increase in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2029

Project Name: Pine 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2029

Project Description: This project identifies a new Pine 345/115 kV power transformer to connect the 345 kV & 115 kV Buses at Pine Substation. The addition of the 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project will increase the strength and reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

PLANNED PROJECTS
YEAR 2029

Project Name: Pine Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Far East El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2029

Project Name: Thorn Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2029

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

7.5 Transmission Projects in 2030

PLANNED PROJECTS
YEAR 2030

Project Name: Mirage 345 kV Switching Station (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345 kV

In-Service Date: May 2030

Project Description: This project involves the construction of a new Mirage 345 kV Switching Station. The 345 kV Line reconfiguration consists of splitting the existing Macho Springs to Luna 345 kV circuit to introduce the Mirage 345 kV Substation. The new Path will now become the Luna to Mirage to Macho Springs 345 kV Circuits. The Mirage 345 kV Bus will be used to connect multiple 345 kV Circuits in an effort to increase the reliability and strength of EPE's Transmission System.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of the 345 kV System by having the 345 kV Lines out of Mirage address contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Tuskegee 345/115 kV Substation (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2030

Project Description: This project involves the construction of a new Tuskegee 345/115 kV Substation. The Tuskegee 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project has been identified as a need under the current plan procedures. This project addresses expected generation and commercial/industrial load growth in the Far East El Paso area. It has been identified to increase the reliability of EPE's Transmission System. The additional 345 & 115 kV circuits out of Tuskegee will address and mitigate any contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: T_W1 345/115 kV Switching Station (New) & Related 345 kV Line Reconfiguration

Operating Voltage: 345/115 kV

In-Service Date: May 2030

Project Description: This project involves the construction of a new T_W1 345/115 kV Switching Station. The 345 kV Line reconfiguration consists of splitting the Lava to Diablo 345 kV circuit to introduce the T_W1 345/115 kV Substation. The new Path will consist of Lava to T_W1 to Diablo 345 kV Circuits. The T_W1 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the West area. It has been identified to increase the reliability of EPE's Transmission System. The additional 345 & 115 kV circuits out of T_W1 will address and mitigate any contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Airport-Mirage 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2030

Project Description: A new 345 kV transmission line is planned to be built from Airport Substation to Mirage Substation with a minimum normal and emergency capacity rating of 2320 MVA. The Airport to Mirage connection will become one of the main serving points for the Airport Substation.

Project Justification: This project, along with the other new 345 kV & 115 kV lines in the area has been identified as part of the new Western 345 kV Transmission Path family of projects that will increase EPE's Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will provide the ability to serve increasing load in the west Las Cruces area and will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: McCloud West-Vado 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2030

Project Description: A new 345 kV transmission line is planned to be built from McCloud West Substation to Vado Substation with a minimum normal and emergency capacity rating of 2320 MVA. Additionally, this 345 kV Circuit is part of the proposed Western 345 kV Transmission Path that has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. This project is part of the new Western 345 kV Transmission Path family of projects that have been identified to increase the Southern New Mexico Import Capability (SNMIC) & El Paso Import Capability (EPIC). Additionally, this project will strengthen the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Tornillo-Tuskegee 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2030

Project Description: A new 345 kV transmission line is planned to be built from Tornillo Substation to Tuskegee Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Tuskegee-Pine 345 kV Circuit1 (New)

Operating Voltage: 345 kV

In-Service Date: May 2030

Project Description: A new 345 kV transmission line is planned to be built from Tuskegee Substation to Pine Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: T_W1-Domenici (WS-3) 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2030

Project Description: A new 115 kV transmission line is planned to be built from T_W1 Substation to Domenici Substation with a minimum normal and emergency capacity rating of 380 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the West area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Rio Bosque-Ascarate 69 kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2030

Project Description: The project consists of reconductoring the Rio Bosque to Ascarate 69 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Socorro-Valley 69 kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2030

Project Description: The project consists of reconductoring the Socorro to Valley 69 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2030

Project Name: Tornillo 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2030

Project Description: This project identifies a new Tornillo 345/115 kV power transformer to connect the 345 kV & 115 kV Buses at Tornillo Substation. The addition of the 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

PLANNED PROJECTS
YEAR 2030

Project Name: T_W1 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2030

Project Description: This project identifies a new T_W1 345/115 kV power transformer to connect the 345 kV & 115 kV Buses at T_W1 Substation. The addition of the 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the West area. Additionally, this project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

PLANNED PROJECTS
YEAR 2030

Project Name: Enchantment (WS-1) Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2030

Project Description: The project consists of the addition of a three-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the West El Paso area under peak load conditions.

PLANNED PROJECTS
YEAR 2030

Project Name: McCombs Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2030

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Northeast El Paso area under peak load conditions.

7.6 Transmission Projects in 2031

PLANNED PROJECTS
YEAR 2031

Project Name: Airport-Arroyo 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2031

Project Description: This project consists of constructing a new 115 kV transmission line from Airport to Arroyo with a minimum normal and emergency capacity rating of 760 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the West area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2031

Project Name: Escondido-Oro Grande 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2031

Project Description: This project will involve the reconductoring of a 115 kV transmission line from Escondido to Oro Grande with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2031

Project Name: Oro Grande-Amrad 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2031

Project Description: This project will involve the reconductoring of a 115 kV transmission line from Oro Grande to Amrad with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2031

Project Name: Bovee-Valley 69 kV Line (Reconductor)

Operating Voltage: 69 kV

In-Service Date: May 2031

Project Description: This project will involve the reconductoring of a 69 kV transmission line from Bovee to Valley with a minimum normal and emergency capacity rating of 230 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected large load growth in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2031

Project Name: HVDC Tie Replacement (New)

Operating Voltage: 345 kV

In-Service Date: May 2031

Project Description: This project involves options for the replacement of the existing Eddy HVDC Tie.

Project Justification: This existing HVDC Tie is at the end of its lifespan with limited to no availability of replacement of components and equipment. Because of this, options for a new Eddy HVDC Tie replacement are being considered. Actual replacement schedule will be dictated by lead times for equipment and facilities, including engineering integration efforts.

PLANNED PROJECTS
YEAR 2031

Project Name: Amrad 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2031

Project Description: This project identifies a new additional Amrad 345/115 kV power transformer. The addition of a second Amrad 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

7.7 Transmission Projects in 2032

PLANNED PROJECTS
YEAR 2032

Project Name: Ascarate-Trowbridge 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2032

Project Description: The project consists of reconductoring the Ascarate to Trowbridge 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2032

Project Name: Rattlesnake-Tuskegee 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2032

Project Description: This project consists of constructing a new 115 kV transmission line from Rattlesnake to Tuskegee with a minimum normal and emergency capacity rating of 380 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2032

Project Name: Newman-Milagro 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2032

Project Description: The project consists of reconductoring the Newman to Milagro 115 kV transmission line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2032

Project Name: Tuskegee 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2032

Project Description: This project identifies a new Tuskegee 345/115 kV power transformer to connect the 345 kV & 115 kV Buses at Tuskegee Substation. The addition of the 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

PLANNED PROJECTS
YEAR 2032

Project Name: CE-3 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2032

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV Bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Central El Paso area under peak load conditions.

7.8 Transmission Projects in 2033

PLANNED PROJECTS
YEAR 2033

Project Name: Bovee-North Loop 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2033

Project Description: This project consists of constructing a new 115 kV transmission line from Bovee to North Loop with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected generation and load increase in the Far East El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2033

Project Name: Anthony-Newman 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2033

Project Description: This project consists of reconductoring the Anthony to Newman 115 kV Line to increase the capacity of the lines with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2033

Project Name: Jornada-Arroyo 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2033

Project Description: This project consists of reconductoring the Jornada to Arroyo 115 kV Line to increase the capacity of the lines with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2033

Project Name: Alamo-Neely 69 kV Line Reconfiguration (In-and-Out at Tornillo 69 kV Substation)

Operating Voltage: 69 kV

In-Service Date: May 2033

Project Description: The 69 kV Line Reconfiguration consists of splitting the Alamo to Neely 69 kV circuit to introduce the Tornillo 69 kV Substation. The new 69 kV Path will now become the Alamo to Tornillo to Neely 69 kV Path.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2033

Project Name: Tornillo 115/69 kV Power Transformer (New)

Operating Voltage: 115/69 kV

In-Service Date: May 2033

Project Description: This project identifies a new Tornillo 115/69 kV power transformer to connect the 115 kV & 69 kV Buses at Tornillo Substation. The addition of the 115/69 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

7.9 Transmission Projects in 2034

PLANNED PROJECTS
YEAR 2034

Project Name: Tuskegee-Pine 345 kV Circuit 2 (New)

Operating Voltage: 345 kV

In-Service Date: May 2034

Project Description: An additional 345 kV transmission line is planned to be built from Tuskegee Substation to Pine Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Anthony-Talavera 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Anthony to Talavera 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Arroyo-Apollo 115 kV Line Reconfiguration (In-and-Out at Moongate 115 kV Substation)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The 115 kV Line Reconfiguration consists of splitting the existing Arroyo to Apollo 115 kV circuit to introduce the Moongate 115 kV Substation. The new Path will become the Arroyo to Moongate to Apollo 115 kV Path.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Apollo-Moongate 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Apollo to Moongate 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Arroyo-Moongate 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Arroyo to Moongate 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Diablo-Verde 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Diablo to Verde 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the West El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Marlow-Trowbridge 115 kV Line (Rebuild, Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Marlow to Trowbridge 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Newman-McCombs 115 kV Line Circuit 1 (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Newman to McCombs 115 kV Line Circuit 1 with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: Newman-McCombs 115 kV Line Circuit 2 (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2034

Project Description: The project consists of reconductoring the Newman to McCombs 115 kV Line Circuit 2 with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2034

Project Name: EA-3 69 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 69 kV

In-Service Date: May 2034

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 69 kV bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the East El Paso area under peak load conditions.

7.10 Transmission Projects in 2035

PLANNED PROJECTS

YEAR 2035

Project Name: Future-4 345/115 kV Substation (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2035

Project Description: This project involves the construction of a new Future-4 345/115 kV Substation. The Future-4 345 & 115 kV Buses will be used to connect multiple circuits at these voltage levels as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. This project has also been identified to increase the reliability of EPE's Transmission System. The additional 345 & 115 kV circuits out of Future-4 will address and mitigate any contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Future-4-Tuskegee 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: This project consists of the construction of a new 115 kV transmission line from Future-4 to Tuskegee with a minimum normal and emergency capacity rating of 380 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Future-4-Wiwynn 115 kV Line (New)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: This project consists of the construction of a new 115 kV transmission line from Future-4 to Wiwynn with a minimum normal and emergency capacity rating of 380 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Arroyo-Talavera 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: This project will involve the reconductoring of a 115 kV transmission line from Arroyo to Talavera with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Montoya-Thorn 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: This project will involve the reconductoring of a 115 kV transmission line from Montoya to Thorn with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Newman-Roberts 115 kV Line Circuit 1 (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: The project consists of reconductoring the Newman to Roberts 115 kV Line Circuit 1 with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Santa Teresa-Verde 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: This project will involve the reconductoring of a 115 kV transmission line from Santa Teresa to Verde with a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2035

Project Name: Future-4 115 kV 2x15.9 MVAR Capacitor Bank (New)

Operating Voltage: 115 kV

In-Service Date: May 2035

Project Description: The project consists of the addition of a two-stage 15.9 MVAR bus shunt capacitor bank connected to the 115 kV bus.

Project Justification: This project was identified to enhance reactive power support and improve voltage profiles in the Far East El Paso area under peak load conditions.

7.11 Transmission Projects in 2036

PLANNED PROJECTS
YEAR 2036

Project Name: Future-4-Tornillo 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2036

Project Description: A new 345 kV transmission line is planned to be built from Future-4 Substation to Tornillo Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Future-4-Tuskegee 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2036

Project Description: A new 345 kV transmission line is planned to be built from Future-4 Substation to Tuskegee Substation with a minimum normal and emergency capacity rating of 2320 MVA. This project has been identified as an effort to increase the reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project has been identified to increase the reliability of EPE's Transmission System by addressing contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Caliente-MPS 115 kV Circuit 1 (Partial Reconductor)

Operating Voltage: 345 kV

In-Service Date: May 2036

Project Description: The project consists of partially reconductoring the Caliente to MPS 115 kV Line Circuit 1 with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Caliente-MPS 115 kV Circuits 2&3 Common Structure Separation

Operating Voltage: 115 kV

In-Service Date: May 2036

Project Description: The project consists of separating the Caliente to MPS 115 kV transmission lines, Circuits 2 & 3, from their existing common structure.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Montoya-Nuway 115 kV Line (Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2036

Project Description: The project consists of partially reconductoring the Montoya to Nuway 115 kV Line with a conductor that provides a minimum normal and emergency capacity rating of 380 MVA.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected large load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Rio Grande-Executive-Sunset North 115 kV Path (Rebuild, Reconductor)

Operating Voltage: 115 kV

In-Service Date: May 2036

Project Description: This project involves the reconductoring of a portion of the Rio Grande to Executive to Sunset North 115 kV Path. The rebuilding and reconductoring of this 115 kV Path should be done with a conductor that provides a minimum normal and emergency capacity rating of 760 MVA.

Project Justification: The upgrade is required to address and mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Escondido 345/115 kV Power Transformer #2

Operating Voltage: 345/115 kV

In-Service Date: May 2036

Project Description: This project identifies a new Escondido 345/115 kV autotransformer to connect the 345 kV & 115 kV Buses at Alamo Substation.

Project Justification: This project has been identified as part of a facilities upgrade required to address expected commercial and industrial load growth in the Northeast El Paso area. Additionally, the project will allow EPE to mitigate contingency overloads.

PLANNED PROJECTS
YEAR 2036

Project Name: Future-4 345/115 kV Power Transformer (New)

Operating Voltage: 345/115 kV

In-Service Date: May 2036

Project Description: This project identifies a new Future-4 345/115 kV power transformer to connect the 345 kV & 115 kV Buses at Future-4 Substation. The addition of the 345/115 kV power transformer has been identified to increase the strength and reliability of EPE's Transmission System.

Project Justification: This project addresses any expected generation and load growth in the Far East El Paso area. Additionally, this project will strengthen the reliability of EPE's Transmission System by adding system flexibility under certain contingency conditions.

TRANSFORMING THE

The Electric Company

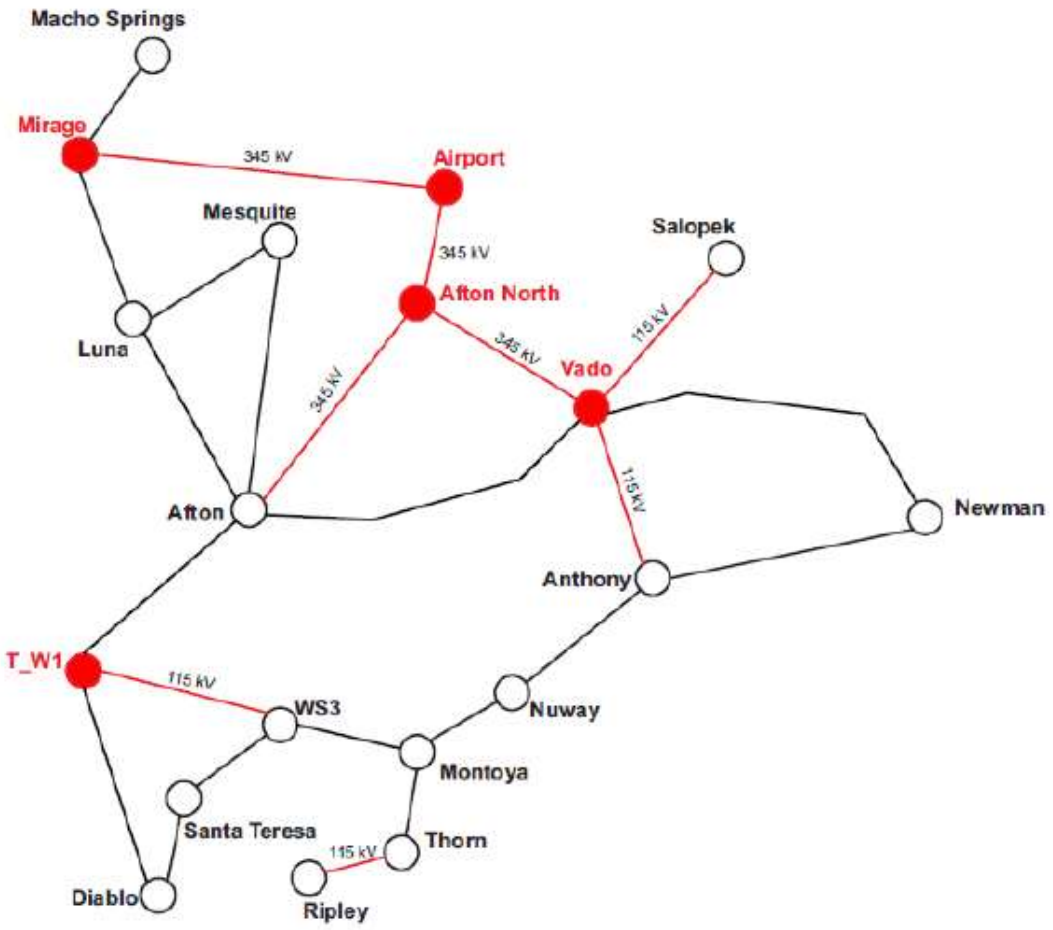
El Paso Electric

ENERGY LANDSCAPE

Afton North-Airport 345kV Line Identified on 2025 EPE System Expansion Plan

Year	Project Description	Expected/Target Completion Date Month-Year
	Rio Bosque-Ascarate 69 kV Line (Reconductor)	May-27
	EA-1 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
	EA-2 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
	FE-7 Substation 115 kV 3x15.9 MVAR Capacitor Bank (New)	May-27
	Rio Bosque 69 kV 1x15.9 MVAR Capacitor Bank (New)	May-27
	WS-3 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-27
2028	Afton North 345 kV Switching Station (New)	May-28
	Airport 345/115 kV Substation (New)	May-28
	Dyer Substation (Voltage Conversion) 69 kV to 115 kV	May-28
	Vado 345/115 kV Substation (New)	May-28
	Afton-Newman 345 kV Line Reconfiguration (In-and-Out at Vado 345 kV Substation)	May-28
	Afton North-Airport 345 kV Line (New)	May-28
	Afton-Afton North 345 kV Line (New)	May-28
	Afton North-Vado 345 kV Line (New)	May-28
	Eastwind-Seabeck 115 kV Line (New)	May-28
	Jornada-Arroyo 115 kV Line (Reconductor)	May-28
	Airport 345/115 kV Autotransformer (New)	May-28
	McCloud East Substation ±200 MVAR STATCOM (New)	May-28
	Leasburg Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
	Marvin Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
	WS-4 Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-28
	West Mesa-Arroyo 345 kV Line Shunt Reactor (50-100 MVAR) (New)	May-28
2029	Anthony-Vado 115 kV Line (Rebuild, Reconductor)	May-29
	Bovee-Eastlake 115 kV Line (New)	May-29
	Bovee-North Loop 115 kV Line (New)	May-29
	Eastlake-Sparks 115 kV Line (Reconductor)	May-29
	Salopek-Vado 115 kV Line (Rebuild, Reconductor)	May-29
	Vado 345/115 kV Autotransformers T1 & T2 (New)	May-29
	Thorn Substation 115 kV 2x15.9 MVAR Capacitor Bank (New)	May-29

MAP 3. WEST AREA (2026-2035)



Existing
New Projects/Upgrades

For Illustration Purposes Only

PLANNED PROJECTS
YEAR 2028

Project Name: Afton North-Airport 345 kV Line (New)

Operating Voltage: 345 kV

In-Service Date: May 2028

Project Description: A new 345 kV transmission line is planned to be built from Afton North Substation to Airport Substation with a minimum normal and emergency capacity rating of 2320 MVA. The Afton North to Airport connection will become one of the main serving points for the Airport Substation.

Project Justification: This transmission line in conjunction with a projected project consisting of a 345/115 kV Autotransformer at Airport Substation, will serve the load at Airport. This transmission line will enhance the system reliability and strengthen the 345 kV transmission system.

A. Introduction

1. **Title:** Transmission Operations

2. **Number:** TOP-001-6

3. **Purpose:** To prevent instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Interconnection by ensuring prompt action to prevent or mitigate such occurrences.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Balancing Authority

   4.1.2. Transmission Operator

   4.1.3. Generator Operator

   4.1.4. Distribution Provider

5. **Effective Date:** See Implementation Plan

B. Requirements and Measures

R1. Each Transmission Operator shall act to maintain the reliability of its Transmission Operator Area via its own actions or by issuing Operating Instructions. *[Violation Risk Factor: High][Time Horizon: Same-Day Operations, Real-time Operations]*

M1. Each Transmission Operator shall have and provide evidence which may include but is not limited to dated operator logs, dated records, dated and time-stamped voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it acted to maintain the reliability of its Transmission Operator Area via its own actions or by issuing Operating Instructions.

R2. Each Balancing Authority shall act to maintain the reliability of its Balancing Authority Area via its own actions or by issuing Operating Instructions. *[Violation Risk Factor: High][Time Horizon: Same-Day Operations, Real-time Operations]*

M2. Each Balancing Authority shall have and provide evidence which may include but is not limited to dated operator logs, dated records, dated and time-stamped voice recordings or dated transcripts of voice recordings, electronic communications, or equivalent documentation, that will be used to determine that it acted to maintain the reliability of its Balancing Authority Area via its own actions or by issuing Operating Instructions.

R3. Each Balancing Authority, Generator Operator, and Distribution Provider shall comply with each Operating Instruction issued by its Transmission Operator(s), unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-Time Operations]*

M3. Each Balancing Authority, Generator Operator, and Distribution Provider shall make available upon request, evidence that it complied with each Operating Instruction issued by the Transmission Operator(s) unless such action could not be physically implemented or it would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format. In such cases, the Balancing Authority, Generator Operator, and Distribution Provider shall have and provide copies of the safety, equipment, regulatory, or statutory requirements as evidence for not complying with the Transmission Operator's Operating Instruction. If such a situation has not occurred, the Balancing Authority, Generator Operator, or Distribution Provider may provide an attestation.

R4. Each Balancing Authority, Generator Operator, and Distribution Provider shall inform its Transmission Operator of its inability to comply with an Operating Instruction issued by its Transmission Operator. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-Time Operations]*

M4. Each Balancing Authority, Generator Operator, and Distribution Provider shall make available upon request, evidence which may include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or equivalent evidence in electronic or hard copy format, that it informed its Transmission Operator of its inability to comply with its Operating Instruction issued. If such a situation has not occurred, the Balancing Authority, Generator Operator, or Distribution Provider may provide an attestation.

R5. Each Transmission Operator, Generator Operator, and Distribution Provider shall comply with each Operating Instruction issued by its Balancing Authority, unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-Time Operations]*

M5. Each Transmission Operator, Generator Operator, and Distribution Provider shall make available upon request, evidence that it complied with each Operating Instruction issued by its Balancing Authority unless such action could not bephysically implemented or it would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format. In such cases, the Transmission Operator, Generator Operator, and Distribution Provider shall have and provide copies of the safety, equipment, regulatory, or statutory requirements as evidence for not complying with the Balancing Authority's Operating Instruction. If such a situation has not occurred, the Transmission Operator, Generator Operator, or Distribution Provider may provide an attestation.

R6. Each Transmission Operator, Generator Operator, and Distribution Provider shall inform its Balancing Authority of its inability to comply with an Operating Instruction issued by its Balancing Authority. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-Time Operations]*

M6. Each Transmission Operator, Generator Operator, and Distribution Provider shall make available upon request, evidence which may include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or equivalent evidence in electronic or hard copy format, that it informed its Balancing Authority of its inability to comply with its Operating Instruction. If such a situation has not occurred, the Transmission Operator, Generator Operator, or Distribution Provider may provide an attestation.

R7. Each Transmission Operator shall assist other Transmission Operators within its Reliability Coordinator Area, if requested and able, provided that the requesting Transmission Operator has implemented its comparable Emergency procedures, unless such assistance cannot be physically implemented or would violate safety, equipment, regulatory, or statutory requirements. *[Violation Risk Factor: High][Time Horizon: Real-Time Operations]*

M7. Each Transmission Operator shall make available upon request, evidence that comparable requested assistance, if able, was provided to other Transmission Operators within its Reliability Coordinator Area unless such assistance could not be physically implemented or would have violated safety, equipment, regulatory, or statutory requirements. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence in electronic or hard copy format. If no request for assistance was received, the Transmission Operator may provide an attestation.

R8. Each Transmission Operator shall inform its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*

M8. Each Transmission Operator shall make available upon request, evidence that it informed its Reliability Coordinator, known impacted Balancing Authorities, and known impacted Transmission Operators of its actual or expected operations that result in, or could result in, an Emergency. Such evidence could include but is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence. If no such situations have occurred, the Transmission Operator may provide an attestation.

R9. Each Balancing Authority and Transmission Operator shall notify its Reliability Coordinator and known impacted interconnected entities of all planned outages, and unplanned outages of 30 minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between the affected entities. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning, Same-Day Operations, Real-Time Operations]*

M9. Each Balancing Authority and Transmission Operator shall make available upon request, evidence that it notified its Reliability Coordinator and known impacted interconnected entities of all planned outages, and unplanned outages of 30 minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels. Such evidence could includebut is not limited to dated operator logs, voice recordings or transcripts of voice recordings, electronic communications, or other equivalent evidence. If such a situation has not occurred, the Balancing Authority or Transmission Operator may provide an attestation.

R10. Each Transmission Operator shall perform the following for determining System Operating Limit (SOL) exceedances within its Transmission Operator Area: *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*

10.1. Monitor Facilities within its Transmission Operator Area;

10.2. Monitor the status of Remedial Action Schemes within its Transmission Operator Area;

10.3. Monitor non-BES facilities within its Transmission Operator Area identified as necessary by the Transmission Operator;

10.4. Obtain and utilize status, voltages, and flow data for Facilities outside its Transmission Operator Area identified as necessary by the Transmission Operator;

10.5. Obtain and utilize the status of Remedial Action Schemes outside its Transmission Operator Area identified as necessary by the Transmission Operator; and

10.6. Obtain and utilize status, voltages, and flow data for non-BES facilities outside its Transmission Operator Area identified as necessary by the Transmission Operator.

M10. Each Transmission Operator shall have, and provide upon request, evidence that could include but is not limited to Energy Management System description documents, computer printouts, Supervisory Control and Data Acquisition (SCADA) data collection, or other equivalent evidence that will be used to confirm that it monitored or obtained and utilized data as required to determine any System Operating Limit (SOL) exceedances within its Transmission Operator Area.

R11. Each Balancing Authority shall monitor its Balancing Authority Area, including the status of Remedial Action Schemes that impact generation or Load, in order to maintain generation-Load-interchange balance within its Balancing Authority Area and support Interconnection frequency. *[Violation Risk Factor: High] [Time Horizon: Real-Time Operations]*

M11. Each Balancing Authority shall have, and provide upon request, evidence that could include but is not limited to Energy Management System description documents, computer printouts, SCADA data collection, or other equivalent evidence that will be used to confirm that it monitors its Balancing Authority Area, including the status of Remedial Action Schemes that impact generation or Load, in order to maintain generation-Load-interchange balance within its Balancing Authority Area and support Interconnection frequency.

R12. Each Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL T_V. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

M12. Each Transmission Operator shall make available evidence to show that for any occasion in which it operated outside any identified Interconnection Reliability Operating Limit (IROL), the continuous duration did not exceed its associated IROL T_V. Such evidence could include but is not limited to dated computer logs or reports in electronic or hard copy format specifying the date, time, duration, and details of the

excursion. If such a situation has not occurred, the Transmission Operator may provide an attestation that an event has not occurred.

R13. Each Transmission Operator shall ensure that a Real-time Assessment is performed at least once every 30 minutes. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

M13. Each Transmission Operator shall have, and make available upon request, evidence to show it ensured that a Real-Time Assessment was performed at least once every 30 minutes. This evidence could include but is not limited to dated computer logs showing times the assessment was conducted, dated checklists, or other evidence.

R14. Each Transmission Operator shall initiate its Operating Plan to mitigate a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment. *[Violation Risk Factor: High] [Time Horizon: Real-time Operations]*

M14. Each Transmission Operator shall have evidence that it initiated its Operating Plan for mitigating SOL exceedances identified as part of its Real-time monitoring or Real-time Assessments. This evidence could include but is not limited to dated computer logs showing times the Operating Plan was initiated, dated checklists, or other evidence. Other evidence could include but is not limited to: Reliability Coordinator's SOL methodology, system logs/records showing successfully mitigated SOL exceedances in conjunction with Operating Plans (e.g. mutually agreed operating protocols between TOPs and their Reliability Coordinator, Operating Procedures, Operating Processes, operating policies, generator redispatch logs, equipment settings for automatically switched equipment and reactive power/voltage control devices, switching schedules, etc.).

R15. Each Transmission Operator shall inform its Reliability Coordinator of actions taken to return the System to within limits when a SOL has been exceeded in accordance with its Reliability Coordinator's SOL methodology. *[Violation Risk Factor: Medium] [Time Horizon: Real-Time Operations]*

M15. Each Transmission Operator shall make available evidence that it informed its Reliability Coordinator of actions taken to return the System to within limits when a SOL was exceeded in accordance with its Reliability Coordinator's SOL methodology. Such evidence could include but is not limited to dated operator logs, electronic communications, voice recordings or transcripts of voice recordings, or dated computer printouts. If such a situation has not occurred, the Transmission Operator may provide an attestation.

R16. Each Transmission Operator shall provide its System Operators with the authority to approve planned outages and maintenance of its telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M16. Each Transmission Operator shall have, and provide upon request, evidence that could include but is not limited to a documented procedure or equivalent evidence that will be used to confirm that the Transmission Operator has provided its System Operators with the authority to approve planned outages and maintenance of telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities.

R17. Each Balancing Authority shall provide its System Operators with the authority to approve planned outages and maintenance of its telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities. *[Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M17. Each Balancing Authority shall have, and provide upon request, evidence that could include but is not limited to a documented procedure or equivalent evidence that will be used to confirm that the Balancing Authority has provided its System Operators with the authority to approve planned outages and maintenance of its telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities.

R18. Each Transmission Operator shall operate to the most limiting parameter in instances where there is a difference in SOLs. [*Violation Risk Factor: High] [Time Horizon: Operations Planning, Same-Day Operations, Real-time Operations]*

M18. Each Transmission Operator shall have, and provide upon request, evidence that could include but is not limited to operator logs, voice recordings, electronic communications, or equivalent evidence that will be used to determine if it operated to the most limiting parameter in instances where there is a difference in SOLs.

R19. Reserved.

M19. Reserved.

R20. Each Transmission Operator shall have data exchange capabilities, with redundant and diversely routed data exchange infrastructure within the Transmission Operator's primary Control Center, for the exchange of Real-time data with its Reliability Coordinator, Balancing Authority, and the entities it has identified it needs data from in order for it to perform its Real-time monitoring and Real-time Assessments. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-time Operations]*

M20. Each Transmission Operator shall have, and provide upon request, evidence that could include, but is not limited to, system specifications, system diagrams, or other documentation that lists its data exchange capabilities, including redundant and diversely routed data exchange infrastructure within the Transmission Operator's primary Control Center, for the exchange of Real-time data with its Reliability Coordinator, Balancing Authority, and the entities it has identified it needs data from

in order to perform its Real-time monitoring and Real-time Assessments as specified in the requirement.

R21. Each Transmission Operator shall test its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality at least once every 90 calendar days. If the test is unsuccessful, the Transmission Operator shall initiate action within two hours to restore redundant functionality. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M21. Each Transmission Operator shall have, and provide upon request, evidence that it tested its primary Control Center data exchange capabilities specified in Requirement R20 for the redundant functionality, or experienced an event that demonstrated the redundant functionality; and, if the test was unsuccessful, initiated action within two hours to restore redundant functionality as specified in Requirement R21. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, or electronic communications.

R22. Reserved.

M22. Reserved.

R23. Each Balancing Authority shall have data exchange capabilities, with redundant and diversely routed data exchange infrastructure within the Balancing Authority's primary Control Center, for the exchange of Real-time data with its Reliability Coordinator, Transmission Operator, and the entities it has identified it needs data from in order for it to perform its Real-time monitoring and analysis functions. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-time Operations]*

M23. Each Balancing Authority shall have, and provide upon request, evidence that could include, but is not limited to, system specifications, system diagrams, or other documentation that lists its data exchange capabilities, including redundant and diversely routed data exchange infrastructure within the Balancing Authority's primary Control Center, for the exchange of Real-time data with its Reliability Coordinator, Transmission Operator, and the entities it has identified it needs data from in order to perform its Real-time monitoring and analysis functions as specified in the requirement.

R24. Each Balancing Authority shall test its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality at least once every 90 calendar days. If the test is unsuccessful, the Balancing Authority shall initiate action within two hours to restore redundant functionality. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M24. Each Balancing Authority shall have, and provide upon request, evidence that it tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality, or experienced an event that demonstrated the redundant functionality; and, if the test was unsuccessful, initiated action within two

hours to restore redundant functionality as specified in Requirement R24. Evidence could include, but is not limited to: dated and time-stamped test records, operator logs, voice recordings, or electronic communications.

R25. Each Transmission Operator shall use the applicable Reliability Coordinator's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time monitoring, and Operational Planning Analysis. *[Violation Risk Factor: High] [Time Horizon: Same-Day Operations, Real-time Operations, Operations Planning]*

M25. Each Transmission Operator shall have, and provide upon request, evidence that it used the applicable Reliability Coordinator's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time monitoring, and Operational Planning Analysis. Evidence could include, but is not limited to: Reliability Coordinator's SOL methodology, Operating Plans, contingency sets, alarming and study reporting thresholds, operator logs, voice recordings or other equivalent evidence.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority:

"Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention:

The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Each Balancing Authority, Transmission Operator, Generator Operator, and Distribution Provider shall each keep data or evidence for each applicable Requirement R1 through R11, and Measure M1 through M11, for the current calendar year and one previous calendar year, with the exception of operator logs and voice recordings which shall be retained for a minimum of 90 calendar days, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- Each Transmission Operator shall retain evidence for three calendar years of any occasion in which it has exceeded an identified IROL and its associated IROL T_v as specified in Requirement R12 and Measure M12.
- Each Transmission Operator shall keep data or evidence for Requirement R13 and Measure M13 for a rolling 30-day period, unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.
- Each Transmission Operator shall retain evidence and that it initiated its Operating Plan to mitigate a SOL exceedance as specified in Requirement R14 and Measurement M14 for rolling 12 months.
- Each Transmission Operator and Balancing Authority shall each keep data or evidence for each applicable Requirement R15 through R18, and Measure M15 through M18 for the current calendar year and one

previous calendar year, with the exception of operator logs and voice recordings which shall be retained for a minimum of 90 calendar days.

- Each Transmission Operator shall keep data or evidence for Requirement R20 and Measure M20 for the current calendar year and one previous calendar year.
- Each Transmission Operator shall keep evidence for Requirement R21 and Measure M21 for the most recent twelve calendar months, with the exception of operator logs and voice recordings which shall be retained for a minimum of 90 calendar days.
- Each Balancing Authority shall keep data or evidence for Requirement R23 and Measure M23 for the current calendar year and one previous calendar year.
- Each Balancing Authority shall keep evidence for Requirement R24 and Measure M24 for the most recent twelve calendar months, with the exception of operator logs and voice recordings which shall be retained for a minimum of 90 calendar days.
- Each Transmission Operator shall retain evidence that it used the applicable Reliability Coordinator's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time monitoring, and Operational Planning Analysis as specified in Requirement R25 and Measurement M25 for a rolling 12 months.

1.3. Compliance Monitoring and Enforcement Program

As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	N/A	N/A	N/A	The Transmission Operator failed to act to maintain the reliability of its Transmission Operator Area via its own actions or by issuing Operating Instructions.
R2.	N/A	N/A	N/A	The Balancing Authority failed to act to maintain the reliability of its Balancing Authority Area via its own actions or by issuing Operating Instructions.
R3.	N/A	N/A	N/A	The responsible entity did not comply with an Operating Instruction issued by the Transmission Operator, and such action could have been physically implemented and would not have violated safety, equipment, regulatory, or statutory requirements.
R4.	N/A	N/A	N/A	The responsible entity did not inform its Transmission Operator of its inability to

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				comply with an Operating Instruction issued by its Transmission Operator.
R5.	N/A	N/A	N/A	The responsible entity did not comply with an Operating Instruction issued by the Balancing Authority, and such action could have been physically implemented and would not have violated safety, equipment, regulatory, or statutory requirements.
R6.	N/A	N/A	N/A	The responsible entity did not inform its Balancing Authority of its inability to comply with an Operating Instruction issued by its Balancing Authority.
R7.	N/A	N/A	N/A	The Transmission Operator did not provide comparable assistance to other Transmission Operators within its Reliability Coordinator Area, when requested and able, and the

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				requesting entity had implemented its Emergency procedures, and such actions could have been physically implemented and would not have violated safety, equipment, regulatory, or statutory requirements.
R8.	The Transmission Operator did not inform one known impacted Transmission Operator or 5% or less of the known impacted Transmission Operators, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas. OR, The Transmission Operator did not inform one known impacted	The Transmission Operator did not inform two known impacted Transmission Operators or more than 5% and less than or equal to 10% of the known impacted Transmission Operators, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas. OR, The Transmission Operator did not inform two known impacted Balancing	The Transmission Operator did not inform three known impacted Transmission Operators or more than 10% and less than or equal to 15% of the known impacted Transmission Operators, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Transmission Operator Areas. OR, The Transmission Operator did not inform three known impacted Balancing	The Transmission Operator did not inform its Reliability Coordinator of its actual or expected operations that resulted in, or could have resulted in, an Emergency on those respective Transmission Operator Areas. OR The Transmission Operator did not inform four or more known impacted Transmission Operators or more than 15% of the known impacted Transmission Operators of its actual or expected

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	Balancing Authorities or 5% or less of the known impacted Balancing Authorities, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas.	Authorities or more than 5% and less than or equal to 10% of the known impacted Balancing Authorities, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas.	Authorities or more than 10% and less than or equal to 15% of the known impacted Balancing Authorities, whichever is greater, of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas.	operations that resulted in, or could have resulted in, an Emergency on those respective Transmission Operator Areas. OR, The Transmission Operator did not inform four or more known impacted Balancing Authorities or more than 15% of the known impacted Balancing Authorities of its actual or expected operations that resulted in, or could have resulted in, an Emergency on respective Balancing Authority Areas.
R9.	The responsible entity did not notify one known impacted interconnected entity or 5% or less of the known impacted entities, whichever is greater, of a planned outage, or an unplanned outage of 30 minutes or more, for telemetering and control	The responsible entity did not notify two known impacted interconnected entities or more than 5% and less than or equal to 10% of the known impacted entities, whichever is greater, of a planned outage, or an unplanned outage of 30	The responsible entity did not notify three known impacted interconnected entities or more than 10% and less than or equal to 15% of the known impacted entities, whichever is greater, of a planned outage, or an unplanned outage of 30	The responsible entity did not notify its Reliability Coordinator of a planned outage, or an unplanned outage of 30 minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	equipment, monitoring and assessment capabilities, or associated communication channels between the affected entities.	minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, or associated communication channels between the affected entities.	minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, or associated communication channels between the affected entities.	OR, The responsible entity did not notify four or more known impacted interconnected entities or more than 15% of the known impacted entities, whichever is greater, of a planned outage, or an unplanned outage of 30 minutes or more, for telemetering and control equipment, monitoring and assessment capabilities, or associated communication channels between the affected entities.
R10.	The Transmission Operator did not monitor, obtain, or utilize one of the items required or identified as necessary by the Transmission Operator and listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize two of the items required or identified as necessary by the Transmission Operator and listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize three of the items required or identified as necessary by the Transmission Operator and listed in Requirement R10, Part 10.1 through 10.6.	The Transmission Operator did not monitor, obtain, or utilize four or more of the items required or identified as necessary by the Transmission Operator and listed in Requirement R10 Part 10.1 through 10.6.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R11.	N/A	N/A	The Balancing Authority did not monitor the status of Remedial Action Schemes that impact generation or Load, in order to maintain generation-Load-interchange balance within its Balancing Authority Area and support Interconnection frequency.	The Balancing Authority did not monitor its Balancing Authority Area, in order to maintain generation-Load-interchange balance within its Balancing Authority Area and support Interconnection frequency.
R12.	N/A	N/A	N/A	The Transmission Operator exceeded an identified Interconnection Reliability Operating Limit (IROL) for a continuous duration greater than its associated IROL T_v.
R13.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for one 30-minute period within that 24-hour period.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for two 30-minute periods within that 24-hour period.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for three 30-minute periods within that 24-hour period.	For any sample 24-hour period within the 30-day retention period, the Transmission Operator's Real-time Assessment was not conducted for four or more 30-minute periods within that 24-hour period.
R14.	N/A	N/A	N/A	The Transmission Operator did not initiate its Operating

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
				Plan for mitigating a SOL exceedance identified as part of its Real-time monitoring or Real-time Assessment
R15.	N/A	N/A	N/A	The Transmission Operator did not inform in accordance with its Reliability Coordinator's SOL methodology its Reliability Coordinator of actions taken to return the System to within limits when a SOL had been exceeded.
R16.	N/A	N/A	N/A	The Transmission Operator did not provide its System Operators with the authority to approve planned outages and maintenance of its telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R17.	N/A	N/A	N/A	The Balancing Authority did not provide its System Operators with the authority to approve planned outages and maintenance of its telemetering and control equipment, monitoring and assessment capabilities, and associated communication channels between affected entities.
R18.	N/A	N/A	N/A	The Transmission Operator failed to operate to the most limiting parameter in instances where there was a difference in SOLs.
R19. Reserved.				
R20.	N/A	N/A	The Transmission Operator had data exchange capabilities with its Reliability Coordinator, Balancing Authority, and identified entities for performing Real-time	The Transmission Operator did not have data exchange capabilities with its Reliability Coordinator, Balancing Authority, and identified entities for performing Real-time

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			monitoring and Real-time Assessments, but did not have redundant and diversely routed data exchange infrastructure within the Transmission Operator's primary Control Center, as specified in the Requirement.	monitoring and Real-time Assessments as specified in the Requirement.
R21.	The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality, but did so more than 90 calendar days but less than or equal to 120 calendar days since the previous test; OR The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement	The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality, but did so more than 120 calendar days but less than or equal to 150 calendar days since the previous test; OR The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality at least once every 90 calendar	The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality, but did so more than 150 calendar days but less than or equal to 180 calendar days since the previous test; OR The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality at least once every 90 calendar	The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality, but did so more than 180 calendar days since the previous test; OR The Transmission Operator did not test its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality;

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	R20 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 2 hours and less than or equal to 4 hours.	days but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 4 hours and less than or equal to 6 hours.	days but, following an unsuccessful test, initiated action to restore the redundant functionality in more than 6 hours and less than or equal to 8 hours.	OR The Transmission Operator tested its primary Control Center data exchange capabilities specified in Requirement R20 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, did not initiate action within 8 hours to restore the redundant functionality.
R22. Reserved.				
R23.	N/A	N/A	The Balancing Authority had data exchange capabilities with its Reliability Coordinator, Transmission Operator, and identified entities for performing Real-time monitoring and analysis functions, but did not have redundant and diversely routed data exchange infrastructure	The Balancing Authority did not have data exchange capabilities with its Reliability Coordinator, Transmission Operator, and identified entities for performing Real-time monitoring and analysis functions as specified in the Requirement.

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
			within the Balancing Authority's primary Control Center, as specified in the Requirement.	
R24.	The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality, but did so more than 90 calendar days but less than or equal to 120 calendar days since the previous test; OR The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, initiated action to restore the redundant	The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality, but did so more than 120 calendar days but less than or equal to 150 calendar days since the previous test; OR The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, initiated action to restore the redundant functionality in	The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality, but did so more than 150 calendar days but less than or equal to 180 calendar days since the previous test; OR The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, initiated action to restore the redundant functionality in	The Balancing Authority tested its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality, but did so more than 180 calendar days since the previous test; OR The Balancing Authority did not test its primary Control Center data exchange capabilities specified in Requirement R23 for redundant functionality; OR The Balancing Authority tested its primary Control Center data exchange capabilities specified in

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
	functionality in more than 2 hours and less than or equal to 4 hours.	more than 4 hours and less than or equal to 6 hours.	more than 6 hours and less than or equal to 8 hours.	Requirement R23 for redundant functionality at least once every 90 calendar days but, following an unsuccessful test, did not initiate action within 8 hours to restore the redundant functionality.
R25.				The Transmission Operator failed to use the applicable Reliability Coordinator's SOL methodology when determining SOL exceedances for Real-time Assessments, Real-time monitoring, and Operational Planning Analysis.

D. Regional Variances

None.

E. Associated Documents

The Project 2014-03 SDT has created the SOL Exceedance White Paper as guidance on SOL issues and the URL for that document is: http://www.nerc.com/pa/stand/Pages/TOP0013RI.aspx.

Operating Plan - An Operating Plan includes general Operating Processes and specific Operating Procedures. It may be an overview document which provides a prescription for an Operating Plan for the next-day, or it may be a specific plan to address a specific SOL or IROL exceedance identified in the Operational Planning Analysis (OPA). Consistent with the NERC definition, Operating Plans can be general in nature, or they can be specific plans to address specific reliability issues. The use of the term Operating Plan in the revised TOP/IRO standards allows room for both. An Operating Plan references processes and procedures, including electronic data exchange, which are available to the System Operator on a daily basis to allow the operator to reliably address conditions which may arise throughout the day. It is valid for tomorrow, the day after, and the day after that. Operating Plans should be augmented by temporary operating guides which outline prevention/mitigation plans for specific situations which are identified day-to-day in an OPA or a Real-time Assessment (RTA). As the definition in the Glossary of Terms states, a restoration plan is an example of an Operating Plan. It contains all the overarching principles that the System Operator needs to work his/her way through the restoration process. It is not a specific document written for a specific blackout scenario but rather a collection of tools consisting of processes, procedures, and automated software systems that are available to the operator to use in restoring the system. An Operating Plan can in turn be looked upon in a similar manner. It does not contain a prescription for the specific set-up for tomorrow but contains a treatment of all the processes, procedures, and automated software systems that are at the operator's disposal. The existence of an Operating Plan, however, does not preclude the need for creating specific action plans for specific SOL or IROL exceedances identified in the OPA. When a Reliability Coordinator performs an OPA, the analysis may reveal instances of possible SOL or IROL exceedances for pre- or post-Contingency conditions. In these instances, Reliability Coordinators are expected to ensure that there are plans in place to prevent or mitigate those SOLs or IROLs, should those operating conditions be encountered the next day. The Operating Plan may contain a description of the process by which specific prevention or mitigation plans for day-to-day SOL or IROL exceedances identified in the OPA are handled and communicated. This approach could alleviate any potential administrative burden associated with perceived requirements for continual day-to-day updating of "the Operating Plan document" for compliance purposes.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	August 8, 2005	Removed “Proposed” from Effective Date	Errata
1	November 1, 2006	Adopted by Board of Trustees	Revised
1a	May 12, 2010	Added Appendix 1 – Interpretation of R8 approved by Board of Trustees on May 12, 2010	Interpretation
1a	September 15, 2011	FERC Order issued approved the Interpretation of R8 (FERC Order became effective November 21, 2011)	Interpretation
2	May 6, 2012	Revised under Project 2007-03	Revised
2	May 9, 2012	Adopted by Board of Trustees	Revised
3	February 12, 2015	Adopted by Board of Trustees	Revisions under Project 2014-03
3	November 19, 2015	FERC approved TOP-001-3. Docket No. RM15-16-000. Order No. 817.	Approved
4	February 9, 2017	Adopted by Board of Trustees	Revised
4	April 17, 2017	FERC letter Order approved TOP-001-4. Docket No. RD17-4-000	
5	TBD	Adopted by Board of Trustees	R19 and R22 retired under Project 2018-03 Standards Efficiency Review Retirements
6	May 13, 2021	Adopted by the Board of Trustees	Revised under Project 2015-09
6	March 4, 2022	FERC Letter Order issued approving Docket No.RD22-2-000.	
6	March 4, 2022	Effective Date	April 1, 2024

A. Introduction

1. **Title:** **System Operating Limits Methodology for the Operations Horizon**

2. **Number:** FAC-011-4

3. **Purpose:** To ensure that System Operating Limits (SOLs) used in the reliable operation of the Bulk Electric System (BES) are determined based on an established methodology or methodologies.

4. **Applicability:**

   4.1. Functional Entities:

   3.1.1. Reliability Coordinator

5. **Effective Date:** See Implementation Plan for Project 2015-09.

B. Requirements and Measures

R1. Each Reliability Coordinator shall have a documented methodology for establishing SOLs (i.e., SOL methodology) within its Reliability Coordinator Area. *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M1. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology.

R2. Each Reliability Coordinator shall include in its SOL methodology the method for Transmission Operators to determine which owner-provided Facility Ratings are to be used in operations such that the Transmission Operator and its Reliability Coordinator use common Facility Ratings *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

M2. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology, that addresses the items listed in Requirement R2.

R3. Each Reliability Coordinator shall include in its SOL methodology the method for Transmission Operators to determine the System Voltage Limits to be used in operations. The method shall: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

3.1. Require that each BES bus/station have an associated System Voltage Limits, unless its SOL methodology specifically allows the exclusion of BES buses/stations from the requirement to have an associated System Voltage Limit;

3.2. Require that System Voltage Limits respect voltage-based Facility Ratings;

3.3. Require that System Voltage Limits are greater than or equal to in-service BES relay settings for undervoltage load shedding systems and Undervoltage Load Shedding Programs;

3.4. Identify the minimum allowable System Voltage Limit;

3.5. Define the method for determining common System Voltage Limits between the Reliability Coordinator and its Transmission Operators, between adjacent Transmission Operators, and between adjacent Reliability Coordinators within an Interconnection.

M3. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R3.

R4. Each Reliability Coordinator shall include in its SOL methodology the method for determining the stability limits to be used in operations. The method shall: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

4.1. Specify stability performance criteria, including any margins applied. The criteria shall, at a minimum, include the following:

4.1.1. steady-state voltage stability;

4.1.2. transient voltage response;

4.1.3. angular stability; and

4.1.4. System damping.

4.2. Require that stability limits are established to meet the criteria specified in Part 4.1 for the Contingencies identified in Requirement R5 applicable to the establishment of stability limits that are expected to produce more severe System impacts on its portion of the BES.

4.3. Describe how the Reliability Coordinator establishes stability limits when there is an impact to more than one Transmission Operator in its Reliability Coordinator Area or other Reliability Coordinator Areas.

4.4. Describe how stability limits are determined, considering levels of transfers, Load and generation dispatch, and System conditions including any changes to System topology such as Facility outages.

4.5. Describe the level of detail that is required for the study model(s), including the portion modeled of the Reliability Coordinator Area, and the critical modeling details from other Reliability Coordinator Areas, necessary to determine different types of stability limits.

4.6. Describe the allowed uses of Remedial Action Schemes and other automatic post-Contingency mitigation actions in establishing stability limits used in operations.

4.7. State that the use of underfrequency load shedding (UFLS) programs and Undervoltage Load Shedding (UVLS) Programs are not allowed in the establishment of stability limits.

M4. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R4.

R5. Each Reliability Coordinator shall identify in its SOL methodology the set of Contingency events for use in determining stability limits and the set of Contingency events for use in performing Operational Planning Analysis (OPAs) and Real-time Assessments (RTAs). The SOL methodology for each set shall: *[Violation Risk Factor: Medium] [Time Horizon: Operations Planning]*

5.1. Specify the following single Contingency events

5.1.1. Loss of any of the following either by single phase to ground or three phase Fault (whichever is more severe) with Normal Clearing, or without a Fault:

- generator;
- transmission circuit;
- transformer;
- shunt device; or

- single pole block in a monopolar or bipolar high voltage direct current system.

5.2. Specify additional single or multiple Contingency events or types of Contingency events, if any.

5.3. Describe the method(s) for identifying which, if any, of the Contingency events provided by the Planning Coordinator or Transmission Planner in accordance with FAC-014-3, Requirement R7, to use in determining stability limits.

M5. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R5.

R6. Each Reliability Coordinator shall include the following performance framework in its SOL methodology to determine SOL exceedances when performing Real-time monitoring, Real-time Assessments, and Operational Planning Analyses: *[Violation Risk Factor: High] [Time Horizon: Operations Planning]*

6.1. System performance for no Contingencies demonstrates the following:

6.1.1. Steady state flow through Facilities are within Normal Ratings; however, Emergency Ratings may be used when System adjustments to return theflow within its Normal Rating could be executed and completed within the specified time duration of those Emergency Ratings.

6.1.2. Steady state voltages are within normal System Voltage Limits; however, emergency System Voltage Limits may be used when System adjustments to return the voltage within its normal System Voltage Limits could be executed and completed within the specified time duration of those emergency System Voltage Limits.

6.1.3. Predetermined stability limits are not exceeded.

6.1.4. Instability, Cascading or uncontrolled separation that adversely impact the reliability of the Bulk Electric System does not occur.[1]

6.2. System performance for the single Contingencies listed in Part 5.1 demonstrates the following:

6.2.1. Steady state post-Contingency flow through Facilities within applicable Emergency Ratings. Steady state post-Contingency flow through a Facility must not be above the Facility's highest Emergency Rating.

6.2.2. Steady state post-Contingency voltages are within emergency System Voltage Limits.

6.2.3. The stability performance criteria defined in the Reliability Coordinator's SOL methodology are met[1].

6.2.4. Instability, Cascading or uncontrolled separation that adversely impact the reliability of the Bulk Electric System does not occur[1].

6.3. System performance for applicable Contingencies identified in Part 5.2 demonstrates that: instability, Cascading, or uncontrolled separation that

adversely impact the reliability of the Bulk Electric System does not occur.

6.4. In determining the System's response to any Contingency identified in Requirement R5, planned manual load shedding is acceptable only after all other available System adjustments have been made.

M6. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R6.

R7. Each Reliability Coordinator shall include in its SOL methodology a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, the timeframe that communication must occur. The approach shall include: *[Violation Risk Factor: High] [Time Horizon: Operations Planning]*

[1] Stability evaluations and assessments of instability, Cascading, and uncontrolled separation can be performed using real-time stability assessments, predetermined stability limits or other offline analysis techniques.

7.1. A requirement that the following SOL exceedances will always be communicated, within a timeframe identified by the Reliability Coordinator.

7.1.1 IROL exceedances;

7.1.2 SOL exceedances of stability limits;

7.1.3 Post Contingency SOL exceedances that are identified to have a validated risk of instability, Cascading, and uncontrolled separation;

7.1.4 Pre-Contingency SOL exceedances of Facility Ratings; and

7.1.5 Pre-Contingency SOL exceedances of normal minimum System Voltage Limits.

7.2. A requirement that the following SOL exceedances must be communicated, if not resolved within 30 minutes, within a timeframe identified by the Reliability Coordinator.

7.2.1 Post-Contingency SOL exceedances of Facility Ratings and emergency System Voltage Limits, and

7.2.2 Pre-Contingency SOL exceedances of normal maximum System Voltage Limits.

M7. Acceptable evidence may include, but is not limited to dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R7.

R8. Each Reliability Coordinator shall include in its SOL methodology: *[Violation Risk Factor: High] [Time Horizon: Operations Planning]*

8.1. A description of how to identify the subset of SOLs that qualify as Interconnection Reliability Operating Limits (IROLs).

8.2. Criteria for determining when exceeding a SOL qualifies as exceeding an IROL and criteria for developing any associated IROL T_V.

M8. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation of its SOL methodology that addresses the items listed in Requirement R8.

R9. Each Reliability Coordinator shall provide its SOL methodology to: *[Violation Risk Factor: Lower] [Time Horizon: Operations Planning]*

9.1. Each Reliability Coordinator that requests and indicates it has a reliability-related need within 30 days of a request.

9.2. Each of the following entities prior to the effective date of the SOL methodology:

9.2.1. Each adjacent Reliability Coordinator within the same; Interconnection;

9.2.2. Each Planning Coordinator and Transmission Planner that is responsible for planning any portion of the Reliability Coordinator Area;

9.2.3. Each Transmission Operator within its Reliability Coordinator Area; and

9.2.4. Each Reliability Coordinator that has requested to receive updates and

indicated it had a reliability-related need.

M9. Acceptable evidence may include, but is not limited to, dated electronic or hard copy documentation such as emails with receipts, registered mail receipts, or postings to a secure web site with accompanying notification(s).

C. Compliance

1. Compliance Monitoring Process

1.1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.1.1. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The Reliability Coordinator shall keep data or evidence of compliance with Requirements R1 through R9 for the current year plus the previous 12 calendar months.

1.1.1. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

Requirement	Lower	Moderate	High	Severe
R1.	N/A	N/A	N/A	The Reliability Coordinator did not have a documented SOL methodology for establishing SOLs within its Reliability Coordinator Area.
R2.	N/A	N/A	The Reliability Coordinator included in its SOL methodology the method for Transmission Operators to determine which owner-provided Facility Ratings are to be used in operations, but the method did not address the use of common Facility Ratings between the Reliability Coordinator and the Transmission Operators in its Reliability Coordinator Area.	The Reliability Coordinator did not include in its SOL methodology the method for Transmission Operators to determine which owner-provided Facility Ratings are to be used in operations.
R3.	The Reliability Coordinator failed to incorporate one of the Parts of Requirement R3 into its SOL methodology.	The Reliability Coordinator failed to incorporate two of the Parts of Requirement R3 into its SOL methodology.	The Reliability Coordinator failed to incorporate three of the Parts of Requirement R3 into its SOL methodology.	The Reliability Coordinator failed to incorporate four or more of the Parts of Requirement R3 into its SOL methodology.
R4.	The Reliability Coordinator failed to incorporate one of the Parts of	The Reliability Coordinator failed to incorporate two of the Parts of	The Reliability Coordinator failed to incorporate three of the Parts of Requirement	The Reliability Coordinator failed to incorporate four or more of the Parts of

Requirement	Lower	Moderate	High	Severe
	Requirement R4 into its SOL methodology.	Requirement R4 into its SOL methodology.	R4 into its SOL methodology.	Requirement R4 into its SOL methodology.
R5.	N/A	N/A	The Reliability Coordinator failed to incorporate one of the Parts 5.2 or 5.3 of Requirement R5 into its SOL methodology.	The Reliability Coordinator failed to incorporate Part 5.1 of Requirement R5 into its SOL methodology. OR The Reliability Coordinator failed to incorporate Parts 5.2 and 5.3 of Requirement R5 into its SOL methodology.
R6.	The Reliability Coordinator failed to incorporate one of the Parts of Requirement R6 into its SOL methodology.	The Reliability Coordinator failed to incorporate two of the Parts of Requirement R6 into its SOL methodology.	The Reliability Coordinator failed to incorporate three of the Parts of Requirement R6 into its SOL methodology.	The Reliability Coordinator failed to incorporate four of the Parts of Requirement R6 into its SOL methodology.
R7.	N/A	The Reliability Coordinator included in its SOL methodology, a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, with what priority, but failed to include one of the Parts 7.2.1 through 7.2.2.	The Reliability Coordinator included in its SOL methodology, a risk-based approach for determining how SOL exceedances identified as part of Real-time monitoring and Real-time Assessments must be communicated and if so, with what priority, but failed to include one of the Parts 7.1.1 through 7.1.5.	The Reliability Coordinator failed to include in its SOL methodology, a risk-based approach for determining how SOL exceedances identified as part of Real- time monitoring and Real-time Assessments must be communicated and if so, with what priority.

Requirement	Lower	Moderate	High	Severe
R8.	N/A	N/A	The Reliability Coordinator failed to include Part 8.1 (a description of how to identify the subset of SOLs that qualify as IROLs) in its SOL methodology. OR The Reliability Coordinator failed to include Part 8.2 (a criteria for determining when violating a SOL qualifies as an IROL in its SOL methodology. OR The Reliability Coordinator failed to include Part 8.2 (criteria for developing any associated IROL T_v) in its SOL methodology.	The Reliability Coordinator failed to include Parts 8.1 and 8.2 in its SOL methodology.
R9.	The Reliability Coordinator failed to provide its new or revised SOL methodology to one of the parties specified in Requirement R9, Part 9.2 prior to the effective date OR The Reliability Coordinator provided its new or revised SOL methodology to a requesting Reliability	The Reliability Coordinator failed to provide its new or revised SOL methodology to two of the parties specified in Requirement R9, Part 9.2 prior to the effective date OR The Reliability Coordinator provided its new or revised SOL methodology to a requesting Reliability	The Reliability Coordinator failed to provide its new or revised SOL methodology to three of the parties specified in Requirement R9, Part 9.2 prior to the effective date OR The Reliability Coordinator provided its new or revised SOL methodology to a requesting Reliability	The Reliability Coordinator failed to provide its new or revised SOL methodology to four or more of the parties specified in Requirement R9, Part 9.2 prior to the effective date OR The Reliability Coordinator failed to provide its new or revised SOL methodology

Requirement	Lower	Moderate	High	Severe
	Coordinator in accordance with Requirement R9, Part 9.1 but was late by less than or equal to 10 calendar days.	Coordinator in accordance with Requirement R9, Part 9.1, but was late by more than 10 calendar days but less than or equal to 20 calendar days.	Coordinator in accordance with Requirement R9, Part 9.1, but was late by more than 20 calendar days but less than or equal to 30 calendar days.	to one or more of the parties specified in Requirement R9, Part 9.2 OR The Reliability Coordinator provided its new or revised SOL methodology to a requesting Reliability Coordinator in accordance with Requirement R9, Part 9.1, but was late by more than 30 calendar days. OR The Reliability Coordinator failed to provide its new or revised SOL methodology to a requesting Reliability Coordinator in accordance with Requirement R9, Part 9.1.

D. Regional Variances

None.

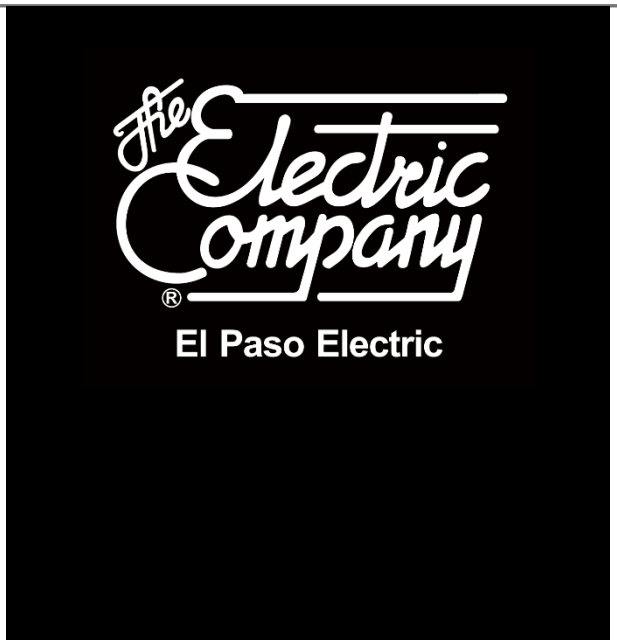
E. Associated Documents

Implementation Plan

Version History

Version	Date	Action	Change Tracking
1	November 1, 2006	Adopted by Board of Trustees	New
2		Changed the effective date to October 1, 2008 Changed "Cascading Outage" to "Cascading" Replaced Levels of Non-compliance with Violation Severity Levels Corrected footnote 1 to reference FAC-011 rather than FAC-010	Revised
2	June 24, 2008	Adopted by NERC Board of Trustees	Revised FERC Order 705
2	January 22, 2010	Updated effective date and footer to April 29, 2009 based on the March 20, 2009 FERC Order	Update
2	February 7, 2013	R5 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
2	November 21, 2013	R5 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2	February 24, 2014	Updated VSLs based on June 24, 2013 approval.	
3	November 13, 2014	Adopted by NERC Board of Trustees	Replaced references to Special Protection System and SPS with Remedial Action Scheme and RAS
3	November 19, 2015	FERC Order issued approving FAC-011-3. Docket No. RM15-13-000.	

Version	Date	Action	Change Tracking
4	May 13, 2021	Adopted by NERC Board of Trustees	Revised under Project 2015-09
4	March 4, 2022	FERC Order issued approving FAC-011-4. Docket No.RD22-2-000.	



Import Capability Assessment

Prepared By: System Planning & Interconnections

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EXECUTIVE SUMMARY

Adequate import capability is a critical element of maintaining a reliable, resilient, and flexible electric transmission system. Import capability enables the delivery of power from external systems to serve native load and is essential to ensuring the system can reliably meet both current demand and forecasted future load growth. As load demand increases over the planning horizon, the ability to maintain and to incrementally increase import capability is necessary to preserve acceptable reliability margins and prevent long-term system constraints.

The Southern New Mexico Import Capability (SNMIC) and the El Paso Import Capability (EPIC) are related but distinct transmission import limitations that apply at distinct locations within El Paso Electric's (EPE) Transmission System. SNMIC represents the maximum amount of electric power that can be reliably imported into Southern New Mexico from the Western Interconnection over the WECC-accepted transmission interface known as WECC Path 47. (WECC is the Western Electricity Coordinating Council.) EPIC represents the maximum amount of that imported power that can be reliably delivered from Southern New Mexico into El Paso Electric's primary load centers within its Balancing Authority Area. Based on the current system topology, SNMIC is limited to 940 MW with All Facilities In-Service[1] (AFIS). Based on most recent power system studies and operational nomograms, SNMIC varies depending on the Initially-Out-of-Service[2] (IOS) system elements. According to the latest power flow studies, under AFIS planning conditions, EPIC is typically around 1,100 MW.

Table 1. SNMIC & EPIC | Existing Target Limits

System Condition	Import Capability (MW)	
	SNMIC	EPIC
All Facilities In-Service (AFIS)	940 Simultaneous	1100
Newman-Vado 345 kV Line Initially-Out-of-Service (IOS)	702	1100
Diablo-T_W1 345 kV Line IOS	704	1100

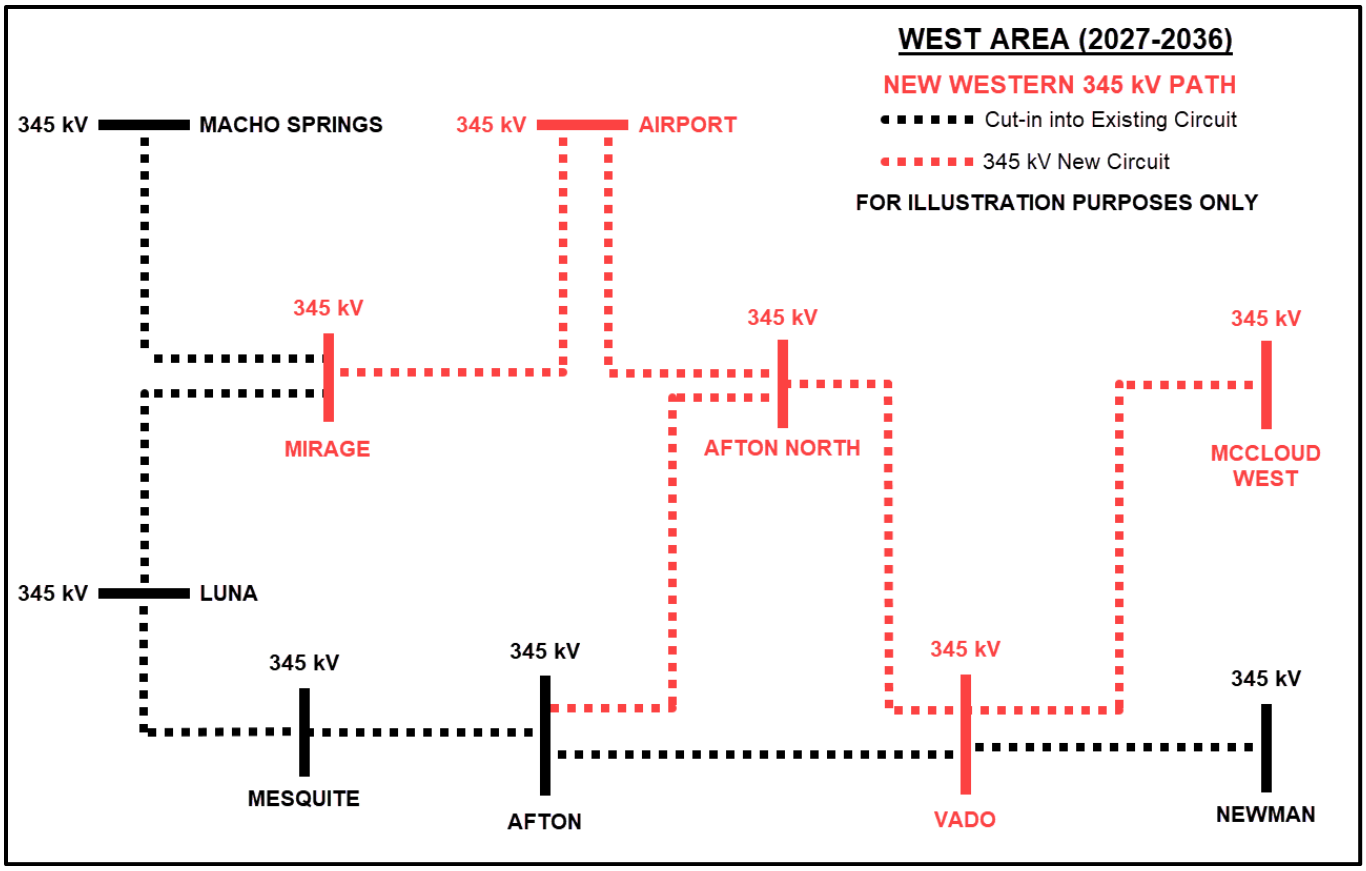
The purpose of EPE's pursuit of a new 345 kV transmission path is to maintain the capability of EPE's transmission system to move enough power to satisfy growing load requirements and improve the reliable

[1] All Facilities In Service (AFIS) refers to a pre-contingency system condition used in power flow and transmission planning studies in which all transmission facilities are assumed to be in their normal, in-service configuration, with no outages or forced removals of system elements. For clarity, the term "All Facilities In Service (AFIS)" may be used interchangeably with "All Lines In Service (ALIS)" While ALIS is a commonly used shorthand in power flow analysis, AFIS more precisely captures the intent that all modeled facilities, not only transmission lines, are assumed to be available and in service under pre-contingency conditions.

[2] Initially-Out-of-Service (IOS) refers to a pre-contingency modeling condition used in power flow and transmission planning studies in which one or more specific system elements are intentionally modeled as out of service at the start of the analysis, prior to applying the next contingency.

operation of the Bulk Electric System serving EPE's service territory, specifically with respect to the SNMIC and the EPIC. Remaining within these import capability limits are critical to EPE's ability to reliably serve customer load, particularly during high-load conditions and periods when local generation is limited. For purposes of the assessment performed by EPE, the new Western 345 kV Transmission Path was assumed to be comprised of the following 345 kV Circuits:

1. Mirage-Airport 345 kV Line
2. Airport-Afton North 345 kV Line
3. Afton North-Afton 345 kV Line
4. Afton North-Vado 345 kV Line
5. Vado-McCloud West 345 kV Line



EPE evaluated system performance both with and without the new Western 345 kV Transmission Path under expected future load conditions. This assessment evaluated system stability, contingency performance, and operational impacts consistent with applicable reliability standards and real-time operating obligations. The assessment demonstrated that without the addition of the new Western 345 kV Transmission Path, EPE's ability to import power would be limited to the existing SNMIC and EPIC limits under expected growing load demand conditions. Given this limitation, System instabilities were observed at the forecasted load levels when system conditions approached the current import levels.

When the new Western 345 kV Transmission Path was reflected in the assessment, the study results demonstrated a material improvement in system performance.

With the new transmission path in service:

- EPE can reliably and efficiently maximize its current SNMIC and EPIC limits under expected load conditions.
- The previously observed system instabilities are eliminated, including those occurring on externally owned facilities.
- The additional transmission capacity and system strength provided by the new 345 kV facilities allow for increased SNMIC and EPIC limits, further enhancing system flexibility and reliability.

Table 2. Import Limit Comparison

Import Limits (MW)				
System Topology	SNMIC		EPIC	
	With 345 kV Transmission Path Modeled	Without 345 kV Transmission Path Modeled	With 345 kV Transmission Path Modeled	Without 345 kV Transmission Path Modeled
AFIS	1115	840	1500	800
Newman-Vado 345 kV Line IOS	702	490	1100	400
Diablo-T_W1 345 kV Line IOS	704	500	1100	450

In summary, this assessment demonstrates that without the new Western 345 kV Transmission Path, EPE cannot reliably maintain existing SNMIC and EPIC limits under expected load conditions without incurring system instabilities, increased costs, and customer impacts. With the new 345 kV path, EPE resolves these limitations and also improves overall system reliability, operational flexibility, and long-term service to customers. Accordingly, the new Western 345 kV Transmission Path is necessary and appropriate, and in the public interest to support reliable electric service at currently-forecasted load levels.

1 BACKGROUND

1.1 Forecasted Load Demands

Over the next ten years, EPE's service territory area is expected to experience substantial growth in native system peak demand, marking a clear departure from historical growth trends and prior forecasts. Based on the 2026 Long-Term Load Forecast, native system peak demand is projected to increase from approximately 2,434 MW in 2026 to about 4,132 MW by 2035, representing an increase of roughly 1,700 MW over the decade. This trajectory reflects a 10-year compound annual growth rate (CAGR) of approximately 5.9% for native system peak demand, significantly higher than historical averages and prior forecast expectations.

Table 3. Native System Peak Demand Growth Rates (CAGR)

	Historical	2026 Forecast	2025 Forecast
10-Year	2.6%	5.9%	3.8%
20-Year	2.7%	3.5%	2.7%

While load growth has historically been driven primarily by gradual increases in residential, commercial, and traditional industrial demand, the current forecasted growth profile reflects a structural shift in the composition and magnitude of system demand. This shift is driven by the combined effects of steady "natural" load growth and the emergence of large, high load-factor customers, which together reshape the system's load requirements.

2 POWER FLOW ASSESSMENT RESULTS

2.1 Assessment Purpose

To determine the impact of the new El Paso Electric (EPE) Western 345 kV Transmission Path will have on EPE's Import Capabilities (more specifically, the SNMIC and the EPIC), several scenarios were assessed to determine whether the EPE transmission system, without the addition of the new 345 kV facilities, could serve forecasted load levels without exceeding governing import and operating limits, and to validate the following:

- That imported power could flow up to the current SNMIC and EPIC limits with the new Western 345 kV Transmission Path in service, assuming expected load demand, resources, and transmission projects, and
- That either SNMIC and/or EPIC limits could be *increased* with the new Western 345 kV Transmission Path in service.

2.2 Southern New Mexico Import Capability (SNMIC)

2.2.1 Single Contingency Evaluation with SNMIC at 940 MW

Contingency power flow analysis was completed for SNMIC at 940 MW. Without the new Western 345 kV Transmission Path, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. With the addition of the new Western 345 kV Path, those issues disappear.

1. SNMIC at 940 MW | N-1 Conditions – Transmission System Elements
    - Austin-Mesa 115 kV Line
    - Bernardo-Belen 115 kV Line (TSGT)
    - Bernardo-Socorro 115 kV Line (TSGT)
    - Luna-Hidalgo 345 kV Line
    - Montecillo-Rio Grande 115 kV Line
    - Turquois-Hidalgo 115 kV Line (PNM)

2.2.2 Single Contingency Evaluation with IOS Conditions

Contingency power flow analysis was completed for SNMIC limits at 702 and 704 MW. Without the new Western 345 kV Path considered, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. With the addition of the new Western 345 kV Path, those issues disappear.

1. SNMIC Limits | N-1 IOS Conditions – Transmission System Elements
    - Newman-Vado 345kV Line IOS | SNMI @ 702 MW
        - Anthony-Enchantment 115 kV Line
        - Anthony-Vado 115 kV Line
        - Ascarate-Durazno 115 kV Line
        - Austin-Mesa 115 kV Line
        - Diablo-Rio Grande 115 kV Circuit 1
        - Diablo-Rio Grande 115 kV Circuit 2
        - Enchantment-Nuway 115 kV Line
        - Montecillo-Rio Grande 115 kV Line
        - Nuway-Woodrow 115 kV Line
        - T_W1 345/115 kV Power Transformer
        - Vado 345/115 kV Power Transformer #1

- Vado 345/115 kV Power Transformer #2

- Diablo-T_W1 345 kV Line | SNMI @ 704 MW
  - Bovee-Valley 69 kV Line
  - Newman 345/115 kV Power Transformer
  - T_W1 345/115 kV Power Transformer

2.2.3 SNMIC New Limit

Additional assessments were completed to determine a new SNMIC limit with the new Western 345 kV Transmission Path. Contingency power flow analysis was completed for the new SNMIC identified limit of 1,115 MW with the new Transmission Path. Without the new Western 345 kV Path at this limit, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. They include system elements not only on the EPE transmission system, but also on the transmission systems of adjacent entities in the region. With the addition of the new Western 345 kV Path, those issues disappear.

1. New SNMIC Limit | 1115 MW for N-1 Conditions – Transmission System Elements
   - Ascarate-Durazno 115 kV Line
   - Austin-Mesa 115 kV Line
   - Belen-Bernardo 115 kV Line (TSGT)
   - Bernardo-Socorro 115 kV Line (TSGT)
   - Elephant Butte-Frontier 115 kV Line (TSGT)
   - Elephant Butte-Socorro 115 kV Line (TSGT)
   - Hidalgo-Greenlee 345 kV Line
   - Lava-Vado 345 kV Line
   - Luna-Hidalgo 345 kV Line
   - Macho Springs-Springerville 345 kV Line
   - Montecillo-Rio Grande 115 kV Line
   - Newman-Roberts 115 kV Line Circuit 2
   - Turquois-Hidalgo 115 kV Line (PNM)

2.2.4 SNMIC Results Summary

2.2.4.1 Without the new 345 kV Western Transmission Path Considered

Similar to the results where SNMIC was evaluated at 940 MW, without the addition of the new Western 345 kV Transmission Path, EPE cannot reliably achieve its current simultaneous SNMIC limits of 940 MW under expected load demand conditions. Furthermore, as the results based on the SNMIC targets evaluated for the Newman-Vado and T_W1-Diablo 345 kV circuits under IOS conditions, EPE cannot consistently meet these limits during forecasted load conditions. If these limits are approached without including the new Western 345 kV Path, contingencies can cause system instabilities.

EPE retains the real-time operational obligation to respond when the contingency involves EPE-owned transmission facilities. As a result, even when the limiting facility is owned by other entities, such as Tri-State Generation and Transmission Association (TSGT) or Public Service Company of New Mexico (PNM), EPE would have to take corrective action in real time to maintain system reliability. In the absence

of the new Western 345 kV Transmission Path, EPE's available mitigation options in real-time are limited and increasingly severe:

1. Generation Re-Dispatch
   a. The primary operational mitigation is the redispatch of generation to attempt to alleviate the loading being experienced on the identified facilities. This action can result in increased production costs, inefficiencies in resource utilization, and higher overall system costs, which ultimately have financial implications for EPE and its customers.

2. Load Curtailment
   a. If generation re-dispatch proves inadequate or if local resources are unavailable, the sole remaining mitigation strategy is to restrict imports to reduce loading on the identified facilities. Limiting imports in this way may prevent EPE from meeting load demand, making customer load curtailment necessary. Such curtailments directly affect customers, decrease service reliability, and trigger other costs.

Neither of these mitigation measures constitute a long-term, sustainable solution for expected future operating conditions at the forecasted load levels. Instead, they represent reactive measures that increase operating risk and cost exposure while reducing system resilience.

2.2.4.2 With the new Western 345 kV Transmission Path Considered

The integration of the new Western 345 kV Path enables EPE to reliably meet the current simultaneous WECC Path 47 Ratings of 940 MW under projected load conditions without observed system instability. Similarly, as indicated in the results where the SNMIC Targets were assessed under the Newman-Vado 345 kV Line and T_W1-Diablo 345 kV Line IOS scenarios, performance remains consistent. With the new transmission path in service:

1. EPE is able to reliably achieve power flows up to its current SNMIC limits under expected load conditions.
2. The previously observed system instabilities are eliminated, including those occurring on externally owned facilities.

Additionally, when a new SNMIC was evaluated, the results demonstrated that with the new Western 345 kV Transmission Path in service, SNMIC can be increased to 1,115 MW while maintaining acceptable system performance and reliability under N-1 conditions. While the increase in SNMIC to 1,115 MW may appear modest in the near term, the new Western 345 kV Transmission Path plays a critical foundational role for future system expansion. The new 345 kV path will establish a high-capacity transmission corridor that:

1. Positions EPE for a future additional transmission circuit, which could result in a still-greater increase in SNMIC once added.

2. Removes structural system limitations that currently restrict the ability to fully realize higher import capability.
3. Ensures that future upgrades can be implemented efficiently and cost-effectively without recreating major system bottlenecks.

These results indicate that the new project not only resolves the identified reliability limitations but also positions the system to better support future load growth and changing resource conditions.

2.3 El Paso Import Capability (EPIC)

2.3.1 Single Contingency Evaluation with EPIC at 1100 MW

Contingency power flow analysis was performed to assess EPIC at 1,100 MW. Without the new Western 345 kV Path, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. With the addition of the new Western 345 kV Path, those issues disappear.

1. EPIC at 1100 MW | N-1 Conditions – Transmission System Elements
    - Afton-Lava 345 kV Line
    - Ascarate-Durazno 115 kV Line
    - Diablo 345/115 kV Power Transformer #1
    - Diablo 345/115 kV Power Transformer #2
    - Diablo 345/115 kV Power Transformer #3
    - Diablo-Rio Grande 115 kV Circuit 1
    - Diablo-Rio Grande 115 kV Circuit 2
    - Domenici-Montoya 115 kV Line
    - Durazno-Sunset North 115 kV Line
    - Lava-T_W1 345 kV Line
    - Lava-Vado 345 kV Line
    - Luna-Lava 345 kV Line
    - Mesa-Austin 115 kV Line
    - Mesa-Montecillo 115 kV Line
    - Mimbres-Airport 115 kV In-Line Tap
    - Montecillo-Rio Grande 115 kV Line

2.3.2 Single Contingency Evaluation with IOS Conditions

Contingency power flow analysis was completed for EPIC at 1,110 MW. Without the new Western 345 kV Path, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. With the addition of the new Western 345 kV Path, those issues disappear.

1. EPIC at 1100 MW | N-1 IOS Conditions – Transmission System Elements
    - Newman-Vado 345 kV Line IOS | EPIC @ 1100 MW
        - Ascarate-Durazno 115 kV Line
        - Ascarate-Trowbridge 115 kV Line
        - Austin-Marlow 115 kV Line
        - Austin-Mesa 115 kV Line
        - Diablo-Rio Grande 115 kV Circuit 1
        - Diablo-Rio Grande 115 kV Circuit 2
        - Domenici-T_W1 115 kV Line
        - Durazno-Sunset North 115 kV Line
        - Elephant Butte-Frontier 115 kV Line (TSGT)

- Executive-Sunset North 115 kV Line
- Hidalgo-Turquois 115 kV Line (PNM)
- Marlow-Trowbridge 115 kV Line
- Mesa-Montecillo 115 kV Line
- Montecillo-Rio Grande 115 kV Line
- Montoya-Thorn 115kV Line
- Newman-Roberts 115 kV Circuit 1
- Rio Grande-Executive 115 kV Line
- Santa Fe-Dallas 69 kV Line
- T_W1 345/115 kV Power Transformer #1
- Vado 345/115 kV Power Transformer #1
- Vado 345/115 kV Power Transformer #2

- Diablo-T_W1 345 kV Line IOS | EPIC @ 1100 MW
  - Domenici-T_W1 115 kV Line
  - Lava-Vado 345 kV Line
  - Luna-Lava 345 kV Line
  - Montoya-Thorn 115kV Line
  - T_W1 345/115 kV Power Transformer
  - Vado 345/115 kV Power Transformer #1
  - Vado 345/115 kV Power Transformer #2

2.3.3 EPIC New Limit

Additional assessments were made to determine a new EPIC limit with the new Western 345 kV Transmission Path. Contingency power flow analysis was completed for the new EPIC identified limit of 1,500 MW with the new Transmission Path. Without the new Western 345 kV Path, several transmission system elements exceeded their maximum allowed tolerances/limits at forecasted load levels under contingency conditions. Those transmission system elements are listed below. They include system elements not only on the EPE transmission system, but also on the transmission systems of adjacent entities in the region. With the addition of the new Western 345 kV Path, those issues disappear.

1. New EPIC Limit | 1500 MW for N-1 Conditions – Transmission System Elements
   - Afton-Lava 345 kV Line
   - Afton-Mesquite 345 kV Line
   - Anthony-Enchantment 115 kV Line
   - Ascarate-Durazno 115 kV Line
   - Belen-Bernardo 115 kV Line (TSGT)
   - Dallas-Santa Fe 69 kV Line
   - Diablo 345/115 kV Power Transformer #1
   - Diablo 345/115 kV Power Transformer #2
   - Diablo 345/115 kV Power Transformer #3
   - Diablo-Rio Grande 115 kV Circuit 1
   - Diablo-Rio Grande 115 kV Circuit 2
   - Domenici-Montoya 115 kV Line
   - Durazno-Sunset North 115 kV Line
   - Enchantment-Nuway 115 kV Line
   - Lava-T_W1 345 kV Line
   - Lava-Vado 345 kV Line
   - Luna-Lava 345 kV Line
   - Luna-Mesquite 345 kV Line
   - Mesa-Austin 115 kV Line
   - Mesa-Montecillo 115 kV Line
   - Mimbres-Airport 115 kV In-Line Tap
   - Montecillo-Rio Grande 115 kV Line
   - Newman-Roberts 115 kV Line Circuit 1
   - T-W1 345/115 kV Power Transformer

2.3.4 EPIC Results Summary

2.3.4.1 Without the new Western 345 kV Path Considered

When considering the EPIC limits under N-1 and N-1-1 conditions, under projected load conditions and without the addition of the new Western 345 kV Transmission Path, the transmission system is unable to reliably support currently forecasted load growth. The results can be summarized as follows:

- Inability to maintain EPIC Limits
  Similar to the results presented when EPIC was evaluated under specific conditions, the EPE transmission system is unable to sustain the established EPIC limits of 1100 MW, under AFIS and IOS conditions. EPE cannot consistently remain within these limits during the anticipated load. If these limits are approached without including the new Western 345 kV Path, certain credible contingencies can cause system instabilities. If the new 345 kV Western Transmission Path is not considered, the EPIC Limit is reduced to 800 MW under AFIS conditions, 450 MW under the Diablo-T_W1 IOS Condition, and 400 MW under the Newman-Vado IOS condition, respectively. This represents a reduction of around 28% under N-1, around 60% under the Diablo-T_W1 IOS Condition, and around 64% under the Newman-Vado IOS condition respectively; relative to the capability with the new Western 345 kV Path considered.

- Widespread Contingency Results
  Multiple transmission elements exceed their thermal or stability limits under N-1 contingency conditions. These issues are not capable of being resolved through traditional operational measures on a sustained basis.

- Inefficient Alternative – Widespread Upgrades
  A viable alternative would require upgrading numerous individual elements and associated facilities, which would:
  - Increase overall project costs.
  - Require broader system disruptions during construction.
  - Provide a piecemeal solution without improving overall system robustness.

2.3.4.2 With the new Western 345 kV Path Considered

The inclusion of the new Western 345 kV Transmission Path provides a comprehensive and effective system-wide solution that resolves the identified issues. These improvements include:

- Restoration and Enhancement of the EPIC Limit
  With the new Western 345 kV Transmission Path in service, the system is able to:
  - Sustain the current EPIC Limit of 1100 MW under AFIS system conditions while considering the projected load conditions. Additionally, with the new Western 345 kV Transmission Path and the expected load and generation conditions, EPIC was able to be achieved at the current 1100 MW level under both the Newman-Vado & Diablo-T_W1 345 kV Line IOS conditions.

- An Increase in EPIC to approximately 1500 MW represents an increase of 36% above the current EPIC Limit under AFIS conditions.

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DECLARATION OF ABEL R. BUSTILLOS IN SUPPORT OF THE FOREGOING DIRECT TESTIMONY OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL

I ***Abel R. Bustillos***, pursuant to Rule 1-011 NMRA, state as follows:

1. I affirm in writing under penalty of perjury under the laws of the State of New Mexico that the following statements are true and correct.

2. I am over 18 years of age and have personal knowledge of the facts stated herein. I am employed by El Paso Electric Company ("EPE" or "the Company") as *Director of Integrated System Planning.*

3. The foregoing Direct Testimony of Abel R. Bustillos, together with all exhibits sponsored therein and attached thereto, is true and accurate based on my knowledge and belief.

4. I submit this Declaration, based upon my personal knowledge and upon information and belief, in support of EPE's ***Application for a Certificate of Convenience and***

Necessity to Construct, Own, and Operate a New 345kV Transmission Line Between the Afton North and Airport Substations and for Right-of-Way Width Approval.

FURTHER, DECLARANT SAYETH NAUGHT.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2026.

/s/ *Abel R. Bustillos*

ABEL R. BUSTILLOS

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345 KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DIRECT TESTIMONY

OF

MICHELLE A. VELOZ

ON BEHALF OF

EL PASO ELECTRIC COMPANY

JULY 10, 2026

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EXHIBITS

Exhibit MAV-1 Project Cost Estimate

EL PASO ELECTRIC COMPANY
DIRECT TESTIMONY OF
MICHELLE A. VELOZ

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Michelle A. Veloz. My business address is 100 North Stanton Street, El Paso, Texas 79901-1341.

Q2. WHO IS YOUR CURRENT EMPLOYER AND WHAT POSITION DO YOU HOLD?

A. I am employed by El Paso Electric Company ("EPE" or "Company") as Supervisor of Transmission Substation Relay for Transmission Line Engineering.

Q3. WHAT ARE YOUR RESPONSIBILITIES WITH EPE?

A. My responsibilities are to oversee a team responsible for planning, designing, and maintaining the company's transmission infrastructure. I also coordinate and oversee the development of new transmission lines, the rebuild of existing transmission lines, and upgrades to support system reliability and integration of renewable resources. I am responsible for ensuring all projects are delivered on schedule, within budget, and compliant with applicable requirements of North American Electric Reliability Corporation ("NERC"), Federal Energy Regulatory Commission ("FERC"), state regulatory bodies, and internal policies.

I am the EPE Transmission Engineering Supervisor responsible for the design, development and execution of the proposed Afton North to Airport 345kV project.

Q4. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I have been employed by EPE since November 2021 and in my current role since 2022. Before working as a Supervisor in the Transmission Engineering group, I worked as a Senior Engineer in the Transmission Engineering group from 2021 to 2022. Prior to joining EPE in November 2021, I worked as a Senior Transmission Line Engineer at POWER Engineers starting in June 2017. I received my Bachelor of Science degree in Civil Engineering from the University of Texas at El Paso in May 2017.

II. PURPOSE AND SCOPE OF TESTIMONY

Q5. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to describe the proposed Afton North to Airport 345kV project ("Project"), which is a new single circuit 345kV transmission line that begins at the existing Airport Substation and terminates at the future Afton North Substation. I will discuss the planned EPE transmission line facilities for the

Project. Specifically, I will address (1) EPE's transmission line design including the selection of the conductor and proposed use of the 345kV transmission structures, (2) EPE's estimated transmission line project cost, and (3) Right-of-Way ("ROW") Width approval.

Q6. ARE YOU SPONSORING EXHIBITS TO YOUR TESTIMONY?

A. Yes. I am sponsoring the exhibit listed in the Table of Contents. Specifically, those include the following exhibit:

- Exhibit MAV-1 Project Cost Estimate

Q7. PLEASE DESCRIBE THE PROPOSED PROJECT.

A. The proposed Project consists of the construction of approximately 14.3 miles of new single circuit 345 kilovolt "kV" transmission line between the Afton North and Airport Substations in New Mexico. The Project includes transmission structures, conductors, shield wire, foundations and related facilities necessary for the safe and reliable operation of the transmission line. As discussed in the direct testimony of EPE witness Abel Bustillos, the Project is needed to maintain reliable transmission service, provide additional transmission capacity, and support projected system load growth in the region.

The new 345kV single circuit transmission line will utilize a 2-bundle 954 kilo circular mils ("kcmil") Aluminum Conductor Steel Supported ("ACSS") conductor with one optical ground wire ("OPGW"). This conductor provides the necessary operating line capacity as determined by EPE's Transmission System Plan, which is discussed by EPE witness Bustillos.

III. TRANSMISSION LINE DESIGN, INCLUDING CONDUCTOR AND STRUCTURE SELECTION

Q8. WHAT CONDUCTOR AND STRUCTURES DID EPE SELECT FOR CONSTRUCTION OF THE PROPOSED PROJECT?

A. EPE will construct the proposed Afton North to Airport 345kV transmission line primarily on 345kV single circuit steel monopole deadend and tangent structures with a typical structure height of 135 to 165 feet. After evaluating several factors, including span length between structures, structure footprints, construction and maintenance feasibility and ROW limits, EPE affirmed the use of these structure types for the Project.

The proposed 345kV single circuit transmission line will utilize double-bundle 954 kcmil ACSS conductor. There are several advantages of using double-bundle 954 ACSS for this project. First, 954 ACSS is a standard conductor that EPE has used on other transmission lines. Also, the normal peak operating current rating for this conductor will provide the necessary amperage to allow for larger

transfers of power into the transmission system. Lastly, using a standardized conductor will provide savings in conductor purchasing over the long-term use of this conductor.

Q9. DOES THE TRANSMISSION LINE DESIGN COMPLY WITH APPLICABLE SAFETY AND DESIGN STANDARDS?

A. Yes. The proposed Project will be designed and constructed to meet or exceed the requirements for construction as defined in the National Electrical Safety Code ("NESC") and additional design criteria specified in EPE's 345kV Standard Design Criteria, which is attached as Exhibit AG-5 to EPE witness Alejandro Galvis' testimony, will be used.

Q10. IS THE PROPOSED PROJECT INCLUDED IN EPE'S TRANSMISSION SYSTEM PLAN?

A. Yes. The proposed Project is part of EPE's 2026 System Expansion Plan. It will support the company's long-term efforts to maintain system reliability and meet anticipated load growth, as discussed in more detail in the testimony of Mr. Bustillos.

IV. ESTIMATED PROJECT COST

Q11. WHAT IS THE ESTIMATED COST OF THE PROJECT?

A. The estimated cost of the Project, as initially estimated by EPE, is approximately $43.23 million. This estimate includes costs associated with engineering, material procurement, construction labor, and applicable overhead allocations. It does not include allowance for funds using during construction, or AFUDC. The estimate is based on preliminary engineering and recent comparable transmission projects and reflects reasonable assumptions regarding labor and material pricing. The estimated cost does not include certain costs that cannot reasonably be quantified at this stage of the project development, including but not limited to environmental mitigation measures, land acquisition costs, unforeseen permitting conditions, or other costs that may result from construction-related constraints. The estimate reflects EPE's best available information at the time of filing.

Q12. IS THE PROPOSED PROJECT THE MOST REASONABLE AND COST-EFFECTIVE OPTION AVAILABLE?

A. Yes. EPE's estimated costs are reasonable and consistent with current market conditions and comparable transmission projects of similar scope. The cost estimate was developed based on preliminary engineering, standard unit pricing, recent bid data in response to the request for proposals I describe below, and reasonable assumptions regarding labor, materials, and construction.

EPE considered multiple alternatives consistent with prudent planning practices. The alternatives evaluated included rebuilding multiple existing 115kV

transmission lines. EPE witness Bustillos discusses alternatives to the Project in more detail from a planning perspective in his direct testimony.

Q13. HOW DOES EPE INTEND TO MANAGE CONSTRUCTION OF THE PROJECT?

A. EPE intends to utilize an Engineer, Procure, and Construct ("EPC") delivery approach for the Project. Under this approach, the selected EPC contractor will be responsible for detailed engineering, procurement of materials and equipment, and construction of the transmission line in accordance with EPE's technical specifications, design standards and project requirements. The EPC contractor will be selected through a competitive procurement process intended to identify a qualified contractor with demonstrated experience designing and constructing high voltage transmission facilities. EPE issued a Request for Proposals ("RFP") to multiple qualified contractors and is currently evaluating proposals based on technical capability, project execution approach, schedule, safety performance, and overall cost effectiveness.

Q14. WHY IS EPE UTILIZING AN EPC DELIVERY APPROACH FOR THE PROJECT?

A. EPE selected the EPC delivery approach because it provides a single point of responsibility for engineering, procurement and construction activities and

facilitates coordination among project stakeholders throughout project execution. The EPC delivery model allows EPE to leverage contractor expertise during final design development and construction planning while reducing interface risks between separate engineering and construction contracts. Additionally, the EPC approach allows EPE to better manage schedule certainty, procurement risks associated with long-lead materials, and overall project execution risk while maintaining oversight of project scope, quality and cost.

Q15. PLEASE DESCRIBE THE RFP PROCESS THAT EPE USED.

A. EPE conducted a competitive procurement process to solicit proposals from qualified EPC contractors with demonstrated experience in the design and construction of high voltage transmission lines. The RFP provided prospective bidders with the Project scope information, technical requirements, design criteria, schedule expectations, and commercial terms and conditions. Bidders were afforded opportunities to submit questions and participate in clarification discussions and on-site meetings to ensure a common understanding of the Project requirements and assumptions. EPE is currently evaluating the proposals using both technical and commercial criteria. Following completion of the evaluation process, EPE intends to negotiate and execute an agreement with the selected contractor that EPE believes provides the best overall value to customers while supporting successful project delivery.

Q16. DOES THE ESTIMATED COST OF THE PROPOSED PROJECT TAKE INTO ACCOUNT EXTERNAL MARKET FORCES?

A. Yes. The estimate reasonably reflects current and anticipated external market conditions. It considers information obtained through EPE's competitive procurement process, recent transmission project experience, in addition to industry cost trends for critical materials such as steel structures, conductor, and hardware assemblies. Where appropriate, EPE incorporated escalation factors to address forecasted increases in material and labor costs over the anticipated construction period. EPE recognizes that market conditions may continue to evolve throughout project execution and will continue to monitor those conditions as part of ongoing project management activities. The use of a competitive procurement process and the EPC delivery model assists EPE in obtaining market-based pricing and managing risks associated with cost escalation and supply chain uncertainty.

V. RIGHT OF WAY WIDTH APPROVAL

Q17. WHAT IS YOUR UNDERSTANDING OF THE REQUIREMENTS OF THE RIGHT OF WAY WIDTH STATUTE AT NMSA 1978, SECTION 62-9-3.2?

A. The ROW Width Statute states as follows:

> Unless otherwise agreed to by the parties, no person shall begin the construction of any transmission line requiring a width for right of

way of greater than one hundred feet without first obtaining from the commission a determination of the necessary right-of-way width to construct and maintain the transmission line. For the purposes of this subsection, "construction" does not include acquisition of rights of way, preparation of surveys or ordering of equipment.

Although EPE has obtained the needed rights-of-way from the three affected landowners, EPE is still seeking ROW width approval from the Commission to the extent the Commission deems it necessary because one segment of the Project requires ROW of greater than one hundred feet.

Q18. HAS EPE ACQUIRED ALL OF THE NECESSARY RIGHTS OF WAY FOR THE PROJECT?

A. Yes. When the Project was planned as a 115kV transmission line, EPE had acquired all necessary rights-of-way from the Bureau of Land Management ("BLM"), the New Mexico State Land Office ("NMSLO"), and the City of Las Cruces. When the Project evolved into a 345 kV line, the company worked with the BLM and the NMSLO to ensure the ROW accommodates the proposed 345kV transmission line. As explained in the testimony of EPE witness Andrea McArdle, EPE has obtained the necessary amendments to the BLM and NMSLO grants and

does not anticipate any land rights issues that would prevent construction of the Project as proposed.

Q19. HAS EPE DETERMINED THE WIDTH OF THE RIGHT OF WAY NEEDED FOR THE PROJECT?

A. Yes. EPE has determined the ROW width required for the proposed Project based on preliminary engineering design, applicable safety standards, and operational requirements. EPE witness Alejandro Galvis, a New Mexico-licensed professional engineer, confirms this in his direct testimony.

The proposed transmission line will utilize varying ROW widths depending on the specific design considerations and location along the route. For the segment where the Project is adjacent to the existing 345kV corridor into Afton North Substation (approximately 5.6 miles), EPE determined that an approximately 200 foot wide ROW is appropriate. The wider ROW is used where the proposed transmission line runs side by side with an existing 345kV transmission line. This provides the necessary separation between transmission lines, accommodates conductor movement under wind loading, and provides sufficient space for safe construction, inspection, maintenance, and vegetation management activities for both transmission lines. For the remaining portions of the transmission line where the ROW width is approximately 100 feet, EPE has incorporated design measures, including the use of reduced span lengths and an increased number of transmission

structures, to reduce the conductor blowout and maintain the required electrical clearances. By reducing span lengths, conductor swing under applicable wind loading conditions is minimized, allowing the transmission line to operate safely and reliably while remaining within the 100 foot ROW corridor. Although this design approach results in additional structures compared to portions of the Project utilizing 200 foot ROW, it allows EPE to minimize land impacts and reduce the overall project footprint.

The specified ROW widths are consistent with the requirements of the NESC, EPE transmission design standards, and generally accepted utility engineering practices.

Q20. DO CONSTRUCTION, OPERATIONS, AND MAINTENANCE AFFECT THE NECESSARY ROW WIDTH?

A. Yes. The width of the ROW for the transmission line is determined by the space necessary to safely and effectively construct, operate and maintain the transmission facilities. During construction, additional space identified within the Project ROW limits is required to accommodate heavy machinery, cranes, concrete trucks, and other equipment used to install foundations, erect structures and string conductor. During operation, the ROW must provide sufficient clearance between the energized conductors and surrounding vegetation and terrain. This includes

sufficient space to provide for a design that is safe, efficient, and resilient to extreme weather conditions.

VI. SUMMARY AND CONCLUSION

Q21. PLEASE SUMMARIZE YOUR TESTIMONY.

A. EPE's decision to use double-bundle 954 ACSS conductor and monopole steel structures for the Project is reasonable for the reasons discussed above. In addition, EPE has provided reasonable estimates for the cost of the proposed transmission line for this project, based on information available at this time. EPE will construct the proposed transmission line in a safe and efficient manner, and the line and terminations will be designed with criteria that meet or exceed the National Electrical Safety Code.

Q22. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

El Paso Electric

PROJECT COST ESTIMATE	
Issuing Cost Center:	**Developed by:**
7140-ASSET MGMT SERVICE	David Khorshidi
Revision:	**Previous Revision Date:**
0	N/A
Previous Revision Date:	**Current Revision Date:**
N/A	10-Oct-22

PROJECT NAME:	*TL178 Airport-Afton North 345kV T-line*	**STATE:**	*NM*
TYPE OF PROJECT:	*New Transmission Line*	**PREPARED BY:**	*Valeria Chavez Torres*
CONSTRUCTION -		**CHECKED BY:**	*David Guzman*
RESOURCES:	*Contractor*	**DATE - REV:**	*7/10/2026*

PROJECT DESCRIPTION

Construction of approximately 14.3 miles of new single circuit 345kV transmission line connecting the Afton North and Airport Substations in Doña Ana County, New Mexico. The project includes weathering steel monopole structures, double bundled (2) 954 ACSS "Rail" conductor, optical ground wire (OPGW), foundations and all associated facilities necessary to construction and operate the transmission line.

Length:	*14.3*	Miles
No. of Circuits:	*1*	
Voltage:	*345*	kV
Average Span	*600 - 800*	Feet
Structure Type	*Weathering Steel monopoles*	
Structure Count	*Approx. 110 - 120*	
Conductor	*(2) 954 kcmil ACSS "Rail"*	
ROW Width	*5.64 miles of 200 feet*	
	8.66 miles of 100 feet	
Delivery Method	*EPC*	

ESTIMATE BEFORE TAX:	**$ 39,349,338.84**
COST / MILE BEFORE TAX:	**$ 2,751,702.02**
ESTIMATE WITH TAX:	**$ 42,732,660.85**
COST / MILE WITH TAX:	**$ 2,988,297.96**
FULLY LOADED ESTIMATE:	**$ 43,229,062.65**
FULLY LOADED COST / MILE:	**$ 3,023,011.37**

PROJECT ASUMPTIONS

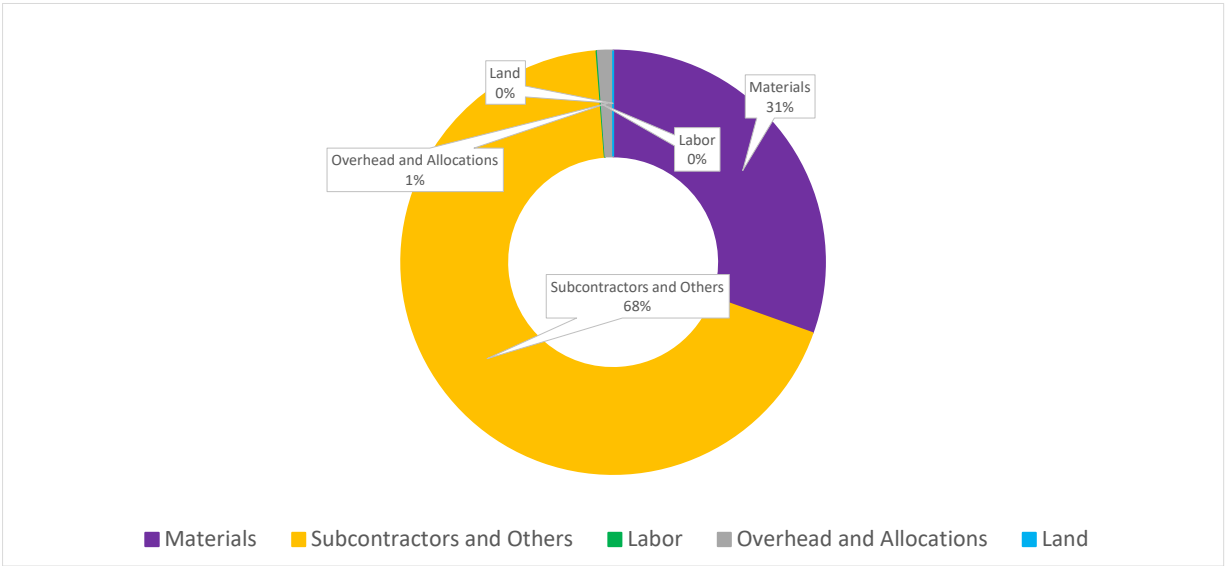
This estimate was developed using contractor budgetary pricing, recent EPC proposals, and current market conditions for labor, steel, conductor and material procurement. Estimated costs assume minimal EPE labor due to the EPC delivery approach. This estimate does not include AFUDC, escalation beyond current pricing, or costs associated with significant scope changes.

El Paso Electric

PROJECT ESTIMATE SUMMARY

PROJECT NAME:	*TL178 Airport-Afton North 345kV T-line*	**STATE:**	NM
TYPE OF PROJECT:	*New Transmission Line*	**PREPARED BY:**	Valeria Chavez Torres
CONSTRUCTION -		**CHECKED BY:**	David Guzman
RESOURCES:	*Contractor*	**DATE - REV:**	2026-07-10

EXPENSE CODE	DESCRIPTION	HOURS	LABOR $	MATERIAL $	SUBCONTRACTORS AND OTHERS $	LAND	TOTAL	% OF TOTAL $
060	MATERIALS-PURCHASES			$ 13,144,286.86			$ 13,144,286.86	30.41%
070	SUBCONTRACTOR CHARGES				$ -		$ -	0.00%
80	OUTSIDE SVCS-CONSULTING				$ 29,335,535.03		$ 29,335,535.03	67.86%
90	OUTSIDE LEGAL SERVICES				$ -		$ -	0.00%
100	OUTSIDE SVCS-ENGINEERING				$ 191,180.00		$ 191,180.00	0.44%
141	RENTS				$ 3,492.17		$ 3,492.17	0.01%
198	FEES & PERMITS				$ -		$ -	0.00%
289	LAND RIGHTS					$ -	$ -	0.00%
299	LAND					$ -	$ -	0.00%
310	MATERIALS-INVENTORY			$ 13,756.88			$ 13,756.88	0.03%
391	STRAIGHT TIME	822.15	$ 44,409.92				$ 44,409.92	0.10%
392	OVERTIME	-	$ -				$ -	0.00%
625	NETWORK UPGRADE PAYMENT				$ -		$ -	0.00%
895	OTHERS				$ -		$ -	0.00%
1000	OVERHEAD AND ALLOCATIONS		$ 69,519.29	$ 131,580.44	$ 295,302.07	$ -	$ 496,401.79	1.15%
		822.15	$ 113,929.20	$ 13,289,624.17	$ 29,825,509.27	$ -	$ 43,229,062.65	100%



BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DECLARATION OF MICHELLE A. VELOZ IN SUPPORT OF THE FOREGOING DIRECT TESTIMONY OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL

I ***Michelle A. Veloz***, pursuant to Rule 1-011 NMRA, state as follows:

1. I affirm in writing under penalty of perjury under the laws of the State of New Mexico that the following statements are true and correct.

2. I am over 18 years of age and have personal knowledge of the facts stated herein. I am employed by El Paso Electric Company ("EPE" or "the Company") as *Supervisor of Transmission Substation Relay for Transmission Line Design.*

3. The foregoing Direct Testimony of Michelle A. Veloz, together with all exhibits sponsored therein and attached thereto, is true and accurate based on my knowledge and belief.

4. I submit this Declaration, based upon my personal knowledge and upon information and belief, in support of EPE's ***Application for a Certificate of Convenience and***

Necessity to Construct, Own, and Operate a New 345kV Transmission Line Between the Afton North and Airport Substations and for Right-of-Way Width Approval.

FURTHER, DECLARANT SAYETH NAUGHT.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2026.

/s/ *Michelle A. Veloz*

MICHELLE A. VELOZ

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345 KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DIRECT TESTIMONY

OF

ANDREA MCARDLE

ON BEHALF OF

EL PASO ELECTRIC COMPANY

JULY 10, 2026

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II.	PURPOSE OF TESTIMONY	3
III.	ENVIRONMENTAL SUMMARY	4
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EXHIBITS

Exhibit AM-1 August 2015 Environmental Assessment

Exhibit AM-2 Finding of No Significant Impacts

Exhibit AM-3 May 2025 Plan of Development

EL PASO ELECTRIC COMPANY
DIRECT TESTIMONY OF
ANDREA MCARDLE

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Andrea R. McArdle. My business address is 7770 Jefferson Street NE, Suite 410, Albuquerque, New Mexico 87109.

Q2. BY WHOM ARE YOU EMPLOYED?

A. I am employed by SWCA, Inc. d.b.a. SWCA Environmental Consultants, Inc. ("SWCA"). SWCA is an interdisciplinary environmental consulting firm with more than 1,600 employees across the United States. We have had an established presence in New Mexico for nearly 30 years. Our Albuquerque office currently has a staff of over 80 full-time planning, natural resource, and cultural resource professionals.

Q3. WHAT IS YOUR CURRENT POSITION?

A. I am a lead environmental planner for SWCA.

Q4. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I have a Bachelor of Science undergraduate degree in Evolution and Ecology from The Ohio State University. As part of my education, I have acquired a broad understanding of natural systems, including vegetation communities, impacts of

invasive species, and population modeling. In addition, I have completed ecological research on invasive species, including performing statistical analysis and publishing study results.

Q5. PLEASE DESCRIBE YOUR CURRENT JOB DUTIES.

A. I am SWCA's New Mexico Public Regulation Commission ("NMPRC") lead for this project. As the NMPRC lead, I am producing this written testimony based on my review of the environmental documentation provided by El Paso Electric ("EPE"). As a lead environmental planner, I manage projects and support clients through the federal and state permitting processes, including National Environmental Policy Act ("NEPA") and NMPRC permitting.

Q6. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.

A. My planning experience as a professional has been related to the development and permitting of electric transmission lines, renewable energies, oil and gas infrastructure, fiber optic lines, and Mexican Spotted Owl (*Strix occidentalis lucida*) U.S. Fish and Wildlife ("USFWS") surveys. The projects I manage involve federal and state permitting, and many require Environmental Assessments ("EAs") as part of the NEPA permitting process. I have worked on six previous projects requiring location approval from the Commission. I have been involved in more than 600 different projects undergoing the NEPA process in New Mexico, the

majority of which were led by the Bureau of Land Management ("BLM") as the lead federal agency. My participation has included initial public and agency scoping, assisting clients in routing projects to avoid impacts to resources, drafting detailed project descriptions, resource analyses, mitigation design and implementation, and preparation of associated technical project documents such as plans of development, which are intended to describe how the construction of a given project will comply with environmental protection measures and regulations, in addition to special status species tech memos that detail special status species-specific surveys, potential impacts, mitigation and avoidance.

Previous projects I have worked on required Endangered Species Act consultation with the USFWS, Clean Water Act permitting through the U.S. Army Corps of Engineers, New Mexico State Land Office ("NMSLO") Right-of-Way ("ROW") grants, and local special use or conditional use permits.

Q7. PRIOR TO THIS MATTER, HAVE YOU EVER PROVIDED TESTIMONY IN REGULATORY PROCEEDINGS?

A. Yes, I have provided written testimony for several other projects requiring NMPRC location approval or a Certificate of Convenience and Necessity ("CCN").

II. PURPOSE OF TESTIMONY

Q8. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. My testimony discusses SWCA's assessment of the potential environmental impacts associated with the Airport to Afton North Project ("Project") proposed by EPE. Specifically, I explain that the Project will not unduly impair environmental values. SWCA reviewed the 2015 EA prepared on behalf of EPE as part of the BLM ROW grant process. This EA is attached to this testimony as Exhibit AM-1. This testimony will rely on information provided in the EA.

Q9. ARE YOU SPONSORING EXHIBITS TO YOUR TESTIMONY?

A. Yes, I am sponsoring the exhibits listed in the Table of Contents. Specifically, those including the following exhibits:

- Exhibit AM-1 2015 Environmental Assessment
- Exhibit AM-2 2015 Finding of No Significant Impacts
- Exhibit AM-3 2025 Plan of Development.

III. ENVIRONMENTAL SUMMARY

Q10. PLEASE DESCRIBE YOUR INVOLVEMENT IN THE PROPOSED PROJECT.

A. I am SWCA's NMPRC lead for this project. As the NMPRC lead, I have produced this written testimony based on my review of the environmental documentation provided by EPE. I have also attended biweekly meetings held between EPE and SWCA to discuss this project and supported EPE through the NMPRC permitting process.

Q11. WHAT TYPES OF LAND WILL THE PROPOSED TRANSMISSION LINE CROSS?

A. The proposed transmission line crosses BLM-managed lands (12.79 miles), NMSLO-managed lands (1.50 miles) and City of Las Cruces lands (0.01 mile).

Q12. DOES EPE ALREADY HAVE ALL NEEDED RIGHTS OF WAY FOR THIS PROJECT?

A. In 2015, EPE acquired all necessary rights-of-way for the original 115 kilovolt ("kV") project from the NMSLO and the BLM. At this time, EPE has filed amendments to both land management agencies to address the current project, which increases the voltage of the transmission line from 115kV to 345kV. A hearing was held on March 2, 2026, before the NMSLO. No questions were raised at the hearing. Original rights to the BLM portion of the project were acquired through the 2017 ROW grant 129489 and the rights to the NMSLO portion of the project were acquired through 2017 ROW grant R-35784. EPE received the

executed BLM grant amendment on April 6, 2026, and the NMSLO grant amendment in June 2026 for the 345kV project. In addition, easement approval from the City of Las Cruces was received on November 13, 2020. No change to the easement on City of Las Cruces private land is needed.

Q13. HOW MUCH LAND IS COVERED BY THE EXISTING RIGHT OF WAY EASEMENT?

A. As described in EPE witness Abel Bustillo's direct testimony, the original BLM grant covered 12.60 miles and 218.67 acres of disturbance for the transmission line. The current Plan of Development (AM-3) includes 12.79 miles on BLM lands, with a maximum disturbance of 223.40 acres. The minor discrepancy between the original grant and the current Plan of Development is due to there being more updated design now than when the analysis as part of the original BLM grant was completed. Please see Michelle Veloz's testimony for more information on project design. The original NMSLO ROW grant covers the same easement as proposed in the grant amendment (1.50 miles, 18.16 acres) and the original easement approval from City of Las Cruces covers the same easement as originally proposed (0.01 mile, 0.1 acre).

Q14. WERE THESE RIGHTS OF WAY EASEMENTS OBTAINED FOR THE PLANNED 115KV TRANSMISSION LINE?

A. Yes.

Q15. WHAT IS THE TERM OF THE GRANTS OF THE RIGHTS OF WAY EASEMENTS?

A. The BLM ROW is granted for 30 years. The NMSLO ROW is granted for 35 years.

Q16. DID THE STATE LAND OFFICE REQUIRE A PUBLIC HEARING FOR THE PROPOSED PROJECT?

A. Yes. The NMSLO required a public meeting for this project because it exceeds 230kV. The public meeting occurred on March 2, 2026, with no questions raised.

Q17. DID MEMBERS OF THE PUBLIC RAISE ANY CONCERNS ABOUT THE PROPOSED PROJECT?

A. No questions were raised at the March 2, 2026, public meeting held by the NMSLO. The public comment period associated with the original NEPA analysis was held from August 1 to September 5, 2013. During that scoping period, Zia Natural Gas, Kinder Morgan, and the City of Las Cruces Utilities each expressed concern with their existing infrastructure near proposed access roads. To mitigate this concern, EPE will share final design with the existing pipeline owners to ensure the project will not impact the existing pipelines. No public objections for the project have been received.

Q18. IS EPE SEEKING LOCATION APPROVAL FOR ITS PROPOSED TRANSMISSION LINE?

A. No, EPE is not seeking location approval. NMSA 1978, Section 62-9-2(B) and the Commission's location approval rule at 17.9.592 NMAC ("Rule 592") do not apply to the proposed transmission line, because the transmission line is not connected to a large capacity plant, as defined by rule 17.9.592.2 and 17.9.592.7.A NMAC.

Q19. WHAT ENVIRONMENTAL AUTHORIZATIONS AND PERMITS MUST BE OBTAINED BY EPE PRIOR TO BEGINNING CONSTRUCTION OF THE TRANSMISSION LINE?

A. Prior to construction of the transmission line, EPE will receive notice to proceed with construction from the land management agencies including the BLM and NMSLO. As part of the construction phase, EPE will develop a Stormwater Pollution Prevention Plan in compliance with the Clean Water Act Section 402.

Q20. WAS EPE REQUIRED TO CONDUCT AN ENVIRONMENTAL ASSESSMENT ("EA") OR OBTAIN APPROVALS FOR AN ENVIRONMENTAL IMPACT STATEMENT UNDER NEPA?

A. An EA was prepared for the BLM Las Cruces District Office to determine if the project could reach a Finding of No Significant Impacts ("FONSI") or would

require further analysis under an Environmental Impact Statement. Due to the analysis and findings included in the EA, it was determined that the project could receive a FONSI. The FONSI was received by the BLM on August 20, 2015. A copy of the FONSI is attached to my testimony as Exhibit AM-2.

Q21. IS THE ENVIRONMENTAL ASSESSMENT THAT WAS COMPLETED FOR THE ORIGINALLY PLANNED TRANSMISSION LINE ATTACHED AS AN EXHIBIT TO YOUR TESTIMONY?

A. Yes, it is attached as Exhibit AM-1.

Q22. ARE THE 2015 ENVIRONMENTAL ASSESSMENT AND FONSI SUFFICIENT FOR THIS PLANNED PROJECT?

A. Yes. The EA (Exhibit AM-1) and FONSI (Exhibit AM-2) are sufficient for the planned project. In addition, the BLM and NMSLO have provided approval of the grant amendments.

Q23. WHAT PROCESS IS EPE EMPLOYING TO ENSURE BEST MANAGEMENT PRACTICES?

A. Prior to the start of construction, there will be a meeting with the construction crew about the environmental concerns in the project area. EPE will ensure the construction crew has a copy of the stipulations listed in the grants as well as the

mitigation measures listed in the Plan of Development (Exhibit AM-3). In addition, periodic environmental inspections will occur during the construction phase.

Q24. WHAT ARE EPE'S PLANS TO MITIGATE HARM TO FISH, WILDLIFE, AND PLANT LIFE IN THE AREA POTENTIALLY IMPACTED BY THE PROPOSED PROJECT?

A. EPE will ensure its contractors receive instruction about sensitive resources that could be present, such as sensitive plants, in-use nests, and animals. Mitigations include adhering to the BLM's fencing mitigations, pre-construction nest surveys if construction activities occur during the nesting season (March 1 – September 31) and building the transmission line in accordance with the Avian Power Line Interaction Committee-suggested practices for raptor protection on power lines.

No fencing between grazing allotments would be removed. One existing pasture fence would be realigned to include BLM "Type A" fencing parallel to the transmission line ROW. If required, three cattle guards would be installed to BLM specifications along the proposed route to allow access for maintenance of the transmission line without impacting grazing operations. During construction, cattle may avoid the vicinity of the project area due to an increase in human activity and noise; however, these increases would be temporary in nature.

Two invasive species, Russian prickly thistle [*Salsola tragus*] and African rue [*Peganum harmala*], are present within the project area. Seeds from invasive

species could be inadvertently spread during construction activities; however, construction equipment would be inspected when leaving the contractor's yard and leaving the project area. Although vegetation will be removed and impacted for the construction of the project, reseeding with native vegetation and monitoring the spread of noxious weeds would decrease the potential impacts. In addition, the vegetation within the project area is common in the region and permanent disturbance of 64.8 acres would be considered relatively small compared to the available vegetation in the region. During and following construction, noxious weed surveys would be conducted to facilitate early detection, containment, and control of noxious weeds, which would minimize the potential for invasive species to colonize within the ROW and potentially contain the expansion of pre-existing infestations.

Q25. WHAT ARE EPE'S PLANS TO MINIMIZE IMPACT TO SCENIC, HISTORIC, CULTURAL, AND RELIGIOUS SITES AND STRUCTURES IN THE VICINITY OF THE LOCATION OF THE PROPOSED TRANSMISSION LINE?

A. Minimization of scenic or visual impacts can be conducted through careful location, minimal disturbance, and repeating the basic elements. The visible elements of the project include transmission line monopole structures and conductors. These components would be visible across long distances due to the open landscape of

the area. The transmission line structures would be made of Corten steel, which becomes less reflective as it weathers to further reduce contrast and potential visual impacts. The project would align with BLM visual resource management objectives for Class IV areas and visual impacts would be mitigated to the extent feasible through design.

There are five eligible cultural resource sites within the transmission line ROW. These resources will be mitigated through data recovery or agency-determined appropriate mitigations prior to all construction activities. If cultural resources are uncovered during construction or any other earth-disturbing activities, work in the affected area would cease immediately and the appropriate agency (BLM or NMSLO), as well as the State Historic Preservation Officer would be notified. In addition, evaluations and documentation of the findings would be completed in compliance with applicable regulations. No impacts to religious sites are expected as none are in the vicinity of the transmission line.

Q26. WHAT ARE EPE'S PLANS TO MINIMIZE IMPACT TO PALEONTOLOGICAL RESOURCES IN THE VICINITY OF THE LOCATION OF THE PROPOSED TRANSMISSION LINE?

A. One geological formation, Camp Rice Formation, present in the ROW may contain paleontological resources. This Formation has produced several fossil localities in the vicinity of the project area. Three scientifically significant fossils were recorded

and collected during the paleontological resource survey, and six more non-significant fossils were recorded, but not collected. None of the observed fossils were within the transmission line ROW. At the time of this testimony, it is assumed that the December 2013 paleontological survey is considered sufficient by the BLM as the BLM is not requesting additional paleontological survey as part of the ROW grant amendment.

Q27. WHAT ARE EPE'S PLANS TO REDUCE NOISE EMISSION LEVELS AND PREVENT INTERFERENCE WITH COMMUNICATION SIGNALS?

A. There are no noise-sensitive properties within 500 feet of the proposed ROW. The construction and operation of the project will adhere to the 2012 Doña Ana County noise control ordinance. During construction, there will be a temporary increase in noise above ambient background levels. However, during operation, noise levels will not exceed ambient background levels at 500 feet from the ROW.

Communication tower signals are not anticipated to be impacted by construction activities.

Q28. HAS EPE IDENTIFIED ANY NECESSARY ENVIRONMENTAL MITIGATION ACTIONS?

A. Yes. EPE identified two endangered species' habitats which are present in the areas likely to be impacted by construction.

Q29. WHAT PROCESS IS EPE EMPLOYING TO IMPLEMENT ANY NECESSARY ENVIRONMENTAL MITIGATION ACTIONS?

A. The proposed transmission line ROW contains habitat suitable for two state-listed endangered species: sand pricklypear (*Opuntia arenaria*) and night-blooming cereus (*Epiphyllum oxypetalum*). These species were not observed during the biological surveys. Because the biological surveys occurred in August and September 2012, EPE will conduct additional pre-construction surveys to ensure the proposed ROW is still absent of sand pricklypear and night-blooming cereus individuals and to comply with 19.21.12 NMAC (New Mexico Plant Rule). If plants are observed, efforts will be made to avoid impacts to the observed population. If impacts to the individual plants are unavoidable, mitigation measures such as salvaging and transplanting would be implemented, as well as applying for an incidental take permit with the state.

Q30. DOES EPE PLAN TO MONITOR THE ENVIRONMENTAL CONDITIONS AT THE CONSTRUCTION SITE TO ENSURE ACHIEVEMENT OF MITIGATION ACTIONS?

A. Yes, EPE plans to conduct periodic environmental inspections which will occur periodically throughout the construction phase.

IV. SUMMARY AND CONCLUSION

Q31. PLEASE SUMMARIZE YOUR TESTIMONY.

A. Although preparation of an EA is not required for the CCN application, EPE has elected to include the prepared EA in this CCN application package to aid in the Commission's review of the project. Based on my review of the EA prepared to evaluate site-specific resources and determine whether the location would unduly impair important environmental values, I have concluded that the location of the 345kV transmission line will not unduly impair any important environmental values. In providing this analysis and reaching this conclusion, my testimony describes and explains that based on the 2015 EA (AM-1), the project will have no significant impact on the important environmental values.

Q32. BASED ON YOUR EXPERTISE AND THROUGH YOUR EVALUATION AND ASSESSMENT OF THE PROPOSED PROJECT, WILL EPE'S PROPOSED TRANSMISSION LINE UNDULY IMPAIR IMPORTANT ENVIRONMENTAL VALUES OR CREATE IMPACTS THAT SIGNIFICANTLY AND ADVERSELY AFFECT THE QUALITY OF THE HUMAN ENVIRONMENT?

A. No. EPE has incorporated mitigation actions and best industry practices into each stage of the proposed project and will conduct periodic environmental inspections to ensure that mitigation purposes are achieved.

Q33. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

United States Department of the Interior
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Environmental Assessment for
El Paso Electric 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico

NEPA Number D0I-NM-L000-2013-0099-EA

Frances J. Martinez — 8/20/15
Signature and Title of Project Lead — Date

Jennifer M Montoya — 8/20/15
Signature and Title of Lead Reviewer — Date

NATIONAL SYSTEM OF PUBLIC LANDS

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1.0 INTRODUCTION

The Bureau of Land Management (BLM) received a right-of-way (ROW) application (NMNM 129489) from El Paso Electric Company (EPE) on November 28, 2012 to construct, operate, maintain, and terminate a new 14.3 mile long, 115 kilovolt (kV) transmission line and access road. EPE is a regional electric utility providing generation, transmission and distribution service to approximately 380,000 retail and wholesale customers in a 10,000 square mile area of west Texas and southern New Mexico. The territory extends from Hatch, New Mexico to Van Horn, Texas and includes two connections to Mexico.

This environmental assessment (EA) has been prepared to analyze and disclose the potential effects of EPE's proposed new ROW on the human environment. The proposed line would be built within a single ROW corridor starting at a new 345/115-kV autotransformer just north of the Afton Generating Station (Afton North Substation) and ending at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of Interstate 10 (I-10) (**Figure 1.1** and **Figure 1.2**). The proposed (Afton North substation to Airport substation) Afton North – Airport Transmission Line project would include: a new approximately 14.3 mile, 3-phase 115-kV transmission line and ancillary facilities (autotransformer); one circuit, with one 954 thousand circular mil (kcmil) wire per phase (three total conductor wires); two overhead shield wires, and; a rebuild/upgrade of the Airport Substation. The circuit would have a capacity to transmit 140 megawatts (MW) at normal operating and 200 MW under emergency conditions.

The transmission line would be located on federal, state, and municipal, lands in southwest New Mexico, paralleling existing utility lines and following parcel section lines as much as practicable (**Figure 1.3**). A permanent access road for construction and maintenance would be constructed within the proposed ROW, adjacent to the structures, with access points from existing county roads (**Figure 1.4**).

Consideration of this ROW application is a federal action requiring compliance with the National Environmental Policy Act of 1969 (NEPA). The BLM Las Cruces District Office (LCDO), will decide whether or not to grant ROW on public land as established by Title V of the Federal Land Policy and Management Act of 1976 (FLPMA) (43 United States Code [USC] 1761-1771).

All figures and illustrations are presented in **Appendix A**.

1.1 Purpose and Need

The purpose of the Proposed Action is to allow EPE to construct a 115-kV transmission line, access road and other ancillary facilities from the Afton North Substation across public lands to the Las Cruces Airport substation. The need for the action is established by the BLM's responsibility under FLPMA to respond to a request for a ROW grant for legal access across public land.

EPE's (the Applicant's) objectives in constructing the proposed Afton North – Airport Transmission Line are to:

- Improve system reliability by providing an alternate transmission source to the Airport Substation.

- Complete infrastructure improvements to provide alternate paths that reduce loads to existing facilities and provide emergency overload options. The available transfer capacity on the existing Public Service Company of New Mexico (PNM) facilities limits EPE's potential to serve a growing load. Increasing the transmission capacity at the Airport Substation would relieve existing transmission congestion.

- Accommodate load growth in the El Paso and Las Cruces areas. In general, population growth in the region has been rapid, with growth projections for Las Cruces and Doña Ana County of more than 30 percent over the next 20 years (Bureau of Business and Economic Research, 2008). While this has been general throughout the county, EPE has had to increase capacity at the Airport Substation, replacing the original 20 megavolt-ampere (MVA) unit with a 30 MVA unit.

1.2 Decision to be Made

This environmental assessment (EA) analyzes two alternatives: the Proposed Action (issuance of the transmission ROW); and no action (not to issue a transmission ROW). This EA also discusses the environmental consequences of implementing either alternative. The deciding authorized officer for the ROW grant is the Las Cruces District Manager. Based on the information provided in this EA, the District Manager will decide whether or not to authorize the use of the ROW for the purpose of constructing, operating, maintaining, and terminating the proposed Afton North – Airport Transmission Line, and if so, under what terms, conditions and stipulations.

1.3 Plan Conformance/Authority/Relationships to Statutes, Regulations and Other Plans

There are no known inconsistencies between the proposed Afton North – Airport Transmission Line project and the officially approved and adopted plans, policies and programs of federal, state or local governments.

1.3.1 Relationship to Statutes, Regulations, or Other Plans

The EA is being prepared in accordance with the requirements of NEPA and other statutes relevant to the proposal. Authority for the proposal and alternatives is contained in Title V section 501 of FLPMA of 1976 as amended and the regulations cited in 43 Code of Federal Regulations (CFR) 2800. In accordance with the 23 CFR 771, BLM requirements for NEPA investigations, and other appropriate standard methodologies, this EA has been prepared to assist in determining the environmental impact of the Proposed Action, and in the evaluation of whether an Environmental Impact Statement (EIS) or Finding of No Significant Impact (FONSI) would be prepared for the proposed project.

1.3.2 Conformance with Land Use Plan

Management direction for the surface and subsurface resources within the LCDO is guided in part by the Mimbres Resource Management Plan (RMP) (BLM, 1993). The purpose of the Mimbres RMP is to determine appropriate multiple uses and allocate resources, develop strategies to manage and protect resources, and establish systems to monitor and evaluate the status of resources and effectiveness of management practices.

The proposed ROW grant associated with the proposed project conforms to Section 2, Management Program, Lands ("Rights-Of-Way, Leases, and Permits"; pp. 2-14 and 2-15) and Access (pp. 2-19 through 2-21) of the 1993 Mimbres RMP and with Federal regulations and policies. In addition, the proposed ROW grants would not cross any portion of public lands designated for ROW avoidance or exclusion areas.

1.3.3 Final Programmatic Environmental Impact Statement (EIS) for Solar Energy Development in Six Southwestern States

The BLM and the U.S. Department of Energy (DOE) were cooperating agencies in the development of a programmatic environmental impact statement (EIS) to evaluate the potential impacts associated with developing solar resources in six states in the southwestern U.S., including New Mexico (BLM/DOE, 2010, 2011, 2012a). The programmatic EIS evaluates regional impacts for the 28,000 acre Afton Solar Energy Zone (SEZ) that includes the ROW for the proposed Afton North – Airport Transmission Line. The programmatic EIS does not evaluate a specific proposed project, but uses assumptions about feasible solar technology that might be deployed in the Afton SEZ over the next 20 years.

Although the 2012 Final programmatic EIS evaluated the impacts associated with a full build out of different types of solar technologies, there are no current plans to develop the entire 28,000-acres included in the Afton SEZ (BLM/DOE, 2012a). Because the programmatic EIS is not intended to reserve the area only for the purposes of solar energy and because transmission capacity would be needed for any solar project, the proposed Afton North – Airport Transmission Line project would be consistent with conclusions in the programmatic EIS and the record of decision (BLM/DOE, 2010, 2011, 2012a, b).

1.4 Scoping and Issues

The following sections describe the internal and external scoping conducted for the proposed Afton North – Airport Transmission Line project.

1.4.1 Internal Scoping

The proposed Afton North – Airport Transmission Line project was initially presented to the BLM LCDO NEPA Interdisciplinary team in June 2012. Issues identified at that meeting included:

- Cultural resource and biological resource surveys
- Vehicle use
- Surface disturbance
- Introduction of invasive and/or noxious weed species
- Lands and Realty

An initial application was submitted to BLM on November 28, 2012 and a revised application was submitted on March 26, 2013. A kick-off meeting was held with the EPE project team and the BLM LCDO NEPA Interdisciplinary team on June 11, 2013. Issues discussed at that meeting included:

- Coordination with other transmission line project applications currently being considered by BLM, specifically the SunZia Transmission Line and Southline Transmission Line
- Alternative routes

- Kangaroo Rat populations and habitat
- Cultural Resources
- Grazing Permits
- Existing and proposed ROWs

The proposed construction corridor was presented by EPE and the proposed methods and approach for conducting an alternative route analysis was presented by the consultant team.

1.4.2 External Scoping

The BLM sent scoping letters on August 1, 2013, describing the Proposed Action to adjacent ROW holders and permittees along the alignment of the proposed route. The scoping period ended on September 5, 2013.

A number of federal and state agencies were also contacted during scoping for this EA, including:

- The United States Army Corps of Engineers (USACE)
- The United States Fish and Wildlife Service (USFWS)
- The New Mexico State Historic Preservation Office (SHPO)
- The New Mexico State Land Office (NMSLO)
- The New Mexico Department of Game and Fish (NMDGF)
- The Federal Energy Regulatory Commission (FERC)
- The New Mexico Environment Department (NMED)

This Project is an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA), and its implementing regulations (36 CFR Part 800). In accordance with 36 CFR § 800.2(a)(2), BLM serves as the lead agency for the purposes of Section 106 review. Tribes were invited to comment on the Proposed Action in accordance with Section 106 of the NHPA, NEPA, and American Indian Religious Freedom Act to ensure that any concerns about the proposed Project are fully considered. Tribal consultation letters were sent from BLM on November 12, 2014 to the following tribes**:**

- Comanche Indian Tribe
- Fort Sill Apache Tribe
- Hopi Cultural Preservation Office
- Isleta Pueblo
- Kiowa Tribe
- Mescalero Apache Tribe
- Navajo Nation
- White Mountain Apache Tribe
- Ysleta Del Sur Pueblo

Correspondence related to the external scoping documentation is contained in **Appendix B**.

Portions of the EPE Project are planned to be located on land that is currently under ownership of the State of New Mexico and the City of Las Cruces (**Table 1.1**). EPE would negotiate with the NMSLO and the City of Las Cruces for permission to access those lands. EPE would apply to the New Mexico State Land Office to obtain the necessary rights-of-way and easements for the approximately 1.5 miles of the proposed Afton North – Airport Transmission Line project that

crosses state lands. That application would include submitting the necessary forms and fees, as well as providing a certified survey plat of the proposed ROW.

Table 1.1 Land Ownership Along the Proposed Right-of-Way

Owner	Amount of Land Crossed (miles)	Maximum Surface Area (acres)[a]
Federal Land	12.79	223.4
State Land	1.50	18.2
City of Las Cruces	0.01	0.1
Total	**14.30**	**241.7**

[a] Calculated assuming 5.64 miles @ 200-foot ROW across Federal land along a southeast-northwest trajectory where the project parallels the existing 345 kV corridor into Afton North Substation, 7.15 miles @ 100-foot ROW for Federal Land along a north-trending section of the proposed ROW, and 100-foot ROW for all other lands near the Airport Substation..

Where the proposed Afton North– Airport Transmission Line project would cross state or municipal lands, it would be subject to applicable land use planning regulations, zoning ordinances, or other requirements enforced by the state, county, or local jurisdiction, and EPE would secure necessary permits.

1.4.3 Resource Issues Identified

As a result of internal and external scoping the BLM received comments from BLM ROW holders: Zia Natural Gas Company (ZNG), the City of Las Cruces, and Kinder Morgan (SFPP LP). These entities expressed concern over conflict between their facilities and the proposed Afton North– Airport Transmission Line. The issues and EPE responses are summarized below. The letters from these three stakeholders and the EPE response are included in **Appendix B**.

In a letter to BLM dated August 30, 2013, ZNG expressed concern that the proposed ROW for the Afton North – Airport Transmission Line project would cross a high pressure natural gas line (ROW NMNM 107570). Specifically, ZNG was concerned that this crossing could violate regulatory requirements for underground clearance and cover. EPE's Transmission Engineering Department examined the proposed design for the Afton North – Airport Transmission Line with respect to the location of the pipeline and determined the transmission structures will not be located within the pipeline ROW. The findings were communicated to ZNG via certified mail and are included in **Appendix B**. EPE will submit the final design to ZNG for their review. If ZNG determines there is a potential affect from the wires crossing their gas line, EPE will enter into a mitigation agreement to remedy the effects.

Several comments were received from the City of Las Cruces Department of Technical Support. The proposed Afton North– Airport Transmission Line would cross a Las Cruces Utility 8" high pressure gas line ROW (NMNM 129320) in the West Mesa area. To evaluate the impacts to the operation and maintenance of the high pressure gas line, the Las Cruces Utility staff requested information on the history of AC current induced from EPE transmission lines with similar transmission capacity to other structures EPE's Transmission Engineering Department examined the proposed design against the City's design of the gas line and determined that no transmission structures would be located within the gas line corridor. The findings were communicated to the City via certified mail and are included in **Appendix B**. EPE will submit the final design to the City for their review. If the City determines there is a potential affect from the wires crossing their gas line, EPE will enter into a mitigation agreement to remedy the effects.

The Las Cruces Department of Technical Support also noted that Las Cruces Utility has utilities just south of I-10 that currently serve businesses and institutions in the area. The proposed Afton North – Airport Transmission Line would cross or parallel these lines at multiple locations. For routine line operation and maintenance of the existing utility lines, and future line rehabilitation, the Las Cruces Department of Technical Support noted that vertical and horizontal line separations would need to be maintained between the existing utilities and the proposed EPE infrastructure. They also requested more detailed design drawings of the structures for the proposed Afton North – Airport Transmission Line to determine the necessary separation distances, and to determine if there were additional concerns. The City of Las Cruces Engineering Department was contacted to verify the location of the existing Las Cruces utilities, and an EPE survey crew field located those lines. Clearances and separations are specified in the National Electrical Safety Code (NESC) or in EPE's internal standards. Whichever standard is more stringent would be applied during the design and confirmed upon completion of construction in order to verify compliance.

Kinder Morgan expressed concern with the proximity of the overhead electrical facilities of the proposed Afton North – Airport Transmission Line to buried pipelines (NMNM 018856 and NMNM 115188) along the ROW. Kinder Morgan requested an agreement with EPE to engage an outside consultant to evaluate potential adverse effects on Kinder Morgan pipelines and determined mitigation requirements. Kinder Morgan also requested adherence to applicable provisions in its technical publication *Guidelines for Design and Construction*: L-OM200-29. Based on the information provided by Kinder Morgan, pipelines do not intersect nor do they cross the proposed Afton North– Airport Transmission Line, although the access road into the proposed Afton North Substation would cross over the Kinder Morgan pipelines **(Appendix B).**

A variety of laws, regulations, and policy directives govern the evaluation of the potential effects of a Proposed Action and alternatives on certain critical environmental elements. The critical elements of the human-built and natural environment of the proposed Afton North – Airport Transmission Line project include:

- Air Quality (including Climate Change)
- Floodplains
- Cultural Resources
- Geology Resources
- Invasive, Non-Native Species
- Livestock Grazing
- Migratory Birds
- Noise
- Paleontological Resources
- Realty and Land Use
- Soils
- Threatened, Endangered, and Special Status Species
- Vegetation
- Visual and Scenic Resources
- Water Quality (Surface/Ground)
- Wildlife and Wildlife Habitat

These resources and resource uses are described with respect to the affected environment in Section 3 of this environmental assessment, and potential impacts are evaluated in Section 4.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

EPE proposes to construct a new 3-phase 115-kV transmission line (**Figure 1.1**) from a new 345/115-kV autotransformer Substation (Afton North Substation) (**Figure 1.2**) to the existing Airport Substation as part of the Airport 115-kV loop. A 100-foot wide ROW is requested from the Airport Substation along the north-south trajectory of the line and a 200-foot wide ROW is requested along the southeast-northwest trajectory where the project parallels the existing 345 kV corridor into Afton North Substation (**Figure 2.3 A-R)**. The proposed new transmission line would be approximately 14.3 miles long, and consist of three 954 kcmil Aluminum Conductor Steel Reinforced (ACSR) (Rail) conductors, one per phase, and two overhead shield wires of which one would be an overhead optical ground wire (OPGW) for EPE system communication purposes. Features of the ROW and the amount of land to be disturbed by the proposed new transmission line and new Afton North Substation are summarized in **Table 2.1**.

If approved, BLM would issue a ROW grant for the construction, operation, maintenance and termination of the proposed Afton North – Airport Transmission Line through the BLM land parcels as described in the preliminary survey results presented in the following section. Construction would start with the issuance of the ROW and last approximately 20 to 25 weeks and involve up to 20 workers.

Bureau of Land Management Parcels
New Mexico Principal Meridian, New Mexico

T. 23 S., R. 1 W.,
sec. 33, E1/2SE1/4NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4.
T. 24 S., R. 1 W.,
sec. 4, lot 1, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4;
sec. 9, E1/2NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4;
sec. 21, E1/2NE1/4NE1/4 and E1/2SE1/4NE1/4;
sec. 28, E1/2NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4;
sec. 33, E1/2NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4.
T. 25 S., R. 1 W.,
sec. 4, lot 1, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4;
sec. 9, E1/2NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4 and NE1/4SE1/4SE1/4;
sec. 10, SW1/4SW1/4, S1/2SE1/4SW1/4 and SW1/4SW1/4SE1/4;
sec. 13, S1/2SW1/4SW1/4NW1/4, SW1/4SE1/4SW1/4NW1/4, S1/2NE1/4NE1/4SW1/4, NW1/4NE1/4SW1/4, N1/2NE1/4NW1/4SW1/4, SW1/4NE1/4SE1/4, S1/2SE1/4NE1/4SE1/4, S1/2NW1/4NW1/4SE1/4, S1/2NW1/4SE1/4, and NE1/4NE1/4SE1/4SE1/4;
sec.14, N1/2SW1/4NE1/4, NE1/4SE1/4SW1/4NE1/4, S1/2SE1/4NE1/4, SW1/4NE1/4NW1/4, S1/2NW1/4NW1/4, and N1/2SE1/4NW1/4;
sec. 15, S1/2NE1/4NE1/4NE1/4, NW1/4NE1/4NE1/4, N1/2SE1/4NE1/4NE1/4, NE1/4NW1/4NE1/4, and N1/2NW1/4NW1/4NE1/4.
T. 25 S., R. 1 E.,
sec. 18, lot 4, SE1/4SW1/4, S1/2SW1/4SE1/4 and S1/2SW1/4SE1/4SE1/4;
sec. 19, N1/2NE1/4NE1/4;
sec. 20, S1/2SW1/4NW1/4NE1/4, N1/2SW1/4NE1/4, E1/2SE1/4NE1/4, NW1/4SE1/4NE1/4, S1/2NE1/4NW1/4, E1/2NW1/4NW1/4, and NW1/4NW1/4NW1/4;

sec. 21, SW1/4NE1/4, S1/2SW1/4NW1/4, SE1/4NW1/4, NE1/4SW1/4, E1/2NW1/4SW1/4, W1/2SE1/4SW1/4, and W1/2NW1/4SE1/4.

New Mexico State Lands Parcels
New Mexico Principal Meridian, New Mexico

T. 24 S., R. 1 W.,
sec. 16, E1/2NE1/4NE1/4, E1/2SE1/4NE1/4, E1/2NE1/4SE1/4, and E1/2SE1/4SE1/4;
sec. 21, E1/2NE1/4SE1/4 and E1/2SE1/4SE1/4.

2.1.1 Afton North – Airport Transmission Line Features

General design features of the proposed Afton North– Airport Transmission Line are described in more detail in the following sections.

2.1.1.1 Transmission Line Design Features

The proposed transmission line would have one-3/8 inch Extra High Strength (EHS) steel shield wire and one fiber-optic shield wire (Overhead Optical Ground Wire or OPGW), necessary for operational communications, for the entire length of the line. All tangent poles would be steel H-frame (**Figure 2.1**) with suspension insulators to support the conductors. All dead-end structures and large angle structures would be un-guyed, self-supporting, three-pole steel structures. The design span between towers would be 700 feet, with maximum span lengths of 800 feet. The maximum height of the structures would be 125 feet with up to 125 total structures.

Poles would be designed to meet the requirements of the State Electric Safety Code (SESC), the NESC and the ASCE Standard 48-11 or the Latest Revision “Design of Steel Transmission Pole Structures”, and specific performance criteria of EPE. To minimize potential impacts on birds, including raptors, the transmission line would be designed to incorporate the avian protection guidelines in Avian Power Line Interaction Committee (APLIC) (2006, 2012).

All steel transmission structures require some type of corrosion protection. Typical options are dull-galvanizing, painting, and the use of special steel alloys such as Corten steel. For the proposed project, all steel poles would be weathering Corten steel. “Weathering” means the chemical composition of the steel exhibits a natural resistance to atmospheric corrosion. The steel forms a protective layer on the surface under the influence of the weather. The weathering also creates a dull-brown patina that reduces light reflectivity.

The proposed Afton North – Airport Transmission Line project would require crossing of other utilities. The location of the proposed transmission line is dependent upon other linear facilities, topographical constraints and utility boundary constraints that exist as well as environmental constraints. Proposed line crossings (**Figure 2.3**) would be coordinated with the facility owner or manager and the required licenses, permits or agreements obtained (**Appendix B**).

The general construction considerations associated with the construction of the EPE Project are described below.

Table 2.1 Construction Summary for the Proposed Afton North – Airport Transmission Line and Afton North Substation					
Project Feature	**Description**	**Overall Project**	**BLM Property**	**State Property**	**Municipal Property (1)**
Length of Lines	Total length of line excluding final spans into the project and interconnecting substations.	14.30 miles	12.79 miles	1.50 miles	0.01 miles
Type of Pole	Single-Circuit, H-Frame, Steel				
Pole Height	Maximum 125 feet				
Span Length	Typically 700ft to 800ft				
Number of Poles	Total number of dead end, angle, or tangent poles excluding structures within interconnecting substations.	Up to 125	Up to 114	11	0
ROW Width	Typically 100ft minimum required. 200' will be required for portions that parallel the existing 345kV corridor.	200ft/100ft	200ft/100ft	100ft	100ft
Wire Pulling and Tensioning Sites	100ft wide by 400ft long, generally extends past each dead end or angle structure. Necessary for conductor stringing equipment and placement of wire reels.	10	9.5	0.5	0
Guard Structures	100ft wide by 100ft long. Placed on either side of existing roads or electrical lines to maintain vertical clearance during construction activities only.	6	6	0	0
New Permanent Access Roads	Vegetation clearing and grading for equipment access. 14ft maximum width by length of the corridor.	14.87 miles	13.36 miles	1.50 miles	0.01 miles
Existing Access Roads along Alignment	Existing width and length varies. No adjustments to be made.	0 ft	0 ft	0 ft	0 ft
New Afton North Substation	417' x 834' Fenced area within a 1600' x 915' ROW Area	7.98 acres	7.98 acres	0.00 acres	0.00 acres
Afton North Substation Staging Area	Included within Substation fenced area, previously disturbed area	0 acres	0 acres	0 acres	0 acres
Afton North Substation Power Service	Wood distribution poles for Substation Service and Construction Staging Power	10	10	0	0
Temporary Disturbance Areas					
Wire Pulling / Tensioning Sites	See Description Above	9.18 acres	8.72 acres	0.46 acres	0.00 acres
Guard Structures	See Description Above	1.38 acres	1.38 acres	0.00 acres	0.00 acres
Transmission Line Staging Areas	One staging area proposed at 10-acres on private land (not BLM land).	10.0 acres	0.00 acres	0.00 acres	0.00 acres
Permanent Disturbance Areas					
Structure Disturbance Area	100ft x 100ft area centered at each structure location for construction and maintenance	28.70 acres	26.17 acres	2.53 acres	0.00 acres
New Access Road [3]	Vegetation clearing and grading for equipment access. 14ft maximum width by length of corridor	24.27 acres	21.70 acres	2.55 acres	0.02 acres
Afton North Substation	See Description Above	11.48 acres	11.48 acres	0.00 acres	0.00 acres
Afton North Substation Power Service	Approximately 35ft x 50ft area at each service structure location for construction and maintenance	0.402 acres	0.402 acres	0.000 acres	0.000 acres
Electrical Specifications for 115-kV Line					
Nominal Voltage	115kV ac				
Capacity	Thermally sized for 140MWac (700 amps) for Normal Operating Conditions, and 200MWac (1000 amps) for Emergency Operating Conditions				
Circuit Configuration	Horizontal				
Ground Clearance of Conductor	Exceeds minimum per National Electric Safety Code (NESC) at Designed Thermal Limit for Emergency Line Loading Conditions (212°F)				

(1) City property includes crossing of one parcel of City of Las Cruces property dedicated for a future 65' road easement adjacent to Airport Substation.
(2) Temporary disturbances for pole work areas exclude 100ft x 100ft permanent structure disturbance area.
(3) Road disturbance area excludes disturbances included elsewhere for pole disturbance.

2.1.1.2 Temporary Work Areas

The proposed project would require several types of temporary use areas during construction: a staging area, pulling and splicing sites, work areas at each structure site, and guard structures. Each of the tower locations would require a temporary work area of 100 feet wide by 200 feet in length. Temporary work areas would be located within the ROW. Tensioning sites would be located within the ROW at approximately 9,000 foot intervals. Activities that would occur in temporary work areas include:

- Equipment Staging
- Equipment Refueling
- Temporary Water Use
- Construction Waste Storage

Previously disturbed lands would be used to the maximum extent possible for construction staging and personnel reporting. There would be one staging area on about 1.2 acres of previously disturbed ground adjacent to the Afton Generating Station with material storage for this proposed project (**Figure 1.3**). The staging area would be used throughout the duration of construction for receiving, storing and transferring of required materials.

The staging area may also serve as a field office, reporting location for construction workers, parking for vehicles and equipment, location for temporary toilets, and location for equipment maintenance.

Concrete Requirements

Locally available commercial ready-mix concrete would be used for all pertinent construction activities. No batch preparation would occur within the project area.

Equipment Staging

Staging of equipment would be located at the staging area, pulling and tensioning sites or other temporary work areas within the surveyed project area. These areas would be used to temporarily lay out equipment.

Equipment Refueling

EPE or their contractor would implement standard refueling procedures for heavy equipment left in the ROW for extended periods of time. Examples of the heavy equipment are cranes, back-hoes, dozers, and drill rigs. The equipment would be refueled in place. No personal or light duty vehicles would be refueled on the ROW.

Temporary Water Use

Water use is expected to be primarily for foundation construction of substations and transmission line structures. Water would be used for dust control during grading and site work. The water would be provided by municipal industrial sources or private sources. No new water rights would be required.

Construction Waste

Construction of the proposed Afton North – Airport Transmission Line and the new Afton North Substation would generate minimal wastes, and would include typical construction wastes. All wastes would be collected on-site and disposed of in accordance with federal, state and local regulations. Recyclable materials would be diverted to recycling facilities to the extent possible. Portable toilets would be used during construction. The waste from the portable toilets would be regularly pumped out, hauled away and disposed of by an appropriately licensed vendor.

2.1.1.3 General Preliminary Construction / Site Preparation

The general preliminary activities required for the construction of both the EPE 115-kV transmission line and Afton North Substation would consist of the completion of the following tasks and activities, which should occur in sequential order, as shown below:

- Conducting final surveys for the transmission centerline and other features, substation boundaries and work areas. Preliminary surveys have been completed.
- Geologic evaluation and geotechnical investigation
- Upgrading or construction of permanent access roads along transmission centerline
- Clearing and grading along portions of the ROW and at structure sites
- Activities at temporary work areas

Surveying the Transmission Centerline and Other Features, Substation Boundaries and Work Areas

Final ground survey and staking would be performed to locate the centerline of the proposed ROW, structure centers, structure references, project substation boundaries, ROW boundaries, access roads, and temporary work areas. Temporary work areas would be located within the proposed ROW and include: pulling and splicing sites, work areas at each structure site, and guard structures. Sensitive environmental features to be avoided would be flagged (if necessary). Environmental monitoring would be in place, if necessary.

Geologic Evaluation and Geotechnical Investigation

The geologic evaluation and geotechnical investigations would be performed as part of the general construction activities in conjunction with final engineering in order to evaluate potential geologic and geotechnical hazards, and to determine specific requirements, such as ground conditions, soils types, depth to rock, depth to water, and soil strength properties, for foundation design and construction.

Road Construction

Existing roads will be used to access the project area. A permanent access road (see **Figure 1.4**) would be located entirely within and parallel to the centerline of the proposed ROW. Travel surfaces up to 14 feet wide would be cleared and graded during the construction of the transmission line and then used for inspection and maintenance during operation. The access roads would be level with existing topography depending on the terrain, site constraints, and equipment requirements. Given the lack of surface water and drainage features within the project, culverts and other crossing structures are not proposed. Surface access would be required to reach each transmission structure. The main access/maintenance road would follow

the centerline of the ROW, with access points from existing roads as identified in **Figure 1.4**. During the maintenance and operations phase of the project, grading would only be required where road conditions deteriorate from washout or erosion. EPE typically inspects 115 kV transmission lines on an annual basis by way of pick-up truck or all terrain vehicles, travelling at speeds less than 25 mph.

Clearing and Grading

Clearing of natural vegetation would be required for construction purposes at the staging area (previously disturbed area), structure sites (permanent clearance of 100 feet by 100 feet area around each tower), pulling and tensioning areas and Afton North Substation site (**Table 2.1**). Clearances are also required along the ROW for electrical safety, maintenance and reliability of the transmission line. Within the ROW, mature vegetation would be selectively removed under or near the conductors to provide adequate electrical clearance as required by NESC. If required, planned removals and selective clearing plans would be submitted to the appropriate land management agencies for approval.

2.1.1.4 Transmission Line Construction

Subsequent to the completion of the general preliminary activities listed above, construction of the 115-kV transmission line would consist of the completion of the following tasks and activities, which should occur in sequential order, as shown below:

- Excavating and installing foundations
- Assembling and erecting structures with temporary and permanent pad sites
- Conventional method of assembly and erection
- Structure grounding
- Stringing conductors, wires, and fiber optic cables

Excavating and Installing Foundations

The self-supported tubular steel structures would be supported by cast-in-place drilled concrete pier foundations or drilled shaft embedded steel foundations. Drilled shafts foundations would be excavated via a truck mounted drilling rig, with augers of various sizes, depending on the diameter and depth of the foundation to be installed. Foundation sizes would vary based on structural requirements and geotechnical conditions, but typical sizes for steel tangent poles would be three-five feet in diameter by 10-14 feet deep, and typical dead-end foundations would be up to eight feet in diameter and up to 30 feet deep. On BLM property, excess spoils (excavated material) would be spread evenly around the tower site, or otherwise handled as required by BLM site inspectors.

Should solid rock be encountered during excavation, blasting, rock excavation and hauling, or use of a rock anchoring system may be required, and would be based on geotechnical conditions and the site specific requirements of the design engineer.

For drilled concrete pier foundations, rebar cages would be delivered to the tower site and installed in the excavated shaft, and commercially available concrete would be delivered to the site in concrete mixers with capacities of up to 10 cubic yards per truck. For direct embedded poles, the embedded pole would be lowered into the drilled shaft, and acceptable backfill material would be delivered and compacted as necessary.

Assembling and Erecting Structures

Bundles of steel members and associated hardware (e.g., insulators, hardware, and stringing sheaves) would be transported to each structure site by truck. Structures would be assembled at each structure site on cribbing that provide for proper alignment of members. Steel sections would be laid out with hydraulic cranes.

After assembly, the structures would be erected via crane, and held level and plumb while the embedded poles are backfilled, or the anchor bolts are properly aligned and secured, depending on the type of foundation. Air compressors and air guns would be used to tighten bolts.

Structure Grounding

After the structures are erected, grounding would be installed adjacent to each pole. Structure grounds are installed to provide a path of low electrical resistance to allow electrical charge imposed on the steel poles (typically through electrical failure or lightning strike) to be dissipated to earth. Grounding rods are typically 10 feet long, are made from either steel or copper, would be driven into the earth adjacent to each pole, and would be attached to the steel structure with a connecting wire.

Stringing Conductors, Wires, and Fiber Optic Cable

Insulators, hardware, and stringing sheaves would be delivered to each structure site. The structures would be rigged with insulator strings and stringing sheaves at each ground (shield) wire and conductor position.

For protection of the public during wire installation, guard structures would be erected over highways, railroads, power lines, structures, and other barriers. Guard structures would consist of H-frame wood poles placed on either side of the barriers or by using boom trucks raising a guard cross beam. These structures would prevent ground wires, conductors, or equipment from falling across obstacles.

Pilot lines would be pulled (strung) from structure to structure by land operated equipment and threaded through the stringing sheaves at each tower. Following pilot lines, a stronger, larger diameter line would be attached to conductors to pull them onto towers. The process would be repeated until the shield wire, OPGW, or conductor is pulled through all sheaves.

Shield wires, fiber optic cable, and conductors would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. Sites for tensioning equipment and pulling equipment would be approximately 9,000 feet apart. The tensioning and pulling sites would be typically 1.8 acres each (approximately 100 feet by 400 feet in both directions opposite the line angle). The sites may differ in size and dimensions, depending on the structure's purpose (mid-span or dead-end) and site specific topographic conditions. Tensioners, pullers, line trucks, wire trailers, dozers, pickups, and tractors needed for stringing and anchoring the ground wire or conductor would be located at these sites. The tensioner, with the puller, would maintain tension on the ground wires or conductor while they are fastened to the towers. Once each type of wire has been pulled in, the tension and sag would be adjusted, the stringing sheaves removed and the conductors would be permanently attached to the insulators.

2.1.2 Afton North Substation

A new 345/115-kV 200 megavolt amperes (MVA) autotransformer would be installed just north of the Afton Generating Station in southern New Mexico. This substation (the Afton North Substation) is part of a long-range plan designed to provide needed diversity and capacity for additional energy requirements on EPE's existing transmission system caused by significant load increases in recent years.

The proposed Afton North Substation, in conjunction with the proposed Afton North - Airport Transmission Line, would relieve potential overloading on existing transmission facilities, including the single 115-kV line that currently serves the existing Airport Substation (**Figure 1.2**). The new Afton North Substation would provide connection to new 345 kV transmission lines and transform the voltage from 345-kV to 115-kV through an autotransformer. The substation would enhance system reliability and is being designed to accommodate current and anticipated future load requirements.

2.1.2.1 Substation Design Features

The Afton North Substation would be located within a ROW area of 915 feet by 1,600 feet (approximately 33.8 acres). The substation would be enclosed within a 417 feet by 834 feet fenced area (about 8 acres). Security lighting designed to comply with all local ordinances, would be installed at the substation. The area would be surfaced with a combination of concrete pads, compacted road base for internal access roads, gravel, and compacted earth. Service power would be required for substation operation, and it is anticipated that this demand would be served from an existing EPE distribution line located approximately ½ mile from the proposed substation location. There would be approximately 10 distribution poles required, and all would be located within the 100 feet of ROW shared with the transmission line.

The Afton North Substation would include the following components:

- 345/115-kV transformer(s)
- 115-kV and 345-kV circuit breakers
- 115-kV manual disconnect switches
- 115-kV and 345-kV disconnect switches, motor operated
- Metering equipment
- Communication equipment
- Associated bus, conductor, surge arresters, and structural steel supports
- Ground conductors, ground rods, and associated hardware for connecting steel and equipment to a new ground grid
- Underground conduits, control cable, pull boxes, junction boxes, and cable trench
- 345-kV and 115-kV dead-end/pull off structures to interface with transmission lines
- Foundations and site surfacing, grading, drainage, etc.
- Metering, Protection and Control, and Communication Control building(s)
- Graded parking area for maintenance vehicles
- Perimeter fence (chain link, concrete block or other material) with security lighting
- 75- kVA electrical power
- Distribution pole to deliver power from the substation service line to a 120/240V transformer

2.1.2.2 Substation Construction

Subsequent to the general preliminary activities listed above, construction of the Afton North Substation would consist of the completion of the following tasks and activities, which should occur in sequential order, as shown below:

- Detailed substation survey
- Final grading for substation pad construction
- Excavating and installing foundations and underground duct banks
- Site wall construction / final site preparation
- Assembling substation structures / equipment grounding
- Equipment installation / commissioning

Final Grading for Substation Pad Construction

Subsequent to the initial survey and vegetation clearing, the pad for the substation would be brought to grade and compacted per the recommendations of the geotechnical report.

Detailed Substation Survey

A detailed survey to locate substation foundations, site wall locations, locations for underground duct banks, and all other pertinent features would be completed and submitted to BLM prior to beginning construction.

Excavating and Installing Foundations and Underground Duct Banks

Substation structures would generally be supported on cast-in-place concrete slab foundations or cast-in-place concrete piers with prefabricated anchors. Foundations would be excavated using backhoes and truck-mounted augers. Rebar cages would be delivered to the site and installed, as required, then commercially available concrete would be delivered to pour all cast-in-place foundations.

Underground duct banks would be excavated with a backhoe, all conduit banks would be placed in the ground, and all trenches would be backfilled as required.

Site Wall Construction / Final Site Preparation

The security fencing around the substation would be constructed of chain link fence to accommodate U.S. Border Patrol security interests for visibility through the substation. After the fencing and gates are constructed, cast-in-place concrete foundations, as required, would be excavated and installed.

Assembling Substation Structures / Equipment Grounding

Based on results of the ground resistivity testing, a ground grid would be installed, which would consist of copper or steel rods driven into the ground in approximately a 20 foot by 20 foot grid over the area of the substation. The ground grid would be attached to substation bus work and equipment supports that would be installed on the concrete foundations. Steel structures, for transmission line dead-end/pull off structures would be erected with a hydraulic crane and bolted to the concrete foundations previously installed.

Equipment Deliveries / Installation / Commissioning

Substation equipment, to include autotransformers, circuit breakers, manual disconnect switches, metering equipment and communication equipment would be delivered, installed and commissioned. The commissioning process would include testing each piece of equipment, and the substation as a whole, to certify it for connection to the 345-kV power source.

2.1.3 Clean-up and Restoration of Affected Areas

Construction sites, staging areas, and access roads would be kept clean and orderly throughout construction. Refuse and trash would be removed and disposed of in an approved manner. In remote areas, trash and refuse would be contained temporarily until it can be hauled to an approved landfill. No open burning of construction trash would occur.

During cleanup and restoration, any hazardous materials use and disposal would be properly managed. Bulk chemicals and hazardous materials are not expected to be produced or stored on-site, and during clean-up and restoration, any hazardous materials such as petroleum products used for equipment would be properly managed in accordance with applicable federal, state, and local regulations regarding the use of hazardous substances. Procedures for proper management of any use of hazardous materials and equipment refueling would be addressed in the final Plan of Development (POD) and consistent with EPE's Emergency Spill Response Procedures.

During construction, topsoil would be stockpiled and used to restore disturbed areas to pre-construction conditions as much as possible. In addition, best management practices (BMPs) would be used during construction to minimize erosion of disturbed areas and stockpiled topsoil prior to restoration. Construction laydown areas would be graded and re-vegetated.

2.2 Best Management Practices

EPE would implement, or cause to be implemented, Best Management Practices (BMPs). BMPs are specific methods, measures, or practices that make up the Proposed Action and are intended to reduce or eliminate adverse effects of the project, whether they are significant or not. Two types of BMPs would be applied: standard BMPs and selectively committed mitigation BMPs. Standard BMPs are incorporated, where applicable, to the Project as a whole and are listed in **Appendix C**. Selective BMPs address specific environmental impacts or localized conditions and are prescribed on a case by case basis. A list of potential selective BMPs is provided as **Appendix C, Table C.1**. Specific application of the selective BMPs will be identified in the final POD.

2.3 No-Action Alternative

Under the No-Action alternative, the EPE application for the use of the ROW would be rejected or denied by the BLM LCDO Authorized Officer, and the new transmission line, substation, and access roads would not be constructed. As a result, the Airport Substation would remain constrained as to load serving capacity. EPE would not be able to relieve the load on the existing PNM 115-kV line that presently connects to the Airport Substation.

2.4 Alternatives Considered but Eliminated from Detailed Analysis

Four (4) "build" alternatives, with two (2) sub-alternatives, were considered to meet the purpose and need of the Proposed Action. Each alternative was evaluated for both environmental impacts and construction costs considerations. To evaluate environmental impacts an environmental constraints analysis was performed. Environmental and public impact considerations such as potential USACE jurisdictional waters, sensitive biological habitats, archeological resources, proximity to populated areas, land ownership, noise, visual resources and other resources were identified and mapped for each route. Straight lines following section boundaries along BLM-managed lands were preferred to reduce the area needed for the ROW, to minimize potential land use conflicts, and to limit the costs of construction. For the reasons described below, these alternatives were eliminated from additional detailed analysis.

For the Afton North – Airport Transmission Line, six route options were considered (those eliminated from detailed study are shown in **Figure 2.2**). They included the preferred alignment (Alternative 4 and Sub alternative C) and variations thereof. In determining the alignment for the proposed Afton North– Airport Transmission Line project, preference was given to routes that:

- Crossed federal land managed by the BLM with minimized crossing of state lands to minimize potential land use conflicts
- Followed existing transmission corridors to the extent practical
- Were located along section lines to minimize potential land use conflicts
- Were as direct as possible with minimal turns to minimize distance and cost, and promote more efficient use of ratepayer funds
- Met design requirements such as service needs, construction timing
- Provided access to the lines for construction and maintenance
- Avoided known cultural and natural resources, and habitat

The three alternative and sub alternative routes considered were selected based on constructability, from an engineering perspective, and met the project need. However, all included more turns and were longer than the preferred alternative (Alternative 4 and Sub alternative C in **Figure 2.2**). The preferred alternative was selected to decrease both cost and the potential for land use conflicts.

Cost estimates, based on the length of the route, ranged from a low of $28.8 million to a high of $29.3 million. In addition, the other alternative routes increased the potential for affecting cultural and natural resources such as wetlands, 100-year floodplains, and ephemeral streams. For these reasons, Alternative 4 and Sub alternative C were considered to be the most effective route with the fewest potential impacts, therefore the other alternatives (1, 2, and 3) and sub alternative routes were eliminated from further detailed analysis.

Adjacent to the existing Afton Generating Station is the proposed location for the new Afton North Substation consisting of a 345-kV source where an autotransformer would be installed to step the voltage down to 115-kV. Alternate connections to the existing substations in the Las Cruces area Salopek 115-kV Substation (just southeast of Las Cruces on the east bank of the Rio Grande) and the Airport Substation were examined, but the transmission path that would be necessary would pass through farming areas (pecan and pistachio tree farms) that could have resulted in land use conflicts.

3.0 AFFECTED ENVIRONMENT

3.1 Air Quality

In New Mexico, air quality at the state level is regulated by the New Mexico Environmental Department Air Quality Bureau (NMED-AQB).

3.1.1 Air Quality Standards

The U.S. Environmental Protection Agency (EPA) implements its statutory authority through the following air quality standards:

- National Primary and Secondary Ambient Air Quality Standards (NAAQS) in 40 CFR Part 50. NAAQS establish concentration limits for six "criteria" pollutants:
    - Carbon Monoxide (CO)
    - Lead (Pb)
    - Nitrogen oxides (NO_x)
    - Particulate Matter [$PM_{2.5}$ (2.5-micrometer diameter) and PM_{10} (10-micrometer diameter)]
    - Ozone (O_3)
    - Sulfur oxides (SO_x)

Air quality for a given area is determined by comparing the ambient air levels of each criteria pollutant against the NAAQS limits (**Table 3.1**). If the local air quality is below the limits, the region of interest is said to be in "attainment" with respect to NAAQS. Exceeding limits leads to a designation as "nonattainment" with respect to the pollutant. In the affected environment, air quality is also evaluated against the New Mexico Ambient Air Quality Standards (NMAAQS) contained in the New Mexico Administrative Code (NMAC 20.2.3).

In addition to air quality, regional haze is a concern in the western states, where fine airborne particles have reduced visibility. In 1999, the EPA announced the Regional Haze Rule under Section 309 of the CAA. Under this rule, state and federal agencies were tasked to develop plans to restore natural visibility conditions in Class I areas by the year 2064. As a participating member of the Western Regional Air Partnership, New Mexico amended its State Implementation Plan to incorporate plans to reduce regional haze in June 2011 (Martinez, 2011).

3.1.2 Regional Air Quality

The regional climate for the vicinity of the Proposed Action is semi-arid, averaging 350 days of clear weather annually. Annual precipitation averages about 8.5 inches of rainfall, and three inches of snow. Prevailing winds are generally southwesterly, with frequent late winter/early spring windstorms (NMED, 2000).

Generally, the air quality in New Mexico is in attainment with respect to NAAQS criteria pollutants. Doña Ana County, which includes the Proposed Action, however, is part of the Paso del Norte air shed that includes El Paso, Texas and Ciudad Juarez, Mexico, an area that has experienced air quality problems in the past.

Table 3.1 National Ambient Air Quality Standards (NAAQS) and New Mexico Ambient Air Quality Standards (NMAAQS)			
Pollutant/Averaging Period†	**NAAQS**		**NMAAQS**
	Primary Standards‡	**Secondary Standards**	**Primary Standards**
CO: 8-hour	9 ppm	-	8.7 ppm
CO: 1-hour	35 ppm	-	13.1 ppm
NO_2: Annual arithmetic mean	0.053 ppm	Same as Primary	0.05 ppm
NO_2: 24-hour	-	-	0.10 ppm
NO_2: 1-hour	100 ppb	-	-
SO_2: Annual Arithmetic Mean	0.03 ppm	-	0.02 ppm
SO_2: 24-hour	0.14 ppm	-	0.10 ppm
SO_2: 3-hour	-	0.5 ppm	-
SO_2: 1-hour	75 ppb	-	-
O_3: 8-hour (2008)	0.075 ppm	Same as Primary	-
O_3: 1 hour	0.12 µg/m^3	Same as Primary	-
Lead: Rolling 3-month average (2008)	0.15 µg/m^3	Same as Primary	-
PM_{10}: 24-hour	150 µg/m^3	Same as Primary	-
$PM_{2.5}$: Annual arithmetic mean	15.0 µg/m^3	Same as Primary	-
$PM_{2.5}$: 24-hour	35 µg/m^3	Same as Primary	-
TSP: Annual geometric mean	-	-	60 µg/m^3
TSP: 30-day	-	-	90 µg/m^3
TSP: 7-day	-	-	110 µg/m^3
TSP: 24-hour	-	-	150 µg/m^3
H_2S: 1-hour	-	-	0.010 ppm
Total reduced sulfur: 0.5-hour	-	-	0.003 ppm

† CO = Carbon monoxide; NO_2 = nitrogen dioxide; SO_2 = Sulfur dioxide; O_3 = Ozone; PM_{10} and $PM_{2.5}$ = particulate matter 10 µm and 2.5 µm-diameter, respectively; TSP = total suspended particulates; H_2S = Hydrogen sulfide

‡ ppm = parts per million; ppb = parts per billion; µg = micro (0.000001) grams

3.1.3 Greenhouse Gases

Beyond the regional scale, climate change has been a subject of both national and international interest. Particular focus has been on the emission of greenhouse gases (GHG) by human activity, principally by the combustion of fossil fuels. Although there are a number of different GHG such as water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3), the amount of these emissions is typically measured and reported as carbon dioxide equivalent (CO_{2e}).

EPA has determined that while ambient concentrations of GHG do not cause direct health effects (such as respiratory problems or toxic effects), the potential impacts associated with climate change represent a danger to public health and welfare (EPA, 2009). The magnitude of the potential effects of climate change as a result of GHG emissions are still being evaluated by both national and international groups (IPCC, 2007; GCRP, 2009). It is possible, however, to estimate how much CO_{2e} is emitted at different scales (CCS, 2006; EPA, 2012a). In April 2012,

EPA proposed the first regulations under the CAA to limit GHG emissions from new power generation facilities (EPA, 2012b).

The Center for Climate Strategies (CCS) reported that in 2000, New Mexico produced about 82.9 million metric tons (MMt) of gross CO_{2e} emissions (CCS, 2006). This was equal to about 1.2% of total gross US GHG emissions in 2000. In CCS (2006), gross New Mexico emissions were projected to increase by 8.0% to about 89.4 MMt CO_{2e} by 2010, which would represent about 1.3% of the total U.S. GHG emissions of 6,822 MMt reported in 2012 (EPA, 2012a). The gross GHG emissions for New Mexico were dominated by fossil fuel combustion in power plants, vehicles, buildings, and industries (82% of total New Mexico emissions). Release of methane from oil and gas, mining, agriculture, and waste management constituted about 13% of the total New Mexico emissions, with the remaining emissions from N_2O produced from industrial and agricultural sources (**Figure 3.1**). The reported emissions for the top five stationary sources in Doña Ana County (two power plants, two landfills, and a university) were slightly more than 770,000 metric tons in 2012 (EPA, 2014a).

Taking into account the amount of carbon that was sequestered annually in biomass (predominantly forests) reduced the New Mexico gross GHG emissions by about 25%, from 83 MMt to 62 MMt net CO_{2e} (CCS, 2006). The authors of the report noted, however, that the estimated net GHG emissions contained significant uncertainty due to the lack of a more up-to-date forest inventory.

GHG emissions from transportation was the fastest growing component of the state inventory from 1990 to 2000, but the New Mexico emissions were still dominated by the production of electricity and oil/gas/coal production (63%, compared to 35 – 40% for the U.S. as a whole) (**Figure 3.1**). Most of the power plant GHG emissions reported for 2000 occurred at coal-fired power plants in the northwest corner of the state (San Juan and Four Corners power plants) (CCS, 2006). Fossil fuel GHG emissions in 2000 were associated with more than 40,000 oil and gas wells, three oil refineries, several gas processing plants, and gas pipelines (CCS, 2006). Most of these facilities were located either in the Permian Basin (southeast) or in the San Juan Basin (northwest), and there is relatively little oil/gas/coal activity in Doña Ana County. In addition, CO_2 is produced from natural formations in Bravo Dome in the northeast corner of the state for use in enhanced oil recovery (CCS, 2006; EPA, 2012a).

Vehicle traffic and diesel equipment used during construction would be the largest direct source of GHG emissions for the proposed Afton North – Airport Transmission Line, producing on the order of hundreds of metric tons of CO_{2e}. In comparison, the natural-gas fired Afton Generating Station emitted about 198,000 metric tons of CO_{2e} in 2012 (EPA, 2014a). In addition, sulfur hexafluoride (SF_6) would be used in electrical equipment at the proposed new Afton North 345/115-kV Autotransformer Substation. Used as an electrical insulator in transmission and distribution switchgear, SF_6 is a potent GHG with about 22,800 times the global warming potential of CO_2 when compared over a 100-year period (BLM, 2012a; EPA, 2014b). Each high-voltage circuit breaker at the new substation would contain less than 100 pounds of SF_6. As part of an ongoing effort to improve the efficiency of SF_6 handling and reduce equipment emissions, EPE is a partner with EPA in the SF_6 Emission Reduction Partnership for Electric Power Systems. Current technologies have reduced SF_6 emission rates to about 2.2 percent.

3.2 Historical and Cultural Resources

Cultural resource surveys of the proposed ROW for the proposed Afton North – Airport Transmission Line Project and the Afton North Substation were conducted in late August/September and October 2012 to meet the requirements of Section 106 of the National Historic Preservation Act (NHPA). No. NM-12-160-S (Marron and Associates, 2012a, b; 2014a, b). All project-related activities would be within the coverage area of the cultural resource surveys.

3.2.1 Cultural Environment

In the past century and a half, Euro-Americans have substantially altered portions of the proposed Afton North – Airport Transmission Line project area. These include the introduction of livestock that have caused overgrazing, construction of roads, buried and overhead utility lines, and pipelines.

3.2.2 Cultural Overview

The prehistoric and historic occupation of south-central New Mexico is divided into four cultural-temporal categories: the Paleo-Indian period (10,000–6000 BC); the Archaic period (6000 BC–AD 400); the Formative period (AD 400-1540); and Historic (AD 1540-present). A specific time range and suite of material culture attributes define each cultural-temporal division (Anschuetz, 1990). For example, the Paleo-Indian period is divided into three distinct sub-periods —Clovis (10,000–9000 BC), Folsom (9000–8000 BC), and Plano (8000–6000 BC)—named for different cultural groupings. Similarly, the Archaic period (6000 BC–AD 200) was a continuation of hunting and foraging of the preceding Paleo-Indian period, but with technological adaptations to changing climate conditions, while the post-Archaic Formative period became increasingly dependent upon agriculture, as indicated by the intensification of farming practices.

The dates associated with these periods and sub-periods, however, are merely the best estimates based, in general, upon currently accepted knowledge of the archaeological record in the Southwest and, in particular, in the Trans-Pecos region of south-central New Mexico and western Texas.

3.2.3 Previous Archaeological Research

An electronic search of the Museum of New Mexico Archaeological Records Management System (ARMS) on August 17, 2012, revealed 40 sites that had been previously recorded within 0.5 km (0.3 mi) of the proposed Afton North – Airport Transmission Line project area. The Area of Potential Effect (APE) reviewed included over 1,130 acres along the proposed ROW. Fourteen of these sites were mapped as being located within the APE. Ten of these were relocated and updated, and in the process, five closely related sites were combined into one site, per the recommendation of the BLM Las Cruces field office. In addition, 36 archaeological surveys are recorded within 0.5 km (0.3 mi) of the proposed Afton North – Airport Transmission Line project area (Marron and Associates, 2014a, b).

Published listings for the State Register of Cultural Properties (SRCP) and the National Register of Historic Places (NRHP) were consulted, and none were located near or within the APE.

3.2.4 Survey Results

A total area of 1,131.14 acres was surveyed in Fall 2012 for the proposed Afton North – Airport Transmission Line project and an additional 180 acres were surveyed for the new Afton North Substation (Marron and Associates, 2012a, b). A number of the sites identified in the 2012 surveys were revisited in September 2014 (Marron and Associates, 2014a, b). A total of 31 archaeological sites were recorded during the surveys of the proposed ROW (22 sites) and the Afton North Substation (nine sites). Seven archaeological sites (Five along the ROW and two at the substation) are recommended eligible for listing in the NRHP. Avoidance is recommended for all of these sites, however, if avoidance is not feasible, data recovery is recommended. One previously recorded site was not located during the Afton North Substation survey, and 24 archaeological sites (17 along the ROW and 7 at the substation) were recommended as not eligible for inclusion in the NRHP because of overall poor condition (erosional impacts, deflation, manmade disturbance, etc.), low artifact count, lack of feature integrity, minimal depositional potential, and negative results for shovel testing.

3.3 Population Demographics

U.S. Census 2010 data was used in this analysis. The project ROW is contained within three 2010 Census Tracts (CT): CT 35-13-1500, CT 35-13-1600, and CT 35-13-1702 (**Figure 3.2**)

In 2000, the total population of the City of Las Cruces was 74,267. By 2010 this population grew by 31.4% to 97,618 (**Table 3.2**). Both the county and the city of Las Cruces grew more rapidly than the 13.2% increase from 2000 to 2010 for the State of New Mexico. At the Census Tract level in the region of influence (ROI), Tract 35-13-1500 has the largest population at 6,119. Tract 35-13-1702 is the least populated at 1,691, and 35-13-1600 is in between at 2,910 (**Table 3.2**).

Population growth in Doña Ana County, as a whole, is projected to continue with a projected 35.2% population increase from 2010 to 2030 (**Table 3.3**).

Table 3.2 1990 to 2010 Population Trends for the Region of Influence

Census Geographies	1990 Population	2000 Population	% Change from 1990-2000	2010 Population	% Change from 2000-2010
Tracts					
35-13-1500	N/A	N/A	N/A	6,119	N/A
35-13-1600	N/A	N/A	N/A	2,910	N/A
35-13-1702	N/A	N/A	N/A	1,691	N/A
Places					
City of Las Cruces, NM	62,126	74,267	19.5	97,618	31.4

Sources: 1990 U.S. Census Data: Summary File 1 (SF1) Table: P1 (BOC, 1991); U.S. Census 2000 Data: SF1 Table: P1 (BOC, 2001); 2010 Census SF1: Table P1 (BOC, 2011)

Table 3.3 20-year Population Projections to 2030 for Doña Ana County and the State of New Mexico				
Census Geographies	**2010**	**2020**	**2030**	**% Change from 2010-2030**
Counties				
Doña Ana County, NM	215,828	256,619	291,895	35.2
States				
New Mexico	2,162,331	2,540,145	2,864,796	32.5
Source(s): Bureau of Business and Economic Research (2008) University of New Mexico. 'New Mexico County Population Projections July 1 2005 to July 1 2035.' August 2008. http://www.unm.edu/~bber/demo/table1.htm.				

3.3.1 Socioeconomics

One Census Tract, CT 35-13-1702, had an unemployment rate higher than that of the City of Las Cruces in the 2000 Census (**Table 3.4**).

Table 3.4 Census 2000 Employment Data								
Census Geographies	**Total Population**	**In Labor Force**	**Not In Labor Force**	**In Labor Force**		**Civilian**		**Percent Unemployed (%)**
				In Armed Forces	**Civilian**	**Employed**	**Unemployed**	
Tracts								
35-13-1500	4,314	2,004	2,310	0	2,004	1,937	67	3.3
35-13-1600	2,201	1,127	1,074	40	1,087	1,026	61	5.4
35-13-1702	1,260	660	600	0	660	584	76	11.5
Places								
City of Las Cruces, NM	57,610	34,935	22,675	136	34,799	31,866	2,933	8.4
Sources: US Census 2000 Data: SF3 Table P43 (BOC, 2008)								

Four small airports are open to the public and the Las Cruces International Airport on I-10 near the northern terminus of the proposed Afton North – Airport Transmission Line provides commercial passenger service. As a general aviation facility, the Las Cruces airport provides 24 hour service, and in 2010, there were 68,772 aircraft operations (Federal Aviation Administration, 2012).

3.3.2 Environmental Justice

For the purposes of the proposed Afton North– Airport Transmission Line Project, the analysis of environmental justice issues associated with the development of the SunZia facility considered potential impacts within the ROI. A description of minority and low-income groups [as defined in CEQ (1997a)] within the ROI is based on demographic and socioeconomic data from the 2010 Census (BOC 2011).

3.3.2.1 Minority Populations

The ethnic and racial characteristics of the ROI based on the 2010 Census are presented in **Table 3.5**. With respect to most of the defined minority groups, the population characteristics of the ROI are similar to the State of New Mexico. The proportion of the population identifying with a Hispanic or Latino origin, however, is higher for the ROI as compared with the State of New Mexico. For example, both Las Cruces (56.8%) and Doña Ana County (65.7 %) have a higher percentage of the population reporting Hispanic origin than New Mexico (46.3%). Two of the three Census Tracts that include the proposed ROW report greater than 80% Hispanic origin, while the third tract (35-13-1500) is less than the state proportion (38.5% compared to 46.3%) (BOC, 2011).

3.3.2.2 Low-Income Populations

The Department of Health and Human Services (HHS) establishes and regularly updates poverty guidelines based on income and family size. These guidelines for 2014 are presented in **Table 3.6** (U.S. Department of Health and Human Services, 2014). Comparing socioeconomic information from the BOC with these guidelines helps to determine whether there are low-income populations within the ROI.

Table 3.5 Population of the ROI by Ethnicity and Race Based on 2010 Census Data

Census 2010 Geography	Total Population	Non-Hispanic														Hispanic**	
		White		Black*		Indian*		Asian		Islander*		Other*		Two*			
		#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Tracts																	
35-13-1500	6,119	3,465	56.6	92	1.5	85	1.4	44	0.7	3	0.0	19	0.3	55	0.9	2,356	38.5
35-13-1600	2,910	469	16.1	1	0.0	4	0.1	1	0.0	0	0.0	25	0.9	12	0.4	2,398	82.4
35-13-1702	1,691	318	18.8	2	0.1	3	0.2	1	0.1	0	0.0	1	0.1	4	0.2	1,362	80.5
Places																	
Las Cruces MSA	97,618	36,577	37.5	1,915	2.0	861	0.9	1,421	1.5	77	0.1	136	0.1	1,188	1.2	55,443	56.8

Source: 2010 Census Summary File 1—New Mexico [machine-readable data files]/prepared by the BOC, 2011. Table P9.
* The complete Census race descriptions are as follows: White alone; Black or African American alone; American Indian and Alaska Native alone; Asian alone; Native Hawaiian and Other Pacific Islander alone; Some Other Race alone; and Two or More Races.
** See 2010 Census Summary File 1 Technical Documentation for additional information about race and origin here.

Table 3.6 2014 Federal Poverty Guidelines for the 48 Contiguous States and Washington, D.C.	
1	$11,670
2	$15,730
3	$19,790
4	$23,850
5	$27,910
6	$31,970
7	$36,930
8	$40,890
For each additional person, add	$4,060
Source: Health and Human Services (2014).	

3.4 Realty

Approximately 75% of the land in Doña Ana County is owned and managed by the federal government, and an additional 12% is owned by the state. The remaining 13% of the land is privately owned. About 89% of the land crossed along the proposed ROW is federally controlled, while about 10% is state-owned, and less than 0.2% belongs to the City of Las Cruces (see **Figure 3.3** and **Table 1.1**).

The BLM has authority for issuing ROWs across Federal land for a variety of public purposes, such as roads, power lines, pipelines and telephone/fiber optic communications infrastructure, etc. The Project encompasses the following ROWs consisting of oil and gas pipelines, electrical power lines, sanitary sewer lines, waterlines, and roads:

- NMNM 052926, City of Las Cruces, Waterline
- NMNM 129320, City of Las Cruces, Natural Gas Pipeline
- NMNM 127485, EPE, Power Transmission Line
- NMNM 119604, Rio Grande Natural Gas Association, Natural Gas Pipeline
- NMNM 115451, State of New Mexico, Sewer Line
- NMNM 057029, Dona Ana County, RS 2477 Road
- NMNM 107570, Natural Gas Processing Company, Natural Gas Pipeline
- NMNM 029898, EPE, Power Transmission Line
- NMNM 0 036763, EPE, Power Transmission Line
- NMNM 061198, EPE, Power Transmission Line
- NMNM 0 018856, SFPP LP, Petroleum Product Pipeline
- NMNM 115188, SFPP LP, Petroleum Product Pipeline
- NMNM 124104, Southline Transmission LLC, Power Transmission Line (Pending)

It also encompasses a Recreation and Public Purposes facility authorized to the State of New Mexico for a juvenile detention center.

The proposed ROW crosses the Afton SEZ, and the northern terminus is about 15 miles west of the Mason Draw SEZ (BLM/DOE, 2010, 2011, 2012a).

3.4.1 Vegetation

The ROW for the proposed Afton North – Airport Transmission Line Project is located primarily within the Chihuahuan Basins and Playas Level IV ecoregion (BLM/DOE, 2010). This consists

of communities of desert shrubs and grasses on alluvial fans, flat to rolling internally drained basins, and river valleys (**Figure 3.4**). Because of the internal drainage (no outflow to rivers that reach the sea) and the high rates of evaporation and transpiration, the region contains salt flats, sand dunes, and wind-blown sand drifts, with saline and alkaline soils (BLM/DOE, 2010).

Some of the dominant vegetation species in the different parts of the ecoregion include:

- Desert shrub land
  - creosote bush *(Larrea tridentata)*
  - tarbush *(Flourensia cernua)*
  - yuccas *(Yucca spp.)*
  - sand sage *(Artemisia filifolia)*
  - viscid acacia *(Acacia neovernicosa)*
  - tasajillo *(Cylindropuntia leptocaulis)*
  - lechuguilla *(Agave lechuguilla)*
  - mesquite *(Prosopis sp.)*

- Gypsum areas
  - gyp grama *(Bouteloua breviseta)*
  - gyp mentzelia *(Mentzelia humulis)*
  - Torrey ephedra *(Ephedra torreyana)*

- Saline flats and alkaline playas
  - four wing saltbush *(Atriplex canescens)*
  - seep weed *(Suaeda sp.)*
  - pickle weed *(Allenrolfea occidentalis)*
  - alkali sacaton *(Sporobolus airoides)*

Native cacti in the ecoregion include horse crippler *(Echinocactus texensis)*.

Other ecoregions that are less prominent in the area around the ROW for the proposed Afton North – Airport Transmission Line Project includes the Low Mountains, Bajadas Level IV (desert shrub and sparse grass), and the Lava Malpais Level IV ecoregion (mixed shrubs and grasses on lava flows) (BLM/DOE, 2010).

3.4.2 Livestock Grazing

Ranching (livestock production) is an extensive agricultural activity in Doña Ana County. Because of the mild climate, livestock can live on the open range throughout the year (NMED, 2011). Federal and state livestock grazing is generally expressed in terms of Animal Unit Months (AUMs), with each AUM representing the amount of forage required by an animal unit for one month. An animal unit is assumed to be one mature 1,000 pound cow and her suckling calf. For the BLM – LCDO, the total number of AUMs authorized by the BLM grazing permit process was 413,702 for grazing year 2009 (BLM/DOE, 2010). The three grazing allotments and the permitted AUMs in the vicinity of the proposed ROW are listed in **Table 3.7**. These allotments are used for cattle grazing. Fences (unbroken by gates) separate these allotments.

Table 3.7 Grazing Allotments in the Vicinity of the Right-of-Way for the Proposed Afton – Airport Transmission Line

Allotment	Total Acres[a]	Active BLM AUMs[b]	No. Permittees
Black Mesa	35,070	1,579	1
Corralitos Ranch	183,957	13,860	1
Home Ranch	35,931	2,149	1

Modified from BLM/DOE, 2010

a Includes public, state, and private land included in the allotment based on the Allotment Master Reports included in the BLM's Rangeland Administration System (BLM/DOE, 2010), dated March 16, 2010.

b This is the permitted use for the entire allotment including public, state, and private lands.

BLM/DOE (2010) includes an estimate of the number of jobs supported in the region around the Afton SEZ, a larger area that includes the proposed ROW. Cattle ranching and farming in this larger region provided about 420 direct jobs and $4.4 million in income (2007 dollars).

3.5 Wildlife

Biological surveys were conducted along the ROW for the proposed Afton North – Airport Transmission Line during daylight hours in August and September 2012 using a combination of vehicle and pedestrian surveys. The survey area was nearly 15 miles long by 300 feet wide. An additional 92 acres located at the site of the proposed Afton North Substation at the south end of the alignment was also surveyed. At present, the ROW is entirely vacant and undeveloped land. Habitat types, dominant plant species, and evidence of special status species (i.e. tracks, scat, food species and other signs) were noted (see also Section 3.8). General habitat types characterized by dominant vegetation and soil types were observed and recorded. The detailed results of the biological survey are presented in **Appendix D**.

Wildlife observed during the surveys included: black-tailed jackrabbit, and whiptail lizards (*Cnemidophorus tesselatus* and *C. inornatus*). Evidence of deer, coyote, and a variety of small burrowing mammals was observed either by tracks, scat, or burrows. The site provides habitat and burrows suitable for burrowing owls, however, none were observed during the field surveys.

A recent study was published that evaluated the occurrence and presence of suitable habitat for the banner-tailed kangaroo rat (*Dipodomys spectabilis*) in a 14,550 square mile area in southwestern New Mexico (Moses et al., 2008). Based on field surveys, three kangaroo rat subpopulations were identified in Doña Ana County [subpopulations 6, 7, and 9 in Moses et al. (2008)], but they are more than 10 miles west and northwest of the proposed Afton North – Airport Transmission Line project. The study also presents a geographic information system (GIS) and statistical analysis to determine the suitability of different areas ("patches") for kangaroo rat habitat. Although no kangaroo rats were observed during the biological survey (**Appendix D**), the proposed ROW is located at the southernmost extent of Patch 458, an area of suitable habitat located on federal (BLM-managed), state, and private lands around the West Potrillo Mountains about 10-15 miles southwest of the proposed ROW (Moses et al., 2008; BLM, 2013).

3.6 Invasive, Non-Native Species

Invasive, non-native, and noxious plant species (noxious weeds) are considered to be a threat to rangeland and wild land in New Mexico. To comply with the requirements of the Noxious Weeds Management Act of 1974, the New Mexico Department of Agriculture maintains an official list of weed species that are designated noxious species (NMDA, 2009).

- "**Class A** species are currently not present in New Mexico, or have limited distribution. Preventing new infestations of these species and eradicating existing infestations is the highest priority."

- "**Class B** species are limited to portions of the state. In areas with severe infestations, management should be designed to contain the infestation and stop any further spread."

- "**Class C** species are wide-spread in the state. Management decisions for these species should be determined at the local level, based on feasibility of control and level of infestation."

- "**Watch List** species are species of concern in the state. These species have the potential to become problematic. More data is needed to determine if these species should be listed. When these species are encountered please document their location and contact appropriate authorities."

Table 3.8 provides a listing of noxious weed species regulated in New Mexico that are known to occur in Doña Ana County (BLM/DOE, 2010). To address the issue of noxious weeds and invasive, non-native plant species, New Mexico has developed a number of Cooperative Weed Management Areas (CWMAs), including one in Doña Ana County. CWMAs are a partnership of federal, state, and local government agencies, tribes, individuals, and other interested groups cooperating to manage noxious weeds or invasive plants in their area (NMDA, 2010).

Table 3.8 Designated Noxious Weeds of New Mexico Occurring in Doña Ana County

Common Name	Scientific Name	Category
African rue	*Peganum harmala*	Class B
Camelthorn	*Alhagi pseudalhagi*	Class A
Hoary cress	*Cardaria spp.*	Class A
Jointed goatgrass	*Aegilops cylindrical*	Class C
Malta starthistle	*Centaurea melitensis*	Class B
Perennial pepperweed	*Lepidium latifolium*	Class B
Russian knapweed	*Acroptilon repens*	Class B
Russian olive	*Elaeagnus angustifolia*	Class C
Sahara mustard	*Brassica tournefortii*	Watch List
Salt cedar	*Tamarix spp.*	Class C
Siberian elm	*Ulmus pumila*	Class C

BLM/DOE, 2010

In evaluating the potential impacts from the development of solar energy resources near Afton, New Mexico, BLM did not find any of these noxious and non-native plant species present in an area that includes most of the ROW for the proposed Afton North – Airport Transmission Line (BLM/DOE, 2010). More recent surveys, however, indicate the presence of African Rue along the proposed Afton Pipeline Corridor (BLM, 2012b).

3.7 Migratory Birds

The proposed project would be located adjacent to the Rio Grande bird migration corridor within the Central Flyway, an administrative zone defined by the USFWS that runs from western Canada south to the New Mexico/Texas international border with Mexico (USFWS, 2012). The

participating member organizations of this flyway monitor and manage the populations of migrating birds (mostly ducks and geese). Extensive semi-desert grassland in southwestern New Mexico also provides potential wintering habitat for a number of prairie-nesting species (BLM, 2012a). Although close to 300 species of birds have been reported in Doña Ana County, most of these species would not be expected to be located within the ROW for the proposed Afton North – Airport Transmission Line because of the lack of perennial water and limited wetlands (BLM/DOE, 2010). Several bird species, however, including Western kingbird, Golden eagle, Swainson's Hawk, Red-tail hawk, House sparrow, House finch, Say's phoebe, Verdin, Mourning dove, and White wing dove were observed using the property for foraging during the biological survey (**Appendix D**). In addition, several bird nests were observed on-site during the survey. Raptor nests were also observed on existing utility poles along the southern leg of the ROW.

Most bird species are protected under the Federal Migratory Bird Treaty Act (MBTA). The presence of these birds would not preclude site development; however, it should be noted that the MBTA requires that no portion of individual birds or their nests may be harmed or disturbed.

3.8 Threatened, Endangered, and Special Status Species

Lists of threatened, endangered, and special status species of plants and wildlife that occur in Doña Ana County were compiled using a variety of sources including the USFWS Online Threatened and Endangered Species System (TESS), online listings of state threatened and endangered wildlife species by the New Mexico Department of Game and Fish, and endangered plants listed by the New Mexico Energy Minerals and Natural Resources Department (NMEMNRD). Lists of sensitive species as designated by the BLM New Mexico State Office were also identified. The USFWS Online Critical Habitat Mapper was utilized to search for designated critical habitat in the proposed Afton North – Airport Transmission Line project area.

A summary list of threatened, endangered, and special status species occurring in Doña Ana County, New Mexico, as well as designated critical habitat is provided in **Appendix D**. No specific occurrence of threatened, endangered, or special status species (wildlife or vegetation) were identified during the biological survey along the ROW, nor was any designated critical habitat identified. The habitat along the ROW is potentially capable of supporting populations of sand prickly pear (*Opuntia arenaria*) and night blooming cereus (*Peniocereus greggii*). However, these species were not observed during the biological survey (**Appendix D**).

3.9 Water Resources

Because of the arid climate in the region, access to water while maintaining the health of the natural aquatic ecosystems is a constant challenge. In New Mexico, surface water and groundwater belong to the public and are subject to appropriation under the *Doctrine of Prior Appropriation*. Under this doctrine, water rights represent the legal right to use a certain amount of water at a given time and place. These rights also grant access to the water for a specified purpose. In general, senior water rights are given priority over more junior water rights.

3.9.1 Surface Water

The proposed ROW for the Afton North – Airport Transmission Line is located within the Rio Grande Hydrologic Region (Region 13, USGS, 2012). It is more narrowly part of the Rio Grande–Mimbres Sub region (Sub region HUC4: 1303) that extends from Elephant Butte

Reservoir to the north to the southern boundary at the junction of the Mexico, New Mexico, and Texas international boundary (USGS, 2012). At the more local level, the ROW lies within the El Paso-Las Cruces watershed (Cataloging Unit HUC8: 13030102) (EPA, 2012c), **Figure 3.5**).

The climate at Afton, New Mexico is arid, with average annual precipitation between 6.8 and 9.4 in/yr and average snowfalls of 3.0 to 4.0 in/yr (BLM/DOE, 2010, 2012). Evaporation in the vicinity of the proposed ROW for the Afton North – Airport Transmission Line is estimated to be 102 in/yr (BLM/DOE, 2012). Other than the Rio Grande to the east, there are no perennial streams, and the only waterways are unnamed intermittent pond features and ephemeral streams (USGS, 1978; 1996a, b).

3.9.2 Groundwater

The ROW for the proposed Afton North – Airport Transmission Line would be located in the Mesilla Basin. The Mesilla Basin occupies about 704,000 acres in the central portion of Doña Ana County, and is bounded by the East and West Potrillo Mountains, Arden Hills, and Sleeping Lady Hills to the west; the Organ Mountains and Franklin Mountains to the east; the Doña Ana Mountains and Robledo Mountains to the north; and the Sierra de Cristo Rey Mountains to the southeast (Lower Rio Grande Water Users Organization [LRGWUO], 2004; BLM/DOE, 2010).

Recharged principally from the Rio Grande, depth to water in the Mesilla Basin ranges from 10 feet below the ground surface near the river to 400 feet in the vicinity of the proposed ROW (LRGWUO, 2004). Near the proposed ROW, groundwater levels in the Mesilla Basin have remained fairly stable for as documented from 1978 to 2000. To the east of the Rio Grande, however, groundwater levels generally decreased during the same period by about 10 to 40 feet, largely because of increased water demand from the City of Las Cruces (LRGWUO, 2004). Groundwater flow is predominantly to the southeast, parallel to the Rio Grande. The Mesilla Basin provides groundwater flow to the Hueco Bolson (aquifer) to the south, and receives inflow from the Jornada de Muerto Basin to the northeast (Hawley et al., 2001). These basins are predominantly closed and recharged through subsurface flow and local precipitation (Doña Ana County, 2012); the water level is dropping due largely to pumping (LRGWUO, 2004). The City of Las Cruces draws most of its groundwater from the Mesilla Basin, with supplementation from the Jornada de Muerto groundwater system during dry periods (City of Las Cruces, 2008).

Groundwater in the Mesilla Basin is drawn from basin-fill deposits of Quaternary alluvial gravel silt and clay from the floodplains of the Rio Grande, and the Quaternary/Tertiary sediments from the Santa Fe Group (see Section 3.9) (King et al., 1971; Nickerson and Myers 1993). Alluvial deposits within the floodplain areas of the Rio Grande extend over 60 miles through the Mesilla Basin, ranging between several hundred feet to five miles wide (LRGWUO, 2004). These Quaternary deposits consist of gravel, sand, silt, and clay, varying in total thickness from 50 to 125 feet (Nickerson and Myers 1993). The Santa Fe Group that includes most of the basin-fill deposits in the Mesilla Basin varies in thickness up to 5,000 feet with thicknesses in the areas of the West Mesa ranging from 1,000 to 1,500 feet (Nickerson and Myers, 1993). These units are also groundwater-bearing units in the nearby Hueco Bolson and Jornada de Muerto Basin, although local variations in particle size and sorting can have a strong effect on groundwater flow (LRGWUO, 2004).

3.9.3 Floodplains

Some of the areas that would be crossed by the proposed ROW lie within the 100-year floodplain (**Figure 3.6**), but most of the area would be above the 500-year floodplain (BLM/DOE,

2010; FEMA, 2012). As noted in BLM/DOE (2010), many of the areas identified as within the 100-year floodplain are internally drained topographic depressions that contain intermittent ponds that form from ephemeral streams that flow during storm events (USGS, 1978; 1996a, b). Flooding is not likely for soils at the site, but the ROW for the proposed Afton North – Airport Transmission Line would cross a total distance of about 0.25 miles across two 100-year floodplains [Federal Emergency Management Agency (FEMA) Map Number 35013, Panels C0625E, C0750E, C0775E, and C0900E].

3.10 Geology

As described previously, the ROW for the proposed Afton North – Airport Transmission Line would be located in the Mesilla Basin within the Basin and Range physiographic province that makes up much of the Intermountain West (Fenneman, 1931). About 60 miles long and ranging from five miles to 25 miles in width, the north-south trending Mesilla Basin is a part of the larger Rio Grande Rift, a large normal-fault bounded extension feature that runs from south-central Colorado to northern Mexico (Hawley and Lozinsky, 1992; Nickerson and Myers, 1993).

The geologic units exposed at the surface in the Mesilla Basin are predominantly intermontane basin fill deposits of Quaternary and Tertiary age (**Figure 3.7**) (Scholle, 2003). The youngest rocks are Quaternary Rio Grande floodplain deposits of Holocene to upper Pleistocene (and uppermost Pliocene in some locations) age that crop out in the eastern part of the basin (Qs in Scholle, 2003). Lower in the stratigraphic section (and therefore older) rocks include Holocene to lower Pleistocene Piedmont channel and floodplain deposits (Qp in Scholle, 2003). The sediments exposed in the western part of the Mesilla Basin includes outcrops of the Upper Santa Fe Group, that includes coarse to medium sand and gravels deposited by the ancestral Rio Grande (Hawley and Lozinsky, 1992; Scholle, 2003). The lower sediments of the Santa Fe Group consist of alluvial (deposited by water) units interbedded with eolian (wind-deposited), and lacustrine (lake-derived sediment) deposits. Sediments of the Santa Fe Group, especially the unconsolidated sands and gravels of the middle and upper units, form the most extensive aquifers beneath the Mesilla Basin (Hawley and Lozinsky 1992).

There are also some exposures of Quaternary basaltic to andesitic lava flows that are Holocene (Recent) to middle Pleistocene in age. A relatively large field is located about six miles to the southwest of the ROW for the proposed Afton North – Airport Transmission Line, with several smaller cinder cone vent deposits about six miles to the east and southeast (Scholle, 2003). Paleozoic sedimentary rocks (mainly carbonates) crop out in the Robledo Mountains to the north and the Organ and Franklin Mountains to the east (Hawley and Lozinsky 1992; Scholle 2003).

3.11 Soils

According to the Web Soil Survey application developed by the Natural Resource Conservation Service as well as other published information (Bulloch and Neher, 1980; BLM/DOE, 2010; NRCS, 2012), soils in the vicinity of the ROW for the proposed Afton North– Airport Transmission Line (**Figure 3.8**) are predominantly loamy fine sands and fine sands of the Wink-Pintura Complex and Onite-Pajarito, Wink-Harrisburg, and Simona-Harrisburg associations (Bulloch and Neher, 1980). Most of the soils have very slow to medium surface runoff, with moderately rapid to rapid permeability. The water erosion potential is “very low” to “low” for all soils except for the northeast trending ridge that cuts across the northern part of the ROW. The susceptibility to wind erosion is very high for most of these soils, and the soils near the proposed ROW have features that are favorable for fugitive dust formation.

3.12 Minerals

The land status for the proposed ROW is part of the federal minerals estate managed by BLM. Only surface pit operations developing bulk salable mineral resources for construction materials [aggregate, scoria (volcanic rock), clay, shale, caliche, and gypsum] were included in the February 2012 listing of active mines for Doña County (NMEMNRD, 2012). As of August 31, 2010, there were no locatable mining claims for precious and base metals (e.g., gold, silver, and lead); fissionable products (e.g., uranium), industrial minerals, or gemstones within the immediate vicinity of the proposed ROW, nor have there been any active claims in the past (BLM/DOE, 2010; BLM, 2012a). Some of the public land that was identified for the Afton SEZ has been closed to locatable mineral entry since June 2009, pending the conclusion of the solar energy programmatic EIS process (BLM/DOE, 2010, 2011, 2012a).

3.13 Paleontological Resources

The American Antiquities Act of 1906 and the Paleontological Resources Preservation Act of 2009 serve as the primary federal legislation, providing for the protection and conservation of paleontological resources occurring on federally administered lands. Other laws may also apply in special circumstances. BLM has developed policy guidelines for addressing potential impacts to paleontological resources on lands they administer (BLM, 1998a, b; 2008, 2009). In addition, paleontological resources on state trust lands are protected by state policy from unauthorized appropriation, damage, removal, or use.

In cooperation with federal and state agencies, the Society of Vertebrate Paleontology (SVP) has established professional best practices for vertebrate paleontologists, along with more specific guidelines for the assessment and mitigation of adverse impacts to significant, nonrenewable, paleontological resources (SVP, 1995).

Information for a paleontological inventory for the proposed Afton North– Airport Transmission Line ROW was obtained from a review of the scientific literature and from record searches at the New Mexico Museum of Natural History and Science and the BLM. A search for paleontological localities was also conducted using records from the online Paleobiology Database operated by the University of California, Santa Barbara. These record searches included a one-mile buffer around the alternative routes, and the area proposed for new access roads and substation. In addition, a paleontological survey was performed in December 2013 (Environmental Planning Group, 2014).

Paleontological potential was assigned to each geological unit using the potential fossil yield classification (PFYC) system that was adopted by the BLM in 2007, for assessing paleontological potential on federal lands. This is a five-tiered system that the BLM uses to classify geological units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate and plant fossils and their potential to be adversely impacted, with a higher class number indicating a higher potential.

PFYC 5 – Very High Potential, monitoring required
PFYC 4 – High Potential, monitoring required
PFYC 4b – High Potential but with lowered risks of human-caused adverse impacts or natural degradation due to moderating circumstances
PFYC 3 – Moderate or Unknown Potential, monitoring may be required
PFYC 2 – Low Potential, no monitoring required

PFYC 1 – Very Low Potential, no monitoring required

The three alternative routes and the preferred route all cross the same two geological units: Quaternary Piedmont (Qp) and the Camp Rice Formation of the Upper Santa Fe Group (QTs/QTsf) (King and Hawley, 1975; Nickerson, 1995) (**Table 3.9** and **Figures 2.2 and 3.7**). Qp has a PFYC of 1, and QTsf has a PFYC of 4 and 4b.

Table 3.9 Geological Units and their Associated Paleontological Sensitivity

Map Unit	Age	Geological Name	Rock Type	PFYC	Paleontological Sensitivity	Survey/Monitoring
Quaternary Terrestrial Sediments						
Qp	Quaternary	Quaternary Piedmont	Unconsolidated sand, silt and gravel	1	Low	No
Tertiary Sedimentary Rocks						
QTs/ QTsf	Blancan-Irvingtonian	Camp Rice Formation (Upper Santa Fe Group)	Consolidated silt, sand, gravel with small to large clasts	4	High	Yes

No fossil localities were previously reported from the project area, but the December 2013 paleontological survey discovered nine fossils. All fossils were found within the area designated for new access roads and the proposed new substation. These fossils include a rabbit calcaneum, the distal end of an artiodactyl tibia, a bison tooth, and six unidentifiable bone fragments (Environmental Planning Group, 2014). It is probable that all of the fossils, except for the bison tooth, came from the Camp Rice Formation. The bison tooth may have come from the more recent, Qp deposits that overly the Camp Rice Formation. Several fossil localities are known from the Camp Rice Formation within the Mesilla Basin and the Las Cruces area. These include tortoise, glyptodont, tapir, mammoth, gomphothere, horse, llama, camel, sloth, rabbit, cat, and deer (Tedford, 1981; Lucas et al., 2000; Morgan and Lucas, 2003).

3.14 Visual/Scenic Resources

The main feature of the proposed Afton North – Airport Transmission Line that could produce visual impacts would be the transmission towers from the perspectives of both design (space, height, color) and time (permanent versus temporary structures). BLM has developed guidelines to inventory and manage visual resources.

Because there are a variety of visual values, different levels of management are necessary. These activities are typically part of a visual resource management (VRM) system. The BLM guidelines for VRM are described in BLM Manual 8400 (BLM, 2007a). The VRM system identifies and inventories existing scenic values (BLM, 2007a–c) and establishes management objectives for those values.

Landscape inventories are determined by taking scenic quality, visual sensitivity, and distance from the existing travel routes and assigning these factors into four separate classes from Class I (highest) to Class IV (lowest). The objective of establishing the Visual Resource Inventory is "to manage public lands in a manner which would protect the quality of the scenic (visual) values of these lands" (BLM, 2007a).

The final VRM classification for the affected area is established in the Mimbres RMP/EIS developed by the BLM LCDO (BLM, 1993). The ROW for the proposed Afton North – Airport would be located in a Class IV (lower) area (**Figure 3.9**). The management objectives for VRM Class IV resources would be managed with potentially high level of change to the characteristic landscape. For VRM Class IV resources, "…management activities may dominate the view and be the major focus of viewer attention. However, every attempt [w]would be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements." (BLM, 2007a, b).

3.15 Public Health and Safety

Most of the proposed Afton North – Airport Transmission Line project would be located in an undeveloped, rural area, and onsite construction activities would not occur near population centers. The Occupational Health and Safety Administration has developed general industry standards in 29 CFR 1910, and construction industry standards are contained in 29 CFR 1926. Specific standards for power transmission and distribution are in 29 CFR Subpart V. For the state of New Mexico, general industry and construction safety standards are developed by the New Mexico Occupational Health and Safety Bureau as part of the New Mexico State Plan.

There are no existing hazardous materials sites in the rural area along most of the proposed ROW. Although hazardous wastes are not anticipated to be generated during construction, materials such as diesel fuels and lubricants for construction equipment would be managed through BMPs with spill response and containment procedures would be used to reduce the impact from a spill.

3.16 Noise

Noise is typically defined as unwanted sound, and it represents a potential occupational hazard because prolonged exposure to noise may cause long-term hearing loss. In the United States, noise levels are evaluated by different federal agencies such as the Federal Highway Administration, the Federal Aviation Administration, and the Occupational Health and Safety Administration. Criteria are established for allowable noise levels with the purpose of minimizing interference in the normal activities occurring in a given area. For example, residential areas where people sleep; institutional locations such as schools, churches, and libraries where noise can interrupt speech or concentration, and; natural areas where unwanted noise can affect wildlife or adversely affect the visitor experience in these areas. Sound levels associated with different activities are shown in **Figure 3.10**. In addition, Doña Ana County approved a noise control ordinance in early 2014 (Doña County, 2012b) that established noise limits for a number of different activities, including those related to public utility generation, transmission/distribution sites, facilities or substations. The new ordinance sets the maximum noise level during nighttime hours to 50 decibels (dB) for residential areas, 60 dB for commercial/office areas, and 70 dB for industrial areas.

Existing ambient noise levels can be used to establish baseline conditions and determine potential site-specific disturbances associated with the Proposed Action. Much of the affected environment in southern Doña Ana County along the ROW is predominantly rural and undeveloped. These rural areas tend to be quiet, open sagebrush-grass areas where natural phenomena such as wind, rain, insects, birds, and other wildlife account for most natural background sounds. Baseline noise levels for typical undeveloped desert or arid environments

range from day-night sound levels of 22 dB on calm days to 38 dB on windy days (Brattstrom and Bondello, 1983). Based on population density and A-weighting to account for the threshold of human hearing, the day night average noise level (Ldn or DNL) was estimated in BLM/DOE (2010) to be 39 A-weighted decibels (dBA) for Doña Ana County, typical of a rural area (33 to 47 dBA Ldn) (Eldred 1982; Miller 2002).

Near the northern terminus where the proposed ROW approaches I-10 and the Las Cruces International Airport, however, the area is much more developed and the ambient noise levels are higher. A summary of noise effects on wildlife populations (Federal Highway Administration, 2004) includes reference to measured average traffic noise levels on undivided highways at 50 feet of 54–62 dBA for passenger cars and 58–70 dBA for heavy trucks. These levels would be similar to or less than those for Interstate, U.S., and state highways in the region, as they tend to carry less traffic, particularly with respect to heavy trucks.

Near the southern terminus of the proposed ROW, an existing multi-modal transmission corridor with power lines and natural gas pipelines connects to the natural gas–fired Afton Generating Station and Afton Compressor Station. In these more industrial and urbanized areas, ambient noise levels would be expected to be influenced by noise-generating activities such as road traffic, railroad traffic, aircraft flyover, commercial/industrial/agricultural activities, and community activities and events. Noise levels in these types of industrial and urban areas range from 45 to about 78 dB (**Figure 3.10**), with lower noise levels at night (Washington State Department of Transportation, 2006). No sensitive receptors (e.g., hospitals, schools, or nursing homes) exist very close to the proposed ROW for the Afton North – Airport Transmission Line (BLM/DOE, 2010).

4.0 ENVIRONMENTAL EFFECTS

This section describes the potential direct, indirect, and cumulative impacts that may occur as a result of implementing the Proposed Action (Section 2.1). An environmental impact is defined as a modification or change in the affected environment (Section 3) as a result of the actions taken. Effects may be beneficial or adverse, and, as described in CEQ NEPA regulations in 40 CFR 1508.27, impact significance is evaluated based on intensity (severity of the impact) and context (relation to the setting for the Proposed Action and the specific resource under consideration).

In conjunction with evaluating the potential environmental impacts associated with the Proposed Action, the impacts from the No-Action alternative were also evaluated for specific resources. Under the No-Action alternative, BLM would not grant a ROW permit and the Afton North – Airport Transmission Line and the new substation would not be constructed and potential impacts associated with construction, operation, and termination would not occur. Unless described otherwise, resource impacts for the No-Action alternative would therefore be the same as existing conditions.

4.1 Impacts of the Proposed Action on Air Quality

Although the proposed Afton North – Airport Transmission Line would largely be a passive facility with respect to air quality, there may be potential impacts associated with the construction phase of the proposed Afton North – Airport Transmission Line project, and the termination and dismantling of structures and equipment at the end of the useful lifecycle for the project.

The construction phase is anticipated to last 20 to 25 weeks, and the resulting impacts to air quality would be short-term. Potential impacts to air quality during construction of the transmission line and the new substation include:

- Fugitive dust from earth moving activities
- Paved and unpaved road dust associated with construction, inspection and maintenance
- Traffic (tailpipe) emissions (including GHG) from on-road vehicles associated with transporting equipment and a commuting construction workforce of up to 20 employees
- Diesel exhaust emissions from non-road engines (i.e., construction equipment)

After the end of the construction phase of the proposed Afton North – Airport Transmission Line project, the air quality impacts from the Proposed Action would decrease. For example, diesel exhaust emissions from construction equipment would drop to zero as the equipment is demobilized and removed from the project area. Potential long term impacts include:

- Dust emissions from vehicles traveling unpaved access and maintenance roads during periodic inspection and maintenance
- Tailpipe emissions (including GHG) from vehicles used for inspection and maintenance
- Emissions of GHGs from circuit breakers at the substation

Termination and demolition of the transmission line at the end of its useful lifecycle, perhaps 50 years or more after project startup, could cause future impacts to air quality. Because this phase of the proposed Afton North – Airport Transmission Line project would effectively be "reverse construction", the potential impacts would be similar to those experienced during the construction phase.

Federal, state, and local air quality requirements regulate emissions of pollutants associated with projects like the proposed Afton North – Airport Transmission Line. Many of the regulations are aimed at stationary sources, which would include the new substation, but not emissions associated with the construction phase. Emissions of regulated pollutants from construction are primarily focused on control of fugitive dust. Tailpipe emissions from vehicles and construction equipment are subject to federal regulations, through performance requirements for various types of engines. Equipment used in the Proposed Action would meet applicable air quality regulations.

Typical emissions of the six NAAQS criteria pollutants [$PM_{2.5}$, PM_{10}, NO_x, SO_2, CO, and Volatile Organic Compounds (VOC)] were calculated for the different phases of the proposed SunZia Transmission Line Project that crosses a similar geographic setting to the north of the proposed project (BLM, 2012a). The proposed SunZia Project would be much larger than the proposed Afton North – Airport Transmission Line [about 530 miles versus 14.3 miles] and the construction period would also be longer (three to four years versus 20 to 25 weeks). The emissions calculations for the SunZia Project were scaled to estimate construction emissions of criteria pollutants for the Afton North – Airport Transmission Line Project, with the results presented in **Table 4.1**. These small amounts relative to natural events would result in minor and short-term impacts to the regional air quality.

GHG emissions would be generated by vehicle traffic and non-road engines (i.e., construction equipment). As shown in **Table 4.1**, it is estimated that the total GHG emissions for the proposed Afton North – Airport Transmission Line Project would be about 260.4 metric tons CO_{2e}. This level represents less than 0.0003% of the CO_{2e} emissions estimated for New Mexico in 2010 (CCS, 2006), and approximately 0.03% of the 2012 CO_{2e} emissions from the top five stationary sources in Doña Ana County (EPA, 2014a). Project-level emissions would have a very small effect on GHG emissions at either the state or county level.

Emission impacts to air quality in Doña Ana County would be very low based on the short duration and temporary nature of the construction period, and sporadic periodic maintenance (**Table 4.1)**. Further, because the BLM (2012a) SunZia data presented in **Table 4.1** are based on a single 500-kV transmission line, it is likely that the scaled calculations are an overestimation of the emissions that would result from the construction of the smaller 115-kV Afton North – Airport Transmission Line.

Best management practices such as periodic water spraying of unpaved roads to minimize fugitive dust emissions and carpooling would be used to further reduce potential impacts to air quality. Restoration and reseeding of disturbed areas with native vegetation would help minimize ongoing fugitive dust emissions after construction is complete.

Table 4.1 Transmission Line Construction Emissions		
Pollutant	**Calculated Emissions for SunZia Transmission Line (Tons/Mile of transmission line for Years 1 to 4)[1]**	**Estimated Total Emissions for Afton North – Airport Transmission Line[2] (tons)**
Fugitive Dust from Earthmoving and Grading		
$PM_{2.5}$	0.06	0.103
PM_{10}	0.6	1.031
Paved and Unpaved Road Fugitive Dust		
$PM_{2.5}$	0.49	0.842
PM_{10}	4.89	8.405
Non-Road Engine Emissions (Construction Equipment)		
$PM_{2.5}$	0.008	0.014
PM_{10}	0.008	0.014
SO_2	0.41	0.705
NO_x	0.001	0.002
CO	0.46	0.791
VOC	0.01	0.017
CO_{2e}	86.8	149.2
Traffic Emissions		
$PM_{2.5}$	0.004	0.007
PM_{10}	0.01	0.017
SO_2	0.17	0.292
NO_x	0.001	0.002
CO	0.28	0.481
VOC	0.03	0.052
CO_{2e}	64.7	111.2

[1] Values calculated for one 500 kV Single-Circuit, AC Line for the proposed SunZia Transmission Line (from BLM, 2012a)
[2] Scaled to the proposed Afton North – Airport Transmission Line Project by multiplying estimated SunZia emissions (tons/mile transmission line) × (14.3 miles) × [(25 weeks)$_{\text{Afton North -Airport}}$/(208 weeks)$_{\text{SunZia}}$

4.2 Impacts of the Proposed Action on Historical and Cultural Resources

Almost all of the sites identified during the cultural resource survey of the proposed Afton North – Airport Transmission Line are lithic artifact scatters with thermal features of an unknown cultural and temporal affiliation. There are a few Jornada Mogollon sites as well and one Paleo-Indian stone artifact that is likely from the Folsom period. The data suggest relatively short occupation events or non-intensive use. The large number of ground-stone artifacts indicates a plant processing function, although there is no evidence of intensive historic residential occupation. No sites listed in the New Mexico SRCP or the NRHP are located near or within the APE.

The APE for the proposed Afton North – Airport Transmission Line does not include a high density of artifacts and there are no listed SCRP or NRHP features located along the proposed ROW. Sites identified during the cultural resource survey which cannot be avoided would be mitigated prior to construction. The five eligible sites within the ROW along the transmission line and two eligible sites within the substation area (Marron and Associates, 2012a, b; 2014a, b) would be mitigated through data recovery prior to constructions activities.

If cultural resource materials are uncovered during construction or earth-disturbing activities, work in the area would cease immediately and the appropriate agency (BLM or the State Land Office, depending on the land owner) and the New Mexico SHPO would be notified. In cooperation with the appropriate agency and/or the SHPO, necessary steps would be taken to

evaluate, document, protect, or remove material or remains, in compliance with the applicable laws.

4.3 Impacts of the Proposed Action on Population Demographics

Because the construction period would be short in duration and include a small workforce of EPE employees and local contractors, relocation of workers to Doña Ana County or Las Cruces and El Paso is not expected. The majority of the workforce would be drawn from the local construction industry. No discernible impacts to the local population demographics are expected.

4.3.1. Socioeconomics

There are no residential areas along the ROW that could be displaced by the proposed project, and because of the short-term duration of the construction phase, existing housing in the region would be sufficient to accommodate the workforce without additional construction. Because of the relatively small size of the project workforce (up to 20) compared to the existing regional workforce (e.g., about 35,000 for Las Cruces, and 75,000 for Doña Ana County), and the fact that the workforce would consist only of EPE employees with some local contractor support, the effects of the project would be small, and existing socioeconomic resources would be sufficient to support the proposed project.

As a result, the project would not require new or expanded public services, and there would be few, if any demands on available housing, public services (e.g., schools, hospitals, emergency services), or infrastructure (e.g., water, electricity, waste management, secondary and primary roads) in the surrounding region. While it is possible that construction, maintenance, or operation workers traveling to the area may use existing public services or amenities such as parks, this potential increase in demand would be minimal and temporary.

4.3.2 Environmental Justice

For the purposes of examining the potential for environmental justice effects associated with the project, it is necessary to assess whether there would be impacts that are high and adverse, and whether they would disproportionately affect minority and low-income populations within the ROI.

Although there are localized minority populations in the region, there are no residences or cultural centers along the proposed ROW that would be displaced or modified by the Afton North – Airport Transmission Line project. Poverty levels in the region surrounding the proposed project are comparable to statewide levels, and the colonias in the area are located mostly near the Rio Grande, more than five to 10 miles east of the project. Most of the construction workers for the project would be either current EPE employees or contract workers from outside the area. Because of the relatively small size and temporary nature of the construction workforce (approximately 20) as compared to the colonias and other minority/low-income populations [e.g., 13,932 in Sunland Park (BOC, 2012)], the impacts to the economy in the region would not be expected to be discernible, nor would the project have any disproportionate or adverse effects on the health and environment for minority and low-income populations in the region.

4.3.3 Impacts of the No-Action Alternative on Population Demographics

For the No-Action alternative BLM would not grant a ROW permit. The Afton North– Airport Transmission Line and the new substation would not be constructed. The socioeconomic resources for the region would continue to develop within the existing planning and business environment. If the application for the use of the ROW is rejected or denied and the proposed project is delayed or postponed, new power flow studies would need to be performed to evaluate the reliability of the system. If the existing lines are affected by natural events such as wildfires and storm-related outages, these and other transmission lines in remote or rural areas could be affected. Loads that are on radial (single line service) lines may be interrupted during these events, leaving customers without power. As loads in the area grow, this becomes a concern when outage events occur. EPE would have to use temporary measures such as altering the generation patterns and implementing remedial action schemes to lessen impacts and the potential for damage to major equipment.

Loading on the Mimbres to Airport Tap to Picacho 115-kV line (a PNM line) is, under certain conditions, approaching maximum use of capability. The Airport Substation load is tied to the Airport Tap and currently receives its power from this line. PNM has indicated that loads in excess of 12 MW at the Airport Substation may be difficult to supply from their line without upgrades of transmission. Taking No Action on the proposed project would result in no change to the current loading conditions and no relief to the Mimbres to Airport Tap to Picacho 115-kV line during heavy loading.

Among the consequences of the No-Action alternative could be decreased reliability of service which could limit expansion of transmission, reducing economic development opportunities in Doña Ana County. Without the Afton North to Airport Project, the need for an additional, third, 345/115-kV autotransformer at existing substations would be increased and the need for transmission line upgrades in the Las Cruces area would also become more likely. Without the proposed Afton North – Airport Transmission Line project, the EPE Import Capacity (EPIC) would be limited to the 900 MW to 940 MW range. This limitation would likely cause the addition of one new local generator to the EPE local generation resource to make up for the loss of the increased import capability, representing a significant expense.

4.4 Impacts of the Proposed Action on Realty

Although no impacts are anticipated, three BLM ROW holders identified concerns during the scoping process with respect to potential impacts to existing facilities from the construction and operation of the proposed Afton North – Airport Transmission Line (see Section 1.4.3).

Project related activities such as wire crossing, clearing and grading for the proposed Afton North – Airport Transmission Line would be located within the pipeline corridors that could affect the ZNG and City of Las Cruces natural gas pipelines. Final design for the proposed Afton North – Airport Transmission Line would incorporate the appropriate vertical and horizontal separations required to be maintained between existing utilities and proposed transmission lines. Transmission design information will be communicated to ZNG and the City of Las Cruces for their review and determination of any effects on their respective pipelines. If determined the proximity of the transmission line will affect the pipeline(s), EPE will enter into a mitigation agreement to remedy the potential effect.

The proposed Afton North – Airport Transmission Line would not cross any existing Kinder Morgan pipelines, however, an access road into the proposed Afton North Substation would

cross the existing Kinder Morgan pipeline. In developing the final designs for the proposed Afton North – Airport Transmission Line, EPE would incorporate the appropriate requirements from the Kinder Morgan guidelines (L-OM200-29), including design approval by Kinder Morgan, requirements for contractors conducting construction activities near Kinder Morgan pipelines, advance notification of construction schedules, provisions for Kinder Morgan representatives to observe construction work, and advance notification prior to the start of any construction activities. EPE will coordinate with Kinder Morgan after completion of the transmission line design to ascertain the need for an outside consultant to determine any adverse effects on the pipelines and establish mitigation if necessary. Should it be required, at that time EPE will enter into an agreement with Kinder Morgan. The detailed EPE response to Kinder Morgan is included in **Appendix B**.

The proposed Afton North – Airport Transmission Line would cross through a portion of the Afton SEZ (BLM/DOE, 2010, 2011, 2012a). As of this writing, there are no established or permitted commercial solar facilities in the vicinity of the ROW for the proposed Afton North – Airport Transmission Line, nor are there active permit applications, and so there would be no impacts from the Proposed Action on existing solar energy resources in the vicinity.

4.4.1 Vegetation

The ecoregions in the vicinity of the proposed Afton North – Airport Transmission Line project are not unique to the area. Compared to the relatively small area that would be disturbed (64.85 acres, see **Table 2.1**) permanently by the project, there would be no significant impacts to vegetation in the vicinity.

Construction of the Proposed Action would result in impacts to vegetation in the project corridor. A road would be cleared along the transmission line, and construction vehicles traveling across relatively undisturbed land would result in some vegetation being removed. At locations where poles or angle structures would be constructed, vegetation would be obliterated. To mitigate the adverse impact to vegetation, the temporary work areas disturbed by construction would be seeded following construction using species native to the project area.

Invasive species, particularly Russian thistle and African Rue, are present throughout the project corridor and in Las Cruces, respectively. Seeds from invasive species could be picked up and inadvertently spread by the movement of construction vehicles. To mitigate the potential spread of invasive species, construction equipment would be inspected and vegetation or soil debris removed before leaving the contractor's yard and again before leaving the project area.

Temporary disturbance associated with the construction phase of the Proposed Action would adversely impact up to 20.56 acres of vegetation, and permanent operation would impact up to 64.85 acres of vegetation in the project corridor (see **Table 2.1**).

4.4.2 Livestock Grazing

As described in Section 3.4.2, there are three different grazing allotments that would be crossed by the proposed Afton North – Airport Transmission Line. There would be 14.87 miles of new, permanent access road associated with the Proposed Action (see **Table 2.1**). This could benefit grazing/ranching by increasing access to the area. If these roads were used for non-ranching activities (e.g., recreation, off-highway vehicles), however, there could be competition with cattle grazing and impacts from fugitive dust from unpaved roads on forage for cattle. These potential impacts would, however, be localized and temporary in nature as traffic crosses

the region. For example, a majority of PM_{10} from fugitive road dust would be expected to settle a short distance from unpaved road surfaces (Countess et al., 2001). A small area (64.85 acres) would be permanently disturbed relative to the area of the grazing allotments in the vicinity (0.044% of 254,958 acres total), and fencing would be limited to key facilities such as the Afton North Substation (7.98 acres).

Though the Proposed Action would cross three grazing allotments on BLM and NMSLO land, no fencing between allotments would be removed. If necessary, three cattle guards would be installed to BLM specifications along the proposed route of the ROW to allow access for maintenance of the transmission line, and grazing would continue. To avoid the need for a fourth cattle guard, existing pasture fencing in Section 9, Township 25 South, Range 1 West would be realigned to include a BLM Type 'A' fence parallel to the proposed Afton North – Airport ROW. These modifications to existing pasture fencing would be conducted using procedures to minimize the potential for noxious or invasive weeds. Cattle would roam freely in the project area along the proposed ROW. The noise and activity of construction could result in cattle voluntarily avoiding the construction area, but this effect would cease upon completion of construction.

The Proposed Action would not be expected to have a long-term impact on livestock grazing. Impacts associated with the Proposed Action are expected to be minor, adverse, and short-term, primarily limited to the duration of construction. Noise and vibration may cause some individual animals to temporarily vacate the area during construction.

4.5 Impacts of the Proposed Action on Wildlife

Wildlife may enter the ROW site at any time during the life cycle of the Proposed Action, and habitat fragmentation that might limit wildlife movement is a potential impact. However, given the temporary nature of the construction, the small area (64.85 acres) that would be permanently disturbed, and the limiting of fencing to key structures, habitat fragmentation along the ROW would be minimal. Incidental takes or temporary displacement of wildlife may occur during construction along the ROW, but the impacts would be on an individual basis rather than affecting an entire population. The Proposed Action would be expected to have negligible impacts on wildlife in the vicinity of the proposed project.

The proposed ROW is located at least partly within Patch 458 identified as suitable habitat for the banner-tailed kangaroo rat (Moses et al., 2008). However, no banner-tailed kangaroo rats were identified during the biological survey, nor were any subpopulations identified in Moses et al. (2008) in the vicinity of the proposed Afton North – Airport Transmission Line. Patch 458 covers a large geographic area in western and northwestern Doña Ana County, and suitable habitat is sporadically distributed. Patch 458 is centered on the West Potrillo Mountains, which are about 10 to 20 miles southwest of the Afton Generating Station at the southern terminus of the Afton North – Airport Transmission Line. Given the distance from the project, and the relatively small area that would be disturbed during the construction, operation, maintenance, and termination of the proposed transmission line and the Afton North Substation (about 85.41 acres total disturbed land with 64.85 acres of permanent disturbance, see **Table 2.1**) no significant impact to existing kangaroo rat populations are anticipated.

4.6 Impacts of the Proposed Action on Invasive, Non-Native Species

During construction, non-native, noxious, and invasive plant species can tend to concentrate around areas of recently disturbed ground, and spread outward into undisturbed habitat under

favorable conditions. The total amount of disturbed land during the project is small, with about 85.41 acres of temporary and permanent disturbance (see **Table 2.1**). Approximately 24% of this ground disturbance would be temporary, to be restored and seeded with native vegetation after construction is complete. During and following construction, BMPs such as preconstruction surveys would be conducted to facilitate early detection, containment, and control of noxious weeds. The intent of the BMPs would be to minimize the potential for invasive species to colonize the land along the ROW, and to remove and/or contain the expansion of pre-existing infestations. The current lack of infestations along the proposed ROW, and the commitments to control weeds and re-seed and reclaim disturbed land as quickly as possible after construction would prevent deleterious impacts from the proposed project on non-native, noxious, or invasive plant species.

4.7 Impacts of the Proposed Action on Migratory Birds

Typically, USFWS recommends that site disturbance activities (e.g. construction activities and especially initial site clearing and grubbing) be conducted outside of the bird breeding season, which is generally March through September in the region. If construction were to occur during the avian nesting season (March through September), a pre-construction migratory bird and raptor nesting survey would be performed during the breeding season prior to disturbance of an otherwise undisturbed area. If no active nests are found on the subject property, the USFWS may not require a permit based on the "Empty Nest Policy." Areas with active bird nests would be avoided during construction. If avoidance were not practical, bird's nests would be monitored to evaluate the birds' responses to nearby construction activities and consultation with USFWS would be initiated.

The proposed Afton North – Airport Transmission Line would be designed and built to be consistent with avian protection guidelines in APLIC (2006, 2012). Examples of design features to protect bird species may include standard raptor-safe design for poles, and bird diverters on the shield wire/fiber optic cable to deter raptor nesting. The implemented design features would minimize impacts to migratory birds.

4.8 Impacts of the Proposed Action on Threatened, Endangered, and Special Status Species

The habitat along the ROW is capable of supporting populations of sand prickly pear and night blooming cereus. However, these species were not observed during the biological survey. If plants or species of concern are noted during future activities at the site, efforts would be made to avoid impacts to their populations. If impacts to individual plants were to be unavoidable, mitigation measures involving salvage and transplanting would be used.

A biological survey along the ROW for the proposed Afton North– Airport Transmission Line identified no specific occurrences of threatened, endangered, or special status species (**Appendix D**). If nesting birds or other sensitive wildlife not previously identified were to be encountered during construction activities, EPE would consult with USFWS to determine appropriate avoidance measures to prevent disturbance. If wildlife or special status species were to suffer mortality, the impacts would be on an individual basis rather than affecting an entire population. For these reasons, and because of the short-term and temporary nature of construction activities and mitigation measures, there would be no significant impacts from the Proposed Action on threatened, endangered, or special status species.

4.9 Impacts of the Proposed Action on Water Resources

The construction phase of the proposed Afton North – Airport Transmission Line could result in impacts to water resources through the water use, placement of structures, construction of access roads, or temporary work areas. As described in Section 3.9, the only perennial waterways in the area include the Rio Grande, about six to 10 miles to the east of the proposed ROW. Because of this distance, the Proposed Action would not alter the course of any perennial streams or rivers in the region, and there would be no direct impacts to perennial surface water.

The ROW for the proposed Afton North – Airport Transmission Line would not cross any wetlands as defined by the USFWS (**Figure 3.6**), and there would be no direct impacts to wetlands from the Proposed Action.

There could, however, be impacts to ephemeral and intermittent surface water features, including water use, erosion and sedimentation associated with land disturbing activities, temporary and permanent fill associated with development of access roads, and accidental spills of environmentally harmful material (e.g., fuels and lubricants).

During the construction period, water would be used periodically to wet down disturbed earth to minimize fugitive dust emissions. In addition, the workforce for the project (up to 20 workers) would need water for drinking (potable) and possibly sanitary systems; although it is anticipated that portable toilets would be used during construction. The water would be provided by municipal industrial sources or private sources. No new water rights would be required.

Based on parameters in BLM/DOE (2010), the application rate of water for dust control for the proposed project would be about 0.355 L/m^2. The total water needed for dust control for the proposed project was calculated by multiplying the calculated application rate by two applications per day, the total disturbed area for the project (85.41 acres [345,650 m^2]), and the number of days for construction (25 weeks x 7 days/week). With these assumptions, the total amount of water needed for dust control for the project would be about 11.3 million gallons or 34.8 acre-feet. Additional water would be needed to meet consumption and sanitary needs for the construction workers at the site. Occupational Safety and Health Administration (OSHA) regulations require each worker should have access to at least one quart of drinking water for each hour of a shift (National Institute of Occupational Health and Safety, 2013). Assuming 12-hour shifts, this would result in three gal/day for each worker. Drinking water consumption requirements can be higher in the arid conditions along the proposed Afton North -Airport Transmission Line. Worker sanitary requirements would be met using portable toilets that do not require water for flushing. Assuming 20 workers, each requiring five gal/day for consumption for a 25-week construction period, the amount of potable water required during construction would be about 17,500 gallons or 0.054 acre-feet. Therefore, the total amount of water needed for construction of the proposed Afton North – Airport Transmission Line (34.85 acre-feet) would represent less than 0.01 % of the annual water used in the region. The need would be temporary, and there would be no long-term impacts on the water supply.

Construction of access roads would require crossing six intermittent surface water features (arroyos) (**Figure 3.6**). All crossings would be constructed with the minimum footprint required to safely transfer building materials and construction equipment. By letter dated August 7, 2014, the USACE determined that a permit is not required for impacts to these surface features since the project would not result in the discharge of dredged/fill material into waters of the United States, as the project site consists entirely of uplands (**Appendix B**).

The ROW for the proposed Afton North – Airport Transmission Line would also cross a total distance of about 0.25 miles across two 100-year floodplains. These 100-year floodplains are intermittent ponds located in closed topographic depressions with no associated arroyos (**Figure 3.6**) and no link to the Rio Grande. During storm events, intermittent flooding could occur in these areas with temporary ponding and erosion. The floodplains are not located near either of the two substations of the project, and other than the towers that support the transmission line, there would be no equipment located in these areas. Although the access road would need to cross floodplains along the centerline of the proposed ROW, towers would be spaced to stay outside of the 100-year floodplains. With the limited area of the floodplains, the temporary nature of any flooding, and the short length of the crossings (less than 2.0% of the total project length of 14.3 miles), it is anticipated that impacts would be negligible.

Potential impacts during construction include erosion, increased runoff and sedimentation during rain events. It is also possible that hazardous materials could be accidentally released from construction and maintenance equipment, as well as substation transformers. As described in Section 2.2, several plans would be developed to minimize erosion, manage hazardous materials, and ensure prompt response and cleanup for spills. The National Pollution Discharge Elimination System (NPDES) permit, a Stormwater Pollution Prevention Plan (SWPPP), and a Spill Prevention, Control, and Countermeasures (SPCC) plan would identify BMPs to limit potential adverse impacts to water resources from construction runoff during rain events. In addition, the proposed Afton North Substation would be constructed on a concrete base with berms to contain spills. Temporary impacts to surface water would not slight.

An accidental release of fuels, lubricants, or other hazardous materials from heavy equipment during construction or maintenance activities could infiltrate the soil. Because no planned permanent or temporary structures or facilities would be located in arroyos or depressions, spills would not be likely to affect these geographic features. The depth to groundwater along the ROW, however, is about 300 to 400 feet (BLM/DOE, 2010). In addition, spill response and containment procedures (see **Appendix C**) would be used to reduce the impact from a spill. As a result, no hazardous materials would be likely to reach the groundwater system, and no impacts to groundwater quality are expected.

4.10 Impacts of the Proposed Action on Geology

During construction, land would be cleared with some excavation for pole foundations (about 125 total) and the new Afton North Substation. There are no unique geological resources or soils that would be affected by construction and related land-disturbing activities.

4.11 Impacts of the Proposed Action on Soils

As noted in Section 2.1, about 24% of the total 85.41 acres that would be disturbed would be restored after construction is complete, with only 64.85 acres permanently disturbed. Topsoil from disturbed areas would be stockpiled and used in the reclamation effort. In addition, BMPs would be used during construction to minimize erosion of disturbed areas and stockpiled topsoil prior to restoration. As a result, potential impacts to soil resources would be short-term and temporary in nature.

4.12 Impacts of the Proposed Action on Minerals

The only active mineral resources produced in Doña Ana County are different types of bulk construction and industrial minerals such as aggregate, scoria, clay, shale, caliche, and gypsum (NMEMNRD, 2012). These are not unique or rare resources, and they are found in other areas within the region. There are no locatable mining claims, active oil and gas leases, or geothermal leases in the immediate vicinity of the proposed ROW. For these reasons, there would be no impacts from the Proposed Action on existing mineral or energy resources.

4.13 Impacts of the Proposed Action on Paleontological Resources

The Proposed Action may impact paleontological resources present in the proposed project area. One geological formation present within the project area may contain paleontological resources. The Camp Rice Formation (part of the QTsf) has a PFYC of 4b and has produced several fossil localities near the project area. Three scientifically significant fossils were recorded and collected during the paleontological resource survey, and six more non-significant fossils were recorded, but not collected. All fossils discovered were located within the area designated for existing access roads and the proposed Afton North Substation.

The primary impact issue for paleontological resources is the loss of scientifically significant fossils and their contextual data. Two types of impacts could potentially affect paleontological resources:

- Direct impacts resulting from ground disturbance during construction
- Indirect impacts due to changes in public accessibility or erosion

Adverse impacts indirectly associated with ground disturbance are a concern. Fossils could be subject to damage or destruction by erosion that is accelerated by ground disturbance, as well as improved access and increased visibility, potentially resulting in unauthorized collection or vandalism. However, not all impacts of construction are adverse to paleontology. Excavation can and often does reveal significant fossils that would otherwise remain buried and unavailable for scientific study. In this manner, ground disturbance can result in beneficial impacts. Such fossils can be collected properly and catalogued into the collection of a museum repository so that they can be available for scientific study.

Because a majority of the Proposed Action crosses the Camp Rice Formation (PFYC 4b), specific mitigation measures would be required as indicated in BLM policy (IM 2008 009) (BLM, 2008).

The probability for impacting significant paleontological resources is high, and is dependent on the Proposed Action. BMP considerations would include onsite monitoring or spot checking during construction activities, assessment of the disturbance, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential.

Recommendations for mitigation, discussed in the Paleontological Resource Assessment already performed (Environmental Planning Group, 2014), includes monitoring of those construction activities with ground-disturbance only. This was based on the thickness of the overlying recent alluvium and small amount of fossils discovered, especially along the ROW.

4.14 Impacts of the Proposed Action on Visual/Scenic Resources

The ROW for the proposed Afton North – Airport would be located in a VRM IV (lower) area. Construction activities for the proposed project may be visible from different observation points, but they would be temporary in nature. Because of the open nature of the largely treeless West Mesa where the proposed project would be located, the 100- to 125-foot towers along the transmission line may be visible over long distances. The towers for the proposed Afton North – Airport Transmission Line area would be spaced 700 to 800 feet apart, reducing contrast with the surrounding landscape. The towers would also be constructed of Corten steel, a material that becomes less reflective as it weathers, further reducing contrast and potential visual impacts. These design and construction features would reduce the overall visual impact associated with the proposed project and be consistent with the BLM visual resource management Class IV objectives for the surrounding area.

4.15 Impacts of the Proposed Action on Public Health and Safety

Limited hazardous materials may be used during the construction phase of the proposed Afton North – Airport Transmission Line. These would be typical of most construction projects, including small quantities of gasoline, diesel fuel, oils, lubricants, solvents, detergents, degreasers, paints, ethylene glycol (radiator fluid), and welding materials/supplies. Hazardous materials would be stored onsite in vessels/containers that are specifically designed for the characteristics of the materials to be stored, with secondary containment (e.g., raised berms or curbing), as appropriate. During construction, a Hazardous Materials Management Plan (HMMP) would be developed to include procedures for:

- Hazardous materials handling, use, and storage
- Emergency response
- Spill prevention, control, and countermeasures (SPCC)
- Employee training, and
- Recordkeeping and reporting

During the operational phase of the project, only small quantities of hazardous materials would be brought onto the ROW, for brief periods, and removed immediately after use. Bulk chemicals are not expected to be used on-site. Equipment maintenance associated with operations activities (e.g., solvents, lubricating oil, and diesel fuel) is anticipated to be conducted at off-site locations. BMPs and standard operating procedures would be used to ensure that hazardous materials are properly stored, managed, and disposed. Waste lubricating oil would be recovered and recycled by a waste oil recycling contractor. Located within the proposed new Afton North Substation would be several electrical transformers. Each transformer would contain approximately 5,000 gallons of mineral oil, and would sit on a concrete pad foundation designed for the local geotechnical soil conditions. The pad would be of a size such that the entire transformer is resting within the pad. In addition, high-voltage circuit breakers at the substation would require a tank that contains sulfur hexafluoride (SF_6) gas. The substation design would provide for a containment area that would be designed to capture the full volume of transformer oil should the transformer experience a catastrophic failure and deposit all of the oil within a very short period of time. The containment area would be designed and constructed to meet applicable SPCC requirements. With these BMPs in place, hazardous materials to be used on the project would not impact the public health and safety.

4.16 Impacts of the Proposed Action on Noise

The Doña Ana County noise control ordinance approved in December 2012 (Doña County, 2012b) establishes nighttime (10:00 PM to 6:00 AM on weekdays, Midnight to 6:00 AM on weekends) noise limits for a number of different activities (**Table 4.2**).

Table 4.2 General Nighttime Sound-Level Limits (10:00 PM to 6:00 AM, Sunday-Thursday; Midnight to 6:00 AM, Friday-Saturday)

Actual Land Use or Category of Receiving Property	Maximum dB
Residential/Noise-sensitive	50
Office/Commercial	60
Industrial	70

(from Doña Ana County, 2012b)

Noise-sensitive property is defined in Section 261-9 of the Doña Ana code as "Property that is occupied and contains any of the following: a dwelling unit or units, school, hospital, religious institution, child-care facility, adult-care facility, court or library." At present, there are no noise sensitive properties within 500 feet of the proposed ROW or the new substation, and the proposed project would comply with the noise ordinance.

4.16.1 Baseline Noise Levels

The baseline ambient day night average noise levels in the undeveloped, rural desert environment around the proposed Afton North – Airport Transmission Line were estimated to be 39 dBA for Doña Ana County (BLM/DOE, 2010). Baseline noise levels near the I-10 corridor at the northern terminus of the proposed ROW, and the multi-modal transmission corridor at the southern end are higher as a result of noise-generating activities such as road and railroad traffic, aircraft flyover, commercial/industrial/agricultural activities, and community activities and events. For example, noise levels within 150 feet of a typical limited access highway (1,500 cars, 100 medium, and 200 heavy trucks at 65 miles/per hour) are 67 dBA (Miller, 2005). For the I-10 corridor, baseline noise levels would be less because annual average daily traffic levels are less, at about 18,000 vehicles per day (Las Cruces Metropolitan Planning Organization, 2010).

4.16.2 Construction Noise Impacts

The use of heavy trucks, bulldozers, and other equipment to construct the pads and access roads for the transmission lines and to build the new substation would generate noise that would be audible above ambient background (see **Figure 3.10**). Additionally, traffic noise during construction (commuting workers, truck shipments to and from the facility, and construction equipment) would be localized and limited to highways that access the site. Typical noise levels associated with construction equipment are provided in **Table 4.3** (PG&E, 2005).

As shown in **Table 4.3**, noise levels are understandably higher closer to operating equipment. During construction, noise levels would decrease to ambient (background) conditions at a distance of approximately 2,100 feet from construction activities (**Table 4.3**). No sensitive receptors (e.g., hospitals, schools, or nursing homes) exist close to the proposed ROW for the Afton North – Airport Transmission Line. Relative short-term increases in noise levels

associated with passing traffic would not be significant for the larger roads that cross the area, as the number of additional trips due to the project would be very small relative to the annual average daily traffic reported for these roads. Noise-impacts related to construction would therefore be small and temporary.

Table 4.3 Noise Levels Associated with Typical Construction Equipment		
Equipment	**At 2,100 feet**	**At 50 feet**
Earth Moving Equipment		
Front Loaders	40 – 52	72 - 84
Backhoes	40 – 61	
Tractors, Bulldozers	44 – 64	
Scrapers, Graders	48 – 61	
Pavers	54 – 56	
Trucks	54 – 62	86 – 94
Rollers	44 – 64	
Graders		
Material Handling Equipment		
Concrete mixers	43 – 56	
Concrete pumps	49 – 51	
Cranes (movable)	43 – 54	75 – 85
Cranes (derrick)	54 – 56	
Forklifts	44 – 50	76 – 82
Tensioners	44 – 54	76 – 86
Cable Pullers	42 – 49	74 – 81
Pneumatic Tools		
Pneumatic tools	51 – 56	84 – 88
Jack hammers and rock drills	49 – 66	
Compactors	52 – 58	

(from PG&E, 2005)

4.16.3 Operations Noise Impacts

During the operations phase of the proposed Afton North – Airport Transmission Line project, sources of noise may include the phenomenon known as “corona discharge” that can ionize the air around metal conductors along high-voltage transmission lines. This can result in an audible crackling noise that is typically higher under more humid conditions. Under fair weather conditions, corona discharge-related noise is very low, with levels less than 30 dBA (PG&E, 2005, 2010). Given the low humidity conditions that are prevalent along the proposed Afton North – Airport Transmission Line, noise emitted by the conductors and connections along the transmission lines would be well below limits specified in the Doña Ana County noise ordinance (see **Table 4.2**), and would not be significant (audible) at ground level (PG&E, 2005, 2010).

In addition to noise along the transmission line, the transformers in the new Afton North Substation could generate a low frequency hum that would vary depending on the electrical load placed on the transformer and the increased noise when cooling fans are running. As noted in PG&E (2005, 2010), the noise associated with a traditional configured substation would likely be about 45-50 dBA at the fence-line and decrease to ambient background levels within about 500 feet (San Diego Gas and Electric, 2009). These levels are below the limits specified in the Doña Ana noise ordinance (Doña Ana County, 2012b). There are no noise-sensitive receivers within 500 feet of the proposed Afton North Substation.

4.17 Cumulative Impacts

4.17.1 Geographic Scope

The geographic boundaries selected for a cumulative impact analysis vary depending on the specific resource being considered. The geographic scope is sometimes referred to as the region of influence (ROI) for the resource of interest. **Table 4.4** provides a summary of the intensity of the impact to the resource, and geographic extent that was considered for each of the resource areas identified in Chapter 3. Cumulative impacts are considered where the Proposed Action is determined to have an impact. The geographic scope for each resource area is based on the ROIs identified in DOE/BLM (2008) and BLM/DOE (2010).

Table 4.4 Geographic Scope of the Cumulative Impacts Analysis by Resource Area

Ch. 4 Section	Resource Area	Impact Intensity	Geographic Scope or ROI
4.1	Air Resources	Low	Doña Ana County, Global Atmosphere
4.2	Historical/Cultural Resources	Low	Areas within and adjacent to the ROW
4.3	Demographics	Low to None	Doña Ana County
4.3	Socioeconomics	Moderate	Doña Ana County
4.3	Environmental Justice	Low to None	Doña Ana County
4.4	Realty	Low	Areas within and adjacent to the ROW
4.4	Vegetation	Low	Areas within and adjacent to the ROW
4.4	Livestock	Low and Temporary	Areas within and adjacent to the ROW
4.5	Wildlife	Low	Areas within and adjacent to the ROW
4.6	Invasive, Non-Native Species	None	Areas within and adjacent to the ROW
4.7	Migratory Birds	Low	Areas within and adjacent to the ROW
4.8	Special Status Species	None	Areas within and adjacent to the ROW
4.9	Surface Water	Low	Rio Grande, West Side Canal
4.9	Groundwater	Low	Mesilla Basin
4.10	Geological	None	Areas within and adjacent to the ROW
4.11	Soils	Low and Temporary	Areas within and adjacent to the ROW
4.12	Minerals	None	Areas within and adjacent to the ROW
4.13	Paleontological	Moderate	Areas within and adjacent to the ROW
4.14	Visual Resources	Low	15-mi radius of the ROW
4.15	Public Health and Safety	None	Doña Ana County
4.16	Noise	Low and Temporary	Areas within and adjacent to the ROW

(Modified from DOE/BLM, 2008 and BLM/DOE, 2010)

4.17.2 Term Limits

BLM ROW grants have term limits of 30 years for the use of the federal lands. It is also recognized that the service life of the proposed transmission line would likely extend beyond 50 years and that EPE would request ROW grant renewals. This timeframe is considerably longer than most planning horizons [typically 10 to 40 years [e.g., City of Las Cruces, 2008; Doña Ana County, 2012)]. The proposed Afton North – Airport Substation Transmission Line would result in different impacts to resources at different times during construction, operation, and eventual termination of the line at the end of its service life. For these reasons, a timeframe of 25 years is considered to be the maximum reasonable horizon for providing a meaningful analysis of potential cumulative impacts associated with the Proposed Action.

4.17.3 Past, Present, and Reasonably Foreseeable Future Actions

Past and present actions are considered in describing the Affected Environment in Chapter 3. Reasonably foreseeable future actions (RFFAs) can include projects, activities, or trends that could affect the resource areas over the geographic extent (Section 4.17.1) and timeframes (Section 4.17.2) described previously for this analysis. To reduce the uncertainty and avoid speculating about future development in the region, the RFFAs considered in the analysis are those "…for which there are existing decisions, funding, formal proposals, or which are highly probable, based on known opportunities or trends" (BLM NEPA Handbook at § 6.8.3.4.).

Energy Transmission and Distribution BLM/DOE (2010, 2011, 2012a) identify two transmission projects as RFFAs that could contribute to cumulative impacts associated with the Afton SEZ. The SunZia Southwest Transmission Project would provide for the construction and operation of two 500-kV transmission lines with an estimated total capacity of 3,000 MW. The eastern end of the proposed SunZia transmission line would be at a new substation in either Socorro or Lincoln County, New Mexico and run westward to Arizona. A new substation would also be constructed at Deming, about 35 miles to the west of the ROW for the proposed Afton North – Airport Transmission Line project. A draft EIS for the SunZia Transmission Line was published in 2012 (BLM, 2012a) and is discussed separately below.

The Southline Transmission Line Project is a proposed 225-mile, 345-kV transmission line corridor that will run west from the Afton Generating Station to the Apache Power Plant Substation in Cochise County, Arizona with a designed transmission capacity of up to 1,500 MW. Approximately 240 miles of new, 345-kV double-circuit transmission lines would be installed from Afton to the Apache Power Plant, with the eastern end of the proposed route extending west northwest from the existing Afton Generating Station parallel to first 3.85 mile section of the for the Afton – Airport Transmission Line. In addition, the new Afton North Substation could affect the tie-in with the proposed Southline Transmission Line Project. The current design calls for the location of the ROW for the proposed Southline Transmission Line Project south of and parallel to the ROW for the proposed Afton North – Airport Transmission Line (Southline Transmission Project, 2013).

Afton Generating Station The Afton Generating Station is a 135 MW natural gas plant located about 12.5 miles southwest of Las Cruces, New Mexico. It has been operating since 2002, and is the southern terminus for the proposed Afton North–Airport Transmission Line. This facility is the closest to the ROW for the proposed Afton North – Airport Transmission Line.

4.17.4 Potential Cumulative Impacts by Resource Category

4.17.4.1 Air Quality

The geographic scope to be considered for ambient air quality is Doña Ana County.

Ozone, PM_{10}, and $PM_{2.5}$ are of regional concern in the area. The total amount of NAAQS criteria pollutants that would be generated during the construction phase are small, and are limited to the 20-25 week construction period. The impacts would be considered temporary and localized in nature, and would not significantly affect air quality for Doña Ana County, regardless of other sources of air pollutant emissions within the region.

The potential air quality impacts associated with the construction (and termination) of the proposed Afton North – Airport Transmission Line project would be temporary and/or localized, and unlikely to overlap in time and space with the other RFFAs to cause cumulative impacts. Operational emissions such as small amounts SF_6 emitted by circuit breakers at the new Afton North Substation would not be low and would be limited to the immediate vicinity of the substation (BLM, 2012a).

Vehicle traffic and construction equipment would be the biggest source of GHG emissions for the proposed Afton North – Airport Transmission Line, with a total of about 260.4 metric tons CO_{2e}. Since the activities are essentially construction in reverse, a similar level would be anticipated during termination and restoration. This total represents an insignificant contribution to the 89.4 million metric tons of CO_{2e} emissions estimated for New Mexico in 2010 (CCS, 2006), and would be even less significant when considered in the context of the global atmosphere. Similarly, GHG emissions from other RFFAs would be dominated by vehicle and construction equipment. These are larger facilities than the Proposed Action, but GHG emissions would be small (hundreds to thousands of metric tons CO_{2e}) relative to statewide (millions of metric tons CO_{2e}) and global emissions. Some RFFAs such as solar energy development would reduce overall GHG emissions. For these reasons, the potential incremental impacts from the proposed project on GHG concentrations in the global atmosphere would be extremely small.

4.17.4.2 Historical and Cultural Resources

As described in Section 4.2, the impacts to historical and cultural resources from the proposed Afton North – Airport Transmission Line project would be small. There are no sites currently listed on the NRHP or the National Register of Historic Landmarks adjacent to the proposed ROW. Sites identified during the cultural resource survey which cannot be avoided would be mitigated prior to construction. The five eligible sites within the ROW along the transmission line and two eligible sites within the substation area (Marron and Associates, 2012a, b; 2014a, b) would be mitigated through data recovery prior to constructions activities.

In the event that cultural resource materials are uncovered during construction or earth-disturbing activities, work in the area would cease immediately. The appropriate agency (BLM or the State Land Office, depending on the land owner), and the New Mexico SHPO would be notified to determine the best approach to evaluate, document, protect, or remove the materials or remains, in compliance with the law.

None of the past, present, and RFFAs identified in the region would specifically cross or be located adjacent to the proposed ROW. Because other RFFAs in the region would also largely be located on federal- and state-managed lands, similar mitigation measures would be used. For this reason, the incremental impacts from the Proposed Action would not result in significant cumulative impacts to historical and cultural resources.

4.17.4.3 Demography, Socioeconomics, and Environmental Justice

Given the small, temporary construction labor force and the distance from minority and low-income communities located near the Rio Grande, there would be almost negligible impacts to demographics, socioeconomics, or environmental justice in Doña Ana County from the Proposed Action. There would be no disproportionate or adverse impacts to minority communities from the Proposed Action. For these reasons, there would be no cumulative impacts, taking into consideration past, present, and RFFAs.

4.17.4.4 Realty

Other transmission projects have been proposed for southern New Mexico. Of these, the Southline Project (Southline Transmission Project, 2013) includes a proposed ROW that extends from the Afton Generating Station to the northwest, parallel to the proposed Afton North – Airport Transmission Line.

The ROI for evaluating cumulative impacts to land use is Doña Ana County, of which about 75% is managed by the federal government (Doña Ana County, 2012c).

In the undeveloped portion of Doña Ana County that includes the Proposed Action, the main current use is for rangeland grazing. With the exception of the area around the new Afton North Substation (about seven acres), the proposed ROW would not be fenced and there would be no significant impacts with respect to changing access on the existing grazing allotments. Other RFFAs such as the Southline Transmission Line project and the Afton SEZ, however, could result in disturbing and limiting access to larger areas.

4.17.4.5 Wildlife

Impacts to wildlife would be anticipated to be similar for the past, present, and RFFAs identified in the region (see Section 4.17.3). These facilities and structures would be expected to comply with the same requirements as the proposed Afton North – Airport Transmission Line, with procedures in place to mitigate impacts to biological resources. Although the Afton SEZ is adjacent to the southern edge of the proposed Afton North – Airport Transmission Line, there are no BLM permit applications for solar facilities (March 2015). None of the past, present, and RFFA transmission projects identified in the region would specifically cross or be located adjacent to the proposed ROW. For this reason, the incremental impacts from the Proposed Action would not result in significant cumulative impacts to biological resources.

4.17.4.6 Vegetation

As described in Section 2.1, with the exception of the new Afton North Substation, the ROW would not be fenced. For this reason, once construction is complete and disturbed land is re-vegetated, the transmission line would not have significant impacts with respect to habitat fragmentation. Termination at the end of the lifecycle of the proposed Afton North – Airport Transmission Line could potentially disrupt wildlife, but the intended end state of termination would be to restore the land to its pre-construction state and the disruption would be localized and temporary.

During construction non-native, noxious and invasive plant species could become established in disturbed areas. The project would include a plan to minimize impacts from noxious and invasive plant species, with mitigation that includes re-vegetating disturbed areas with certified native vegetation.

4.17.4.7 Migratory Birds

The proposed ROW is located adjacent to the Rio Grande bird migration corridor within the Central Flyway. If construction were to occur during the avian nesting season (March through September), a pre-construction migratory bird and raptor nesting survey would be conducted in accordance with USFWS requirements. The transmission line would also be constructed with

design features to minimize impacts to birds (APLIC, 2006, 2012). For this reason, the incremental impacts from the Proposed Action would not result in significant cumulative impacts to migratory birds.

4.17.4.8 Water Resources

The Afton SEZ will not allow high water-use solar facilities (BLM/DOE, 2010, 2011), and the other transmission lines (SunZia and Southline) will only require water for construction (BLM, 2012a; Southline Transmission Project, 2013). The existing Afton Generating Station is a 135-MW natural gas plant with water use limited by permit to less than 555 acre-feet/yr for its cooling cycle (Combined Cycle Journal, 2009). As described in Section 4.9, the Proposed Action would require only 34.85 acre-feet of water for dust suppression during construction, and it is anticipated that similar water usage would be needed during termination. The incremental impacts from the small water needs during the construction and termination periods would not be significant, and there would be no significant cumulative impacts to the use and quality of water resources from the Proposed Action, taking into consideration past, present, and RFFAs in the Mesilla Basin.

4.17.4.9 Soils

Soil resources could be affected by wind/rain erosion during construction, operation, and termination of the facilities. These impacts would be reduced by BMPs and plans to control erosion and siltation, and there would be no significant cumulative impacts, as most of the identified past, present, and RFFAs are more the five miles from the proposed ROW.

4.17.4.10 Paleontological Resources

Because of the High Paleontological Sensitivity (PFYC 4b) of some of the geologic units within the ROI (**Table 4.4**), ground-disturbing activities associated with past, present, and RFFAs adjacent to the proposed ROW could result in adverse cumulative effects to paleontological resources. Direct effects would be the loss of significant paleontological resources as a result of ground-disturbing activities. Any construction or ground-disturbing activities associated with future projects such as transmission lines, pipelines, or new roads could have incremental effects on paleontological resources. An indirect effect to paleontological resources would be increased visibility or access to a paleontological resource resulting from land exchanges or land donations. To identify potential impacts, each project on BLM land in the region of influence would be required to submit a separate, site-specific evaluation of paleontological resource potential and establish necessary mitigation measures in accordance with BLM policy (IM 2008 009) (BLM, 2008).

4.17.4.11 Visual/Scenic Resources

Within 15 miles of the proposed Afton North – Airport Transmission Line, the landscape has been modified by various past and present cultural modifications, including I-10/U.S. Highway 70 and I-25, dirt and gravel roads, transmission towers, a pipeline, cleared rights-of-way, the Afton Generating Station, and an airport. As described in BLM/DOE (2010), the visual resources of the landscape are classified as VRM Class IV, indicating a generally low scenic quality for the area, with moderate to low visual values. The I-10/U.S. Highway 70 corridor, less than a mile to the north of the proposed transmission line would provide observation points to the area. Because of the distance to more sensitive VRM Class I areas, the visual impacts from

the proposed transmission line are small, and would be reduced by using materials and paints that reduce visual contrast and reflectivity.

Some of the identified past, present, and RFFAs (the existing Afton Generating Station, existing roads such as I-10/US Highway 70, I-25, and proposed actions such as the SunZia and Southline transmission lines, solar projects, and wind development) could also contribute to potential cumulative visual impacts. The largest future visual impacts would be associated with potential development in the 29,964 acre Afton SEZ (BLM/DOE, 2010, 2011, 2012a) that includes the proposed ROW. The total cumulative visual impacts, however, would depend on how much solar power was developed in the region.

In general, facilities associated with RFFAs would have different purposes and would vary in appearance. Depending on how much development occurs in the Afton SEZ, the result could be contrasting visual impacts. Considering the low level of reasonable foreseeable future development in the region, BLM/DOE (2010) estimated that the potential cumulative visual impacts from the Afton SEZ would be small to moderate within a 15 mile radius. Because it would have a smaller footprint and lower profile, and use materials designed, in part, to reduce visual impacts, the proposed Afton North – Airport Transmission Line would have a small incremental impact to visual resources, and would not contribute significantly to the overall cumulative impacts.

4.17.4.12 Noise

As described in Section 4.16, most of the potential noise impacts from the proposed Afton North – Airport Transmission Line project would be associated with construction and termination. These activities would be limited to daylight hours, and conducted in accordance with the local noise ordinance for Doña Ana County (Doña Ana County, 2012b). Given the short timeframe of 20 – 25 weeks for construction, and assuming a similar duration for termination, noise impacts from other RFFAs such as solar projects, subdivisions, transmission lines, and substations would be unlikely to overlap in time and space with the Proposed Action.

5.0 INDIVIDUALS, ORGANIZATIONS, TRIBES OR AGENCIES CONSULTED

The public was invited to contact the BLM and provide input on this project. The project was listed on the New Mexico BLM Website NEPA Log: http://www.blm.gov/nm/st/en/prog/planning/nepa_logs.html

Consistent with BLM responsibilities under 40 CFR 1503 and 43 CFR 46.435, a contact list of interested parties was developed to solicit input on the Proposed Action (**Appendix B**). This list includes federal, state, and local agencies which have:

- Jurisdiction by law
- Statutory authority to develop and enforce environmental standards within their jurisdiction
- Special expertise

Input from interested parties was taken into consideration during the development of this EA, and comments are stored as part of the BLM administrative record for this project.

6.0 LIST OF PREPARERS

Frances Martinez, Realty Specialist, Project Lead
Jim Renn, Archaeologist
Joe Sanchez, Natural Resource Specialist
John Thacker, Outdoor Recreation Planner
Steven Torrez, Wildlife Biologist
Juan Gamon, Rangeland Management Specialist
Dr. Mohammad Nash, Soil Scientist
Corey Durr, Hydrologist
Oz Gomez, Outdoor Planner
Joseph Navarro, Environmental Protection Specialist
Jennifer Montoya, Planning and Environmental Specialist

This EA was prepared by a third party contractor, Raba Kistner Environmental, Inc. for BLM/EPE. The following individuals were involved in the preparation and review of the document or provided guidance and quality control during the development of the document.

Raba Kistner Environmental

Steven E. Jones, CHCM, Senior Vice President, Chief Operating Officer
Mary Telles-Goins, Environmental Planner
Pollyanna Clark, MA, RPA, Archeologist/Principal Investigator
David R. Turner, Environmental Planner
Sally Victor, Senior Historian

Marron and Associates

Hollis Paul Lawrence, Principal Investigator/Project Manager
Maria Hroncick-Conner, Crew Chief
Toni Goar, Cultural Resources Program Manager
Scott Walley, Principal Investigator
R. Stanley Kerr, Crew Chief

High Desert Environmental Consulting and Native Plants

Michael Gaglio, Biologist/Managing Member

EPG Environmental Planning Group – Paleontology Survey

Michael Pasenko, Paleontologist and Earth Resources Manager

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8.0 GENERAL ACRONYMS AND ABBREVIATIONS

AC	Alternating Current
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
ARMS	(New Mexico) Archaeological Records Management System
ASCE	American Society of Civil Engineers
AUM	Animal Unit Months
BLM	U.S. Department of the Interior, Bureau of Land Management
BMP	Best Management Practices
BOC	Bureau of the Census
CAA	Clean Air Act as Amended
CCS	Center for Climate Strategies
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CT	Census Tract
CWMA	Cooperative Weed Management Area(s)
DOE	Department of Energy
EA	Environmental Assessment
EHS	Extra High Strength
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
EPE	El Paso Electric
EPIC	EPE Import Capacity
ESA	Endangered Species Act of 1973
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FLPMA	Federal Land Policy and Management Act of 1976 (PL 94-579)
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GCRP	U.S. Global Change Research Program
HMMP	Hazardous Materials Management Plan
HHS	(Department of) Health and Human Services
HUC	Hydrologic Unit Code
IPCC	Intergovernmental Panel on Climate Change
LCDO	Las Cruces District Office
Ldn	day night average (noise)
LRGWUO	Lower Rio Grande Water Users Organization
MBTA	Migratory Bird Treaty Act
MSA	Metropolitan Statistical Area
MVA	megavolt Ampere

MW	megawatt(s)
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NESC	National Electrical Safety Code
NHPA	National Historic Preservation Act
NMAAQS	New Mexico Ambient Air Quality Standards
NMAC	New Mexico Administrative Code
NMDA	New Mexico Department of Agriculture
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
NMEMNRD	New Mexico Energy, Minerals and Natural Resources Department
NMED-AQB	New Mexico Environment Department-Air Quality Board
NMSLO	New Mexico State Land Office
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OPGW	Overhead Optical Ground Wire
OSHA	Occupational Safety and Health Administration
PM	Particulate Matter
PNM	Public Service Company of New Mexico
POD	Plan of Development
PFYC	Potential Fossil Yield Classification System
RFFAs	Reasonably foreseeable future actions
RMP	Resource Management Plan
ROI	Region of Influence
ROW	Right-of-way
SESC	State Electric Safety Code
SEZ	Solar Energy Zone
SHPO	State Historic Preservation Office(r)
SPCC	Spill Prevention, Control, and Countermeasure
SRCP	(New Mexico) State Register of Cultural Properties
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
TESS	Threatened and Endangered Species System
TSP	Total Suspended Particulates
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management System
ZNG	Zia Natural Gas Company

Chemicals

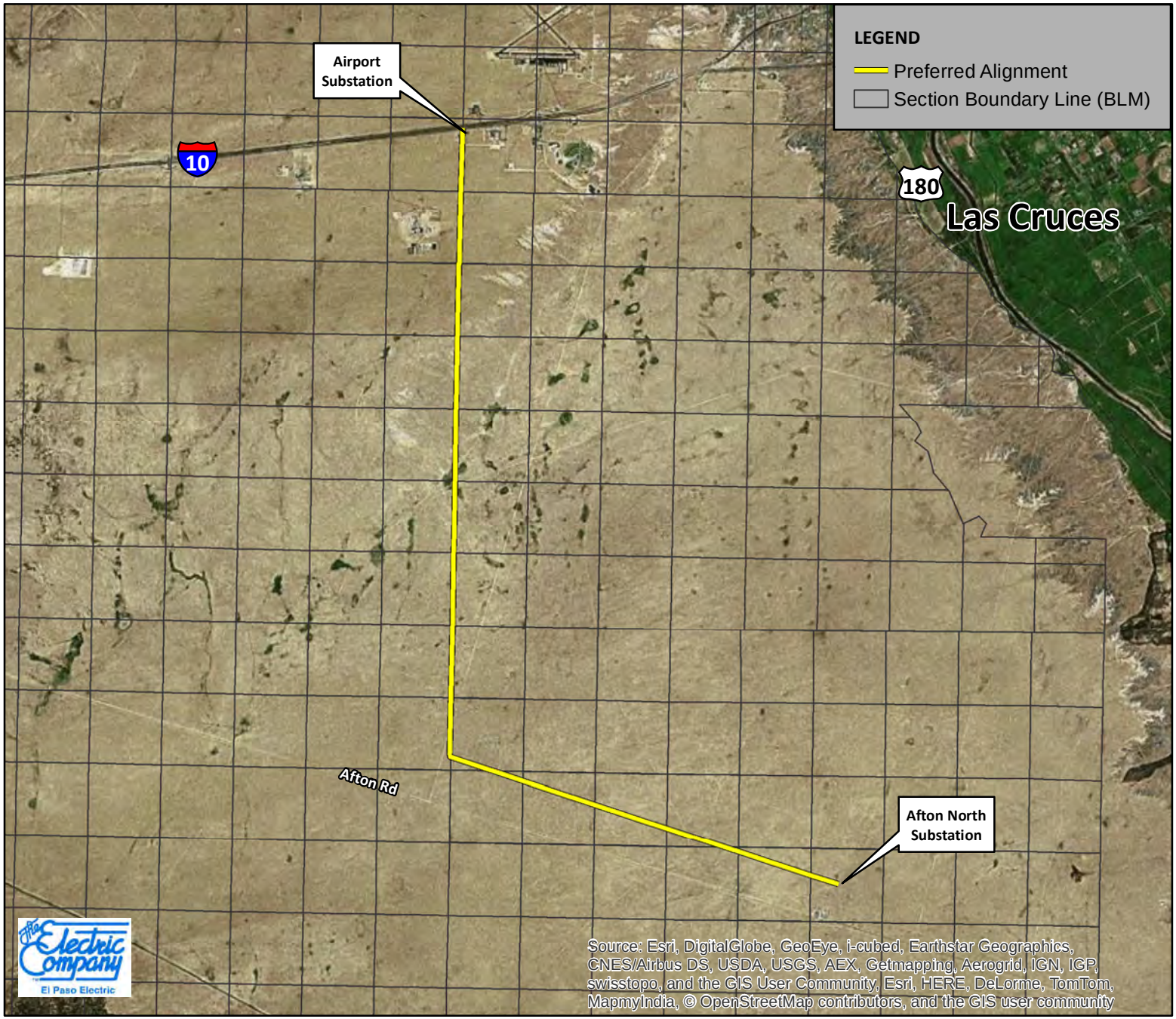
CH_2	Ethylene
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
H_2S	Hydrogen sulfide
NO^X	Nitrogen oxides
N_2O	Nitrous oxide
NO_2	Nitrogen dioxide
O_2	Oxygen
O_3	Ozone
Pb	Lead
PCE	Perchloroethylene
$PM_{2.5}$	Particulate matter 2.5 µm (micrometers) or less in diameter
PM_{10}	Particulate matter 10 µm (micrometers) or less in diameter
SO_2	Sulfur dioxide
SOx	Sulfur oxides
SF_6	Sulfur hexafluoride

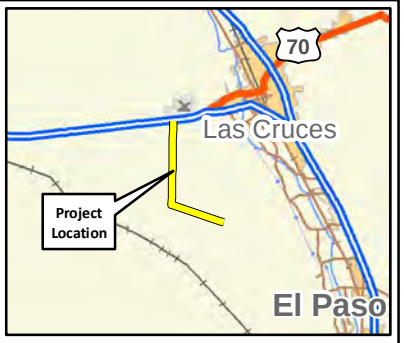
Units of Measure

ac	Acres
ac-ft	Acre-foot (feet)
dB	Decibels
dBA	A-weighted decibel(s)
ft	Foot (feet)
ha	Hectares
Hz	Hertz
kcmil	Thousand circular mil (wire size)
km	Kilometers
kV	Kilovolts
L	Liters
µg	Micrograms
m	Meters
µm	Micrometers
MW	Megawatts
MMt	Million metric tons
km	Kilometers
ppb	Parts per billion
ppm	Parts per million

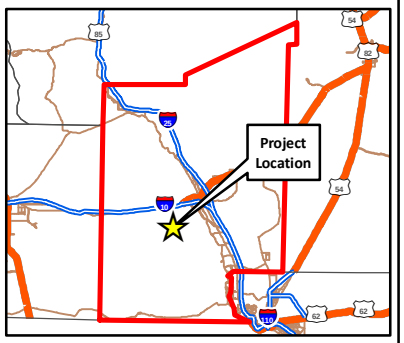
APPENDIX A

FIGURES

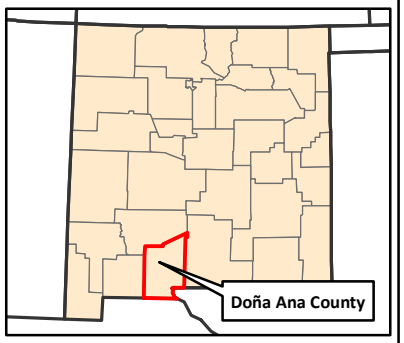




Vicinity Map



Doña Ana County



New Mexico

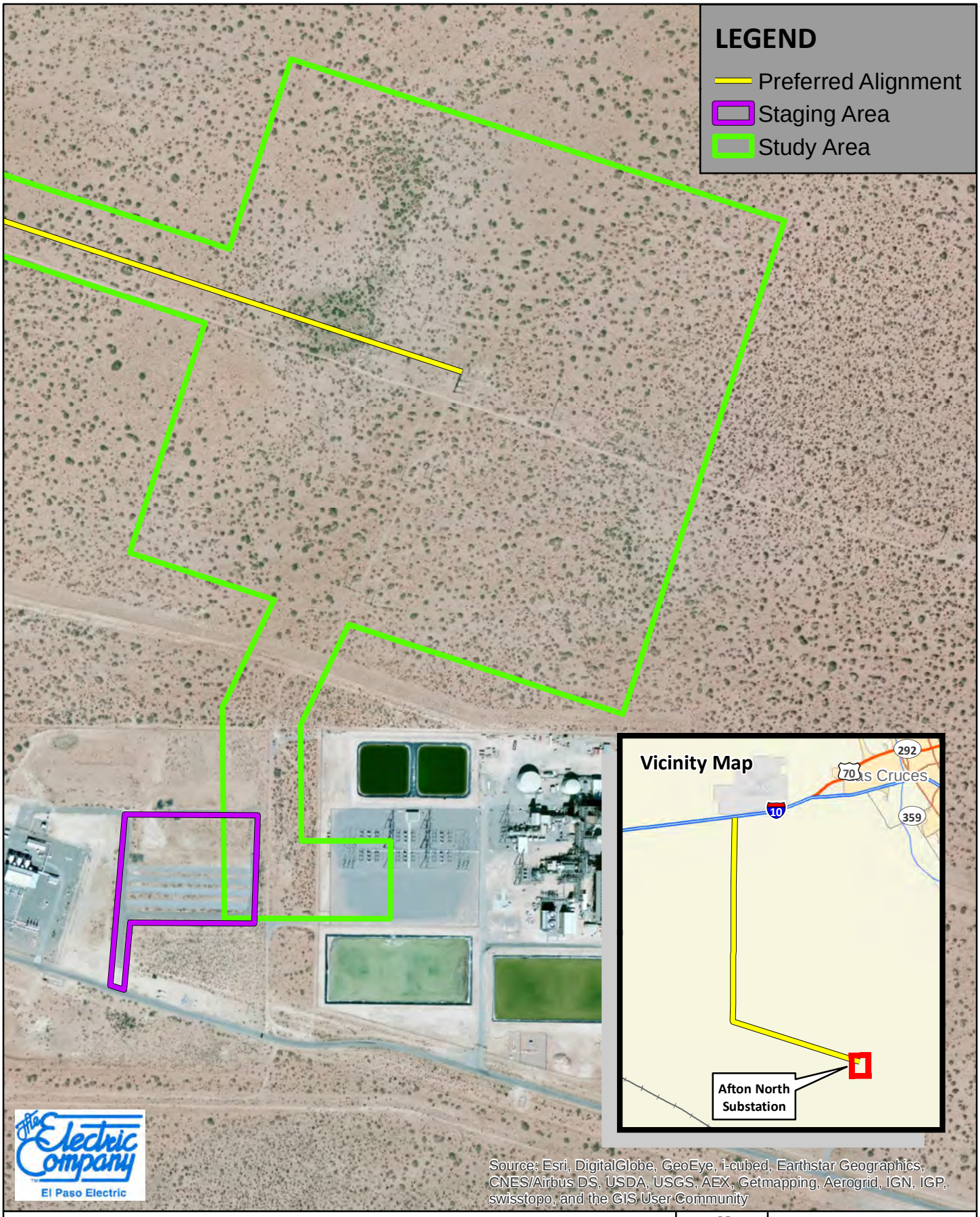
0 0.5 1 2 Miles

N W E S

PROJECT LOCATION MAP

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 1.1



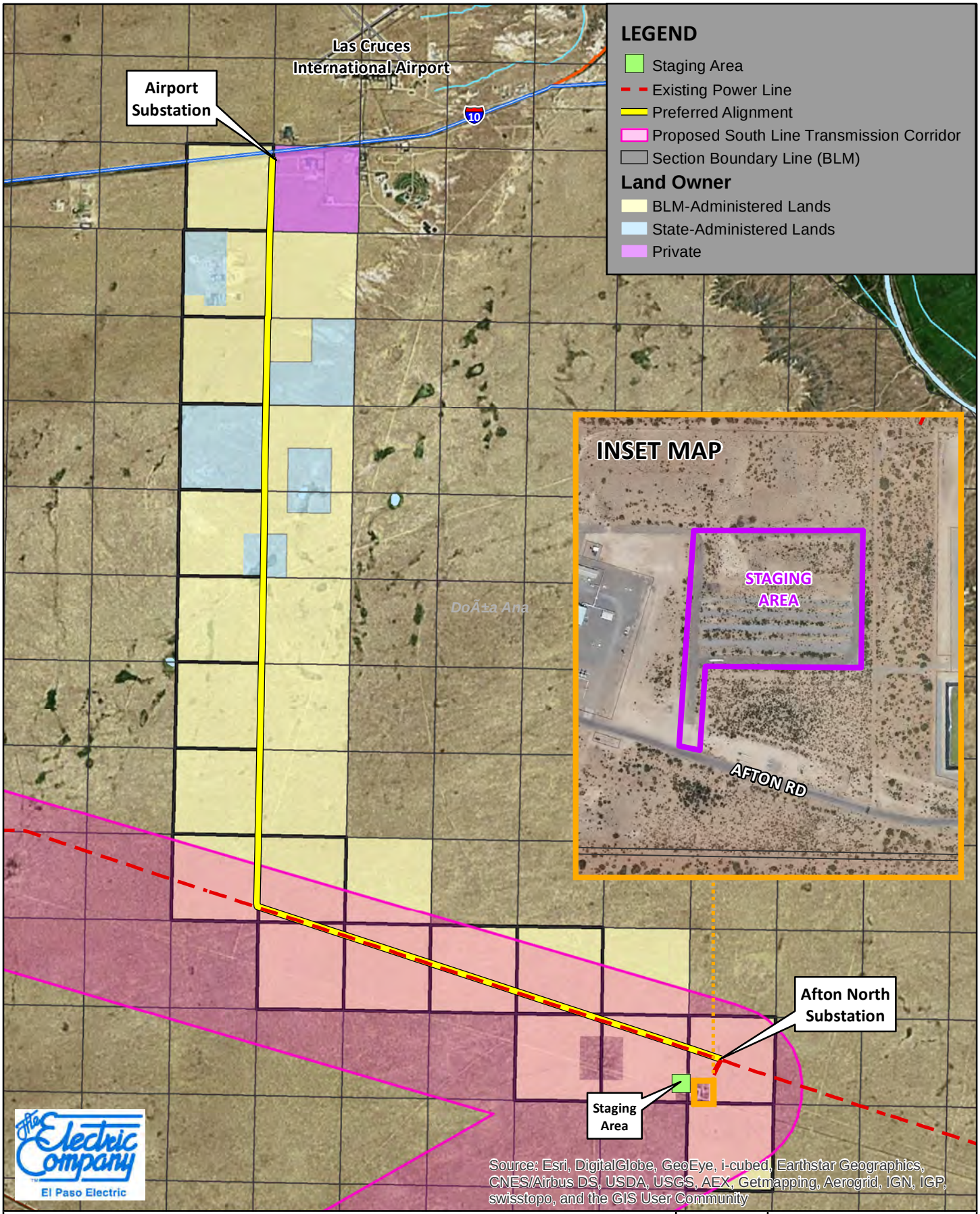
PROPOSED AFTON NORTH SUBSTATION

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 1.2



EXISTING TRANSMISSION LINE AND SECTION BOUNDARIES

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 0.5 1 2 Miles

FIGURE 1.3

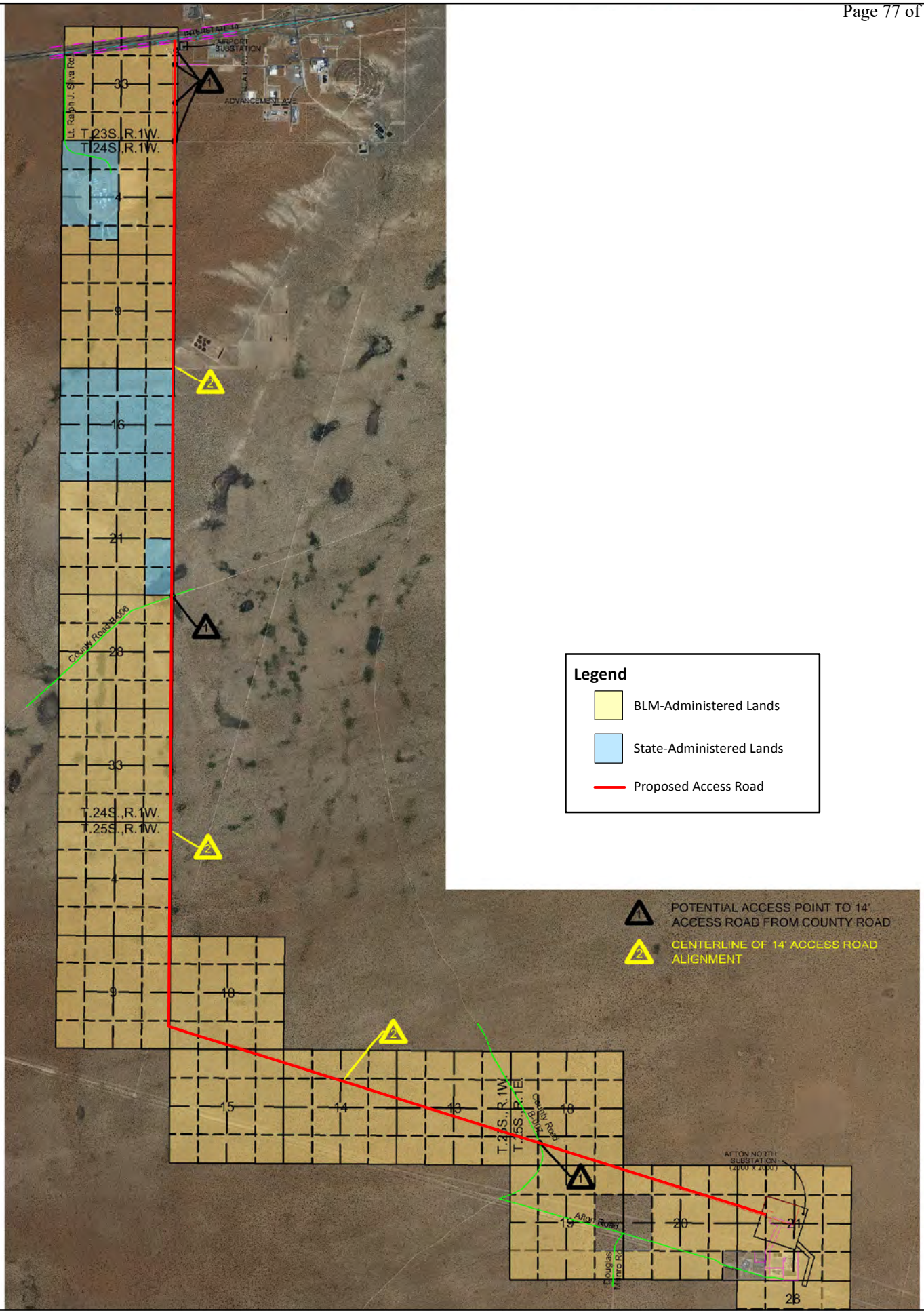


Figure 1.4. Preliminary survey of access roads and alignment and access points within BLM and New Mexico State Lands Aliquot Parcels.

DESIGN LIMITATIONS:
RULING SPAN = 700 FT
MAX SPAN LENGTH = 750 FT
954 KCMIL ACSR "RAIL" PER PHASE

PRELIMINARY
NOT TO BE USED FOR
CONSTRUCTION OR BIDDING

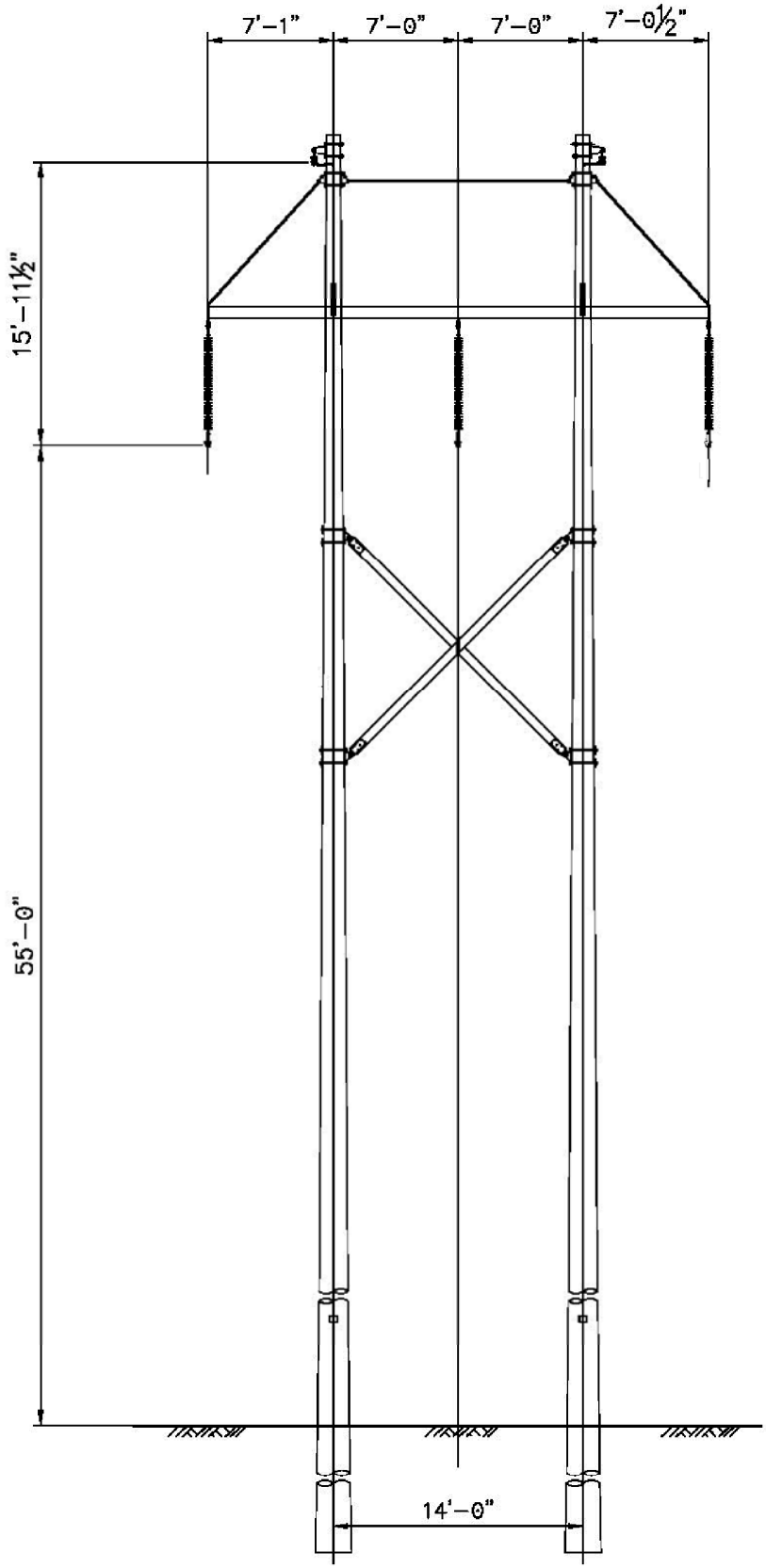
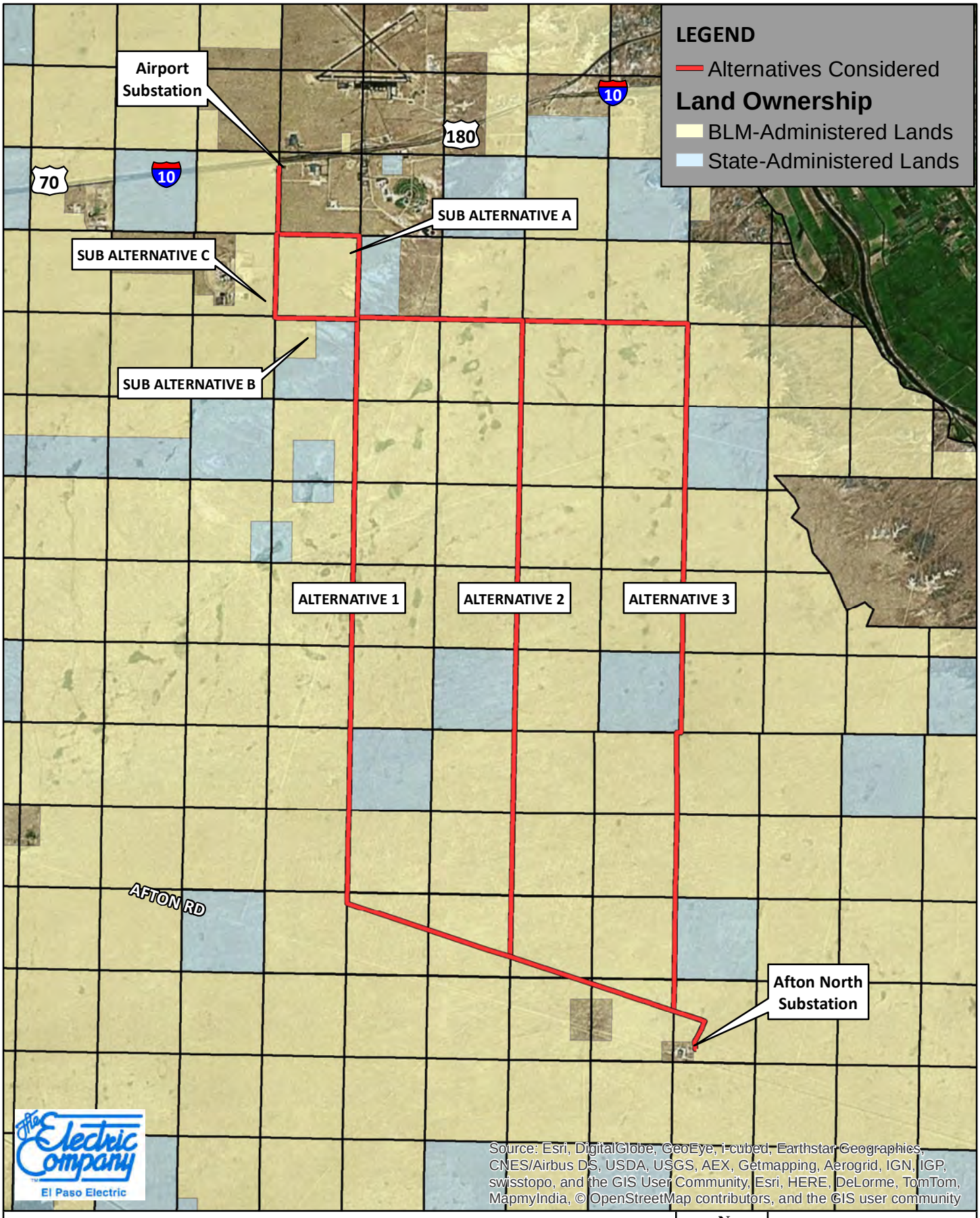


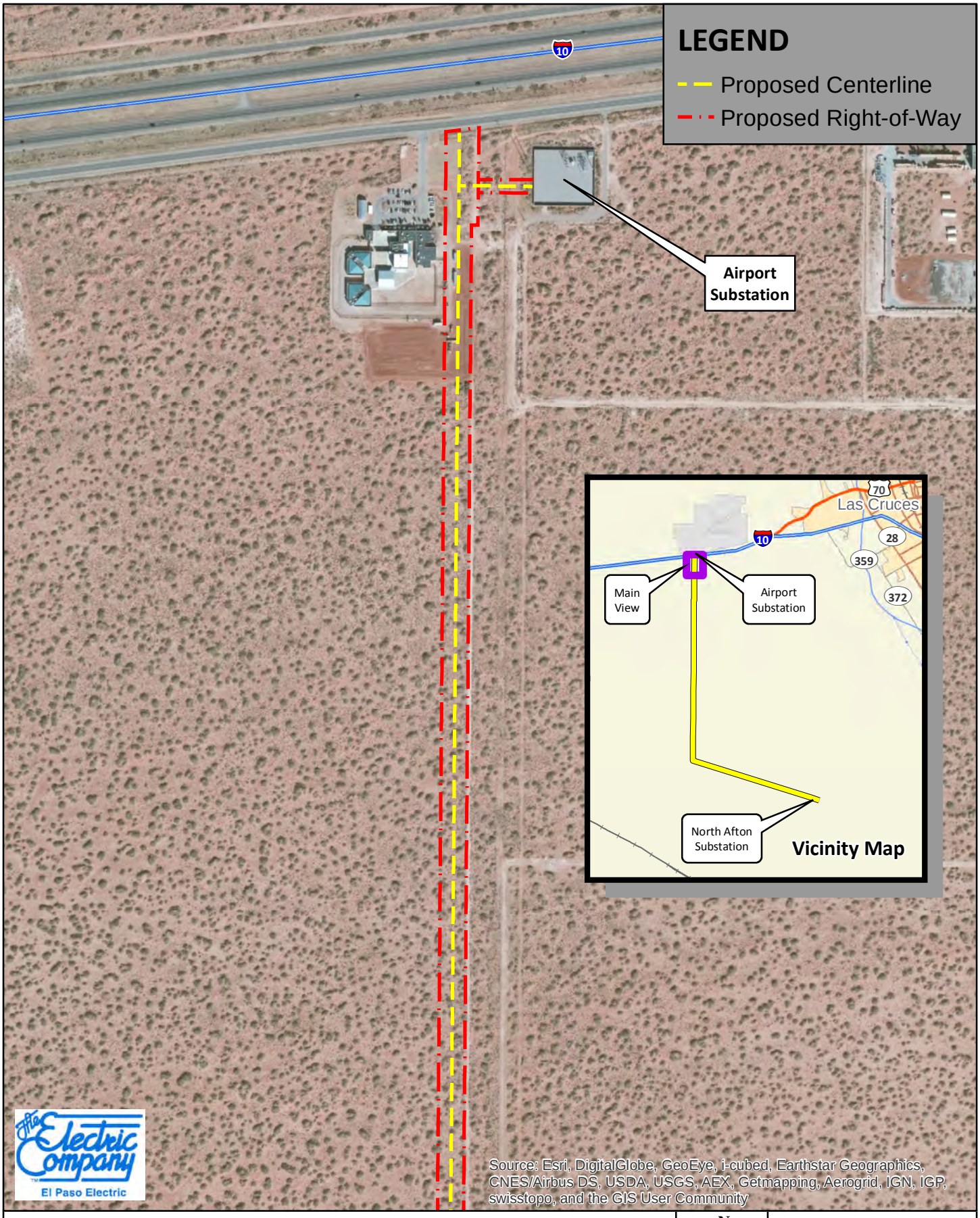
Figure 2.1. Conceptual design for a typical H-frame tower structure for the proposed Afton-Airport Transmission Line.



ALTERNATIVES CONSIDERED

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 2.2



El Paso Electric Company
El Paso Electric

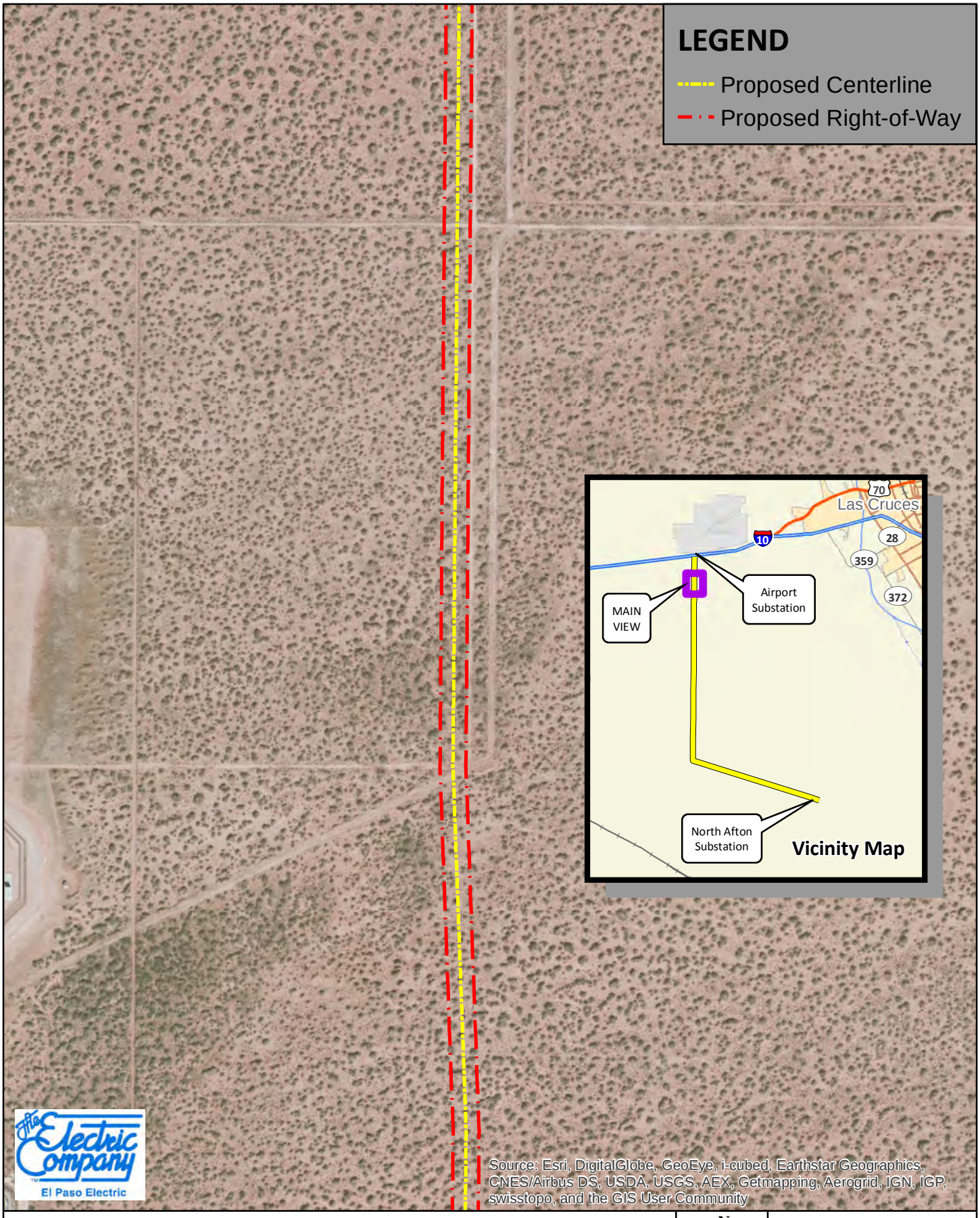
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N
W E
S

0 125 250 500
Feet

FIGURE 2.3A



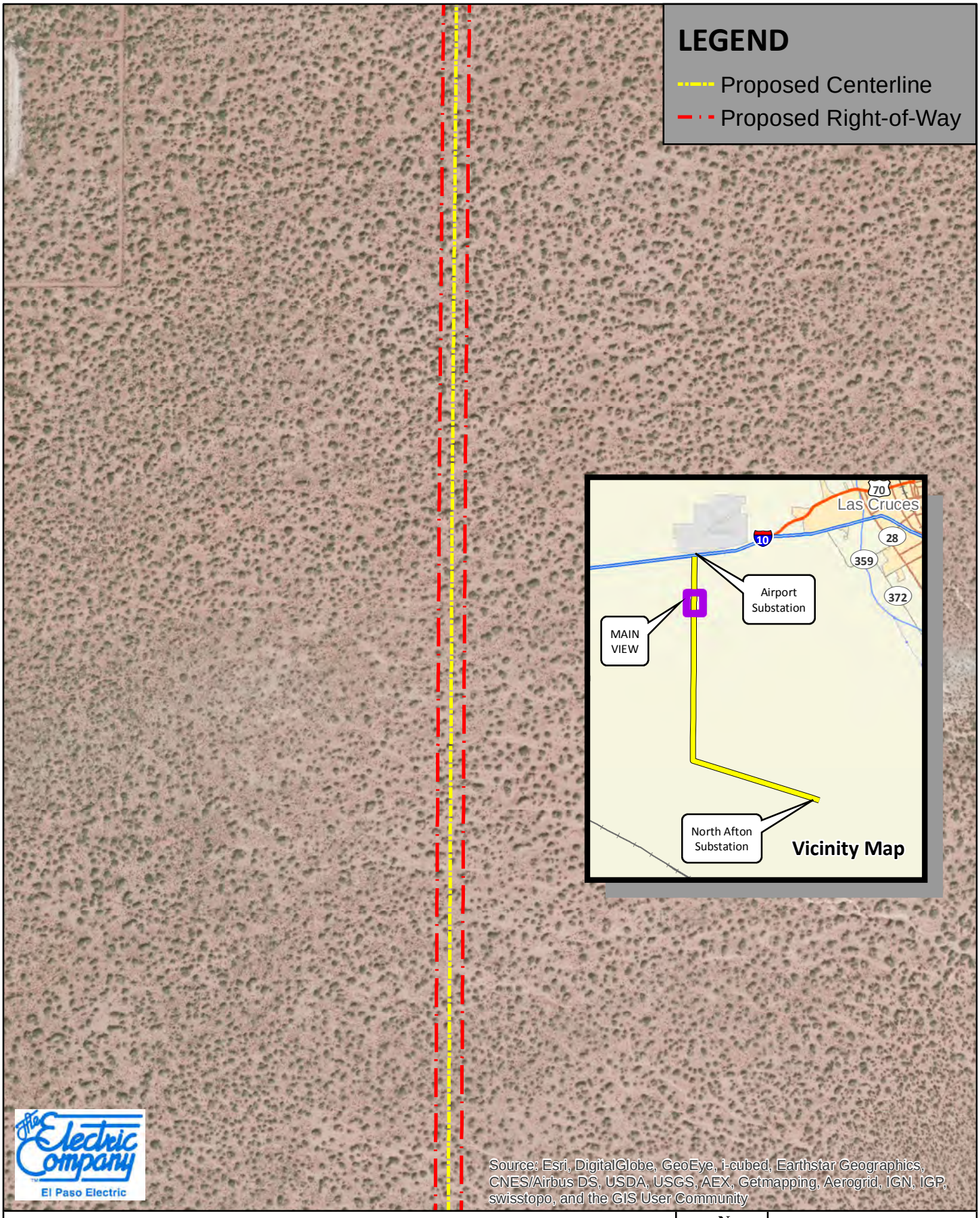
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3B



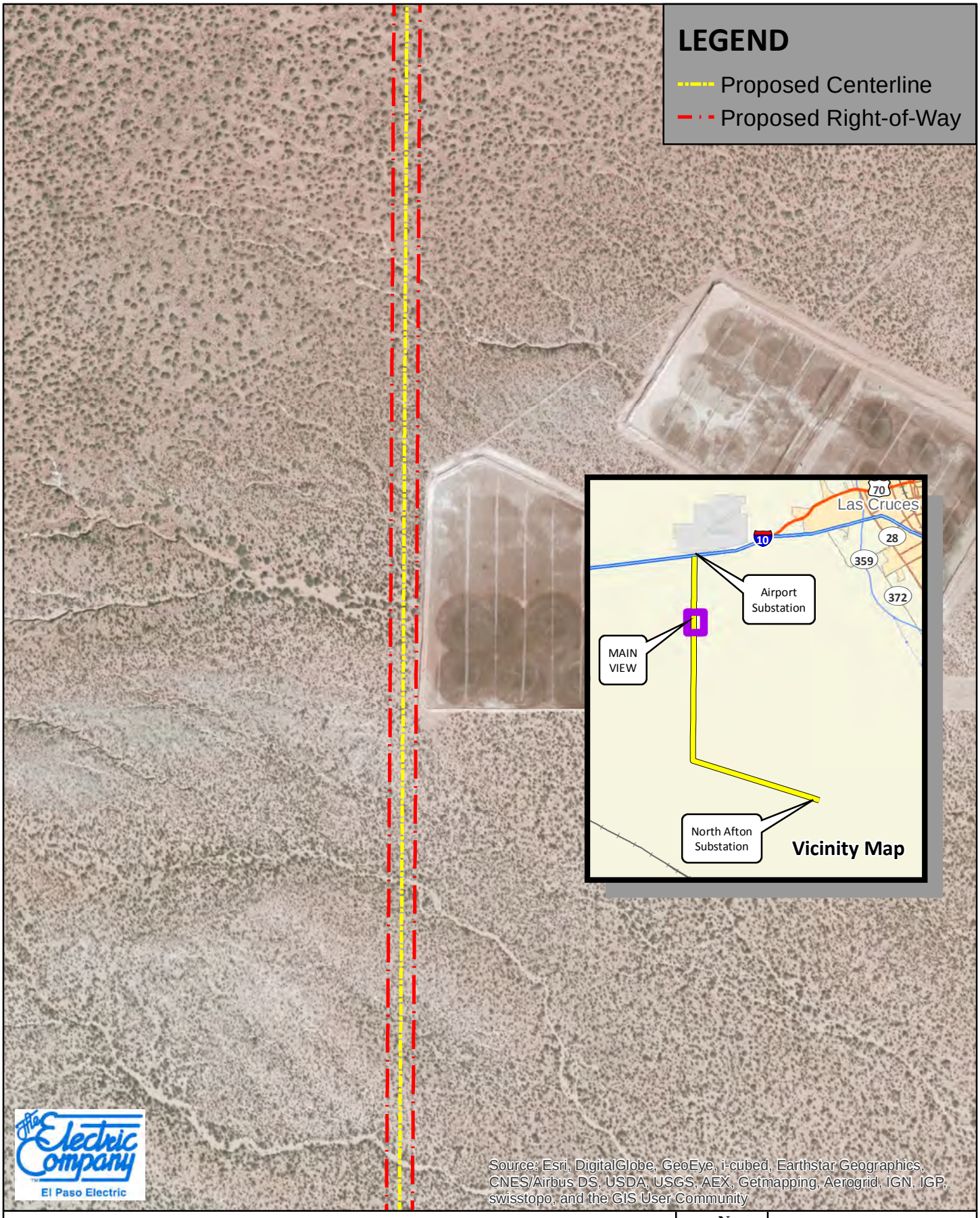
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3C



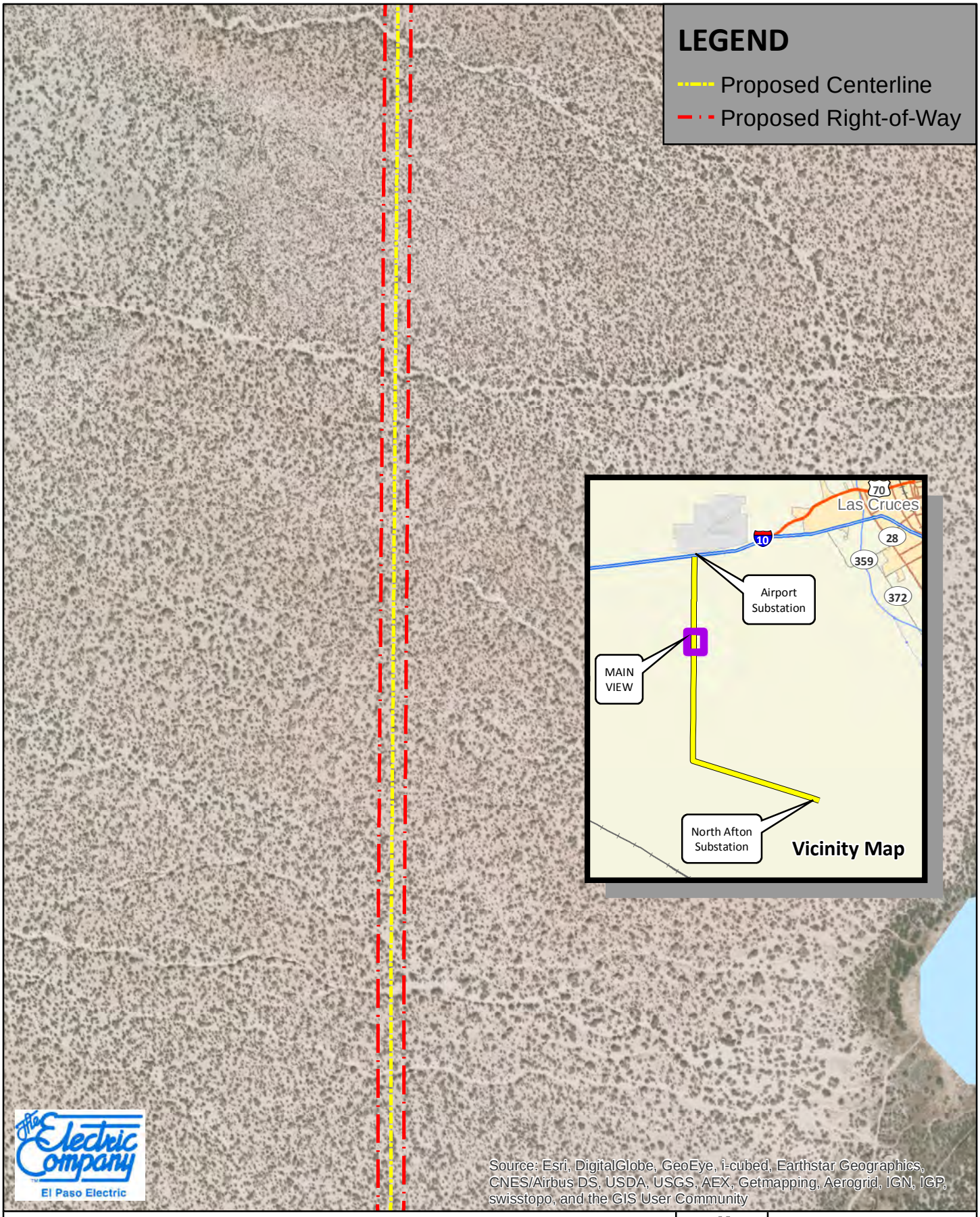
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

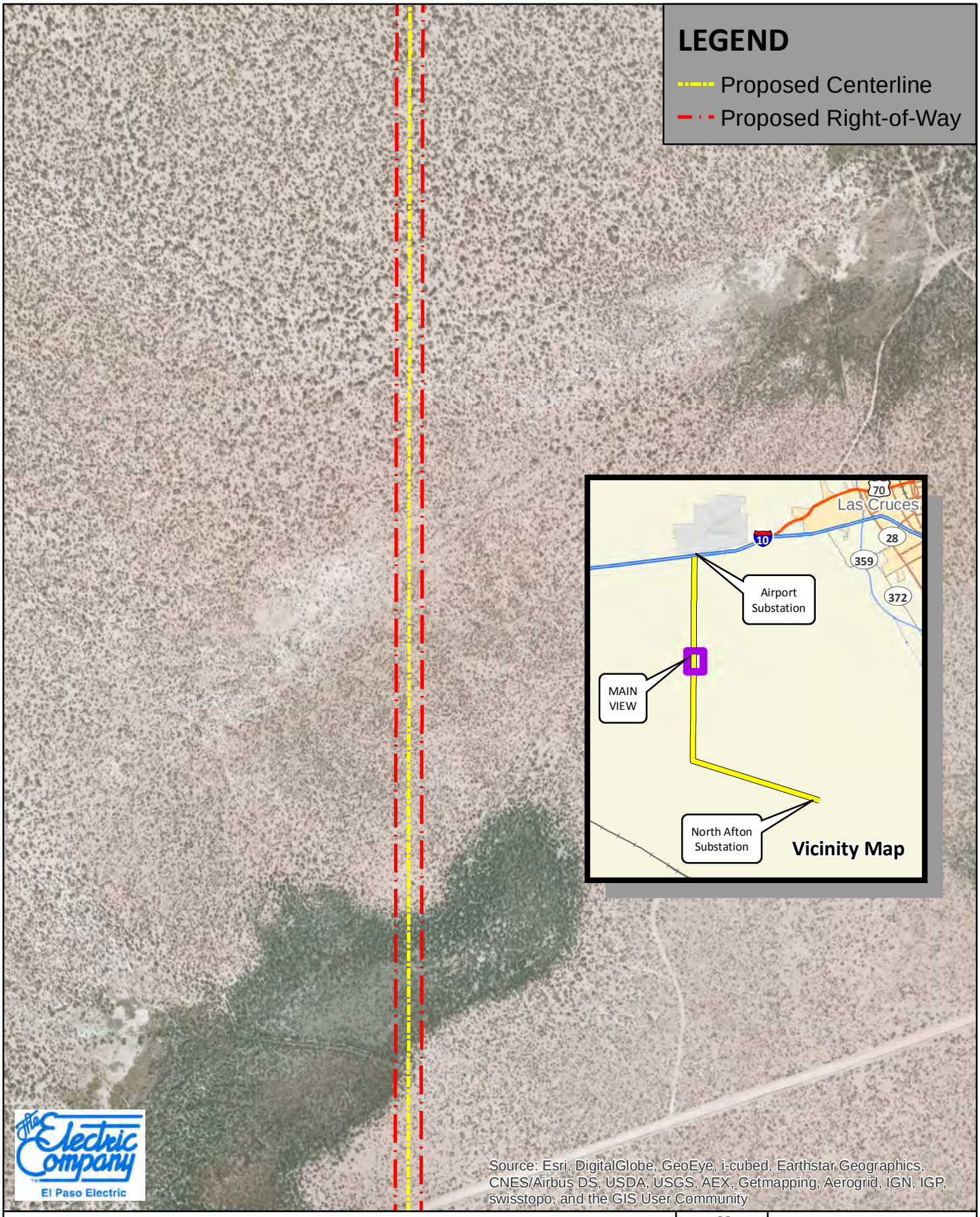
FIGURE 2.3D



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 2.3E



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3F

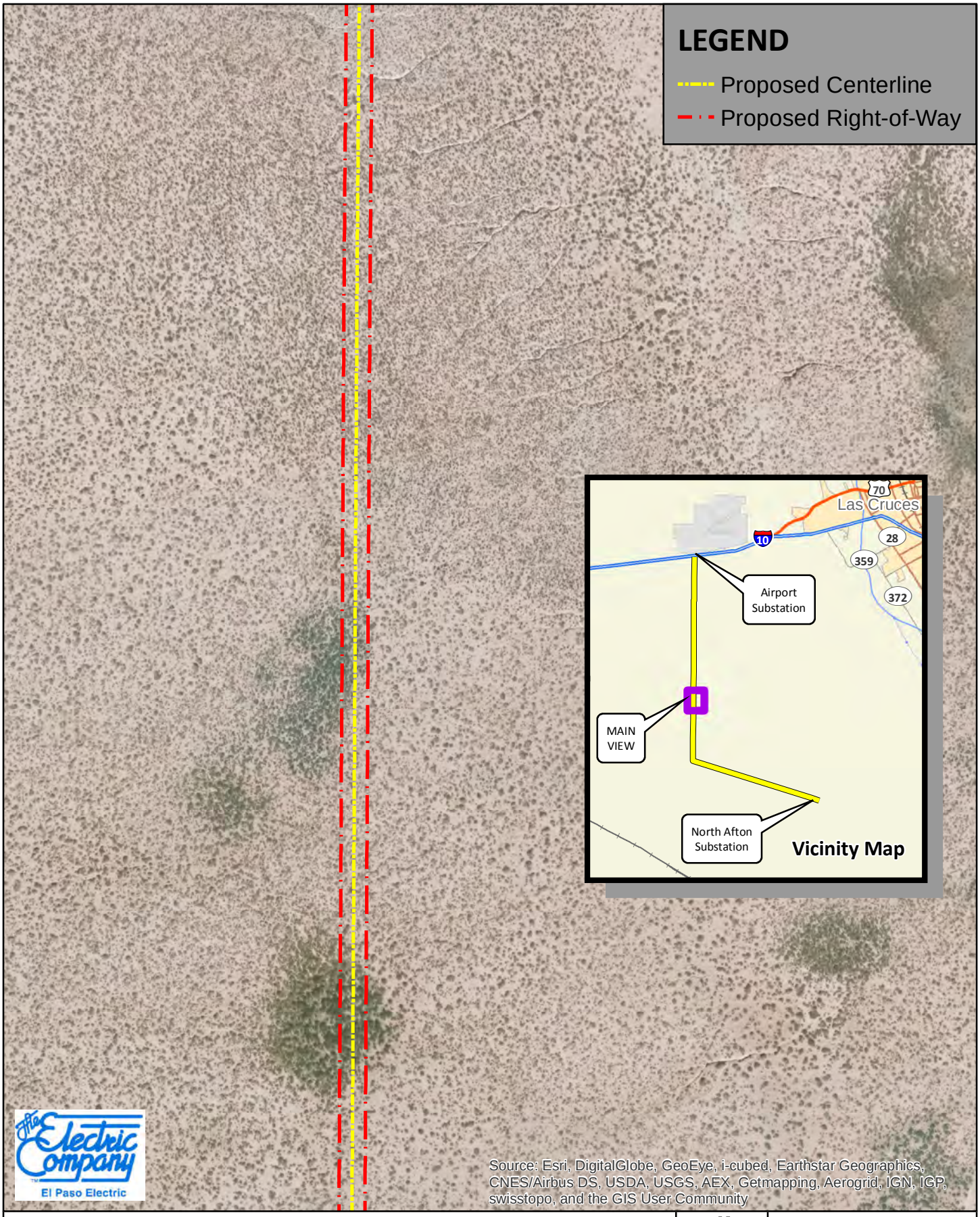
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3G



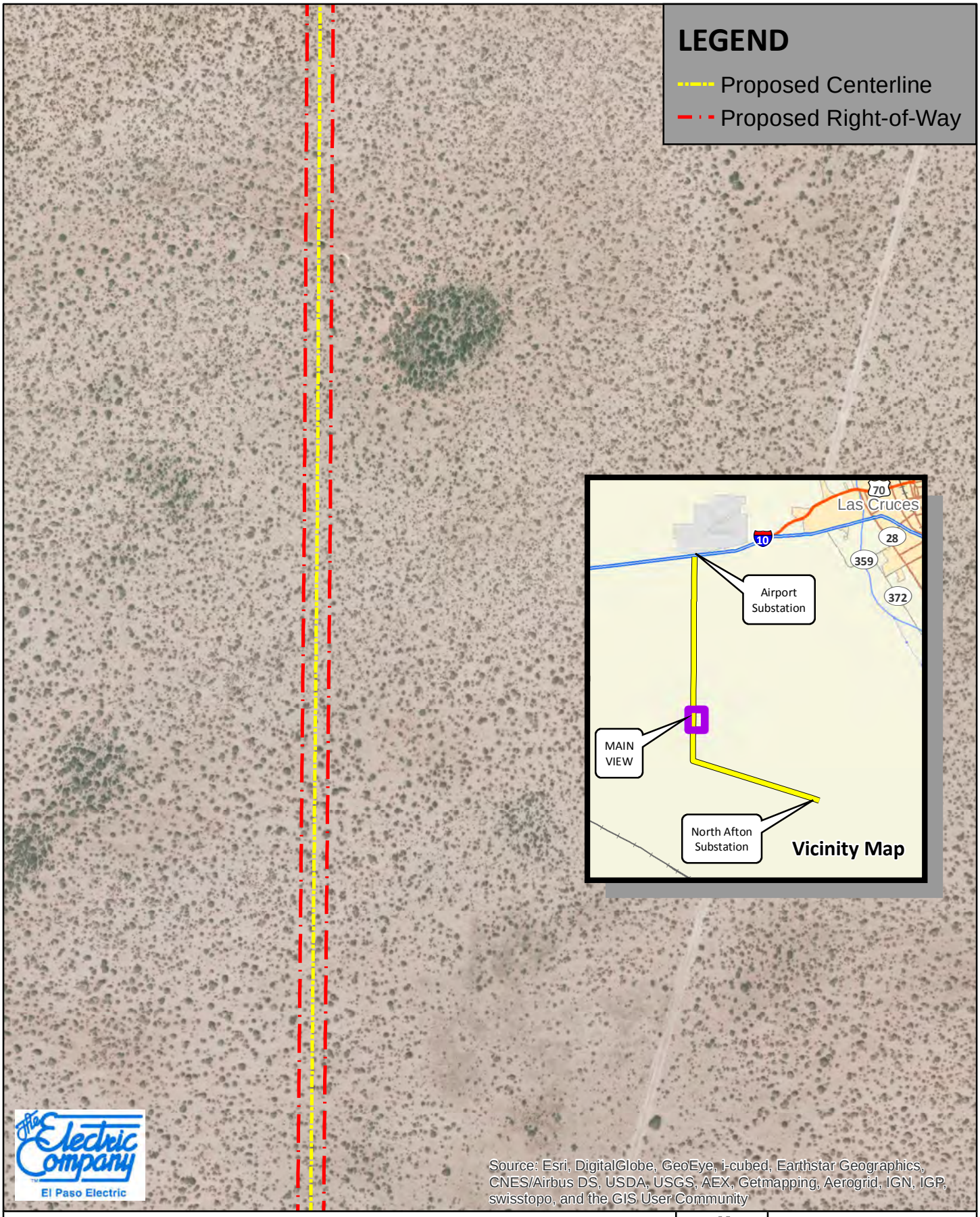
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3H



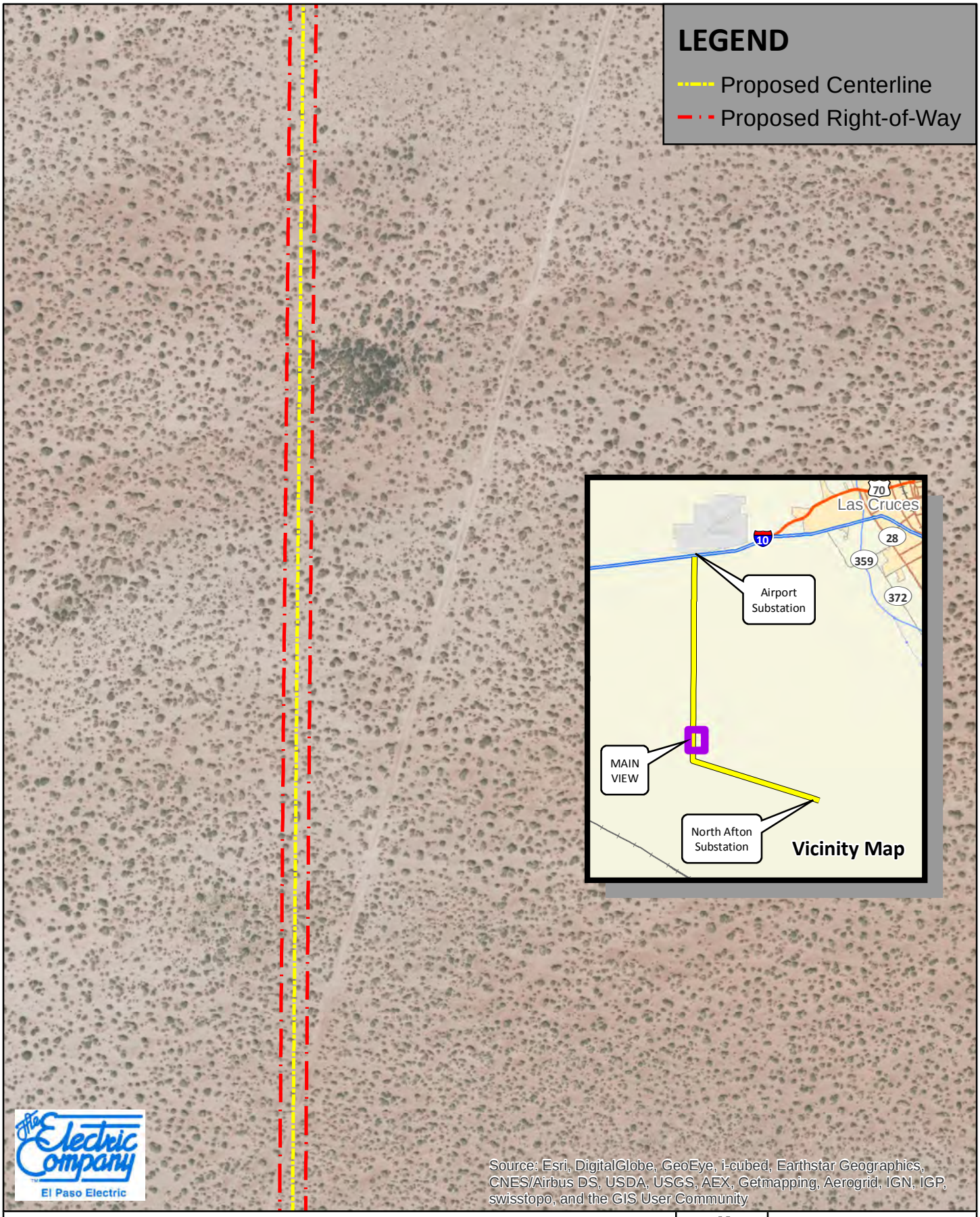
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3I



El Paso Electric Company
El Paso Electric

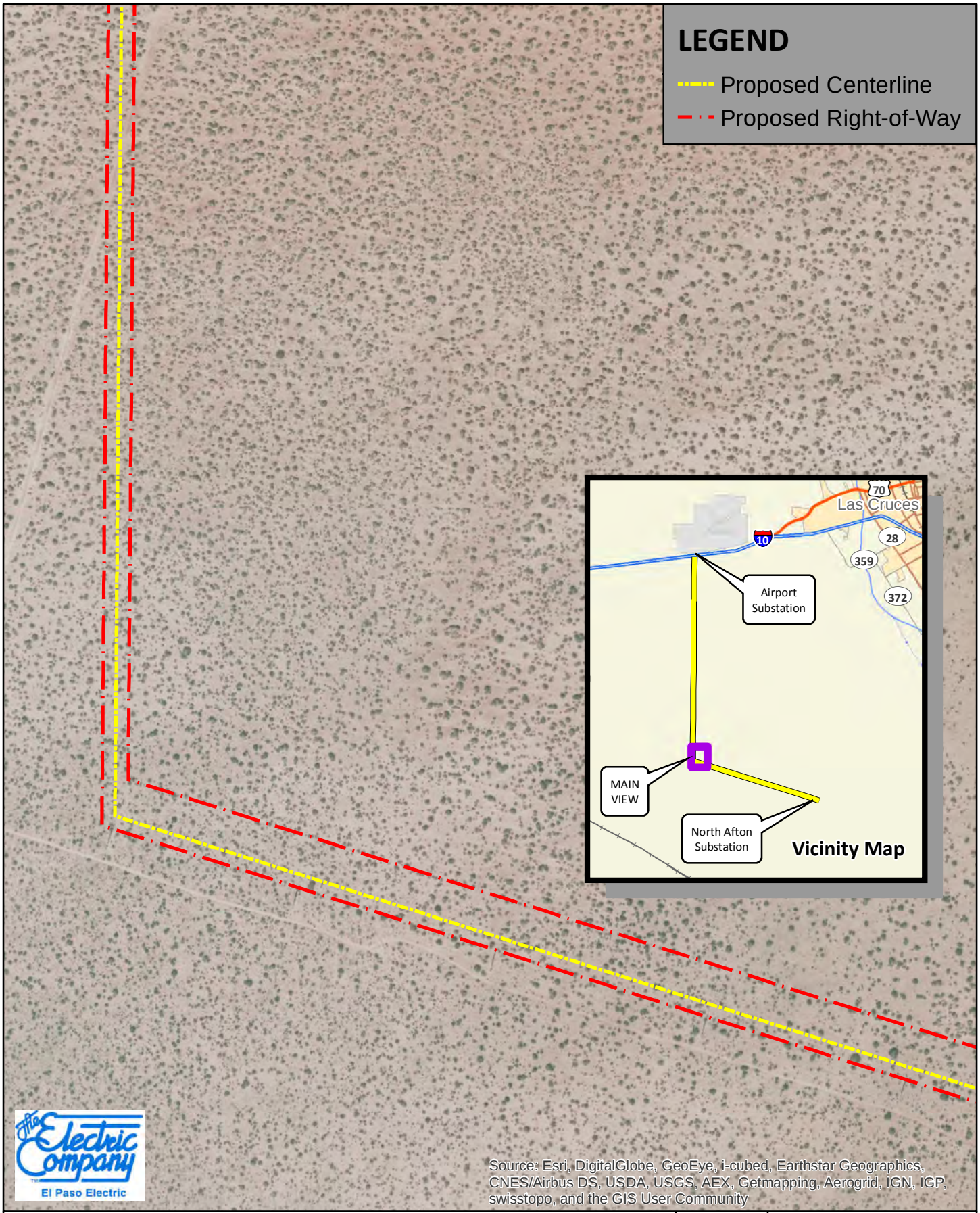
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3J



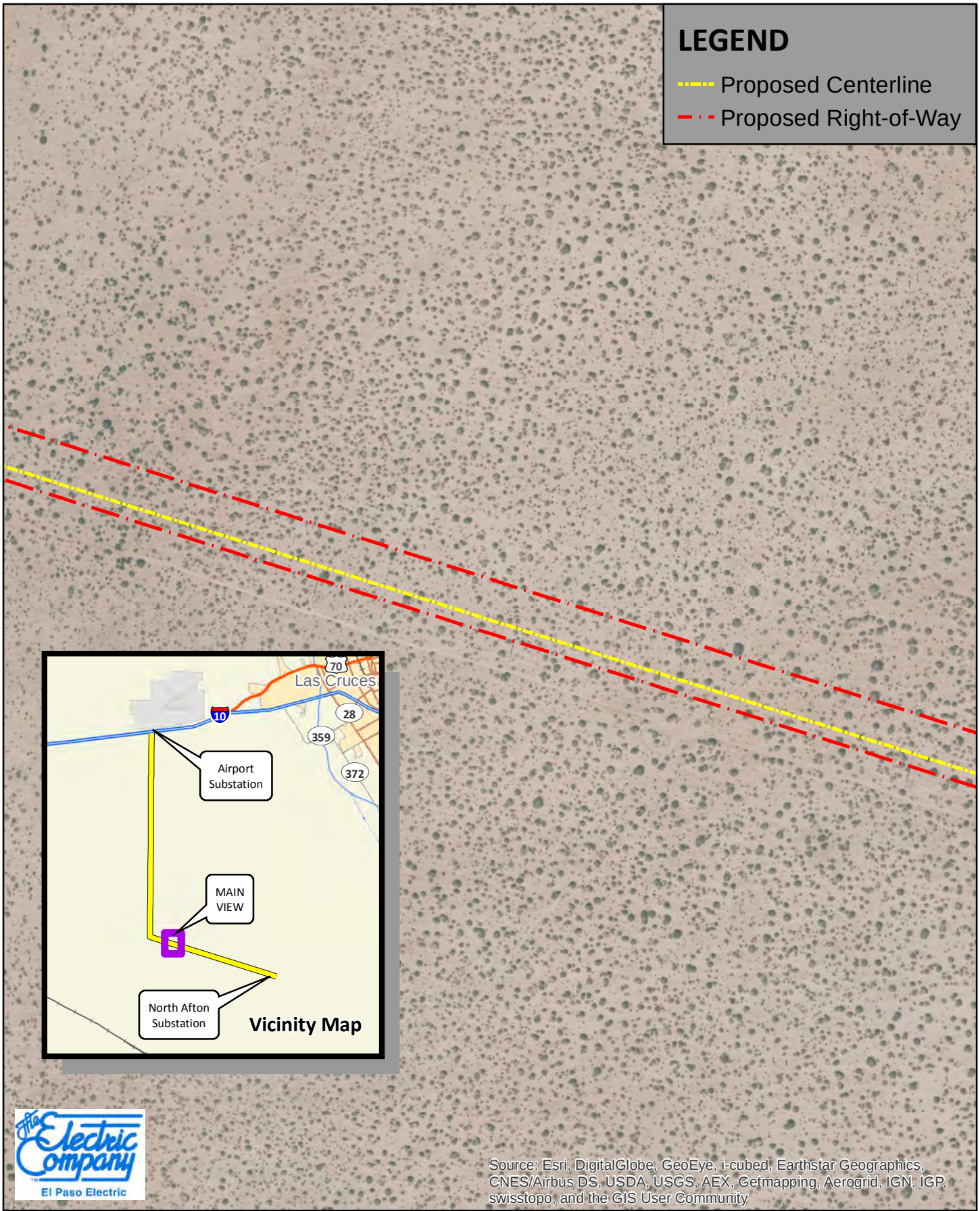
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3K



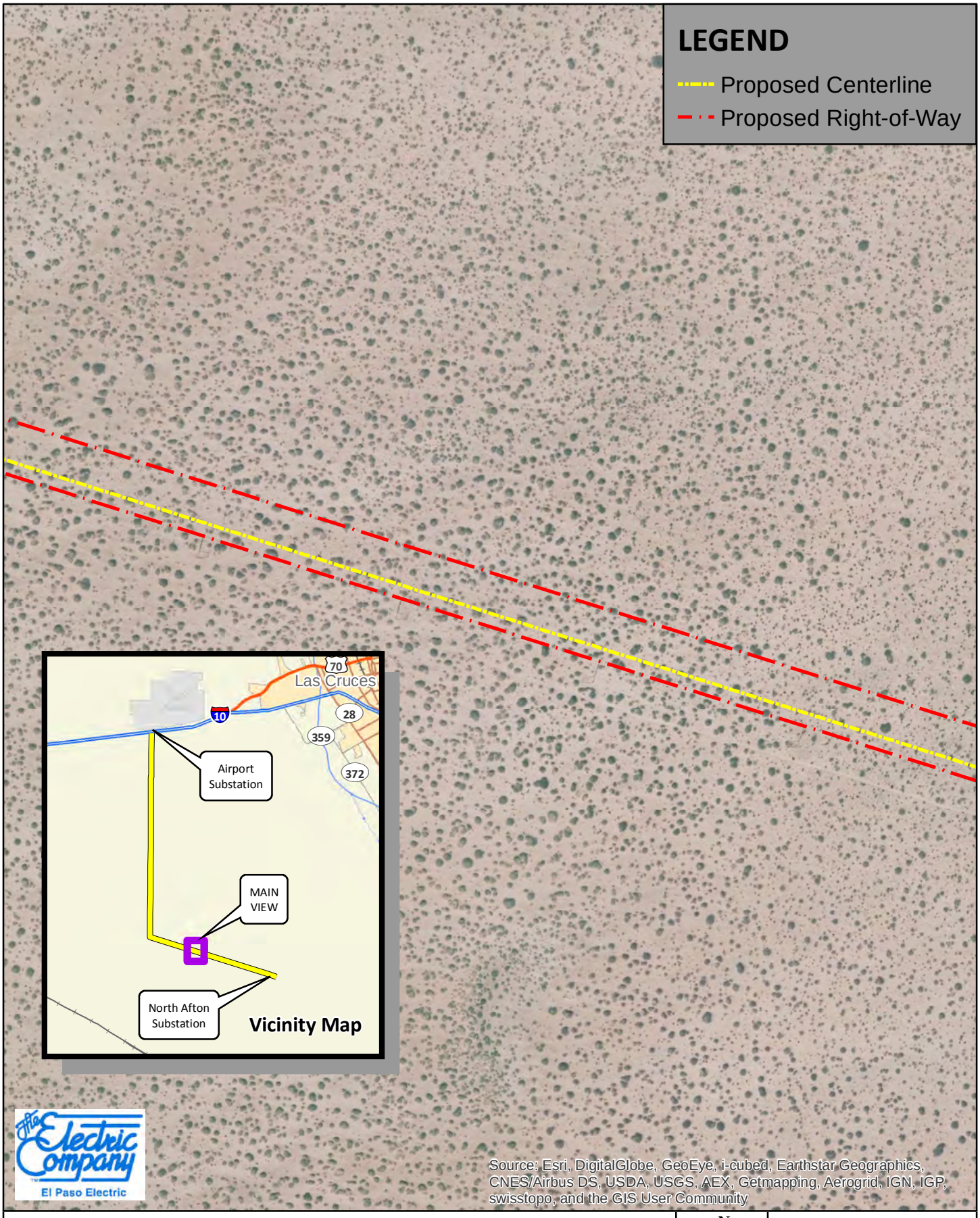
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3L



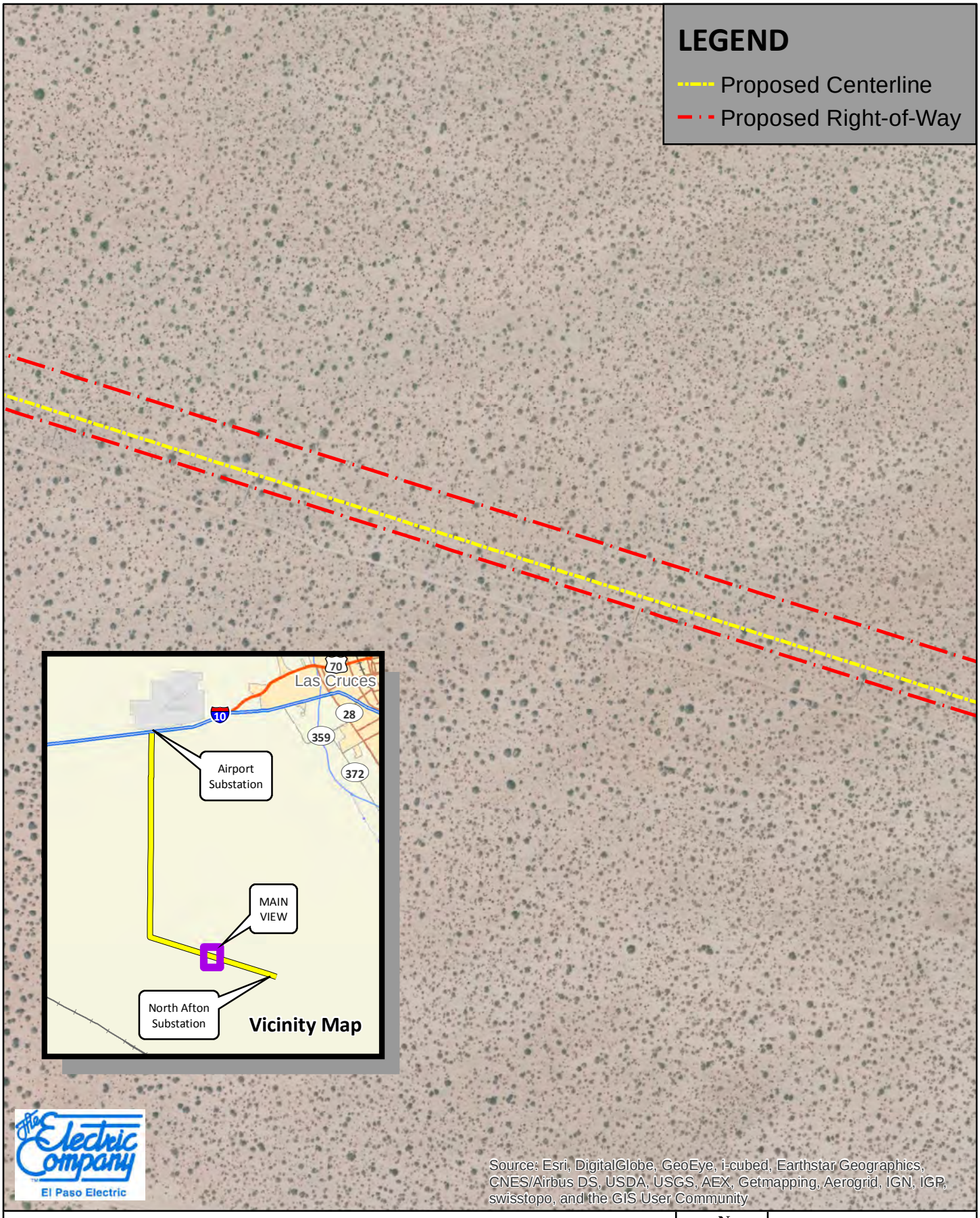
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3M



El Paso Electric

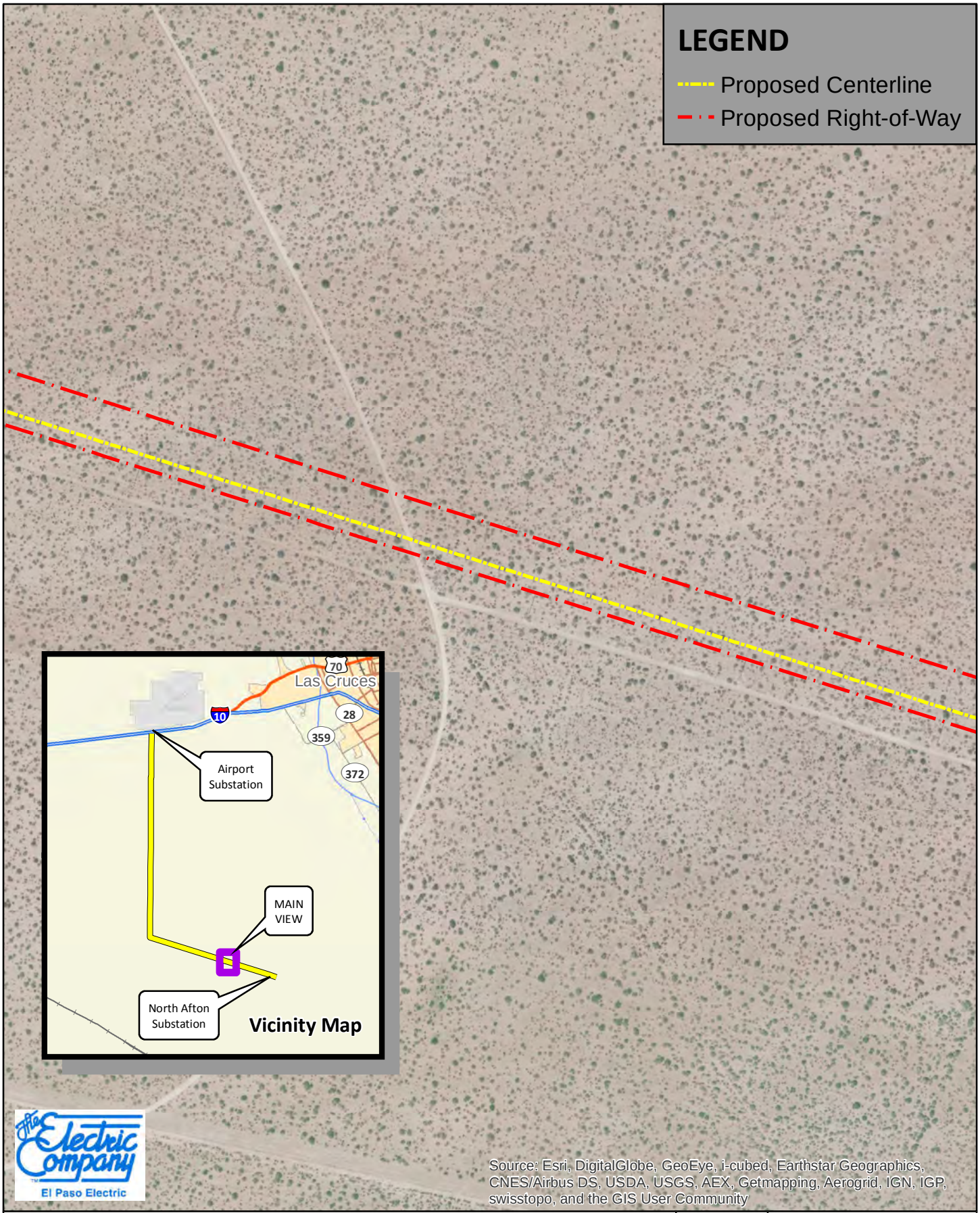
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3N



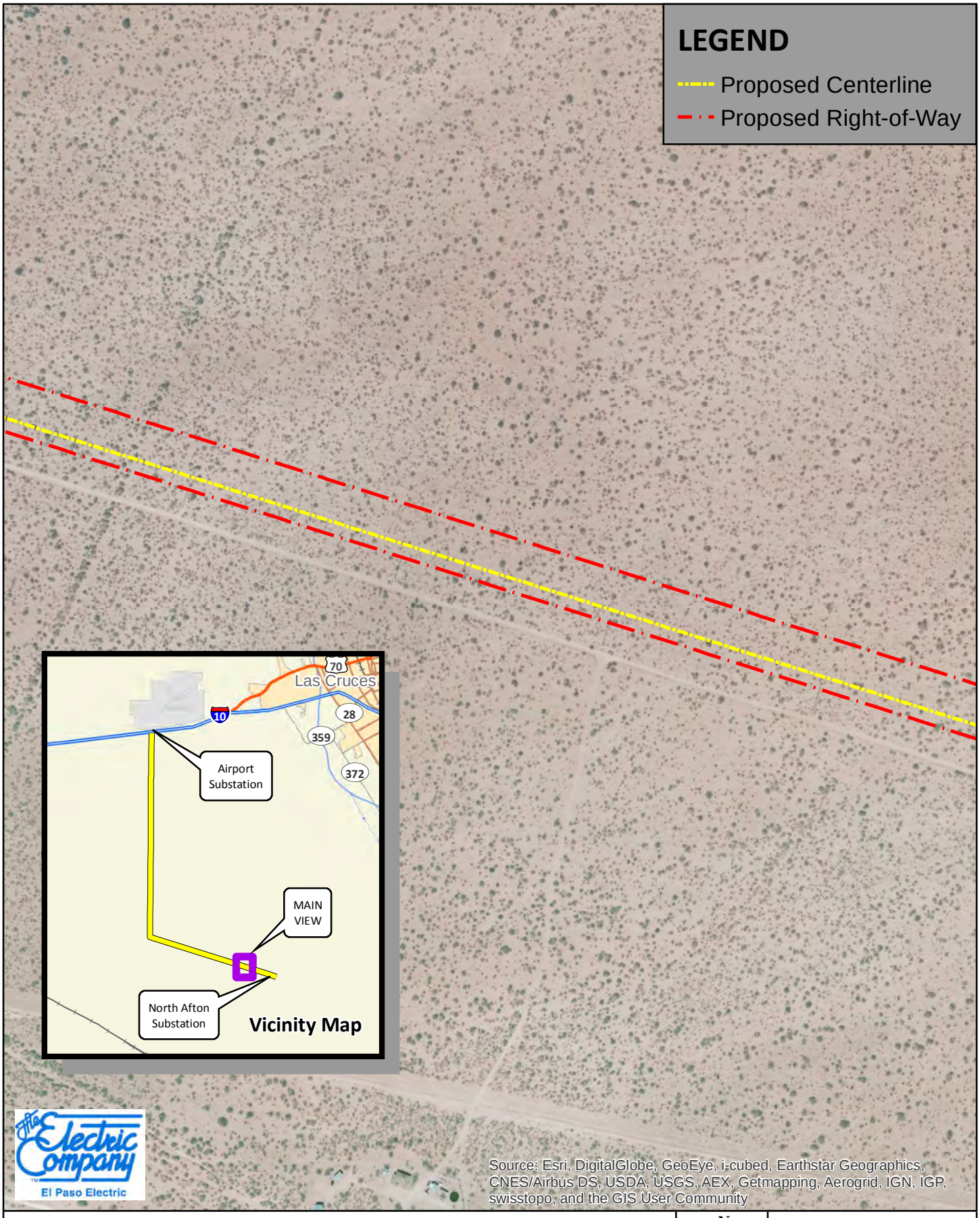
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3O



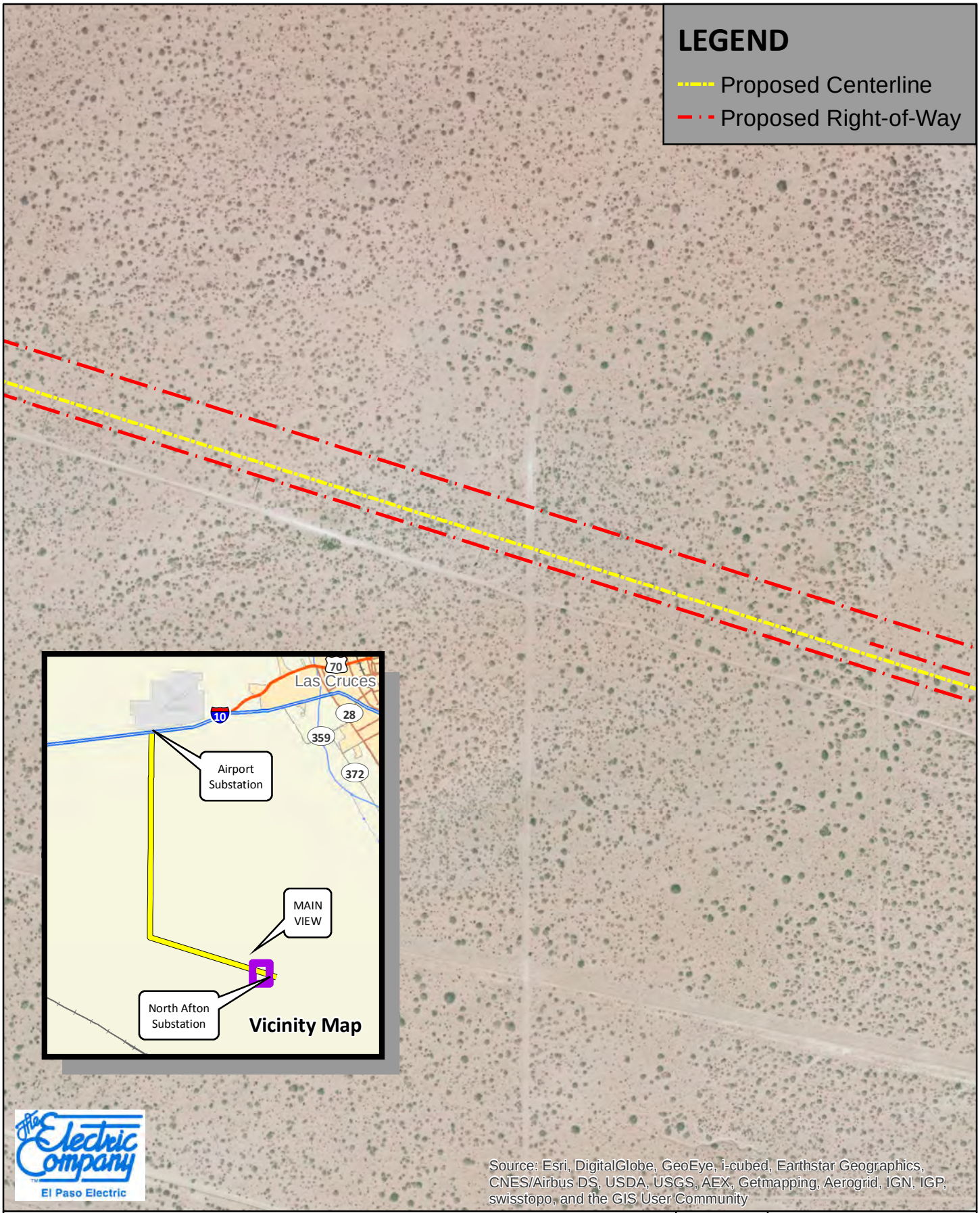
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3P



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3Q

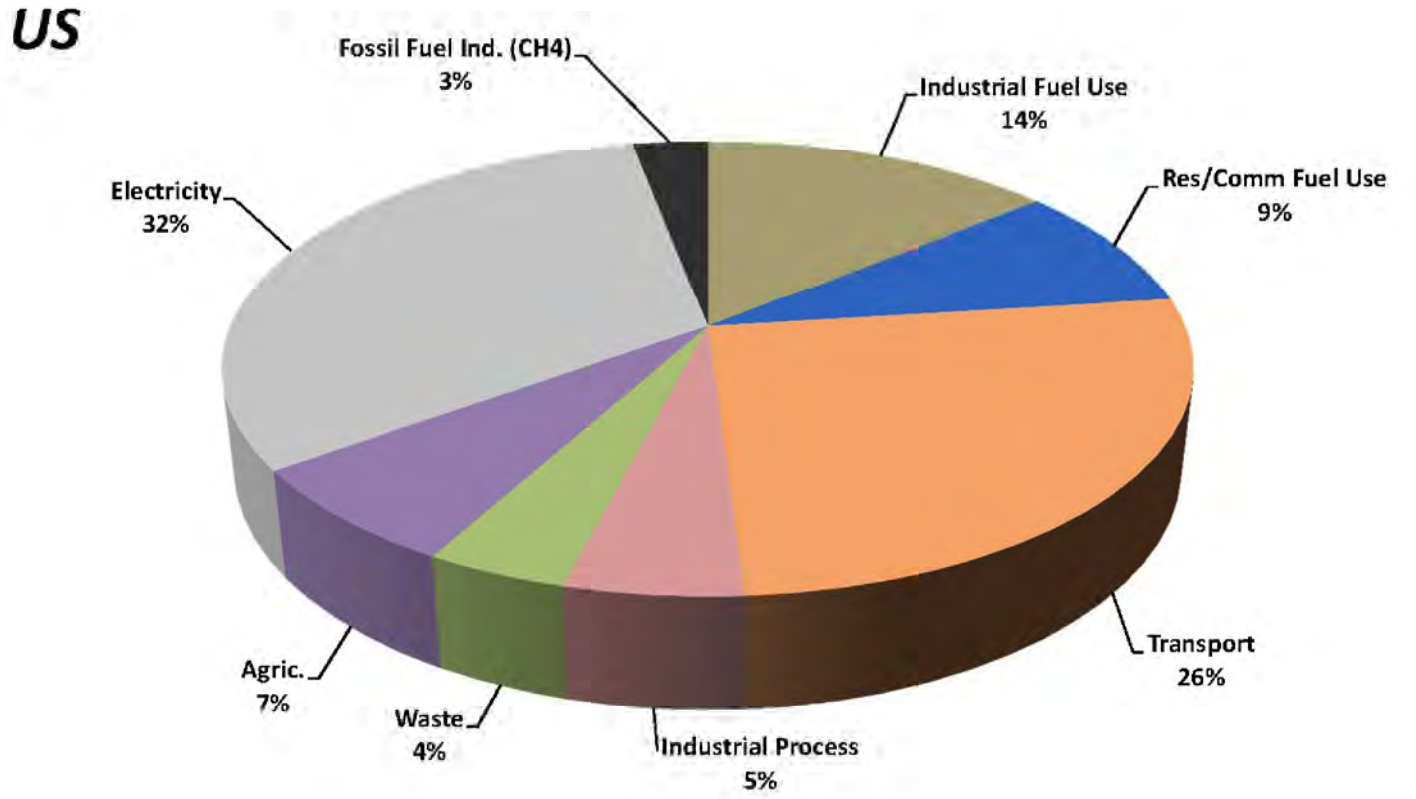
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2.3R



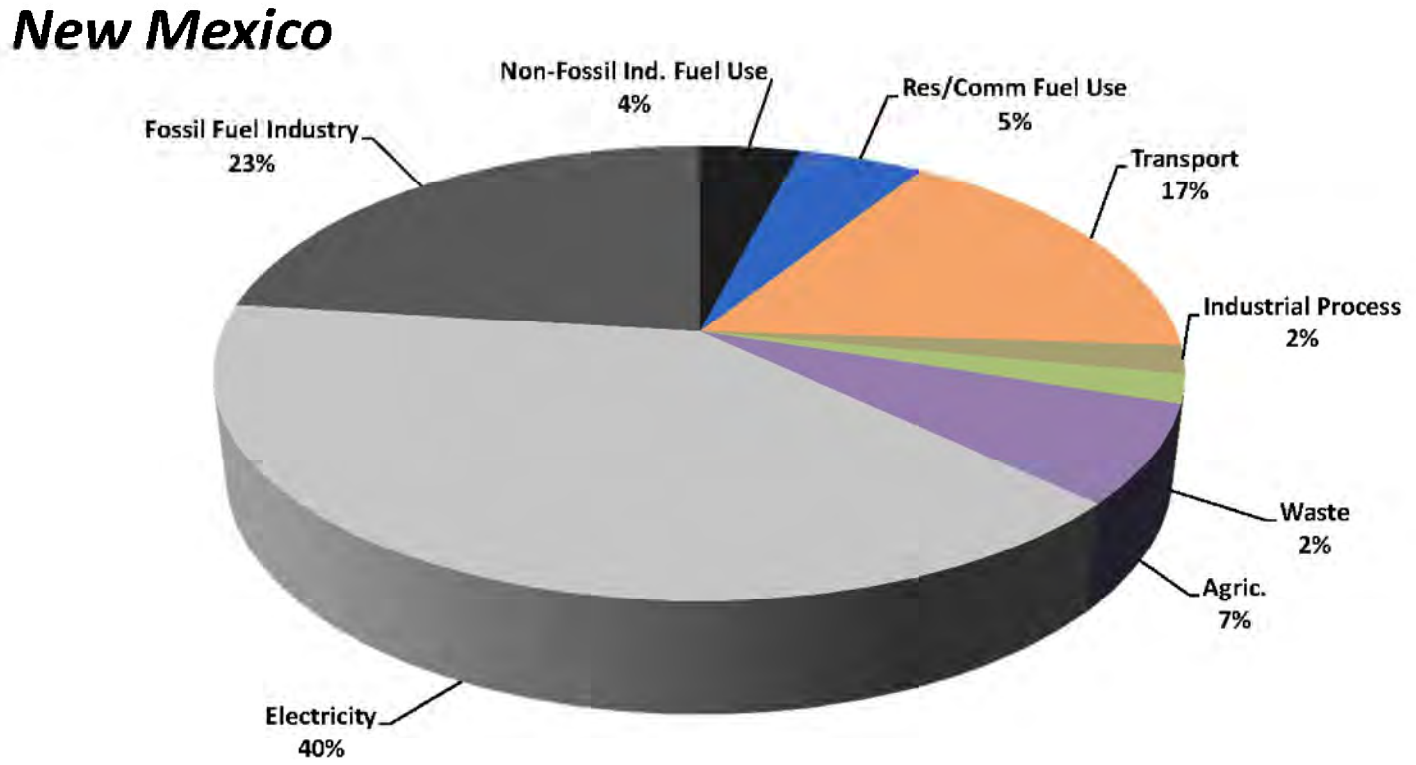


Figure 3.1. Estimated Gross GHG Emissions in 2000 for New Mexico and the United States (from CCS, 2006).

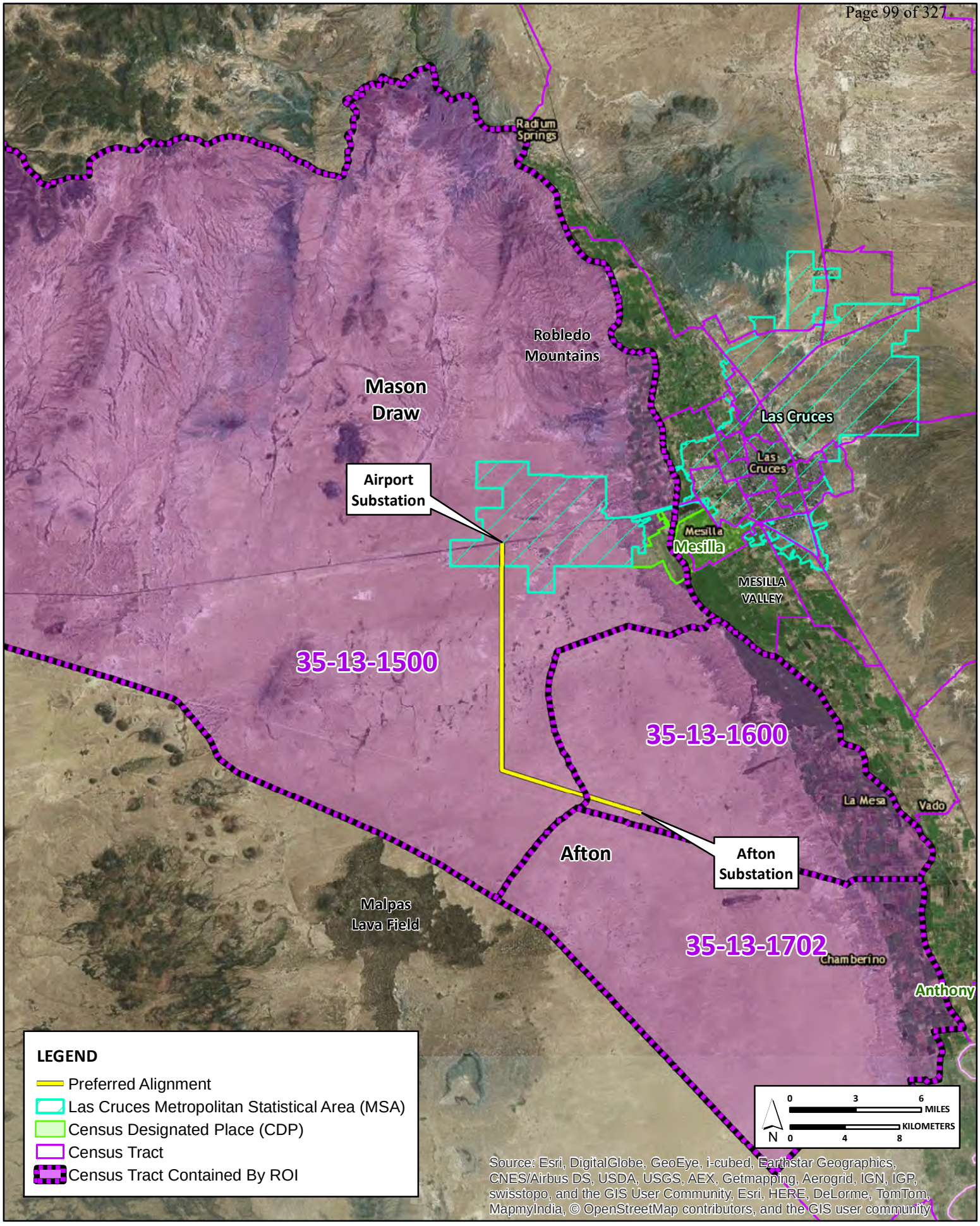


Figure 3.2. Census tracts, designated places, and the Las Cruces Metropolitan Statistical Area that include the proposed Afton - Airport Transmission Line project.

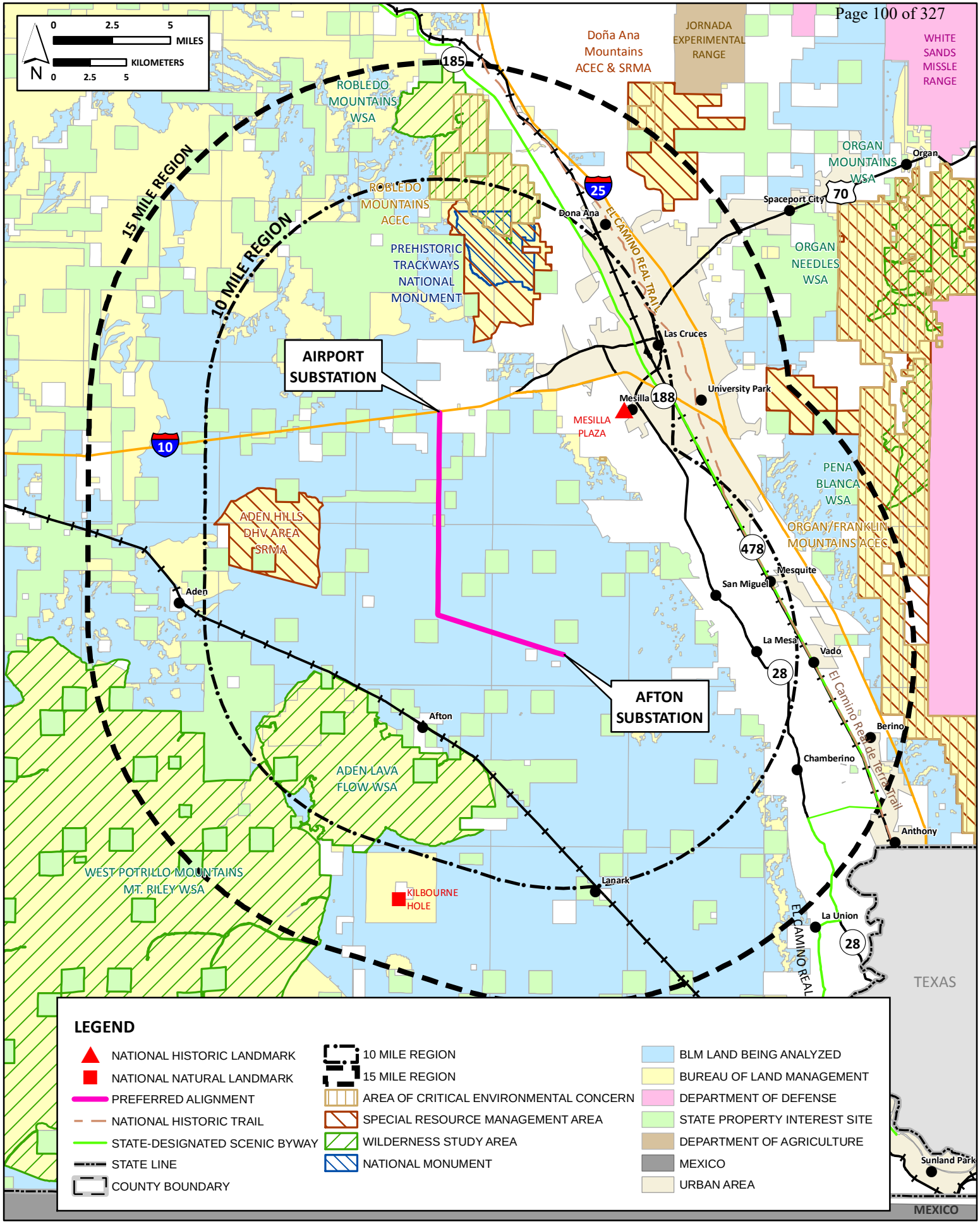


Figure 3.3. Areas of special designation within 10 miles (dot-dash line) and 15 miles (dashed line) of the proposed Afton-Airport Transmission Line project.

NMNM 129489

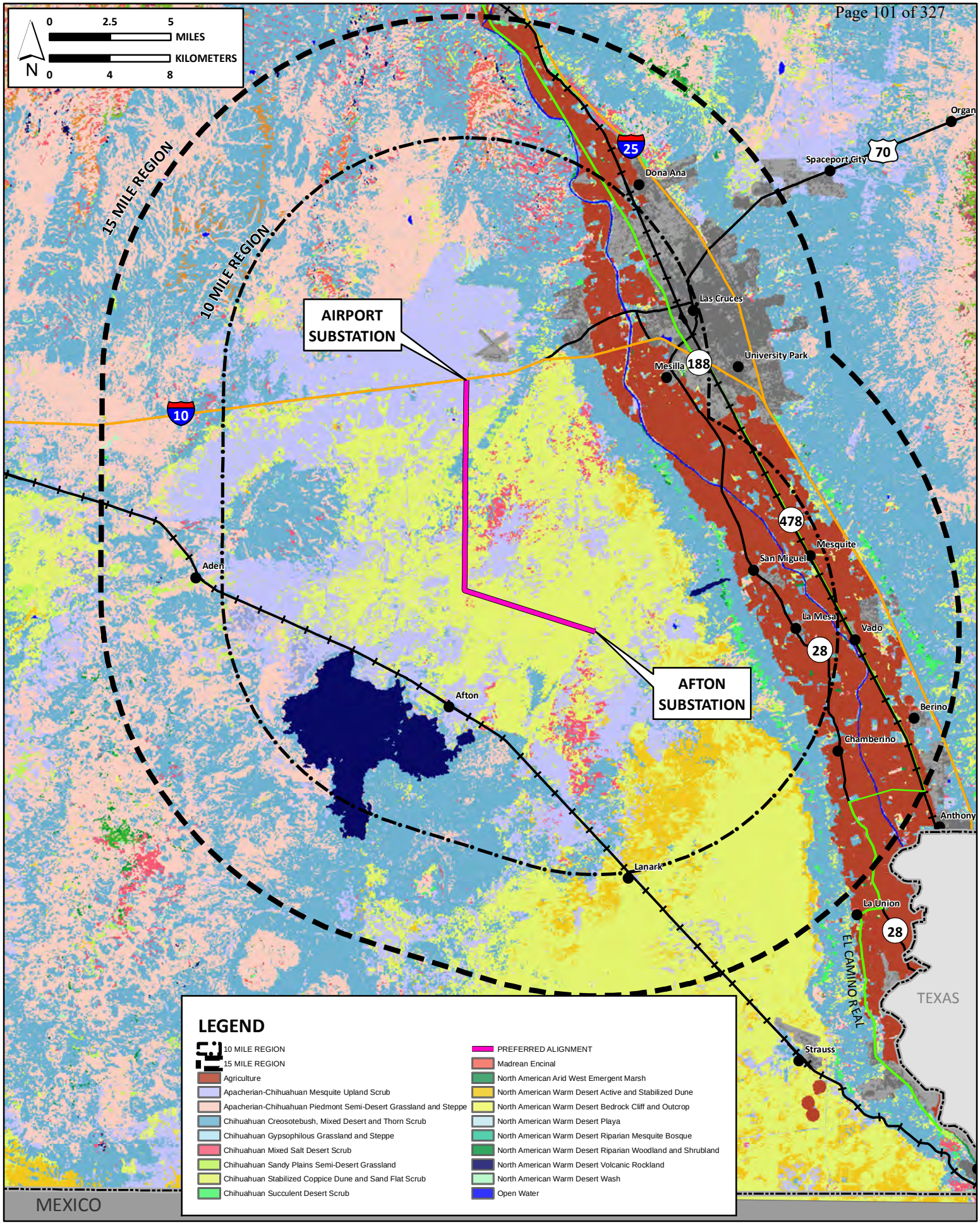


Figure 3.4. Land cover within 10 miles (dot-dash line) and 15 miles (dashed line) of the proposed Afton - Airport Transmission Line project.

NMNM 129489

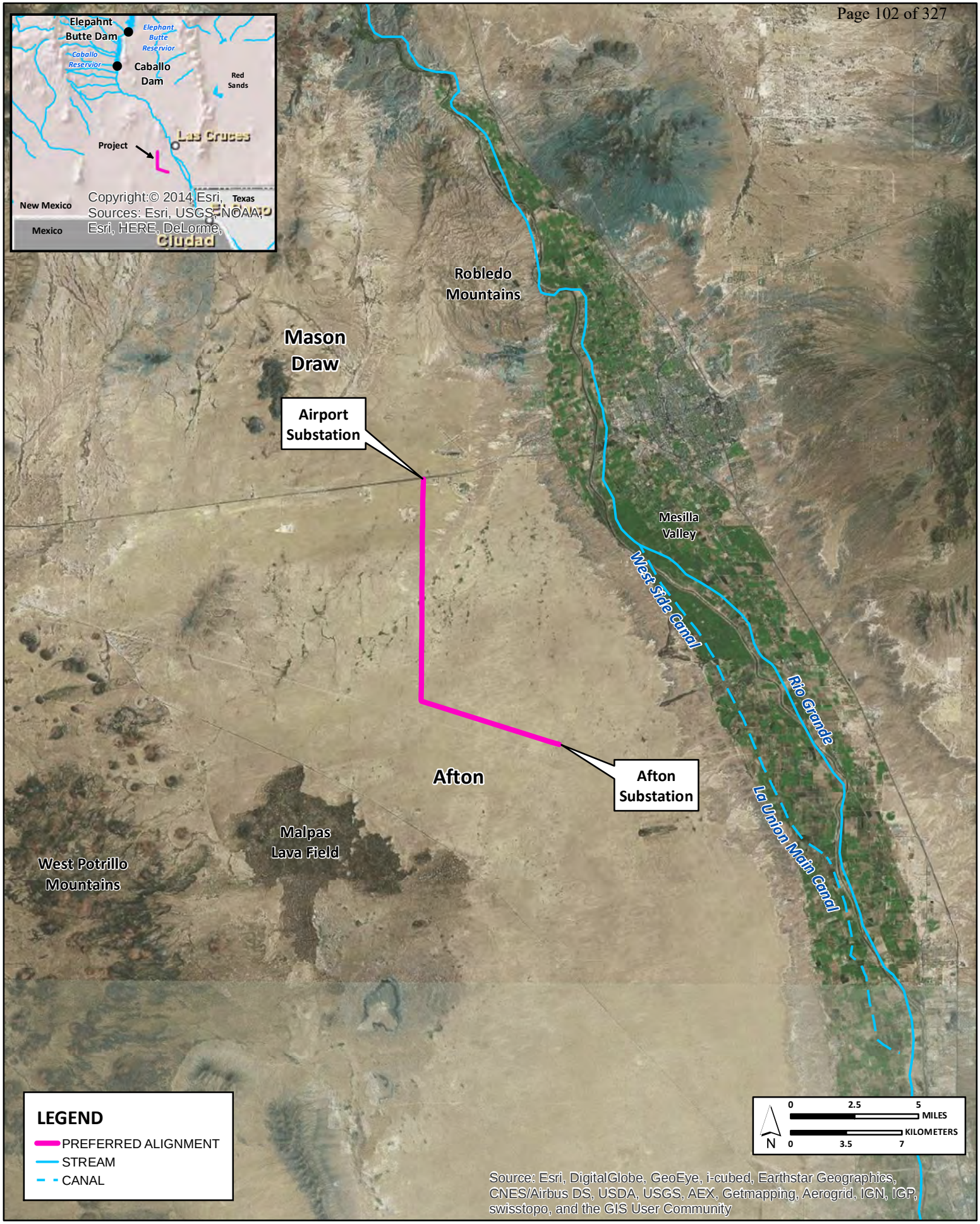


Figure 3.5. Surface water bodies in the vicinity of the proposed Afton - Airport Transmission Line.

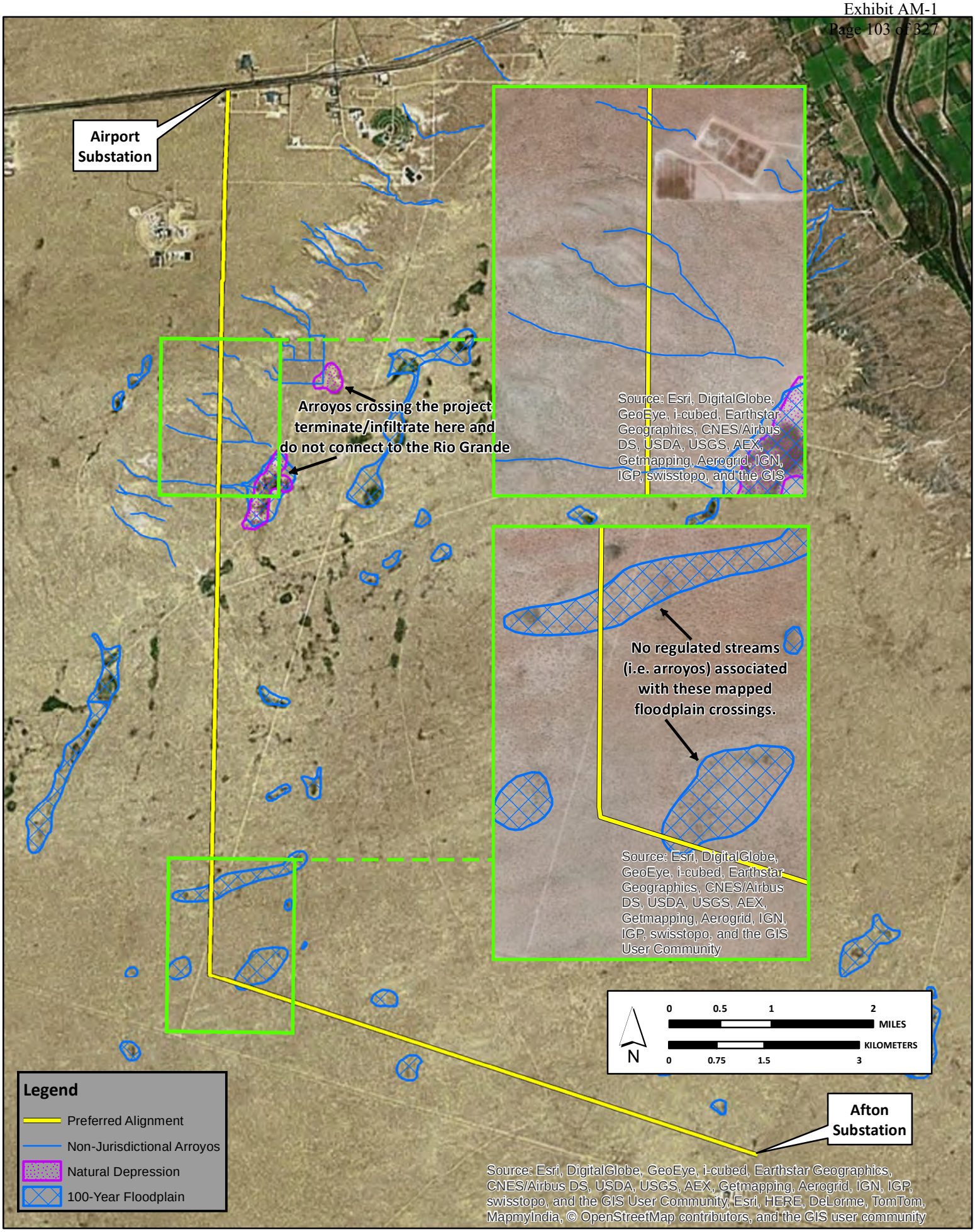


Figure 3.6. The preferred alignment for the proposed Afton-Airport Transmission Line with respect to waters. Insets show detail of non-jurisdictional arroyos and 100-year floodplains crossed by the preferred alignment.

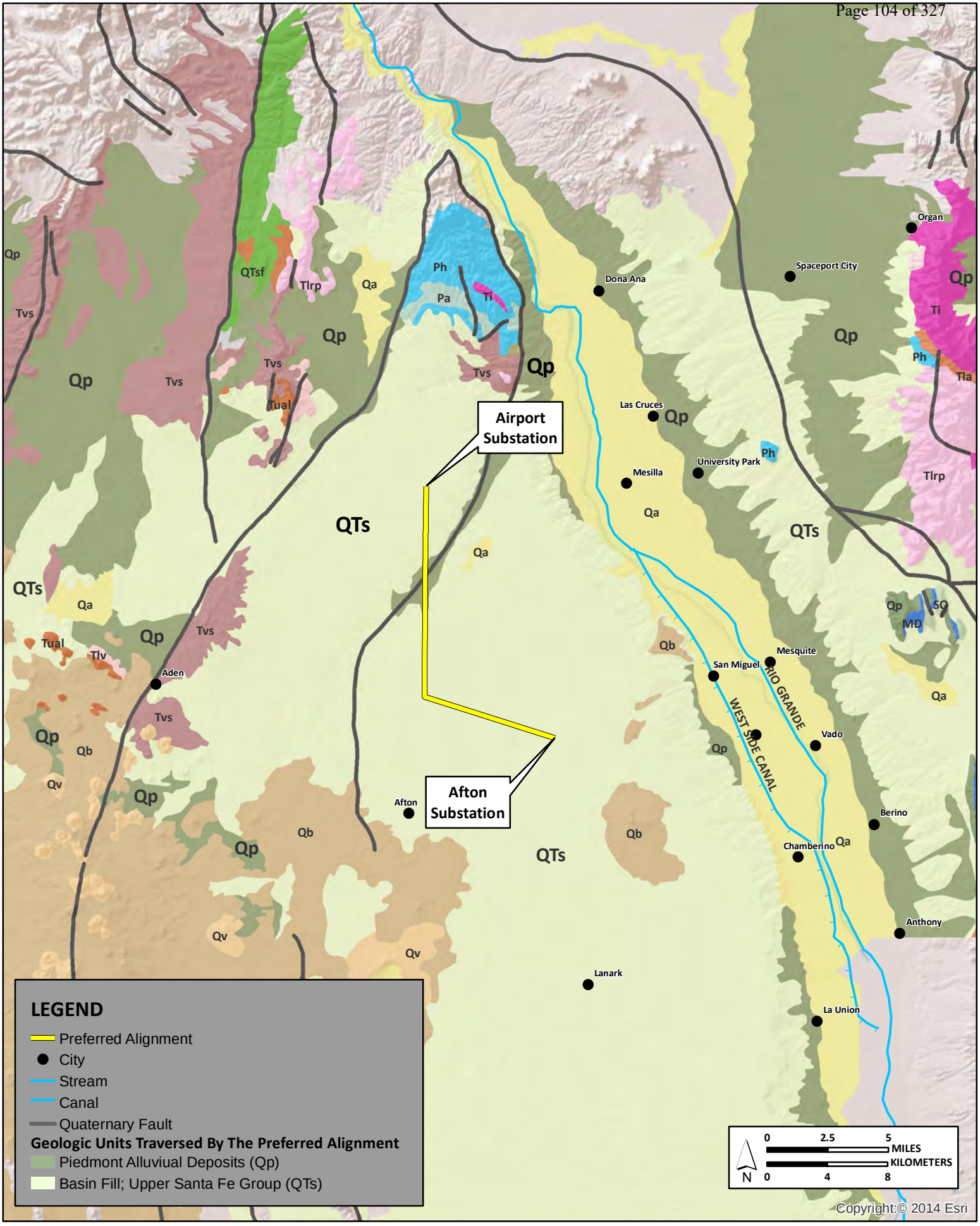


Figure 3.7. Surface geology in the vicinity of the proposed Afton - Airport Transmission Line project.

NMNM 129489

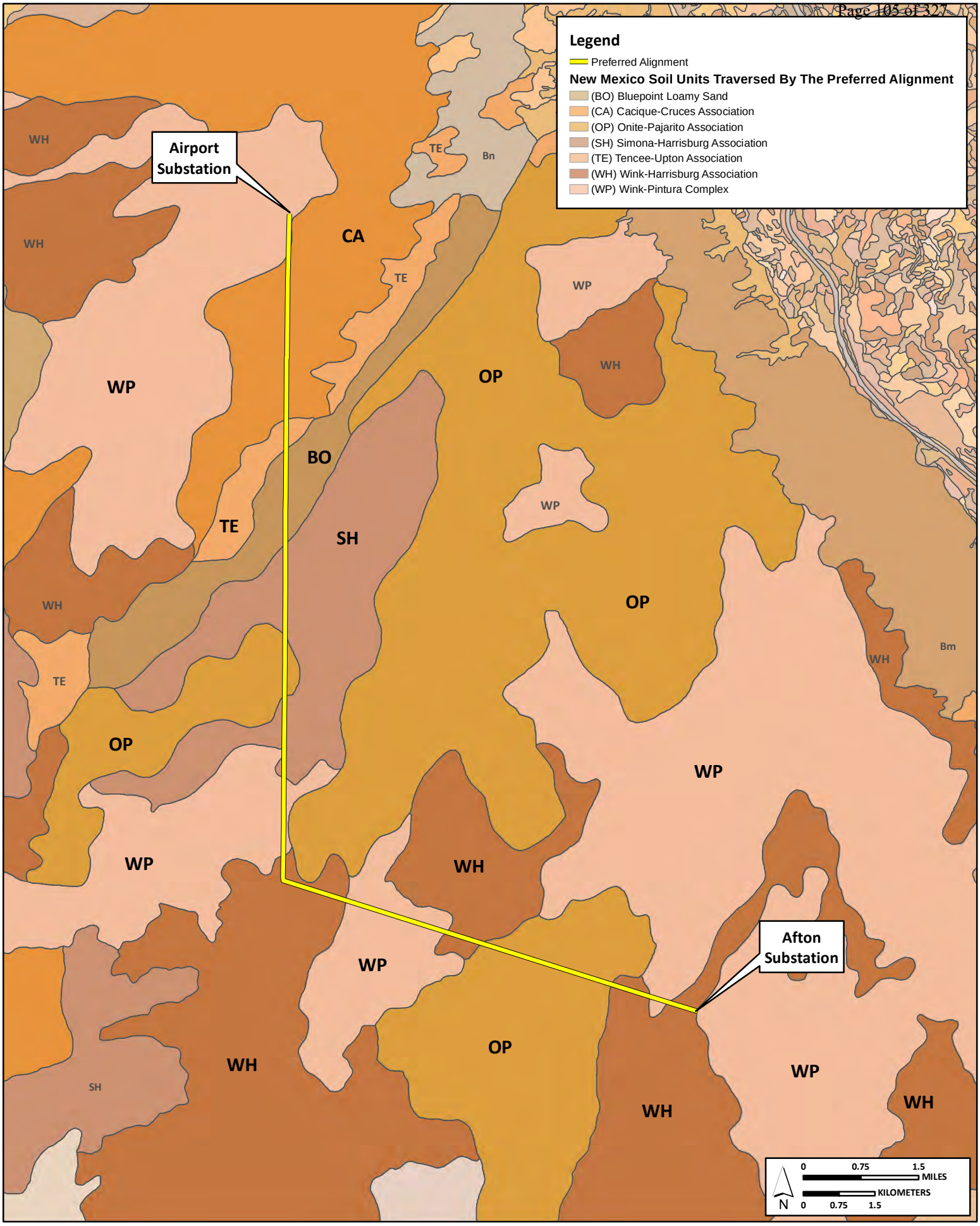


Figure 3.8. Soil types in the vicinity of the proposed Afton-Airport Transmission Line project.

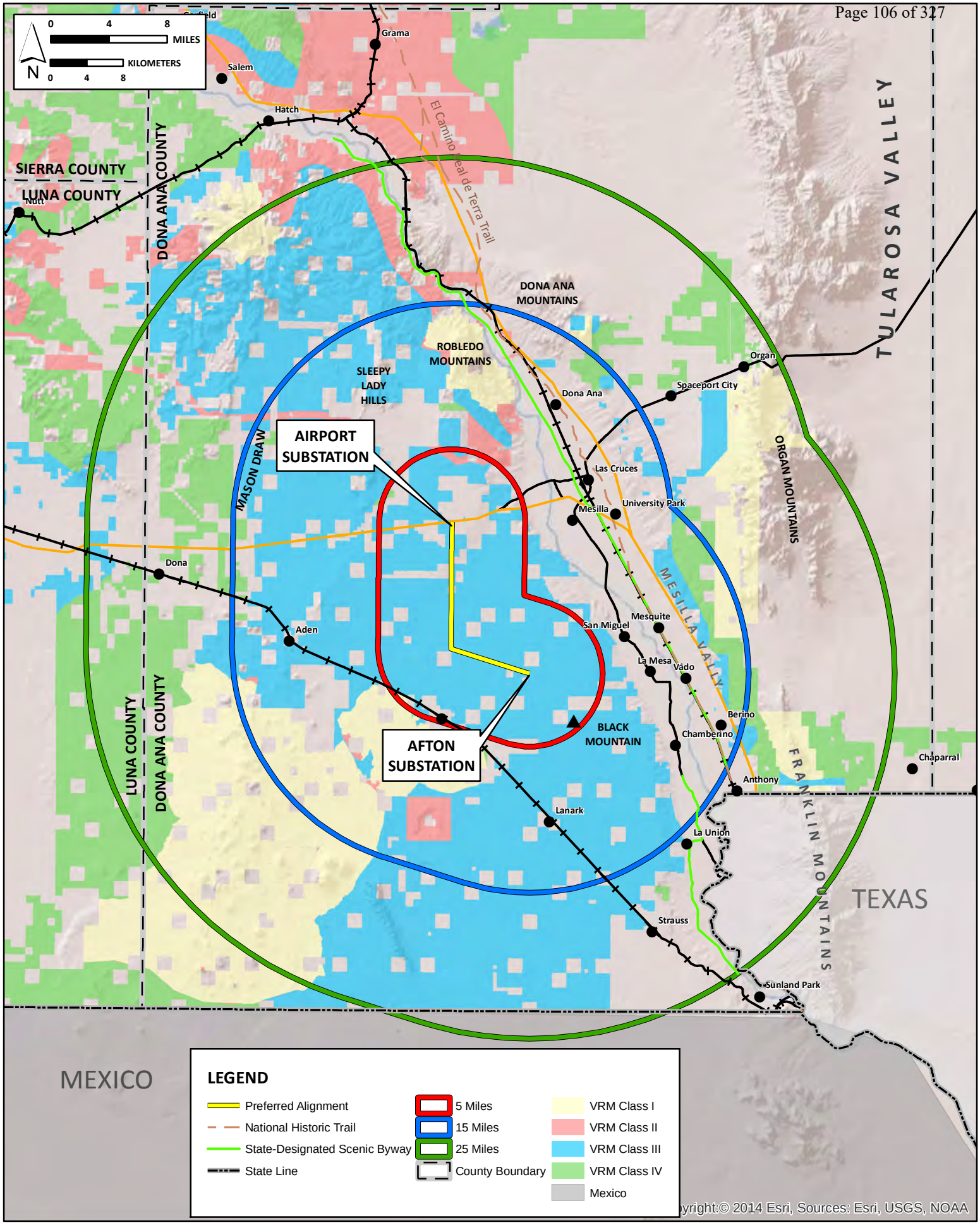


Figure 3.9. Visual Resource Management (VRM) classification in the vicinity of the proposed Afton-Airport Transmission Line project.

NMNM 129489

COMMON SOUNDS	DECIBELS*	EFFECT
Jet Operation	140	Painfully Loud
	130	
Jet Takeoff Thunder Rock Concert	120	Maximum Vocal Effort
Pile Drivers	110	
Garbage Truck	100	
Heavy Truck (50 ft)	90	Very Annoying Hearing Damage at 8 hr
Alarm Clock Hair Dryer	80	Annoying
Freeway Traffic Man's Voice (3 ft)	70	Telephone Use Difficult
Air Conditioning Unit (20 ft)	60	Intrusive
Light Auto Traffic (100 ft)	50	
Living Room Quiet Office	40	
Library Soft Whisper (15 ft)	30	Very Quiet
Broadcasting Studio	20	
	10	Just Audible

*To the ear each 10 dB increases sounds twice as loud. 70 dB is the point at which noise begins to harm hearing.

Figure 3.10. Comparison of Noise Levels Associated with Common Activities (After EPA, 1981)

APPENDIX B

SCOPING AND CONSULTATIONS

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
www.blm.gov/nm

TAKE PRIDE IN AMERICA

In Reply Refer To:
2800 (L0310)

AUG 1 2013

Dear Interested Party:

The Bureau of Land Management (BLM) invites you to participate in a public process to gather input regarding the preparation of an Environmental Assessment (EA) for a right-of-way application for a proposed new 115/345-kV Transmission Line in Doña Ana County, New Mexico. The proposed EA will analyze the potential effects from the construction and operation of the transmission line and the associated infrastructure. The BLM has determined that preparation of an EA is necessary under the National Environmental Policy Act (NEPA) and Council on Environmental Quality implementing regulations in 40 CFR Parts 1500 to 1508.

The BLM received a revised right-of-way application from El Paso Electric Company (EPE) on March 26, 2013 to construct, operate, and maintain a new 14.3-mile long, 115-kilovolt (kV) transmission line that would extend from a new autotransformer (Afton Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 (see Figure 1-1). The proposed circuit will have a capacity to transmit 140 megawatts (MW) at normal operation and 200 MW under emergency conditions. The transmission line would be located on Federal (about 12.75 miles of the total length), State trust (about 1.5 miles), and private lands (0.06 miles), paralleling existing utility lines and following parcel section lines as much as practicable to avoid dividing properties. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round, and include maintenance, replacement of equipment, and operation.

This project is an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations in 36 CFR Part 800. In accordance with 36 CFR 800.2(a)(2), the BLM will serve as the "Lead Agency" for the purposes of the Section 106 review.

Public participation and scoping is now underway for this project. We are inviting you to comment on the proposed project in accordance with Section 106 of the NHPA and NEPA. Your input is important to us, and we would like to hear about your issues and concerns.

You may submit comments at any time during the preparation of the EA; however, if you would like to have your comments considered for inclusion in the Draft EA, they must be submitted by September 5, 2013. There are several ways in which you can submit your comments on the proposed project:

- File your comments electronically by sending them to: BLM_NM_LCDO_Comments@blm.gov. Please include "Afton Transmission Line EA Comments" in the subject line of your email.
- Mail your comments to: "Afton Transmission Line EA Project", BLM Las Cruces District Office, ATTN: Kendrah Penn, 1800 Marquess Street, Las Cruces, New Mexico 88005
- Submit your comments on the enclosed postage paid Comment Form

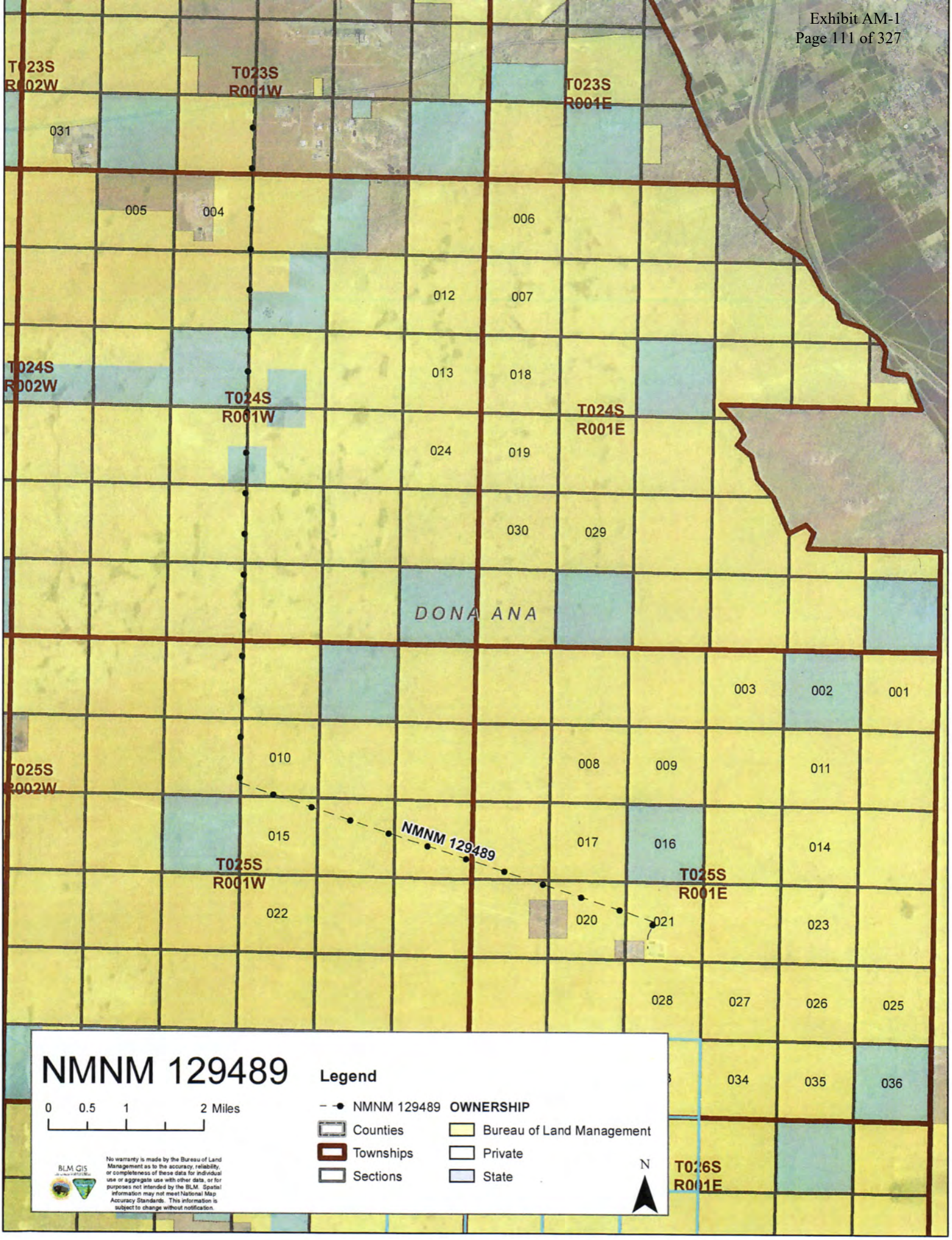
Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

If you have any questions about this Project, please contact Kendrah Penn, Project Lead, at (575) 525-4382. We appreciate your participation in this proposed Project.

Sincerely,

David L. Wallace
Assistant District Manager
Division of Multi-Resources

2 Enclosures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Bureau of Land Management
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BLM GIS
No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

8100 (L0310)

NOV 1 2 2014

Mr. Jimmy Arterberry
Comanche Indian Tribe
NAGPRA and HISTORIC
PRESERVATION PROGRAM
6 SW "D" Avenue
Lawton, OK 73507

Dear Mr. Arterberry:

The Bureau of Land Management (BLM) received a revised right-of-way (ROW) application from El Paso Electric Company (EPE) to construct, operate and maintain a new 14.3-mile long, 15 kilovolt (kV) transmission line, access road, and substation. EPE is a regional electric utility providing generation, transmission, and distribution service to approximately 380,000 retail and wholesale customers in a 10,000 square-mile area of west Texas and Southern New Mexico. The territory extends from Hatch, New Mexico to Van Horn, Texas and includes two connections to Mexico.

The transmission line would be located on Federal, state, municipal, and private lands in southwest New Mexico, paralleling existing utility lines and following parcel section lines as much as practicable. Temporary and permanent access roads for construction and maintenance would be constructed along the proposed ROW, with access points from existing county roads.

Two archaeological surveys were conducted on the properties being considered for development by EPE. *"A Class III Cultural Resource Survey for the Proposed El Paso Electric WA3 Line, Afton to Airport, Doña Ana County, New Mexico"* is entered into the New Mexico Cultural Resource Information System (NMCRIS) as Activity Number 125271. The report was produced by Marron and Associates. Twenty-six sites were evaluated during the course of this project. Five sites have been recommended as eligible for inclusion to the National Register of Historic Places (NRHP) under criteria D, these are LA 32577, LA 34355, LA 173969, LA 173971, and LA 174987, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. Four sites LA 6310, LA 20032, LA 35172, and LA 37891 were not relocated within the project area, it is presumed that these sites have been destroyed or have been misplotted. The 17 remaining sites evaluated for this survey were recommended not eligible.

"A Class III Cultural Resource Survey for the Proposed El Paso Electric Afton Substation, Doña Ana County, New Mexico" is entered into the NMCRIS system as Activity Number 125454. The report was produced by Marron and Associates. Ten sites were evaluated during the course of this project. Two sites have been recommended as eligible for inclusion to the NRHP under criteria D, these are LA 20034 and LA 66083, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. One site, LA 20032, was not relocated within the project area, it is presumed that this site has been destroyed or has been misplotted. The seven remaining sites evaluated for this survey were recommended not eligible.

While this letter is being sent to meet our consultation requirements under Section 106 of the National Historic Preservation Act, The Native American Graves and Repatriation Act, the American Indian Religious Freedom Act, as well as our 2004 Protocol and IM No. NM-2005-037, we are looking forward to your input on this process. In honoring these laws and documents, we are also asking whether there exist any known Traditional Cultural Properties or other areas of religious or cultural significance that would require avoidance, reconsideration of the area of potential effect, or other mitigation of the effects of these actions. Any information received on Traditional Cultural Properties or areas of religious significance will, at your request, be held in strict confidence.

In response to this letter or if you wish to begin further consultation on this issue, please contact Las Cruces District Archaeologist, James Renn at (575) 525-4395 or by e-mail at jrenn@blm.gov.

Sincerely,

/s/ Bill Childress

Bill Childress
District Manager

Identical letter sent to:
See attached list

L0310:JRenn:cp:10/31/2014:x4375:EPE.WA3Line.AftonSubSta.Comanche

Identical letter sent to:

Mr. Jimmy Arterberry
Comanche Indian Tribe
NAGPRA and HISTORIC
PRESERVATION PROGRAM
6 SW "D" Avenue
Lawton, OK 73507

Mr. Jeff Houser
Fort Sill Apache Tribe
Chairman, Fort Sill Apache Tribe
Route 2, Box 121
Apache, OK 73507

Mr. Leigh Kuwanwisiwma
Hopi Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039

Isleta Pueblo
Attention: Stephanie Zuni
Lt. Governor
P.O. Box 1270
Isleta Pueblo, NM 87022

Kiowa Tribe
Attention: Amie Tah-Bone
Museum Director and
Acting NAGPRA Representative
Kiowa Tribe of Oklahoma
P.O. Box #369
Carnegie, OK 73015

Ms. Holly Houghten
Mescalero Apache Tribe
P.O. Box 227
Mescalero, NM 88340

Navajo Nation
Dr. Alan S. Downer
THPO and Department Manager
Historic Preservation
P.O. Box 4950
Window Rock, AZ 86515

Mr. Mark Altaha
White Mountain Apache Tribe
Heritage Program Historic Preservation
Office
P.O. Box 507
Fort Apache, AZ 85926

Mr. Javier Loera
Ysleta Del Sur Pueblo
Tribal Council Office
P.O. Box 17579
El Paso, TX 79907

8100 (L0310)

NOV 1 2 2014

Dr. Jeff Pappas
Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas:

Please find the cultural resource survey reports for two El Paso Electric Company (EPE) projects. EPE proposes to construct a 14.3-mile, 115 kV transmission line and a new substation. The new 115 kV line will connect the Las Cruces Substation to the new Afton Substation (to be constructed).

"*A Class III Cultural Resource Survey for the Proposed El Paso Electric WA3 Line, Afton to Airport, Doña Ana County, New Mexico*" is entered into the New Mexico Cultural Resource Information System (NMCRIS) as Activity Number 125271. The report was produced by Marron and Associates. Twenty-six sites were evaluated during the course of this project. Five sites have been recommended as eligible for inclusion to the National Register of Historic Places (NRHP) under criteria D, these are LA 32577, LA 34355, LA 173969, LA 173971, and LA 174987 and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. Four sites, LA 6310, LA 20032, LA 35172, and LA 37891, were not relocated within the project area, it is presumed that these sites have been destroyed or have been misplotted. The 17 remaining sites evaluated for this survey were recommended not eligible.

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If you have any questions or concerns, please contact Las Cruces District Archaeologist, James Renn at (575) 525-4395 or by e-mail at jrenn@blm.gov.

Thank you for your time in consideration of this report.

Sincerely,

/s/ Bill Childress
Bill Childress
District Manager

2 Enclosures

L0310:JRenn:cp:10/31/2014:x4375:EPE.WA3Line.AftonSubSta.SHPO

ZIA NATURAL GAS COMPANY
3700 W. PICACHO AVE. • LAS CRUCES, NEW MEXICO 88007 • (575) 526-4427 • FAX (575) 523-4945

August 30, 2013

"Afton Transmission Line EA Project"
BLM Las Cruces District Office
ATTN: Kenrah Penn, Project Lead
1800 Marquess Street
Las Cruces, NM 88005

Dear Ms. Kendrah Penn:

Zia Natural Gas Company is responding to your request for input for an Environmental Assessment (EA) for a right-of-way application for a proposed 115/345-kV Transmission Line.

The proposed 14.3 mile long 115-kilovolt (kV) transmission line to be constructed, maintained, and operated by El Paso Electric Company does raise concern as the proposed route crosses the proposed high pressure natural gas line permitted under Right-of-Way Permit NMNM 107550.

Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the center line of the 30-feet wide right-of-way is offset 27.5-feet to the west of NMNM 52930, and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under Right-of-Way NMNM 52930 a 25-feet wide right-of-way.

The construction and grant of permanent access for the proposed transmission line can create cause for the following notice of probable violation for the following items:

Underground Clearance, as required by 49 CFR 192.325
Cover, as required by 49 CFR 192.327

Zia Natural Gas Company reserves the right to further comment on the proposed right-of-way application upon receipt of construction plans for the proposed 115-kV Transmission Line.

Sincerely,

Crystal A. Enoch, P.E.
Project Engineer
Zia Natural Gas Company

Memorandum

TriAxis Engineering, Inc.

To: Thomas Vick, Raba Kistner Consultants

From: Phil Bosanquet, PE, TriAxis Engineering

CC: Steve Jones, Raba Kistner Consultants
Scott Croshaw, PS, Wilson Construction
Mark Petrie, PE, TriAxis Engineering

Date: September 06, 2013

Re: Zia Natural Gas Company EA Comment Letter dated August 30, 2013

The following is in response to the Zia Natural Gas Company EA response letter dated August 30, 2013.

We believe the Right-of-Ways referenced in the letter to be NMNM 107570 (as opposed to NMNM 107550, as stated in letter) and NMNM 25930. The proposed Afton to Airport 115kV transmission line for El Paso Electric will have no impact on the Underground Clearance (as required by 49 CFR 192.325) or the Cover (as required by 49 CFR 192.327) for any gas lines located within the stated easements. Both gas easements have been previously identified and located on our land use maps submitted with the Environmental Assessment documentation.

No structures will be located within the referenced easements, so as to not violate the underground clearance required for gas lines as required by 49 CFR 192.325. The entire width of these easements will be avoided for all transmission structures.

All clearing and grading activities for the access road construction within the referenced right-of-ways will be conducted in such a manner so as not alter the existing grade elevation, and will not impact the existing cover for gas lines as required by 49 CFR 192.327.

ZIA NATURAL GAS COMPANY
3700 W. PICACHO AVE. • LAS CRUCES, NEW MEXICO 88007 • (575) 526-4427 • FAX (575) 523-4945

August 30, 2013

"Afton Transmission Line EA Project"
BLM Las Cruces District Office
ATTN: Kenrah Penn, Project Lead
1800 Marquess Street
Las Cruces, NM 88005

Dear Ms. Kendrah Penn:

Zia Natural Gas Company is responding to your request for input for an Environmental Assessment (EA) for a right-of-way application for a proposed 115/345-kV Transmission Line.

The proposed 14.3 mile long 115-kilovolt (kV) transmission line to be constructed, maintained, and operated by El Paso Electric Company does raise concern as the proposed route crosses the proposed high pressure natural gas line permitted under Right-of-Way Permit NMNM 107550.

Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the center line of the 30-feet wide right-of-way is offset 27.5-feet to the west of NMNM 52930, and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under Right-of-Way NMNM 52930 a 25-feet wide right-of-way.

The construction and grant of permanent access for the proposed transmission line can create cause for the following notice of probable violation for the following items:

Underground Clearance, as required by 49 CFR 192.325
Cover, as required by 49 CFR 192.327

Zia Natural Gas Company reserves the right to further comment on the proposed right-of-way application upon receipt of construction plans for the proposed 115-kV Transmission Line.

Sincerely,

Crystal A. Enoch, P.E.
Project Engineer
Zia Natural Gas Company

FORM 2800-14
(August 1985)

Issuing Office
Las Cruces District Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

SERIAL NUMBER NMNM 107570

1. A right-of-way is hereby granted pursuant to Section 28 of the Act of February 25, 1920 (41 Stat. 449; 30 U.S.C. 185) as amended by the Act of November 16, 1973 (87 Stat. 576).

2. Nature of Interest:

a. By this instrument, the holder:

Rio Grande Natural Gas Association
P.O. Box 20000
Las Cruces, NM 88004

receives a right to operate, maintain, and terminate a(n) existing natural gas pipeline on public lands described as follows:

T. 23 S., R. 1 E., Dona Ana County, New Mexico

sec. 30, SW¼.

T. 23 S., R. 1 W., Dona Ana County, New Mexico

sec. 25, lot 5.

T. 24 S., R. 1 W., Dona Ana County, New Mexico

sec. 1, lot 4;
sec. 11, E½ and E½SW¼;
sec. 14, W½;
sec. 22, NE¼SE¼ and SE¼SE¼;
sec. 23, W½W½;
sec. 27, E½;
sec. 34, W½NE¼, SE¼SW¼, and E½SW¼.

T. 25 S., R. 1 W., Dona Ana County, New Mexico

sec. 3, lot 3, S½NW¼, and W½SW¼;
sec. 9, SE¼NE¼ and E½SE¼;
sec. 10, W½NW¼.

As shown on the attached maps (Exhibit A).

b. The right-of-way or permit area granted herein is 30 feet wide, 8.04 miles long and contains 29.25 acres, more or less.

c. This instrument shall terminate on July 10, 2028, unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully

satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(c) or as directed by the authorized officer.

c. The stipulations, plans, maps, or designs set forth in Exhibit(s) B (dated February 2007) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

d. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

e. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)

Administrator
(Title)

3-15-07
(Date)

(Signature of Authorized Officer)

Asst Dist Mgr
(Title)

3-28-07
(Effective Date of Grant)

EASEMENT SURVEY

SHOWING THE LOCATION OF A PROPOSED 30' GASLINE EASEMENT
LOCATED IN: SECTIONS 16, 9,10 AND 3, TOWNSHIP 25 SOUTH, RANGE 1W, N.M.P.M.
JULY 2002

EXISTING
29.121 ACRES
PER BLM LEASE
SERIAL No. NMNM 052930

SECTION 16
STATE

SECTION 9
FEDERAL

SECTION 4
FEDERAL

SECTION 33

SECTION 10
FEDERAL

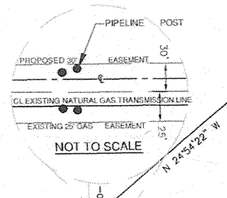
SECTION 3
FEDERAL

SECTION 34
FEDERAL

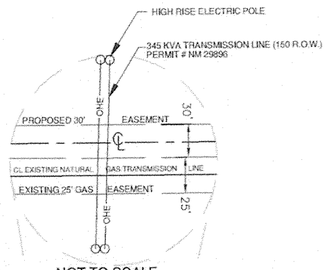
SECTION 15
FEDERAL

SECTION 35

TOWNSHIP 24 SOUTH
TOWNSHIP 25 SOUTH



NOT TO SCALE



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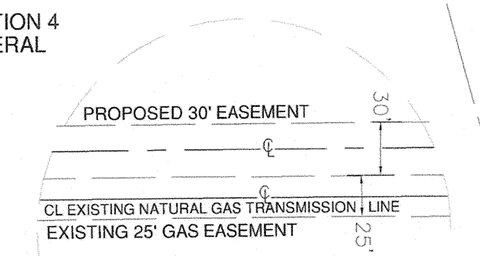


NOT TO SCALE

1/4 CORNER FOUND SEC. 9 / 16

N 24°53'22" W 2374.30

N 15°29'12" E 2224.97'

N 15°29'12" E

38,338.52

FOUND 5/8" IRON ROD DISTURBED

FENCE LINE

OHE

PIPE LINE POST

N 74°22'00" W 1750.50'

N 89°47'11" E 1061.93'

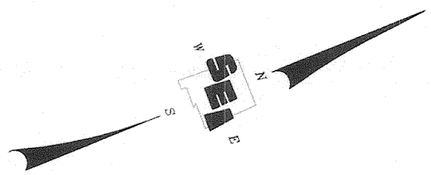
BOM 25' OFFSET STA. 52+80.0'

S 89°59'00" W 2268.61' TO ℄

BOM 25' OFFSET STA. 91+61.35'

BOM 25' OFFSET STA. 144+29.41'

1/4 CORNER FOUND



GRAPHIC SCALE

1000' 0 500' 1000' 2000'

(IN FEET)
1 inch =1000' ft.

I, JOHN A. VUKONICH, NEW MEXICO PROFESSIONAL SURVEYOR, HEREBY CERTIFY THAT THIS BOUNDARY SURVEY PLAT WAS PREPARED FROM AN ACTUAL GROUND SURVEY PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THIS EASEMENT SURVEY PLAT AND THE FIELD SURVEY UPON WHICH IT IS BASED MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

JOHN A. VUKONICH, PE/PS PS #14831

9-19-02
DATE

JOHN A. VUKONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

NM NM 107570

SOUTHWEST ENGINEERING, INC.
475 ARCHULETA ROAD, LAS CRUCES, NEW MEXICO 88005
(505) 526-3381 FAX (505) 526-1762

RGNG PIPELINE
EASEMENT SURVEY
SHOWING THE LOCATION OF A PROPOSED
30' GASLINE EASEMENT

PROJECT NUMBER	22123	DATE 09/18/02
FIELD BOOK	XXXXXXX	1
DATA FILE	22123	OF
DRAWING NUMBER	22123	3

El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7777

March 14, 2014

Ms. Crystal A. Enoch, P.E.
Zia National Gas Company
3700 W. Picacho Ave.
Lac Cruces, NM 88007

RE: Afton Transmission Line EA Project
BLM Las Cruces District Office

Dear Ms. Enoch:

El Paso Electric Company is responding to your letter dated August 30, 2013 regarding your comments to the Afton Transmission Line EA Project. Below is a summary of our understanding of your comments and our response. Attached is a drawing indicating the proposed crossing location concerning right of way grant NMNM 107570.

Comment Summary: Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the centerline of the 30-feet wide right-of-way is offset 27.5 feet to the west of NMNM 52930 and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under right-of-way NMNM 52930 a 25-feet wide right-of-way.

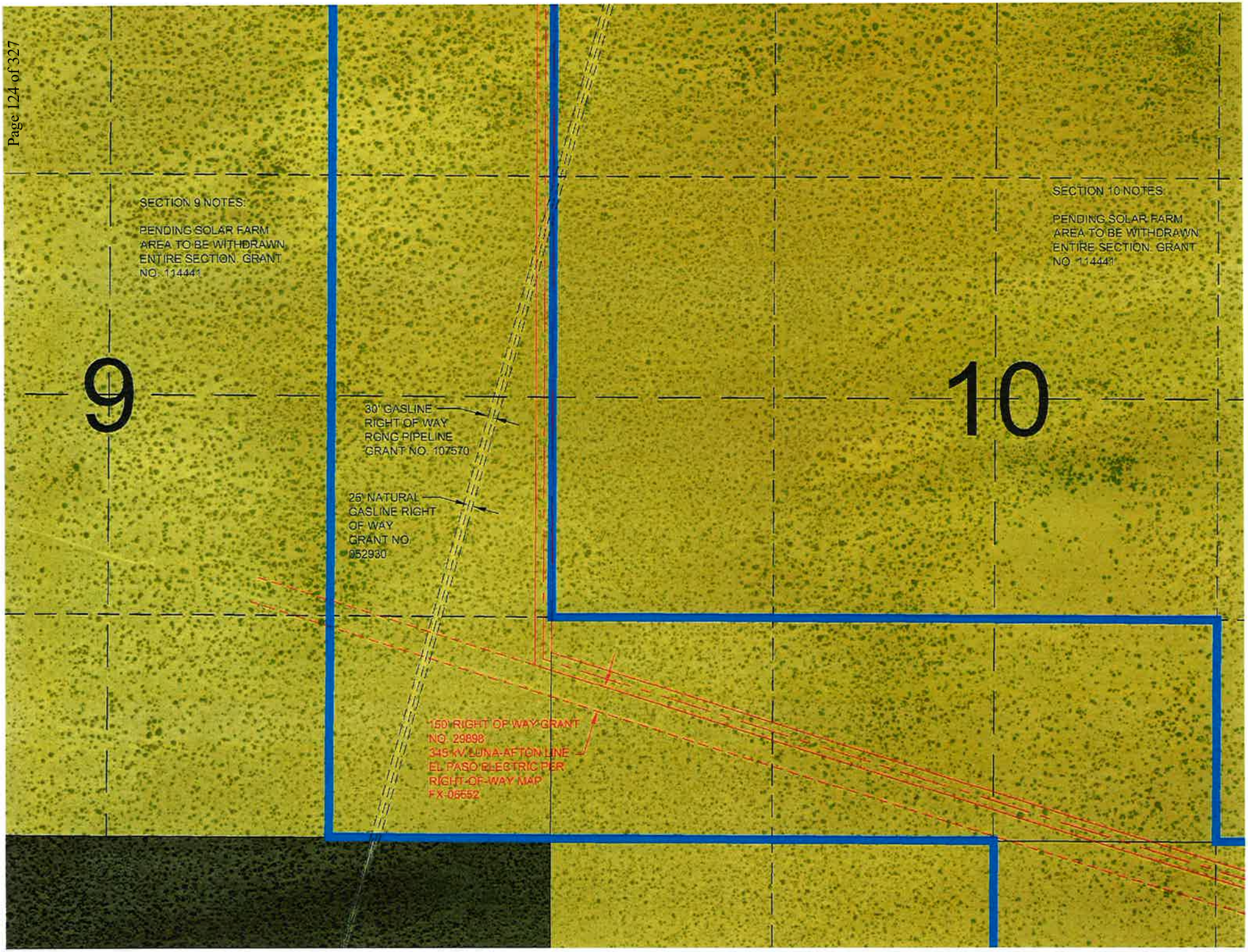
Consideration/Response: We believe that the ROW in question is actually Serial Number 107570. With that understanding, the project team does not propose to place any transmission structures within either of the referenced right-of ways NMNM 107570 nor NMNM 52930. The proposed overhead transmission facilities will span the referenced right-of-ways.

Should you need additional information, please feel free to contact me at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager – Asset Management Services

Enclosure


SECTION 9 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
SECTION 10 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
9
10
30' GASLINE RIGHT OF WAY RGNC PIPELINE GRANT NO. 107570
25' NATURAL GASLINE RIGHT OF WAY GRANT NO. 052930
150' RIGHT OF WAY GRANT NO. 29898 345 kV LUNA-AFTON LINE EL PASO ELECTRIC PER RIGHT-OF-WAY MAP FX-06552

KINDER MORGAN
ENERGY PARTNERS, L.P.
SFPP, L.P.

RECEIVED
LAS CRUCES DISTRICT OFFICE
2013 DEC 16 PM 2:17
LAS CRUCES, NM 88005

SFPP, L.P.
Operating Partnership

December 9, 2013

ENG 4-2-1 (31.0 to 38.0 – 128)
(31.0 to 38.0 – 18)
(47.0 to 53.0 – 5) OOS
File Reference #13–659–1

Kendrah Penn
Project Lead
Afton Transmission Line EA Project
BLM Las Cruces District Office
1800 Marquess Street
Las Cruces NM 88005

Re: Proposed new 115/345-kV transmission Line

Dear Kendrah:

This is in reply to Mr. David L. Wallace's letter dated August 1, 2013, concerning the above referenced project in Dona Ana County, New Mexico.

Enclosed is a copy of drawing 485EBDG16, sheets 33 through 40; and drawing 485EBDG12 sheets 33 through 39, which respectively depict the general alignment of Kinder Morgan's (KM) active 16-inch and 12-inch high pressure refined petroleum product pipelines. These drawings also depict the general alignment of a KM out-of-service 8-inch pipeline (LS 5).

Overhead electrical facilities in proximity to buried pipelines are a concern and may require mitigation to maintain safe operation and pipeline maintenance. In this regard an agreement between the utility and KM will be required to engage an outside consultant to determine any adverse effects on KM pipelines and mitigation requirements. Valley Electric Association would be expected to reimburse KM for the cost of the consultant.

In the interest of public safety and for pipeline protection, the following provisions must be considered in the design and subsequent construction of improvements near KM pipelines.

1. Adherence to applicable provisions enumerated in the enclosed copy of L-OM200-29 "Guidelines for Design and Construction" relating to proposed projects affecting KM pipelines.

2. Exact pipeline location can only be determined by pothole at maximum 50 feet intervals or at other locations as required by KM's onsite representative. The pothole work must be performed by hand excavation in the presence of the KM representative. Arrangements for a pipeline representative can be made by contacting KM's Sr. ROW Specialist, Heath Townsend (480) 261-0333, at least two weeks prior to commencement of work.

3. Provide a construction schedule and notify KM of the pre-construction conference date and time at least two weeks prior to start of construction. A qualified, KM approved inspector must be present for all excavation within 10 feet of its pipeline. All excavation within 2 feet of the pipeline must be done by hand.

A KM pipeline representative will be maintained on site during construction activities over and adjacent to its high pressure pipeline easement to ensure that pipeline facilities are being adequately protected. In this regard, KM does not have sufficient regular employees to monitor the construction work and therefore must hire qualified outside contract inspectors to perform this service. The inspection cost is based on $600 per day plus 19.4% for G&A overhead multiplied by the number of estimated days that work will be performed near the pipeline. Execution of KM's agreement and deposit in the amount of the estimated inspection cost must be received before any work can be progressed within the pipeline easement.

When preliminary project plans have been formulated, based upon the field determination of substructure information, please forward a full sized set of drawings to this office showing KM pipelines in plan and profile (based on surveyed pothole data) relative to the planned improvements and existing conditions. Upon review of the preliminary plans we will provide necessary provisions for pipeline protection when working near these facilities.

To avoid delays in response to future correspondence, please refer to File Reference #13-659.

Sincerely,

T. C. Szto
Manager - Pipeline Engineering

T: Quinn\LETTERS\ENG4-2-1\13-659-1\jdf

Enclosures

cc: J. H. Townsend w/copy of inquiry
J. D. Farhat

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

Name of Company: _____

The list of design, construction and contractor requirements, including but not limited to the following, for the design and installation of foreign utilities or improvements on KM right-of-way (ROW) are not intended nor do they waive or modify any rights KM may have under existing easements or ROW agreements. Reference existing easements and amendments for additional requirements. This list of requirements is applicable for KM facilities on easements only. Encroachments on fee property should be referred to the ROW Department.

Design

- KM shall be provided sufficient prior notice of planned activities involving excavation, blasting, or any type of construction on KM's ROW to determine and resolve any location, grade or encroachment problems and provide protection of our facilities and the public **before** the actual work is to take place.
- Encroaching entity shall provide KM with a set of drawings for review and a set of final construction drawings showing all aspects of the proposed facilities in the vicinity of KM's ROW. The encroaching entity shall also provide a set of as-built drawings showing the proposed facilities in the vicinity of KM's ROW.
- Only facilities shown on drawings reviewed by (Company) will be approved for installation on KM's ROW. All drawing revisions that effect facilities proposed to be placed on KM's ROW must be approved by KM in writing.
- KM shall approve the design of all permanent road crossings.
- Any repair to surface facilities following future pipeline maintenance or repair work by KM will be at the expense of the developer or landowner.
- The depth of cover over the KM pipelines shall not be reduced nor drainage altered without KM's written approval.
- Construction of any permanent structure, building(s) or obstructions within KM pipeline easement is **not** permitted.
- Planting of shrubs and trees is not permitted on KM pipeline easement.
- Irrigation equipment i.e. backflow prevent devices, meters, valves, valve boxes, etc. shall not be located on KM easement.
- Foreign line, gas, water, electric and sewer lines, etc., may cross perpendicular to KM's pipeline within the ROW, provided that a minimum of two (2) feet of vertical clearance is maintained between KM pipeline(s) and the foreign pipeline. Constant line elevations must be maintained across KM's entire ROW width, gravity drain lines are the only exception. Foreign line crossings below the KM pipeline must be evaluated by KM to ensure that a significant length of the KM line is not exposed and unsupported during construction. When installing underground utilities, the last line should be placed beneath all existing lines unless it is impractical or unreasonable to do so. Foreign line crossings above the KM pipeline with less than 2 feet of clearance must be evaluated by KM to ensure that additional support is not necessary to prevent settling on top of the KM hazardous liquids pipeline.
- A foreign pipeline shall cross KM facilities at as near a ninety-degree angle as possible. A foreign pipeline shall not run parallel to KM pipeline within KM easement without written permission of KM.
- The foreign utility should be advised that KM maintains cathodic protection on their pipelines. The foreign utility must coordinate their cathodic protection system with KM's. At the request of KM, foreign utilities shall install (or allow to be installed) cathodic protection test leads at all crossings for the purposes of monitoring cathodic protection. The KM Cathodic Protection (CP) technician and the foreign utility CP technician shall perform post construction CP interference testing. Interference issues shall be resolved by mutual agreement between foreign utility and KM. All costs associated with the correction of cathodic protection problems on KM pipeline as a result of the foreign utility crossing shall be borne by the foreign utility for a period of one year from date the foreign utility is put in service.
- The metallic foreign line shall be coated with a suitable pipe coating for a distance of at least 10 feet on either side of the crossing unless otherwise requested by the KM CP Technician.

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

- AC Electrical lines must be installed in conduit and properly insulated.
- DOT approved pipeline markers shall be installed so as to indicate the route of the foreign pipeline across the KM ROW.
- No power poles, light standards, etc. shall be installed on KM easement
- No pipeline may be located within 50 feet (15 meters) of any private dwelling, or any industrial building or place of public assembly in which persons work, congregate, or assemble.

Construction

- Contractors shall be advised of KM's requirements and be contractually obligated to comply.
- The continued integrity of KM's pipelines and the safety of all individuals in the area of proposed work near KM's facilities are of the utmost importance. Therefore, contractor must meet with KM representatives prior to construction to provide and receive notification listings for appropriate area operations and emergency personnel. **KM's on-site representative will require discontinuation of any work that, in his opinion, endangers the operations or safety of personnel, pipelines or facilities.**
- The Contractor must expose all KM pipelines prior to crossing to determine the exact alignment and depth of the lines. A KM representative must be present. In the event of parallel lines, only one pipeline can be exposed at a time.
- KM will not allow pipelines to remain exposed overnight without consent of KM designated representative. Contractor may be required to backfill pipelines at the end of each day.
- A KM representative shall do all line locating. A KM representative shall be present for hydraulic excavation. The use of probing rods for pipeline locating shall be performed by KM representatives only, to prevent unnecessary damage to the pipeline coating.
- Notification shall be given to KM at least 72 hours before start of construction. A schedule of activities for the duration of the project must be made available at that time to facilitate the scheduling of Kinder Morgan, Inc.'s work site representative. Any Contractor schedule changes shall be provided to Kinder Morgan, Inc. immediately.
- Heavy equipment will not be allowed to operate directly over KM pipelines or in KM ROW unless written approval is obtained from (Company). Heavy equipment shall only be allowed to cross KM pipelines at locations designated by Kinder Morgan, Inc. Contractor shall comply with all precautionary measures required by KM to protect its pipelines. When inclement weather exists, provisions must be made to compensate for soil displacement due to subsidence of tires. Equipment excavating within ten (10) feet of KM Pipelines will have a plate guard installed over the teeth to protect the pipeline.
- Excavating or grading which might result in erosion or which could render the KM ROW inaccessible shall not be permitted unless the contractor/developer/owner agrees to restore the area to its original condition and provide protection to KM's facility.
- A KM representative shall be on-site to observe any construction activities within ten (10) feet of a KM pipeline or aboveground appurtenance. The contractor **shall not** work within this distance without a KM representative being on site. Only hand excavation shall be permitted within two (2) feet of KM pipelines, valves and fittings unless State requirements are more stringent. However, proceed with extreme caution when within three (3) feet of the pipe.
- A KM representative will monitor construction activity within 25 feet of KM facilities during and after the activities to verify the integrity of the pipeline and to ensure the scope and conditions agreed to have not changed. Monitoring means to conduct site inspections on a pre-determined frequency based on items such as: scope of work, duration of expected excavator work, type of equipment, potential impact on pipeline, complexity of work and/or number of excavators involved.
- Ripping is only allowed when the position of the pipe is known and not within ten (10) feet of KM facility unless company representative is present.
- Temporary support of any exposed KM pipeline by Contractor may be necessary if required by KM's on-site representative. Backfill below the exposed lines and 12" above the lines shall be replaced with sand or other selected material as approved by KM's on-site representative and thoroughly compacted in 12" lifts to 95% of standard proctor dry density minimum or as approved by KM's on-site representative. This is to adequately protect against stresses that may be caused by the settling of the pipeline.

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

- No blasting shall be allowed within 1000 feet of KM's facilities unless blasting notification is given to KM including complete Blasting Plan Data. A pre-blast meeting shall be conducted by the organization responsible for blasting.
  KM shall be indemnified and held harmless from any loss, cost of liability for personal injuries received, death caused or property damage suffered or sustained by any person resulting from any blasting operations undertaken within 500 feet of its facilities. The organization responsible for blasting shall be liable for any and all damages caused to KM's facilities as a result of their activities whether or not KM representatives are present. KM shall have a signed and executed Blasting Indemnification Agreement before authorized permission to blast can be given.

  No blasting shall be allowed within 300 feet of KM's facilities unless blasting notification is given to KM a minimum of one week before blasting. *(note: covered above)* KM shall review and analyze the blasting methods. A written blasting plan shall be provided by the organization responsible for blasting and agreed to in writing by KM in addition to meeting requirements for 500' and 1000' being met above. A written emergency plan shall be provided by the organization responsible for blasting. *(note: covered above)*

- Any contact with any KM facility, pipeline, valve set, etc. shall be reported immediately to KM. If repairs to the pipe are necessary, they will be made and inspected before the section is re-coated and the line is back-filled.

- KM personnel shall install all test leads on KM facilities.

- Burning of trash, brush, etc. is not permitted within the KM ROW.

Insurance Requirements

- All contractors, and their subcontractors, working on Company easements shall maintain the following types of insurance policies and minimum limits of coverage. All insurance certificates carried by Contractor and Grantee shall include the following statement: "Kinder Morgan and its affiliated or subsidiary companies are named as additional insured on all above policies (except Worker's Compensation) and waiver of subrogation in favor of Kinder Morgan and its affiliated or subsidiary companies, their respective directors, officers, agents and employees applies as required by written contract." **Contractor shall furnish Certificates of Insurance evidencing insurance coverage prior to commencement of work and shall provide thirty (30) days notice prior to the termination or cancellation of any policy.**

1. Statutory Coverage Workers' Compensation Insurance in accordance with the laws of the states where the work is to be performed. If Contractor performs work on the adjacent on navigable waterways Contractor shall furnish a certificate of insurance showing compliance with the provisions of the Federal Longshoreman's and Harbor Workers' Compensation Law.
2. Employer's Liability Insurance, with limits of not less than **$1,000,000** per occurrence and **$1,000,000** disease each employee.
3. Commercial General Liability Insurance with a combined single limit of not less than **$2,000,000** per occurrence and in the aggregate. All policies shall include coverage for blanket contractual liability assumed.
4. Comprehensive Automobile Liability Insurance with a combined single limit of not less than **$1,000,000.** If necessary, the policy shall be endorsed to provide contractual liability coverage.
5. If necessary Comprehensive Aircraft Liability Insurance with combined bodily injury, including passengers, and property damage liability single limits of not less than **$5,000,000** each occurrence.
6. Contractor's Pollution Liability Insurance this coverage shall be maintained in force for the full period of this agreement with available limits of not less then **$2,000,000** per occurrence.
7. Pollution Legal Liability Insurance this coverage must be maintained in a minimum amount of **$5,000,000** per occurrence.

El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7760

March 14, 2014

T.C. Szto
Manager – Pipeline Engineering
Kinder Morgan
SFPP, L.P. Operating Partnership
1100 Town & Country Road
Orange County, California 92868

RE: Proposed new 115 Transmission Line
File Reference #13-659-1

Dear T.C. Szto:

El Paso Electric Company is responding to your letter dated December 9, 2013 regarding the proposed new 115kV transmission Line. Below is a summary of our understanding of your comments and our responses. Enclosed is a drawing of the proposed Afton North Substation and a drawing indicating the proposed access road crossing location and with regard to right of way grant NMNM 18856.

Comment Summary: Overhead electrical facilities in proximity to buried pipelines are a concern and may require mitigation to maintain safe operation and pipeline maintenance. In this regard an agreement between the utility and KM will be required to engage an outside consultant to determine any adverse effects on KM pipelines and mitigation requirements.

Adherence to applicable provisions enumerated in the enclosed copy of L-OM200-29 "Guidelines for Design and Construction" relating to proposed projects affecting KM Pipelines.

Consideration/Response: Based on the information provided from Kinder Morgan, we believe that the three (3) Kinder Morgan pipelines in question are within the 50' wide right-of-way grant number 18856, See attached PDF for the approximate location. We understand that the three (3) pipelines are depicted on the Kinder Morgan provided drawing Line # 485EBDG12, sheet # 033, attached, as LS-127/128 16", LS-4/5 (NIS) 8", and LS-17/18 12", referenced North to South on the drawing. As far as we can tell, these pipelines do not intersect nor cross the proposed Afton to Airport transmission line, although the access road into the proposed Afton North Substation will cross over the KM pipelines. The EPE project design team will incorporate the requirements enumerated within the Kinder Morgan L-OM200-29 "Guidelines for Design and Construction" document.

The following specific sections are herein acknowledged.

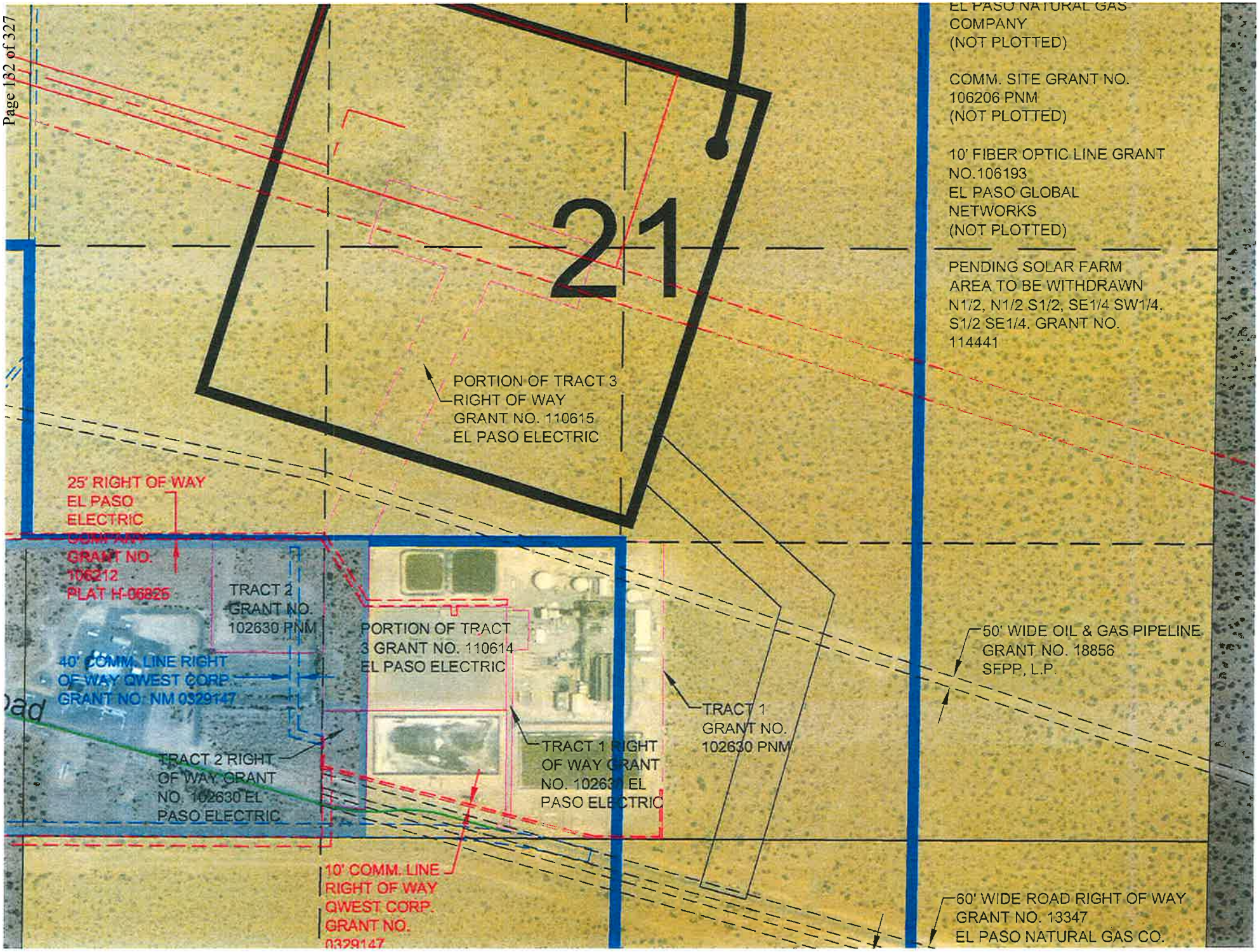
- KM shall approve the design of all permanent road crossings.
- Contractors shall be advised of KM's requirements and be contractually obligated to comply.
- The Contractor must expose all KM pipelines prior to crossing to determine the exact alignment and depth of the lines. A KM representative must be present. The pothole work must be done by hand excavation in the presence of the KM Representative. Arrangements for a pipeline representative can be made by contacting KM's Sr. ROW Specialist, Heath Townsend at (480) 261-0333, at least two weeks prior to commencement of work.
- Provide a construction schedule and notify KM of the pre-construction conference date and time at least two weeks prior to start of construction.
- A KM representative shall be on-site to observe any construction activities within ten (10) feet of a KM pipeline or above ground appurtenance. All excavations within 2 feet of the pipeline must be done by hand.
- Notification shall be given to KM at least 72 hours before start of construction.

Should you need additional information, please feel free to contact Martha A. Velasco at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager - Asset Management Services

Enclosure


21
EL PASO NATURAL GAS COMPANY (NOT PLOTTED)
COMM. SITE GRANT NO. 106206 PNM (NOT PLOTTED)
10' FIBER OPTIC LINE GRANT NO.106193 EL PASO GLOBAL NETWORKS (NOT PLOTTED)
PENDING SOLAR FARM AREA TO BE WITHDRAWN N1/2, N1/2 S1/2, SE1/4 SW1/4, S1/2 SE1/4. GRANT NO. 114441
PORTION OF TRACT 3 RIGHT OF WAY GRANT NO. 110615 EL PASO ELECTRIC
25' RIGHT OF WAY EL PASO ELECTRIC COMPANY GRANT NO. 106212 PLAT H-06825
TRACT 2 GRANT NO. 102630 PNM
40' COMM. LINE RIGHT OF WAY QWEST CORP. GRANT NO. NM 0329147
PORTION OF TRACT 3 GRANT NO. 110614 EL PASO ELECTRIC
50' WIDE OIL & GAS PIPELINE GRANT NO. 18856 SFPP, L.P.
TRACT 1 GRANT NO. 102630 PNM
TRACT 2 RIGHT OF WAY GRANT NO. 102630 EL PASO ELECTRIC
TRACT 1 RIGHT OF WAY GRANT NO. 102630 EL PASO ELECTRIC
10' COMM. LINE RIGHT OF WAY QWEST CORP. GRANT NO. 0329147
60' WIDE ROAD RIGHT OF WAY GRANT NO. 13347 EL PASO NATURAL GAS CO.

1650.00'
PONDING AS REQUIRED
BOUNDARY OF STUDY AREA
2000' X 2000'
PROPOSED SUBSTATION EASEMENT
N: 408282.85
E: 1455121.29
834.00'
N: 408030.80
E: 1455916.29
915.00'
417.00'
NEWMAN 345KV LINE
N: 407633.30
E: 1455790.27
4215
AIRPORT 115KV LINE
CONTROL HOUSE
AFTON 345KV LINE
N: 407885.35
E: 1454995.26
CENTER POLES #200
CENTER POLES #197
150.00' RIGHT OF WAY GRANT NO. 29898
345 kV LUNA-AFTON LINE EL PASO
ELECTRIC PER RIGHT-OF-WAY MAP
FX-06552
CENTER POLES #199
60.00'
LUNA 345KV LINE
CENTER POLES #198
CENTER POLE STEEL A75
CENTER POLE STEEL AN5
CENTER POLES #198A
4220
4225
4230
PORTION OF TRACT 3 RIGHT
OF WAY GRANT NO. 110615
EL PASO ELECTRIC
4235
50.00' EASEMENT
24.00' ACCESS ROAD
ARCH SITES TYP.
50.00' WIDE OIL & GAS PIPELINE
GRANT NO. 18856 SFPP, L.P.
25.00' WIDE 24kV THREE
PHASE DISTRIBUTION LINE
RIGHT OF WAY
GRANT NO. 61198
(PLAT NO. H-06405)
25.00' RIGHT OF WAY
EL PASO ELECTRIC CO
GRANT NO. 106212
PLAT H-06825
TRACT 2
GRANT NO.
102630 PNM
PORTION OF TRACT 3 GRANT
NO. 110614 EL PASO ELECTRIC
TRACT 1
GRANT NO. 102630 PNM
TRACT 1 RIGHT OF WAY GRANT
NO. 102630 EL PASO ELECTRIC
40.00' COMM. LINE
RIGHT OF WAY
QWEST CORP.
GRANT NO. 0329147
10.00' COMM. LINE
RIGHT OF WAY
QWEST CORP.
GRANT NO. 0329147
60.00' WIDE ROAD RIGHT OF WAY
GRANT NO. 13347
EL PASO NATURAL GAS CO.
50.00' WIDE POWER LINE
RIGHT OF WAY GRANT NO. 107835
EL PASO NATURAL GAS CO.
40.00' TELEPHONE
RIGHT OF WAY
GRANT NO. 0467924 QWEST
50.00' NATURAL GAS LINE
RIGHT OF WAY GRANT NO. 000161
EL PASO NATURAL GAS CO.
TRACT 2 RIGHT OF WAY GRANT
NO. 102630 EL PASO ELECTRIC
40.00' TELEPHONE
RIGHT OF WAY
GRANT NO. 0467924 QWEST
60.00' WIDE ROAD
RIGHT OF WAY
GRANT NO. 77527
COUNTY OF DONA ANA
GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.

M:\SGR\11-300-136-05\2.0_Project_Disciplines\Site_Design\Drawings\Sheets\1130013605_SITE.dwg

WILSON & COMPANY
4900 LANG AVE. NE.
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4055 FIRST FLOOR
FAX: 505-348-4155 SECOND FLOOR
www.wilsonco.com

CONSULTANTS

SEAL
NOT FOR CONSTRUCTION

PROJECT NAME
AFTON NORTH SUBSTATION

REV	DATE	DESCRIPTION	BY

PROJECT NO:	1130013605
DESIGNED BY:	DMD
DRAWN BY:	MIT
CHECKED BY:	—
DATE:	JAN 2014

SHEET TITLE
OVERALL SITE

SHEET NO:
3

Afton Transmission Line Right-of-Way Environmental Assessment

RECEIVED
LAS CRUCES DISTRICT OFFICE
2013 SEP -4 PM 2:08
BLM LAS CRUCES, NM 88005

BLM WANTS TO HEAR FROM YOU!
SCOPING COMMENT FORM

Please return this form by **September 5, 2013**. Additional sheets may be attached if more space is needed. Fold the form so the address is showing and tape or staple the edges together to mail it. **POSTAGE is required.**

City of Las Cruces Utilities Dept Technical Support
Name
680 Motel Blvd
Address
Las Cruces NM 88001
City State Zip

City of Las Cruces Utilities Department
Organization (if applicable)
Add to Mailing List ☒ YES ☐ NO

PLEASE PRINT

PLEASE READ CAREFULLY

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, are available for public inspection in their entirety.

1. Las Cruces Utilities (LCU) has an 8" high pressure gas line in the west mesa area. The proposed EPE transmission line will cross this HP gas line near IW-55 sections 9 & 10. In order to evaluate the impacts to the operation and maintenance of the HP gas line, LCU will like to know the history of AC current induced from the EPE transmission line (with similar transmission capacity) to other structures?

2. LCU has utility lines south of I-10 that currently serving businesses and institutions in the area. The proposed EPE transmission line will cross or parallel in multiple locations. For routine line O&M and future line rehabilitation, vertical and horizontal line separations will need to be maintained between LCU and EPE infrastructure. Since the drawing

attached to the Scoping comment is too general to evaluate the necessary separations, LCU will like to obtain a set of EPE design drawing and meet with EPE to discuss comments.

3. Additional comments may be generated after reviewing EPE's drawing.

Hand deliver to Ms. Kendrah Penn on Sep 4, 2013.

---------- FOLD HERE ----------

U S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICTOFFICE
1800 MARQUESS STREET
LAS CRUCES NEW MEXICO 88005

OFFICIAL BUSINESS
Penalty for Private Use $300

NO POSTAGE
NECESSARY
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UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO.14153 WASHINGTON DC

POSTAGE WILL BE PAID BY
THE BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
ATTN: KENDRAH PENN
LAS CRUCES DISTRICT OFFICE
1800 MARQUESS STREET
LAS CRUCES NM 88005

The Electric Company
El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7753

March 14, 2014

Ms. Meei Montoya, P.E.
Senior Operations Engineer
City of Las Cruces
Utilities Department Technical Support
680 Motel Blvd.
Lac Cruces, NM 88001

RE: Afton Transmission Line EA Project
BLM Las Cruces District Office

Dear Ms. Montoya:

El Paso Electric Company is responding to your comments delivered September 4th, 2013 regarding the Afton Transmission Line EA Project. Below is a summary of our understanding of your comments and our response. Enclosed is a drawing indicating the proposed crossing location regarding right of way grant NMNM 52930. Also included is the information regarding our on-call and field location activities for comment 2, which we previously provided via email correspondence.

Comment Summary 1: The proposed EPE transmission line will cross a Las Cruces Utility (LCU) 8" high pressure gas line in the West Mesa area. In order to evaluate the impacts to the operation and maintenance of the HP gas line, LCU "will like to know the history of AC current induced from the EPE transmission line (with similar transmission capacity) to other structures".

Consideration/Response 1: The 25 foot ROW for the line mentioned in part 1 of the comment parallels the 30 foot ROW of the Zia Natural Gas Company line from the other EA comment we received. The project team does not propose to place any transmission structures within either of the referenced right-of ways NMNM 107570 nor NMNM 52930. EPE's overhead transmission facilities will completely span the referenced right-of-ways.

Comment Summary 2: LCU has utility lines south of I-10 that currently serve businesses and institutions in the area. The proposed EPE transmission line will cross or parallel in multiple locations. For routine line operation and maintenance and future line rehabilitation, vertical and horizontal line separations will need to be maintained between LCU and EPE infrastructure. Since the drawing attached to the scoping comment is too general to evaluate the necessary separations, LCU "will like to obtain a set of EPE design drawing and meet with EPE to discuss comments".

Consideration/Response 2: The project team has contacted Ms. Meei Montoya, P.E., Senior Operations Engineer, with the City of Las Cruces, to verify the location of the LCU Utility lines. A survey crew has field located those lines marked by the one call center. Presently the project is in the design phase and final design drawings are not available. The project will be designed with regard to maintaining proper vertical and horizontal separations between current utility lines and proposed utility lines.

Comment Summary 3: Additional comments may be generated after reviewing EPE's drawing.

Consideration/Response 3: The project team will address additional comments if they arise.

Should you need additional information, please feel free to contact Martha Velasco at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager - Asset Management Services

Enclosures

Thomas Vick

From: Sparrow, Coyote M. <Coyote.Sparrow@wilsonco.com>
Sent: Thursday, January 23, 2014 7:22 AM
To: Thomas Vick; Mary Goins; mpetrie@triaxiseng.com; pbosanquet@triaxiseng.com; Croshaw,Christopher S.; Perkins, Scott F.; Steve Jones
Subject: FW: DO NOT REPLY: Request 2014032986 - proposed EPEC transmissionline in WMIP
Attachments: One call locations.pdf; BLM_proposed EPEC transmission line_CLC comments.pdf; BLM_proposed EPEC transmission line_CLC map.pdf

FYI. I sent the One call locations.pdf to Meei to help their spotters find the locations.

Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: Meei-Huey Montoya [mailto:mmontoya@las-cruces.org]
Sent: Wednesday, January 22, 2014 4:11 PM
To: Robin Pirtle; Glenn Ford; Gary Rivera; Tony Jimenez
Cc: Vincent Sanchez; Adrienne Widmer; Sparrow, Coyote M.
Subject: FW: DO NOT REPLY: Request 2014032986 - proposed EPEC transmission line in WMIP

Just an FYI...You may have received locate requests as shown on the following emails.

These locate requests are pertaining to a proposed EPEC transmission line in WMIP area. This project is in design and BLM permit stages. EPEC's surveyor contacted the city since we have provided comments to BLM a few months ago requesting additional information.

EPEC's surveyor provides maps (attachment 1) for the locate area just in case you have questions. Our comments to BLM regarding this project are shown as attachments 2 and 3.

Meei Montoya, P.E.
Senior Operations Engineer
Las Cruces Utilities
Regulatory Environmental Services & Technical Support
(575) 528-3525

-----Original Message-----
From: Sparrow, Coyote M. [mailto:Coyote.Sparrow@wilsonco.com]
Sent: Wednesday, January 22, 2014 9:21 AM
To: Meei-Huey Montoya
Subject: RE: DO NOT REPLY: Request 2014032986

Meei,
Attached are the more detailed maps for the utility spotters, if they need them. If they have any questions they can call me directly.

thanks
Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: Sparrow, Coyote M.
Sent: Friday, January 17, 2014 1:34 PM
To: 'mmontoya@las-cruces.org'
Cc: 'Thomas Vick'; Mary Goins
Subject: FW: DO NOT REPLY: Request 2014032986

Meei,
Here is the second NM One Call request, as we discussed I had them put the latitude and longitude in the request.
Thanks again

Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: eticket@nm811.org [mailto:eticket@nm811.org]
Sent: Friday, January 17, 2014 10:16 AM
To: Sparrow, Coyote M.
Subject: DO NOT REPLY: Request 2014032986

New Mexico One Call
Locate Request Confirmation Header Code: DESIGN LOCATE
Request Type:
Ticket No: 2014032986 Seq. No: 0
Update of:
Original Call Date: 01/17/2014 Time: 10:06:21 AM OP: 273
Transmit Date: 01/17/2014 Time: 10:16:07 AM
Work to Begin Date: 01/22/2014 Time: 09:57:00 AM

Company: WILSON & COMPANY
Contact Name: COYOTE SPARROW Contact Phone: (505)239-0799
Alternate Contact: Alternate Phone:
Best Time to Call: Fax No: (505)348-4055
Cell Phone: Pager No:
Email: coyote.sparrow@wilsonco.com

State: NM County: DONA ANA City: RURAL DONA ANA
Address: , W AFTON RD
To Address:
Nearest Intersecting Street: CR-B008
2nd Intersecting Street:
Subdivision: 32°9'2.4"/106°56'22.4"
Latitude: 32.14082950 Longitude: -106.94017300
Zip Code:
Grid:

Location of Work: FR THE INTERSECTION OF CR B007 AND W AFTON GO W ON
AFTON FOR 3.3MI GO N FOR 1MI SPOT N ALONG DIRT
COUNTY ROAD FOR 2000FT

Remarks: CALL/E MAIL COYOTE SPARROW WITH ANY QUESTIONS OR
CLEARIFICATION

Type of Work: SURVEY
Private Property: Street: Overhead Lines: Blasting:
Easement: Mechanical Boring: Premarked:
Work Being Done For: EL PASO ELECTRIC CO
The following utility owners have been notified:
EP24 ELEL KMEP COLC QLNS
1NMPSO

IMPORTANT CONFIRMATION NOTICE

Your fax request has been received and processed. It is your responsibility to review the information provided on this faxback confirmation ticket and ensure it has been correctly interpreted from your request. Notify us immediately of any corrections or errors.
Acceptance of this faxback confirmation ticket means you accept responsibility for the accuracy of the information contained in the ticket and you agree to indemnify New Mexico One Call Systems, Inc. of all liability, claims, fees, or damages, including reasonable attorney fees arising from or resulting from the use of the information provided on this confirmation ticket.

New Mexico Law requires you to wait two working days from the date and time of this confirmation notice before you begin excavation. This request is valid for ten working days. Only the facility owners listed on this ticket will be notified. You can check the Locate Status of this ticket and request other tickets by visiting the our website at www.nmonecall.org.

****

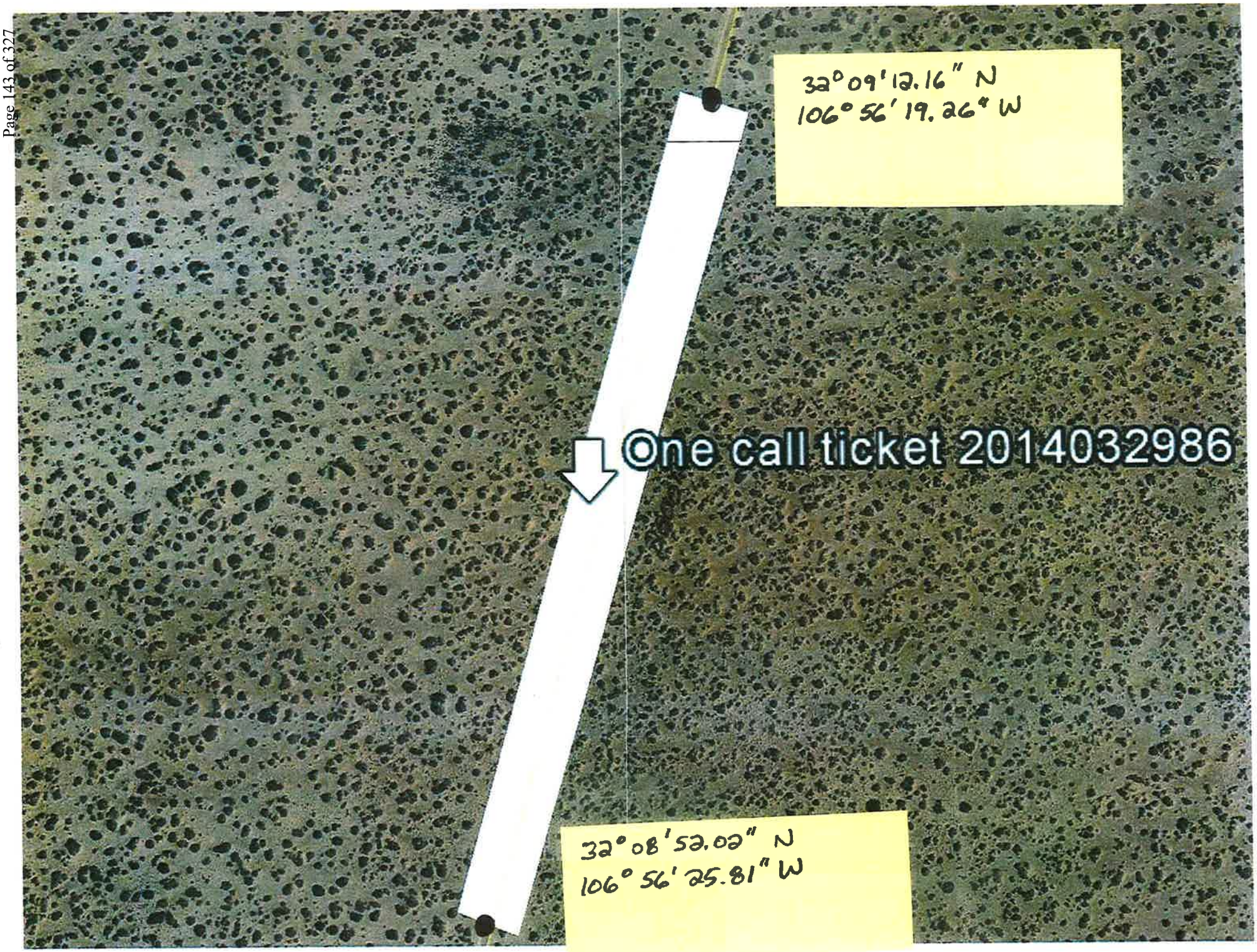
Confidential/Proprietary Note:

The information in this email is confidential and may be legally privileged.
Access to this email by anyone other than the intended addressee is unauthorized. If you are not the intended recipient of this message, any review, disclosure, copying, distribution, retention, or any action taken or omitted to be taken in reliance on it is prohibited and may be unlawful. If you are not the intended recipient, please reply to or forward a copy of this message to the sender and delete the message, any attachments, and any copies thereof from your system.
Thank you.

****

one call ticket 2014032980
One call ticket 2014032986
DUSTY PRINTS
FRONTAGE
RAMP
SANDY BEACH
HELIOS FARM
FAIRACRES
TRES SENDAS
CAMINO DE PAVOS
BILBO
MESILLA HILLS
CASABLANCA
LAS VISTAS
CRESTA
NIZHONI
RAASAF
VISTA VERDE
WINTERSET
THIELMAN
CALLE DE MEDANOS
CALLE DE PARIAN
CALLE CUARTA
LA MESILLA
ESTRADA
LA PUENTE
FAIR LADY
SELENE
SNOW
UNION
VALDES
MESILLA ACRES
FIESTA
NM 374
NM 292
TIERRA DE MESILLA
AVENIDA DE
ARMORY
CRAWFORD
MOUNTAIN VISTA
INTERSTATE 10
ROBERT LARSON
TONY FLORES
ENFORCERS ROW
ADVANCEMENT
REA
VENTURE
Lt. RALPH J. SILVA
UNNAMED
COUNTY ROAD B-006
COUNTY ROAD B-007
SOUTHERN UNION GASS
W AFTON RD
5 1/2
MILES
Afton Compr. Station

HARRY BURREL
Crawford Blvd
ARMORY
CRAWFORD
RAMP
INTERSTATE 10
RAMP
CRAWFORD
Robert Larson Blvd
CRAWFORD
10
one call ticket 2014032980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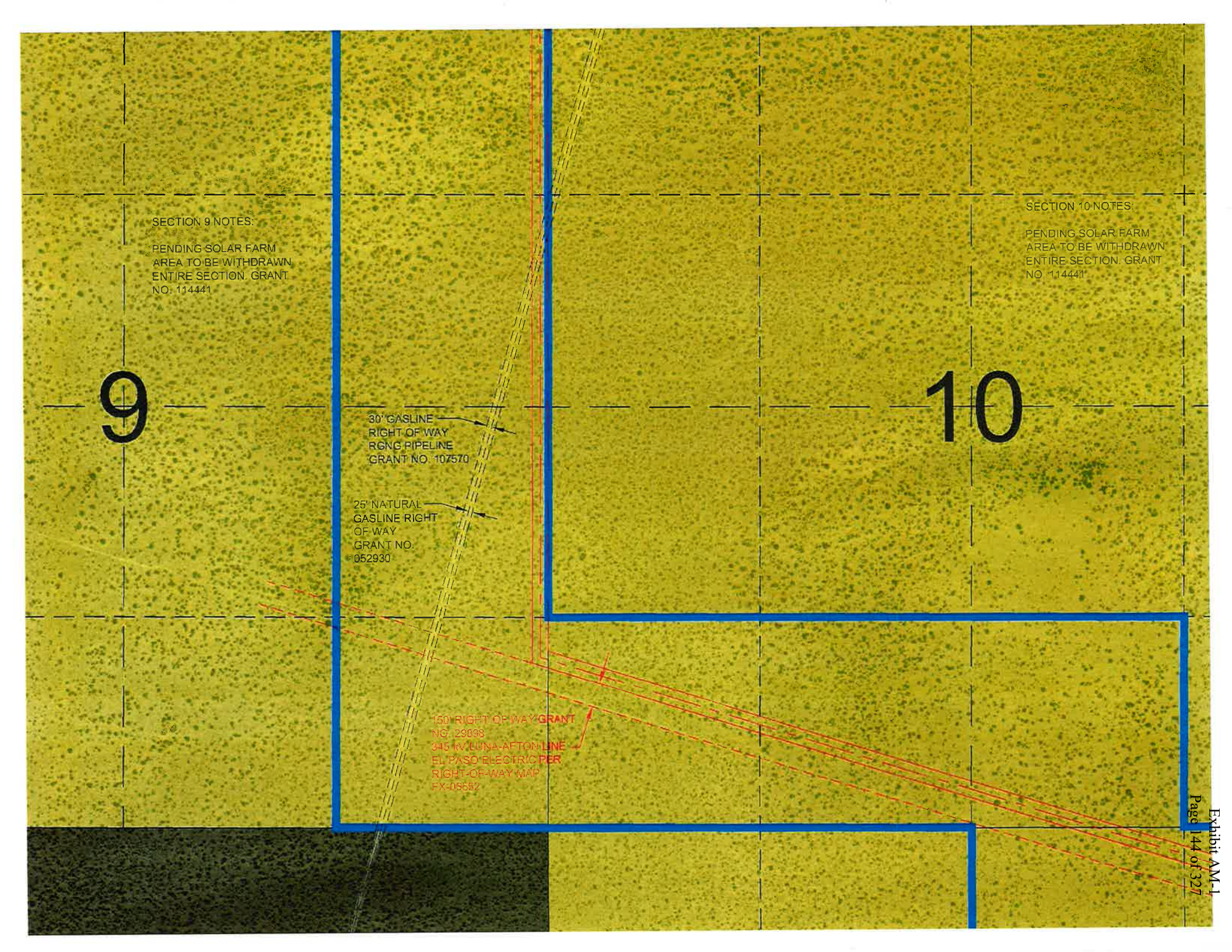
SECTION 9 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
SECTION 10 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
9
10
30' GASLINE RIGHT OF WAY RGNG PIPELINE GRANT NO. 107570
25' NATURAL GASLINE RIGHT OF WAY GRANT NO. 052930
150' RIGHT OF WAY GRANT NO. 29038 345 kV LUNA-AFTON LINE EL PASO ELECTRIC PER RIGHT-OF-WAY MAP FX-0552

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

January 20, 2014

Mr. Kenneth K. Cunningham
Ecological and Environmental Planning Division
New Mexico Department of Game and Fish
Post Office Box 25112
Santa Fe, NM 87504

RE: El Paso Electric Proposed Afton to Airport Transmission and Substation
Project No. DOI-NM-L000-2013-0099-EA

Dear Mr. Cunningham:

El Paso Electric (EPE) is contacting your office for comment regarding a proposed new 115 kilovolt (kV) transmission line and 345 kV substation in Doña Anna County, New Mexico. EPE has applied to the Bureau of Land Management (BLM), Las Cruces District Office, for a right-of-way to construct, operate, and maintain a new 14.3 mile transmission line that would extend from a new autotransformer (Afton North Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 on Robert Larsen Blvd, south of the Airport approximately one mile west of the I-10 and Crawford Blvd Interchange (Project Location Map).

EPE and our consultants are working with the BLM to prepare an Environmental Assessment (EA) to analyze potential environmental impacts from the construction and operation of the transmission line, substation and the associated infrastructure. The transmission line would be located on Federal (12.75 miles), State trust (1.5 miles) and private lands (0.06 miles), paralleling existing utility lines and following parcel section lines as much as practicable. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round and include maintenance, replacement of equipment, and operation. Construction of the proposed project is estimated to take 20 to 25 weeks. Vegetation and land clearing activities would be scheduled as much as practicable outside the bird nesting season. If construction activities are to occur during nesting season, EPE would conduct nest surveys in advance of construction activities and provide monitors during construction, if appropriate.

High Desert Native Plants, LLC (HDNP) performed a biological survey of the proposed project area in August and September of 2012, using a combination of vehicle and intensive pedestrian surveys. The purpose of the survey was to identify the potential for the presence of special status species (SSS) and sensitive biological resources along the right-of-way. The survey area was approximately 15 miles long by 300 feet wide and also included an additional 92 acres at the site of the proposed Afton North Substation. A copy of the biological survey report is included with this correspondence.

At present, the right-of-way is vacant, undeveloped land. The biological survey identified no specific occurrences of SSS and no designated critical habitat within the proposed project area. However, areas capable of supporting Texas horned lizards (*Phrynosoma cornutum*) and western burrowing owls (*Athene cunicularia hypugaea)* were observed. HDNP qualified habitat quality for horned lizards as poor and identified no harvester ant nests on site, therefore making the determination that the proposed project would not likely adversely affect the species. Similarly HDNP noted that browsing habitat for burrowing owls is not abundant in the project area and no burrows suitable for nesting were observed, again resulting in the determination that the proposed project will not likely adversely affect the species. Please refer to the enclosed Survey Report for a full description of SSS and the determinations of effect.

Based on the findings documented by HDNP, the project will not adversely affect SSS. As previously mentioned, EPE is working with the BLM on an EA for the proposed project and would appreciate any input you may have regarding the observations and conclusions presented herein. We are working with Steven Torrez, Wildlife Biologist for the BLM in Las Cruces. Please feel free to direct any comments or concerns your agency may have pertaining to the proposed project to us and the BLM. If you have any questions or require additional information, please do not hesitate to contact me directly at (915) 351-4258 or via e-mail at jessica.christianson@epelectric.com.

Sincerely,

Jessica Christianson, PWS
Principal Environmental Scientist

Enclosures: Project Location Map
HDNP Biological Resources Survey- Proposed Powerline, October 2012
HDNP Biological Resources Survey- Proposed Afton Substation, October 2012

CC (w/o enclosures): Steven Torrez, BLM-LCDO
Patricia Zenone, USFWS
Martha Velasco, El Paso Electric Company
David Gamon, El Paso Electric Company

GOVERNOR
Susana Martinez

INTERIM DIRECTOR AND SECRETARY
TO THE COMMISSION
R.J. Kirkpatrick

DEPUTY DIRECTOR
Daniel E. Brooks

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Post Office Box 25112, Santa Fe, NM 87504

Tel: (505) 476-8000 | Fax: (505) 476-8123

For information call: (888) 248-6866

www.wildlife.state.nm.us

STATE GAME COMMISSION

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Farmington

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Albuquerque

BILL MONTOYA
Alto

RALPH RAMOS
Las Cruces

February 4, 2014

Jessica Christianson, PWS
Principal Environmental Scientist
The Electric Company
P.O. Box 982
El Paso, TX 79960-0982

RE: El Paso Electric Transmission Project; NMDGF No. 16173

Dear Mr. Christianson:

In response to your letter dated 20 January 2014 regarding the above referenced project, the Department of Game and Fish (Department) is providing the following recommendations to minimize or eliminate impacts to wildlife.

- 2003 Powerline Project Guidelines, updated February 2007
- 2003 Trenching Guidelines, updated September 2006

Major emphases of these guidelines include 1) designing transmission lines to prevent or minimize risk of electrocution of raptors (See *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* produced by the Avian Power Line Interaction Committee. A copy of this report may be purchased from APLIC at http://www.aplic.org.and 2) avoiding leaving open trenches during below-ground powerline construction to minimize injury or death to wildlife.

With implementation of these recommendations during construction, the Department believes that this project as proposed is unlikely to adversely affect wildlife or wildlife habitats. For your convenience, we have enclosed a copy of New Mexican Wildlife of Concern for Dona Ana County. Included below are sources of additional information:

1. For Biota Information System of New Mexico (BISON-M) species accounts, searches, and county lists go to bison-m.org.
2. For the Department's Habitat Handbook Project guidelines go to wildlife.state.nm.us/conservation/habitat_handbook/index.htm.
3. For custom, site-specific database searches on plants and wildlife go to nhnm.unm.edu, then go to Data, Free On-Line Data, and follow the directions.
4. For state-listed plants contact the New Mexico State Forestry Division at (505) 476-3334 or nmrareplants.unm.edu/index.html.
5. For the most current listing of federally listed species **always** check the U.S. Fish and Wildlife Service at (505) 346-2525 or fws.gov/southwest/es/NewMexico/SBC.cfm.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Kevin Rodden, Southwest Regional Habitat Biologist at (575) 532-2111 or kevin.rodden.mathis@state.nm.us.

Sincerely,

Kenneth K. Cunningham, Assistant Chief
Ecological and Environmental Planning Division

Enc.: 1
cc: USFWS NMES Field Office

NEW MEXICO WILDLIFE OF CONCERN
DONA ANA COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at http://www.fws.gov/southwest/es/NewMexico/SBC.cfm. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to http://nmrareplants.unm.edu/. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

Common Name	Scientific Name	NMGF	US FWS	critical habitat
Bleached Earless Lizard	Holbrookia maculata ruthveni	s		
Southwestern Fence Lizard	Sceloporus cowlesi	s		
Little White Whiptail	Aspidoscelis gypsi	s		
Brown Pelican	Pelecanus occidentalis	E		
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Bald Eagle	Haliaeetus leucocephalus	T		
Northern Goshawk	Accipiter gentilis	s	SOC	
Common Black-Hawk	Buteogallus anthracinus	T	SOC	
Aplomado Falcon	Falco femoralis	E	Exp	
Peregrine Falcon	Falco peregrinus	T	SOC	
Mountain Plover	Charadrius montanus	s	SOC	
Least Tern	Sterna antillarum	E	E	
Black Tern	Chlidonias niger surinamensis		SOC	
Common Ground-Dove	Columbina passerina	E		
Yellow-billed Cuckoo	Coccyzus americanus	s	C	
Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y
Burrowing Owl	Athene cunicularia		SOC	
Buff-collared Nightjar	Caprimulgus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Costa's Hummingbird	Calypte costae	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Sprague's Pipit	Anthus spragueii		C	
Varied Bunting	Passerina versicolor	T		
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Red Bat	Lasiurus blossevillii	s	SOC	
Spotted Bat	Euderma maculatum	T		
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Organ Mountains Colorado Chipmunk	Neotamias quadrivittatus australis	T	SOC	

Desert Pocket Gopher	Geomys arenarius	s	SOC
Pecos River Muskrat	Ondatra zibethicus ripensis	s	SOC
Red Fox	Vulpes vulpes	s	
Ringtail	Bassariscus astutus	s	
Western Spotted Skunk	Spilogale gracilis	s	
Common Hog-nosed Skunk	Conepatus leuconotus	s	
Desert Bighorn Sheep	Ovis canadensis mexicana		
Dona Ana Talussnail	Sonorella todseni	T	SOC
Fairy Shrimp	Streptocephalus moorei	s	
Anthony Blister Beetle	Lytta mirifica		SOC
Desert Viceroy Butterfly	Limenitis archippus obsoleta		SOC

El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

January 20, 2014

Ms. Patricia Zenone, Biologist
U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
2105 Osuna Road NE
Albuquerque, NM 87113

RE: El Paso Electric Proposed Afton to Airport Transmission and Substation
Project No. DOI-NM-L000-2013-0099-EA

Dear Ms. Zenone:

El Paso Electric (EPE) is contacting your office for informal consultation regarding a proposed new 115 kilovolt (kV) transmission line and 345 kV substation in Doña Anna County, New Mexico. EPE has applied to the Bureau of Land Management (BLM), Las Cruces District Office, for a right-of-way to construct, operate, and maintain a new 14.3 mile transmission line that would extend from a new autotransformer (Afton North Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 on Robert Larsen Blvd, south of the Airport approximately one mile west of the I-10 and Crawford Blvd Interchange (Project Location Map).

EPE and our consultants are working with the BLM to prepare an Environmental Assessment (EA) to analyze potential environmental impacts from the construction and operation of the transmission line, substation and the associated infrastructure. The transmission line would be located on Federal (12.75 miles), State trust (1.5 miles) and private lands (0.06 miles), paralleling existing utility lines and following parcel and section lines as much as practicable. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round and include maintenance, replacement of equipment, and operation. Construction of the proposed project is estimated to take 20 to 25 weeks. Vegetation and land clearing activities would be scheduled as much as practicable outside the bird nesting season. If construction activities are to occur during nesting season, EPE would conduct nest surveys in advance of construction activities and provide monitors during construction, if appropriate.

High Desert Native Plants, LLC (HDNP) performed a biological survey of the proposed project area in August and September of 2012, using a combination of vehicle and intensive pedestrian surveys. The purpose of the survey was to identify the potential for the presence of special status species (SSS) and sensitive biological resources along the right-of-way. The survey area was approximately 15 miles long by 300 feet wide and also included an additional 92 acres at the site of the proposed Afton North Substation. A copy of the biological survey report is included with this correspondence. This report itemizes the list of SSS occurring in Doña Ana County and identifies target species that could potentially occupy the proposed project area.

At present, the right-of-way is vacant, undeveloped land. The biological survey identified no specific occurrences of SSS and no designated critical habitat within the proposed project area. Of the federally listed species occurring in Doña Ana County, only the Aplomado falcon (*Falco femoralis septentrionalis*) (endangered) and night-blooming cereus (*Peniocereus greggii*) (species of concern) were identified as potentially occurring within the project area. HDNP observed neither species during the survey area and noted no breeding habitat for Aplomado falcons, consequently making a determination that the propose project will not adversely affect these or other SSS. Please refer to the enclosed Survey Report for a full description of SSS and the determinations of effect.

Based on the findings documented by HDNP, the project will not adversely affect SSS. As previously mentioned, EPE is working with the BLM on an EA for the proposed project and would appreciate any input you may have regarding the observations and determinations presented herein.

Steven Torrez, Wildlife Biologist for the BLM in Las Cruces, is aiding in the review of the project and instructed us to initiate this informal consultation with you. Please feel free to direct any comments or concerns your agency may have pertaining to the proposed project to us and the BLM. If you have any questions or require additional information, please do not hesitate to contact me directly at (915) 351-4258 or via e-mail at jessica.christianson@epelectric.com.

Sincerely,

Jessica Christianson, PWS
Principal Environmental Scientist

Enclosures:
Project Location Map
HDNP Biological Resources Survey- Proposed Powerline, October 2012
HDNP Biological Resources Survey- Proposed Afton Substation, October 2012

CC (w/o enclosures):
Steven Torrez, BLM-LCDO
Kenneth Cunningham, NMDGF
Martha Velasco, El Paso Electric Company
David Gamon, El Paso Electric Company

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
LAS CRUCES REGULATORY FIELD OFFICE
505 S. MAIN ST SUITE 142
LAS CRUCES, NM 88001
(575)-652-3708

REPLY TO ATTENTION OF

August 7, 2014

Regulatory Division

SUBJECT: No Permit Required – Action No. SPA-2014-00363-LCO, El Paso Electric - Proposed Airport to Afton Transmission Line

Jessica Christianson
El Paso Electric Company
Rio Grande Power Plant
PO Box 982
El Paso, TX 79960

Dear Ms. Christianson:

I am writing this letter in response to your request for a determination of Department of the Army permit requirements for the proposed El Paso Electric - Proposed Airport to Afton Transmission Line located at approximately latitude 32.269025, longitude -106.939408, in Dona Ana County, New Mexico. The El Paso Electric Company (EPE) is in the in the process of performing an environmental review pursuant to the National Environmental Policy Act (NEPA) for the Bureau of Land Management (BLM) to assess the environmental impacts of a proposed 14.3 mile long, 115 kilovolt (kV) transmission line and access road. The proposed line would be built within a single ROW corridor starting at a new 345/115-kV autotransformer just north of the Afton Generating Station and ending at EPE's existing Las Cruces Airport Substation located just south of Interstate 10. We have assigned Action No. SPA-2014-00363-LCO to this project. Please reference this number in all future correspondence concerning the project.

Based on the information provided, we have determined that a Department of the Army permit is not required since the project would not result in the discharge of dredged/fill material into waters of the United States, the project site consists entirely of uplands. However, it is incumbent upon you to remain informed of any changes in the Corps Regulatory Program regulations and policy as they relate to your project. If your plans change such that waters of the U.S. could be impacted by the proposed project, please contact our office for a reevaluation of permit requirements.

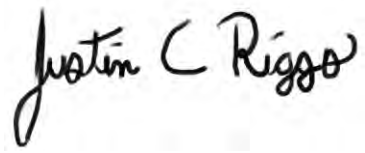
This decision is based on an approved jurisdictional determination (JD) (attached) that there are no waters of the United States on the project site. The basis for this JD is that the project site contains entirely uplands. A copy of this JD is also available at

http://www.spa.usace.army.mil/reg/JD. This approved JD is valid for five years unless new information warrants revision of the determination before the expiration date.

You may accept or appeal this approved JD or provide new information in accordance with the attached Notification of Administration Appeal Options and Process and Request for Appeal (NAAOP-RFA). If you elect to appeal this approved JD, you must complete Section II of the form and return it to the Army Engineer Division, South Pacific, CESPD-PDS-O, Attn: Tom Cavanaugh, Administrative Appeal Review Officer, 1455 Market Street, Room 1760, San Francisco, CA 94103-1399 within 60 days of the date of this notice. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

If you have any questions concerning our regulatory program, please contact me at 575-652-3708 or by e-mail at Justin.C.Riggs@usace.army.mil. At your convenience, please complete a Customer Service Survey on-line available at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,



Justin Riggs
Regulatory Manager for
Southern New Mexico and West Texas

Enclosure(s)
Approved JD

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 7, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, El Paso Electric - Proposed Airport to Afton Transmission Line, SPA-2014-00363-LCO

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: **New Mexico** County/parish/borough: **Dona Ana** City: **Las Cruces**
Center coordinates of site (lat/long in degree decimal format): Lat. **32.269025°**, Long. **-106.939408333333°**
Universal Transverse Mercator: **13 317334.3 3571906.66**
Name of nearest waterbody: **Grande, Rio**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:
Name of watershed or Hydrologic Unit Code (HUC): **El Paso-Las Cruces. New Mexico, Texas., 13030102**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **August 7, 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet, wide, and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **Pick List** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **Pick List** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain:

   Identify flow route to TNW[5]:
   Tributary stream order, if known:

   (b) General Tributary Characteristics (check all that apply):
   Tributary is: ☐ Natural
   ☐ Artificial (man-made). Explain:
   ☐ Manipulated (man-altered). Explain:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime:
Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:
Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):
☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain:

Surface flow is**: Pick List**
Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain:
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent

wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet, wide, Or acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet, wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

[8]See Footnote # 3.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Jessic Christianson**
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; NM-PICACHO MOUNTAIN**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **NAIP 2013**
  or ☒ Other (Name & Date): **Photos taken in 2014 by Jessic Christianson**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The project location is comprised entirely of uplands and upland drainage.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
www.blm.gov/nm

TAKE PRIDE IN AMERICA

In Reply Refer To:
2800 (L0310)

AUG 1 2013

Dear Interested Party:

The Bureau of Land Management (BLM) invites you to participate in a public process to gather input regarding the preparation of an Environmental Assessment (EA) for a right-of-way application for a proposed new 115/345-kV Transmission Line in Doña Ana County, New Mexico. The proposed EA will analyze the potential effects from the construction and operation of the transmission line and the associated infrastructure. The BLM has determined that preparation of an EA is necessary under the National Environmental Policy Act (NEPA) and Council on Environmental Quality implementing regulations in 40 CFR Parts 1500 to 1508.

The BLM received a revised right-of-way application from El Paso Electric Company (EPE) on March 26, 2013 to construct, operate, and maintain a new 14.3-mile long, 115-kilovolt (kV) transmission line that would extend from a new autotransformer (Afton Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 (see Figure 1-1). The proposed circuit will have a capacity to transmit 140 megawatts (MW) at normal operation and 200 MW under emergency conditions. The transmission line would be located on Federal (about 12.75 miles of the total length), State trust (about 1.5 miles), and private lands (0.06 miles), paralleling existing utility lines and following parcel section lines as much as practicable to avoid dividing properties. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round, and include maintenance, replacement of equipment, and operation.

This project is an undertaking subject to review under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations in 36 CFR Part 800. In accordance with 36 CFR 800.2(a)(2), the BLM will serve as the "Lead Agency" for the purposes of the Section 106 review.

Public participation and scoping is now underway for this project. We are inviting you to comment on the proposed project in accordance with Section 106 of the NHPA and NEPA. Your input is important to us, and we would like to hear about your issues and concerns.

You may submit comments at any time during the preparation of the EA; however, if you would like to have your comments considered for inclusion in the Draft EA, they must be submitted by September 5, 2013. There are several ways in which you can submit your comments on the proposed project:

- File your comments electronically by sending them to: BLM_NM_LCDO_Comments@blm.gov. Please include "Afton Transmission Line EA Comments" in the subject line of your email.
- Mail your comments to: "Afton Transmission Line EA Project", BLM Las Cruces District Office, ATTN: Kendrah Penn, 1800 Marquess Street, Las Cruces, New Mexico 88005
- Submit your comments on the enclosed postage paid Comment Form

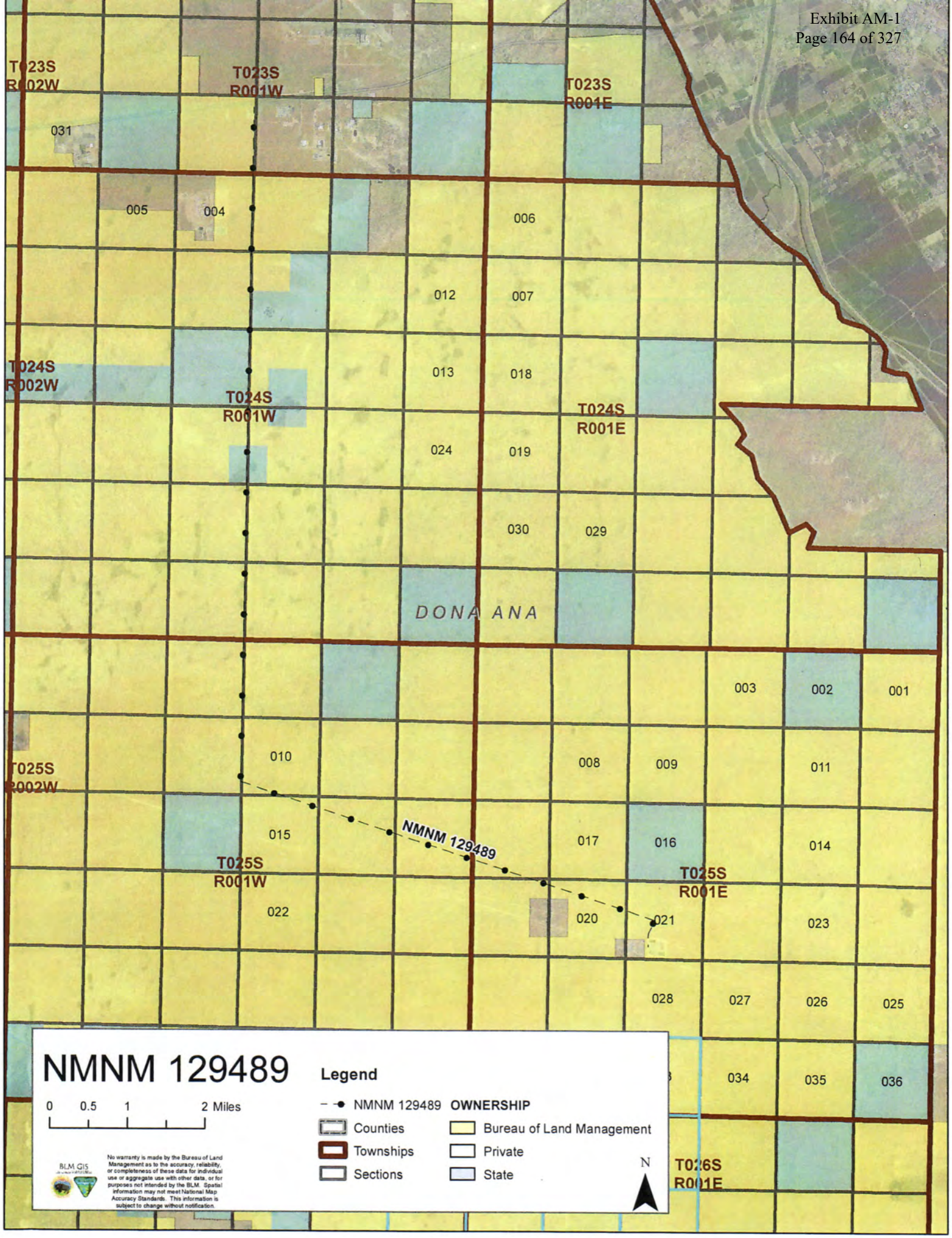
Before including your address, phone number, email address, or other personal identifying information in your comment, be advised that your entire comment—including your personal identifying information, may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

If you have any questions about this Project, please contact Kendrah Penn, Project Lead, at (575) 525-4382. We appreciate your participation in this proposed Project.

Sincerely,

David L. Wallace
Assistant District Manager
Division of Multi-Resources

2 Enclosures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No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by the BLM. Spatial information may not meet National Map Accuracy Standards. This information is subject to change without notification.

8100 (L0310)

NOV 1 2 2014

Mr. Jimmy Arterberry
Comanche Indian Tribe
NAGPRA and HISTORIC
PRESERVATION PROGRAM
6 SW "D" Avenue
Lawton, OK 73507

Dear Mr. Arterberry:

The Bureau of Land Management (BLM) received a revised right-of-way (ROW) application from El Paso Electric Company (EPE) to construct, operate and maintain a new 14.3-mile long, 15 kilovolt (kV) transmission line, access road, and substation. EPE is a regional electric utility providing generation, transmission, and distribution service to approximately 380,000 retail and wholesale customers in a 10,000 square-mile area of west Texas and Southern New Mexico. The territory extends from Hatch, New Mexico to Van Horn, Texas and includes two connections to Mexico.

The transmission line would be located on Federal, state, municipal, and private lands in southwest New Mexico, paralleling existing utility lines and following parcel section lines as much as practicable. Temporary and permanent access roads for construction and maintenance would be constructed along the proposed ROW, with access points from existing county roads.

Two archaeological surveys were conducted on the properties being considered for development by EPE. *"A Class III Cultural Resource Survey for the Proposed El Paso Electric WA3 Line, Afton to Airport, Doña Ana County, New Mexico"* is entered into the New Mexico Cultural Resource Information System (NMCRIS) as Activity Number 125271. The report was produced by Marron and Associates. Twenty-six sites were evaluated during the course of this project. Five sites have been recommended as eligible for inclusion to the National Register of Historic Places (NRHP) under criteria D, these are LA 32577, LA 34355, LA 173969, LA 173971, and LA 174987, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. Four sites LA 6310, LA 20032, LA 35172, and LA 37891 were not relocated within the project area, it is presumed that these sites have been destroyed or have been misplotted. The 17 remaining sites evaluated for this survey were recommended not eligible.

"A Class III Cultural Resource Survey for the Proposed El Paso Electric Afton Substation, Doña Ana County, New Mexico" is entered into the NMCRIS system as Activity Number 125454. The report was produced by Marron and Associates. Ten sites were evaluated during the course of this project. Two sites have been recommended as eligible for inclusion to the NRHP under criteria D, these are LA 20034 and LA 66083, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. One site, LA 20032, was not relocated within the project area, it is presumed that this site has been destroyed or has been misplotted. The seven remaining sites evaluated for this survey were recommended not eligible.

While this letter is being sent to meet our consultation requirements under Section 106 of the National Historic Preservation Act, The Native American Graves and Repatriation Act, the American Indian Religious Freedom Act, as well as our 2004 Protocol and IM No. NM-2005-037, we are looking forward to your input on this process. In honoring these laws and documents, we are also asking whether there exist any known Traditional Cultural Properties or other areas of religious or cultural significance that would require avoidance, reconsideration of the area of potential effect, or other mitigation of the effects of these actions. Any information received on Traditional Cultural Properties or areas of religious significance will, at your request, be held in strict confidence.

In response to this letter or if you wish to begin further consultation on this issue, please contact Las Cruces District Archaeologist, James Renn at (575) 525-4395 or by e-mail at jrenn@blm.gov.

Sincerely,

/s/ Bill Childress

Bill Childress
District Manager

Identical letter sent to:
See attached list

L0310:JRenn:cp:10/31/2014:x4375:EPE.WA3Line.AftonSubSta.Comanche

Identical letter sent to:

Mr. Jimmy Arterberry
Comanche Indian Tribe
NAGPRA and HISTORIC
PRESERVATION PROGRAM
6 SW "D" Avenue
Lawton, OK 73507

Mr. Jeff Houser
Fort Sill Apache Tribe
Chairman, Fort Sill Apache Tribe
Route 2, Box 121
Apache, OK 73507

Mr. Leigh Kuwanwisiwma
Hopi Cultural Preservation Office
P.O. Box 123
Kykotsmovi, AZ 86039

Isleta Pueblo
Attention: Stephanie Zuni
Lt. Governor
P.O. Box 1270
Isleta Pueblo, NM 87022

Kiowa Tribe
Attention: Amie Tah-Bone
Museum Director and
Acting NAGPRA Representative
Kiowa Tribe of Oklahoma
P.O. Box #369
Carnegie, OK 73015

Ms. Holly Houghten
Mescalero Apache Tribe
P.O. Box 227
Mescalero, NM 88340

Navajo Nation
Dr. Alan S. Downer
THPO and Department Manager
Historic Preservation
P.O. Box 4950
Window Rock, AZ 86515

Mr. Mark Altaha
White Mountain Apache Tribe
Heritage Program Historic Preservation
Office
P.O. Box 507
Fort Apache, AZ 85926

Mr. Javier Loera
Ysleta Del Sur Pueblo
Tribal Council Office
P.O. Box 17579
El Paso, TX 79907

8100 (L0310)

NOV 1 2 2014

Dr. Jeff Pappas
Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas:

Please find the cultural resource survey reports for two El Paso Electric Company (EPE) projects. EPE proposes to construct a 14.3-mile, 115 kV transmission line and a new substation. The new 115 kV line will connect the Las Cruces Substation to the new Afton Substation (to be constructed).

"*A Class III Cultural Resource Survey for the Proposed El Paso Electric WA3 Line, Afton to Airport, Doña Ana County, New Mexico*" is entered into the New Mexico Cultural Resource Information System (NMCRIS) as Activity Number 125271. The report was produced by Marron and Associates. Twenty-six sites were evaluated during the course of this project. Five sites have been recommended as eligible for inclusion to the National Register of Historic Places (NRHP) under criteria D, these are LA 32577, LA 34355, LA 173969, LA 173971, and LA 174987 and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. Four sites, LA 6310, LA 20032, LA 35172, and LA 37891, were not relocated within the project area, it is presumed that these sites have been destroyed or have been misplotted. The 17 remaining sites evaluated for this survey were recommended not eligible.

"*A Class III Cultural Resource Survey for the Proposed El Paso Electric Afton Substation, Doña Ana County, New Mexico*" is entered into the NMCRIS system as Activity Number 125454. The report was produced by Marron and Associates. Ten sites were evaluated during the course of this project. Two sites have been recommended as eligible for inclusion to the NRHP under criteria D, these are LA 20034 and LA 66083, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. One site LA 20032, was not relocated within the project area, it is presumed that this site has been destroyed or has been misplotted. The seven remaining sites evaluated for this survey were recommended not eligible.

If you have any questions or concerns, please contact Las Cruces District Archaeologist, James Renn at (575) 525-4395 or by e-mail at jrenn@blm.gov.

Thank you for your time in consideration of this report.

Sincerely,

/s/ Bill Childress
Bill Childress
District Manager

2 Enclosures

L0310:JRenn:cp:10/31/2014:x4375:EPE.WA3Line.AftonSubSta.SHPO

THE
NAVAJO
NATION

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AG CULTURES PLANNING OFFICE
2015 JAN 28 PM 1:21
LAS CRUCES

Historic Preservation Department, POB 4950, Window Rock, AZ 86515 • PH: 928.871-7198 • FAX: 928.871.7886

BEN SHELLY
PRESIDENT

REX LEE JIM
VICE-PRESIDENT

January 22, 2015

Bill Childress, District Manager
Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, NM 88005

Subject: **14.3 MILE TRANSMISSION LINE, ACCESS RAOD AND SUBSTATION-NEW MEXICO, TEXAS**

Dear: Mr. Childress,

The Historic Preservation Department-Traditional Culture Program, hereafter (HPD-TCP) is in receipt of your letter regarding a proposed application from El Paso Electric Company to construct, operate and maintain an new 14.3 mile long, 15 kilovolt transmission line, access road and substation located west of Texas and Southern New Mexico.

After reviewing the information documents provided, HPD-TCP the project proposed **will not have** adverse effects to Navajo Traditional Cultural Properties. HPD-TCP on behalf of the Navajo Nation has no concerns at this time, and would like to request additional proposal information regarding this project.

If the proposed application inadvertently discovers habitation sites, plant gathering areas, human remains and objects of cultural patrimony, HPD-TCP request that we be notified respectively in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). (***The Navajo Nation claims cultural affiliation to all Anaasazi people (periods from Archaic to Pueblo IV) of the southwest. The Navajo Nation makes this claim through Navajo oral history and ceremonial history, which has been documented as early as 1880 and taught from generation to generations).***

The HPD-TCP appreciates the Bureau of Land Management's consultation efforts regarding this document. Should you have any additional concerns and/or questions do not hesitate to contact me electronically at tony@navajohistoricpreservation.org or telephone at 928-871-7750.

Sincerely,

Tony H. Joe, Jr., Supervisory Anthropologist
Section 106 Consultation
Traditional Culture Program
Historic Preservation Department

TCP File 15-019

Ysleta del Sur Pueblo

Tribal Council – Javier Loera (War Captain/Tribal Historic and Preservation Officer) E-mail jloera@ydsp-nsn.gov

117 South Old Pueblo Road • P.O. Box 17579 • El Paso, Texas 79917 • (915) 859-8053 • Cell (915) 497-3876

December 9, 2014

Mr. Bill Childress
District manager
United States department of the Interior
Bureau of Land Management
Las Cruces District office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr.Childress

This letter is in response to the correspondence received in our office in which you provide Ysleta Del Sur Pueblo the opportunity to comment on the El Paso Electric Company (EPE) to Construct and Operate and Maintain a new 14.3 mile long, 15 (KV) transmission line, access road, and substation .

While we do not have any comments on the ***Application From El Paso Electric Company*** and believe that this project will not adversely affect traditional , religious or culturally significant sites of our Pueblo and have no opposition to it: we would like to request consultation should any human remains or artifacts unearthed during this project be determined to fall under NAGPRA guidelines .Copies of our Pueblo's Culture Affliction Position Paper and Consultation policy are available upon request.

Sincerely,

Javier Loera
War Captain/Tribal Historic and Preservation officer
Ysleta Del Sur Pueblo

Las Cruces District Office
Attn: James Renn
1800 Marquess Street
New Mexico 88005

December 8, 2014

Re: Right of Way Application from El Paso Electric Company

Dear Mr. Renn:

In response to your request, the above reference project has been reviewed by staff of this office to identify areas that may potentially contain prehistoric or historic archeological materials. The location of your project has been cross referenced with the Comanche Nation site files, where an indication of ***"No Properties"*** have been identified.

Please contact this office at (580) 595-9960/9618 if you require additional information on this project.

This review is performed in order to locate, record, and preserve the Comanche Nation and State of (New Mexico) prehistoric and historic cultural heritage, in cooperation with State Historic Preservation Office.

Regards

Theodore Villicana
Theodore E. Villicana
Resource Technician
Comanche Nation Historic Preservation Office

THE HOPI TRIBE

2014 NOV 28 PM 2:16

Herman G. Honanie
CHAIRMAN

Alfred Lomahquahu Jr.
VICE-CHAIRMAN

November 24, 2014

Bill Childress, District Manager
Attention: James Renn, Archaeologist
Bureau of Land Management, Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Childress,

This letter is in response to your correspondence dated November 12, 2014, regarding a right-of-way application from El Paso Electric Company to construct, operate and maintain a new 14.3 mile long transmission line access road and substation. The Hopi Tribe claims cultural affiliation to the Paleo, Archaic, Mimbres and Mogollon prehistoric cultural groups in the Las Cruces District. The Hopi Cultural Preservation Office supports the identification and avoidance of our ancestral sites, and we consider the prehistoric archaeological sites of our ancestors to be Traditional Cultural Properties. Therefore, we appreciate the Bureau of Land Management (BLM), Las Cruces Field Office's solicitation of our input and your efforts to address our concerns.

The Hopi Cultural Preservation Office understands the area of potential effect has been surveyed for cultural resources and seven National Register sites, LA 32577, LA 34355, LA 173969, LA 173971, LA 174987, LA20034 and LA 66083, have been identified that will be adversely affected by this proposal. Therefore we request continuing consultation on this proposal including being provided with copies of the survey reports and proposed treatment plans for review and comment. If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office at 928-734-3619 or tmorgart@nsn.us. Thank you for your consideration.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

xc: New Mexico State Historic Preservation Office

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
www.blm.gov/nm

TAKE PRIDE IN AMERICA

RECEIVED
LAS CRUCES DISTRICT
2014 DEC 10 PM 2:03
LAS CRUCES, NEW MEXICO

In Reply Refer To:
8100 (L0310)

100356

NOV 12 2014

RECEIVED
NOV 17 2014
HISTORIC PRESERVATION DIVISION

Dr. Jeff Pappas
Department of Cultural Affairs
Historic Preservation Division
Bataan Memorial Building
407 Galisteo Street, Suite 236
Santa Fe, NM 87501

Dear Dr. Pappas:

Please find the cultural resource survey reports for two El Paso Electric Company (EPE) projects. EPE proposes to construct a 14.3-mile, 115 kV transmission line and a new substation. The new 115 kV line will connect the Las Cruces Substation to the new Afton Substation (to be constructed).

"*A Class III Cultural Resource Survey for the Proposed El Paso Electric WA3 Line, Afton to Airport, Doña Ana County, New Mexico*" is entered into the New Mexico Cultural Resource Information System (NMCRIS) as Activity Number 125271. The report was produced by Marron and Associates. Twenty-six sites were evaluated during the course of this project. Five sites have been recommended as eligible for inclusion to the National Register of Historic Places (NRHP) under criteria D, these are LA 32577, LA 34355, LA 173969, LA 173971, and LA 174987 and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. Four sites, LA 6310, LA 20032, LA 35172, and LA 37891, were not relocated within the project area, it is presumed that these sites have been destroyed or have been misplotted. The 17 remaining sites evaluated for this survey were recommended not eligible.

"A Class III Cultural Resource Survey for the Proposed El Paso Electric Afton Substation, Doña Ana County, New Mexico" is entered into the NMCRIS system as Activity Number 125454. The report was produced by Marron and Associates. Ten sites were evaluated during the course of this project. Two sites have been recommended as eligible for inclusion to the NRHP under criteria D, these are LA 20034 and LA 66083, and will be the subject of further treatment to mitigate adverse effects through data recovery before final project approval. One site LA 20032, was not relocated within the project area, it is presumed that this site has been destroyed or has been misplotted. The seven remaining sites evaluated for this survey were recommended not eligible.

If you have any questions or concerns, please contact Las Cruces District Archaeologist, James Renn at (575) 525-4395 or by e-mail at jrenn@blm.gov.

Thank you for your time in consideration of this report.

Sincerely,

Bill Childress
District Manager

2 Enclosures

COMMENTS:
S M Wakefield 12/08/2014
for NM State Historic Preservation Office

- No Adverse effect through mitigation
- Please note that under the new BLM Protocol, mitigation will always trigger an adverse effect determination.
- We look forward to reviewing the data recovery plan(s) for the eligible sites.

THE HOPI TRIBE

LAS CRUCES DISTRICT OFFICE
2014 DEC 18 PM 12:59
LAS CRUCES, NEW MEXICO

Herman G. Honanie
CHAIRMAN

Alfred Lomahquahu Jr.
VICE-CHAIRMAN

December 11, 2014

Bill Childress, District Manager
Attention: James Renn, Archaeologist
Bureau of Land Management, Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Dear Mr. Childress,

This letter is in response to an e-mail correspondence from Archaeologist Renn dated December 2, 2014, with enclosed cultural resources survey reports, in response to our November 24, 2014 letter, regarding a right-of-way application from El Paso Electric Company to construct, operate and maintain a new 14.3 mile long transmission line access road and substation.

The Hopi Tribe claims cultural affiliation to the Paleo, Archaic, Mimbres and Mogollon prehistoric cultural groups in the Las Cruces District. The Hopi Cultural Preservation Office supports the identification and avoidance of our ancestral sites, and we consider the prehistoric archaeological sites of our ancestors to be Traditional Cultural Properties. Therefore, we appreciate the Bureau of Land Management (BLM), Las Cruces Field Office's solicitation of our input and your efforts to address our concerns.

In our November 24, 2014 letter the Hopi Cultural Preservation Office stated we understood the area of potential effect has been surveyed for cultural resources and seven National Register sites have been identified that will be adversely affected by this proposal.

We have now reviewed the enclosed cultural resource reports which state that the area was greatly used prehistorically. We understand 17 ineligible prehistoric sites and five National Register eligible prehistoric sites, LA 32577, LA 34355, LA 173969, LA 173971, LA 173957, described as Jornada Mogollon artifact scatters with thermal features, are located in the 14.12 mile long right-of-way, and six ineligible prehistoric sites and two National Register eligible sites, LA 20034 and LA 66083, described as Jornada Mogollon artifact scatters with features, are located in the substation 180 acre area of potential effect.

Therefore we have determined that this proposal will adversely affect cultural resources significant to the Hopi Tribe and request continuing consultation on it proposal including being provided with copies of the proposed treatment plan for review and comment. If you have any questions or need additional information, please contact Terry Morgart at the Hopi Cultural Preservation Office at 928-734-3619 or tmorgart@hopi.nsn.us. Thank you for your consideration.

Respectfully,

Leigh J. Kuwanwisiwma, Director
Hopi Cultural Preservation Office

xc: New Mexico State Historic Preservation Office

ZIA NATURAL GAS COMPANY
3700 W. PICACHO AVE. • LAS CRUCES, NEW MEXICO 88007 • (575) 526-4427 • FAX (575) 523-4945

August 30, 2013

"Afton Transmission Line EA Project"
BLM Las Cruces District Office
ATTN: Kenrah Penn, Project Lead
1800 Marquess Street
Las Cruces, NM 88005

Dear Ms. Kendrah Penn:

Zia Natural Gas Company is responding to your request for input for an Environmental Assessment (EA) for a right-of-way application for a proposed 115/345-kV Transmission Line.

The proposed 14.3 mile long 115-kilovolt (kV) transmission line to be constructed, maintained, and operated by El Paso Electric Company does raise concern as the proposed route crosses the proposed high pressure natural gas line permitted under Right-of-Way Permit NMNM 107550.

Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the center line of the 30-feet wide right-of-way is offset 27.5-feet to the west of NMNM 52930, and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under Right-of-Way NMNM 52930 a 25-feet wide right-of-way.

The construction and grant of permanent access for the proposed transmission line can create cause for the following notice of probable violation for the following items:

Underground Clearance, as required by 49 CFR 192.325
Cover, as required by 49 CFR 192.327

Zia Natural Gas Company reserves the right to further comment on the proposed right-of-way application upon receipt of construction plans for the proposed 115-kV Transmission Line.

Sincerely,

Crystal A. Enoch, P.E.
Project Engineer
Zia Natural Gas Company

Memorandum

TriAxis Engineering, Inc.

To: Thomas Vick, Raba Kistner Consultants

From: Phil Bosanquet, PE, TriAxis Engineering

CC: Steve Jones, Raba Kistner Consultants
Scott Croshaw, PS, Wilson Construction
Mark Petrie, PE, TriAxis Engineering

Date: September 06, 2013

Re: Zia Natural Gas Company EA Comment Letter dated August 30, 2013

The following is in response to the Zia Natural Gas Company EA response letter dated August 30, 2013.

We believe the Right-of-Ways referenced in the letter to be NMNM 107570 (as opposed to NMNM 107550, as stated in letter) and NMNM 25930. The proposed Afton to Airport 115kV transmission line for El Paso Electric will have no impact on the Underground Clearance (as required by 49 CFR 192.325) or the Cover (as required by 49 CFR 192.327) for any gas lines located within the stated easements. Both gas easements have been previously identified and located on our land use maps submitted with the Environmental Assessment documentation.

No structures will be located within the referenced easements, so as to not violate the underground clearance required for gas lines as required by 49 CFR 192.325. The entire width of these easements will be avoided for all transmission structures.

All clearing and grading activities for the access road construction within the referenced right-of-ways will be conducted in such a manner so as not alter the existing grade elevation, and will not impact the existing cover for gas lines as required by 49 CFR 192.327.

ZIA NATURAL GAS COMPANY
3700 W. PICACHO AVE. • LAS CRUCES, NEW MEXICO 88007 • (575) 526-4427 • FAX (575) 523-4945

August 30, 2013

"Afton Transmission Line EA Project"
BLM Las Cruces District Office
ATTN: Kenrah Penn, Project Lead
1800 Marquess Street
Las Cruces, NM 88005

Dear Ms. Kendrah Penn:

Zia Natural Gas Company is responding to your request for input for an Environmental Assessment (EA) for a right-of-way application for a proposed 115/345-kV Transmission Line.

The proposed 14.3 mile long 115-kilovolt (kV) transmission line to be constructed, maintained, and operated by El Paso Electric Company does raise concern as the proposed route crosses the proposed high pressure natural gas line permitted under Right-of-Way Permit NMNM 107550.

Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the center line of the 30-feet wide right-of-way is offset 27.5-feet to the west of NMNM 52930, and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under Right-of-Way NMNM 52930 a 25-feet wide right-of-way.

The construction and grant of permanent access for the proposed transmission line can create cause for the following notice of probable violation for the following items:

Underground Clearance, as required by 49 CFR 192.325
Cover, as required by 49 CFR 192.327

Zia Natural Gas Company reserves the right to further comment on the proposed right-of-way application upon receipt of construction plans for the proposed 115-kV Transmission Line.

Sincerely,

Crystal A. Enoch, P.E.
Project Engineer
Zia Natural Gas Company

FORM 2800-14
(August 1985)

Issuing Office
Las Cruces District Office

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

SERIAL NUMBER NMNM 107570

1. A right-of-way is hereby granted pursuant to Section 28 of the Act of February 25, 1920 (41 Stat. 449; 30 U.S.C. 185) as amended by the Act of November 16, 1973 (87 Stat. 576).

2. Nature of Interest:

a. By this instrument, the holder:

Rio Grande Natural Gas Association
P.O. Box 20000
Las Cruces, NM 88004

receives a right to operate, maintain, and terminate a(n) existing natural gas pipeline on public lands described as follows:

T. 23 S., R. 1 E., Dona Ana County, New Mexico

sec. 30, SW¼.

T. 23 S., R. 1 W., Dona Ana County, New Mexico

sec. 25, lot 5.

T. 24 S., R. 1 W., Dona Ana County, New Mexico

sec. 1, lot 4;
sec. 11, E½ and E½SW¼;
sec. 14, W½;
sec. 22, NE¼SE¼ and SE¼SE¼;
sec. 23, W½W½;
sec. 27, E½;
sec. 34, W½NE¼, SE¼SW¼, and E½SW¼.

T. 25 S., R. 1 W., Dona Ana County, New Mexico

sec. 3, lot 3, S½NW¼, and W½SW¼;
sec. 9, SE¼NE¼ and E½SE¼;
sec. 10, W½NW¼.

As shown on the attached maps (Exhibit A).

b. The right-of-way or permit area granted herein is 30 feet wide, 8.04 miles long and contains 29.25 acres, more or less.

c. This instrument shall terminate on July 10, 2028, unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully

satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800.

b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(c) or as directed by the authorized officer.

c. The stipulations, plans, maps, or designs set forth in Exhibit(s) B (dated February 2007) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.

d. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.

e. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)

Administrator
(Title)

3-15-07
(Date)

(Signature of Authorized Officer)

Asst Dist Mgr
(Title)

3-28-07
(Effective Date of Grant)

EASEMENT SURVEY

SHOWING THE LOCATION OF A PROPOSED 30' GASLINE EASEMENT
LOCATED IN: SECTIONS 16, 9,10 AND 3, TOWNSHIP 25 SOUTH, RANGE 1W, N.M.P.M.
JULY 2002

EXISTING
29.121 ACRES
PER BLM LEASE
SERIAL No. NMNM 052930

SECTION 16
STATE

SECTION 9
FEDERAL

SECTION 4
FEDERAL

SECTION 33

SECTION 10
FEDERAL

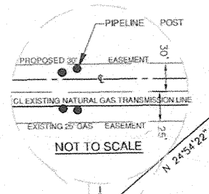
SECTION 3
FEDERAL

SECTION 34
FEDERAL

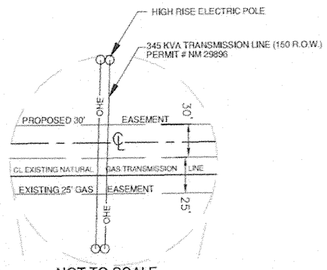
SECTION 15
FEDERAL

SECTION 35

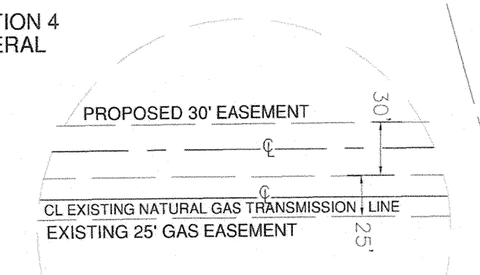
TOWNSHIP 24 SOUTH
TOWNSHIP 25 SOUTH



NOT TO SCALE



NOT TO SCALE



NOT TO SCALE

1/4 CORNER FOUND SEC. 9 / 16

N 24°53'22" W 2374.30

N 15°29'12" E 2224.97'

N 15°29'12" E

FENCE LINE

OHE

N 74°22'00" W 1750.50'

PIPE LINE POST

N 89°47'11" E 1061.93'

16 9 10 15

BOM 25' OFFSET STA. 52+80.0'

S 89°59'00" W 2268.61' TO ℄

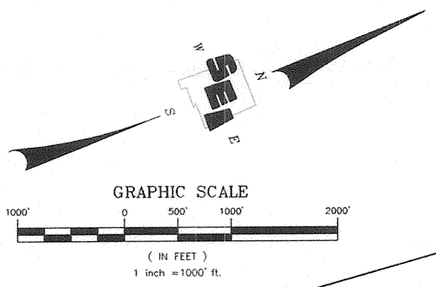
BOM 25' OFFSET STA. 91+61.35'

1/4 CORNER FOUND

38,338.52

BOM 25' OFFSET STA. 144+39.41'

FOUND 5/8" IRON ROD DISTURBED



I, JOHN A. VUKONICH, NEW MEXICO PROFESSIONAL SURVEYOR, HEREBY CERTIFY THAT THIS BOUNDARY SURVEY PLAT WAS PREPARED FROM AN ACTUAL GROUND SURVEY PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION, THAT I AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THIS EASEMENT SURVEY PLAT AND THE FIELD SURVEY UPON WHICH IT IS BASED MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT THIS SURVEY IS NOT A LAND DIVISION OR SUBDIVISION AS DEFINED IN THE NEW MEXICO SUBDIVISION ACT.

JOHN A. VUKONICH, PE/PS PS #14831

9-19-02
DATE

JOHN A. VUKONICH
NEW MEXICO
14831
REGISTERED PROFESSIONAL SURVEYOR

NM NM 107570

SOUTHWEST ENGINEERING, INC.
475 ARCHULETA ROAD, LAS CRUCES, NEW MEXICO 88005
(505) 526-3381 FAX (505) 526-1762

RGNG PIPELINE
EASEMENT SURVEY
SHOWING THE LOCATION OF A PROPOSED
30' GASLINE EASEMENT

PROJECT NUMBER	22123	DATE	09/18/02
FIELD BOOK	XXXXXXX	1 OF 3	
DATA FILE	22123		
DRAWING NUMBER	22123		

El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7777

March 14, 2014

Ms. Crystal A. Enoch, P.E.
Zia National Gas Company
3700 W. Picacho Ave.
Lac Cruces, NM 88007

RE: Afton Transmission Line EA Project
BLM Las Cruces District Office

Dear Ms. Enoch:

El Paso Electric Company is responding to your letter dated August 30, 2013 regarding your comments to the Afton Transmission Line EA Project. Below is a summary of our understanding of your comments and our response. Attached is a drawing indicating the proposed crossing location concerning right of way grant NMNM 107570.

Comment Summary: Zia Natural Gas Company's immediate concern is the placement of any transmission structures in the permitted Right-of-Way NMNM 107550 where the centerline of the 30-feet wide right-of-way is offset 27.5 feet to the west of NMNM 52930 and is paralleling the existing natural gas transmission line owned and operated by the City of Las Cruces permitted under right-of-way NMNM 52930 a 25-feet wide right-of-way.

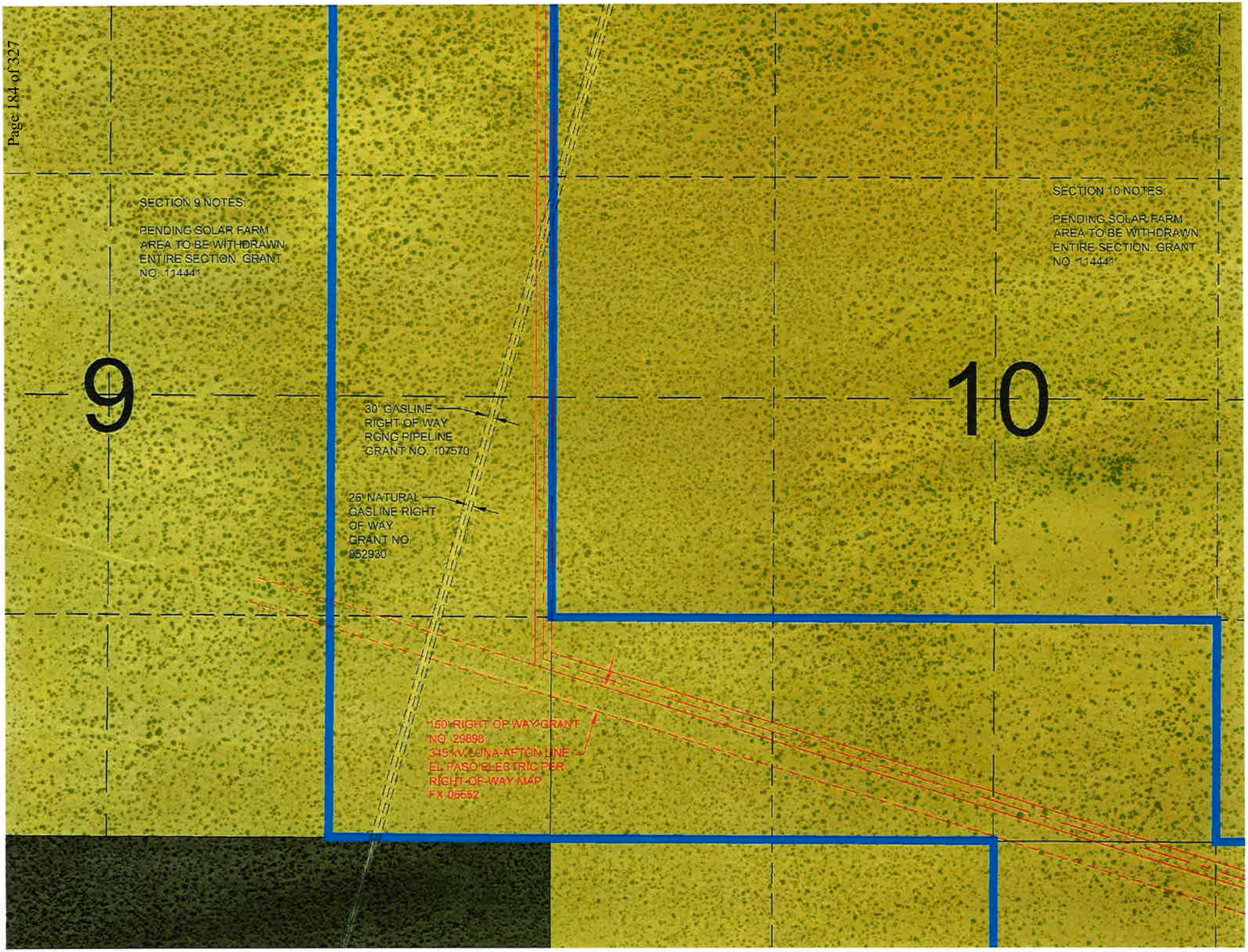
Consideration/Response: We believe that the ROW in question is actually Serial Number 107570. With that understanding, the project team does not propose to place any transmission structures within either of the referenced right-of ways NMNM 107570 nor NMNM 52930. The proposed overhead transmission facilities will span the referenced right-of-ways.

Should you need additional information, please feel free to contact me at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager – Asset Management Services

Enclosure


SECTION 9 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
SECTION 10 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
9
10
30' GASLINE RIGHT OF WAY RGNC PIPELINE GRANT NO. 107570
25' NATURAL GASLINE RIGHT OF WAY GRANT NO. 052930
150' RIGHT OF WAY GRANT NO. 29898 345 kV LUNA-AFTON LINE EL PASO ELECTRIC PER RIGHT-OF-WAY MAP FX-06552

KINDER MORGAN
ENERGY PARTNERS, L.P.
SFPP, L.P.

RECEIVED
LAS CRUCES DISTRICT OFFICE
2013 DEC 16 PM 2:17
LAS CRUCES, NM 88005

SFPP, L.P.
Operating Partnership

December 9, 2013

ENG 4-2-1 (31.0 to 38.0 – 128)
(31.0 to 38.0 – 18)
(47.0 to 53.0 – 5) OOS
File Reference #13–659–1

Kendrah Penn
Project Lead
Afton Transmission Line EA Project
BLM Las Cruces District Office
1800 Marquess Street
Las Cruces NM 88005

Re: Proposed new 115/345-kV transmission Line

Dear Kendrah:

This is in reply to Mr. David L. Wallace's letter dated August 1, 2013, concerning the above referenced project in Dona Ana County, New Mexico.

Enclosed is a copy of drawing 485EBDG16, sheets 33 through 40; and drawing 485EBDG12 sheets 33 through 39, which respectively depict the general alignment of Kinder Morgan's (KM) active 16-inch and 12-inch high pressure refined petroleum product pipelines. These drawings also depict the general alignment of a KM out-of-service 8-inch pipeline (LS 5).

Overhead electrical facilities in proximity to buried pipelines are a concern and may require mitigation to maintain safe operation and pipeline maintenance. In this regard an agreement between the utility and KM will be required to engage an outside consultant to determine any adverse effects on KM pipelines and mitigation requirements. Valley Electric Association would be expected to reimburse KM for the cost of the consultant.

In the interest of public safety and for pipeline protection, the following provisions must be considered in the design and subsequent construction of improvements near KM pipelines.

1. Adherence to applicable provisions enumerated in the enclosed copy of L-OM200-29 "Guidelines for Design and Construction" relating to proposed projects affecting KM pipelines.

2. Exact pipeline location can only be determined by pothole at maximum 50 feet intervals or at other locations as required by KM's onsite representative. The pothole work must be performed by hand excavation in the presence of the KM representative. Arrangements for a pipeline representative can be made by contacting KM's Sr. ROW Specialist, Heath Townsend (480) 261-0333, at least two weeks prior to commencement of work.

3. Provide a construction schedule and notify KM of the pre-construction conference date and time at least two weeks prior to start of construction. A qualified, KM approved inspector must be present for all excavation within 10 feet of its pipeline. All excavation within 2 feet of the pipeline must be done by hand.

A KM pipeline representative will be maintained on site during construction activities over and adjacent to its high pressure pipeline easement to ensure that pipeline facilities are being adequately protected. In this regard, KM does not have sufficient regular employees to monitor the construction work and therefore must hire qualified outside contract inspectors to perform this service. The inspection cost is based on $600 per day plus 19.4% for G&A overhead multiplied by the number of estimated days that work will be performed near the pipeline. Execution of KM's agreement and deposit in the amount of the estimated inspection cost must be received before any work can be progressed within the pipeline easement.

When preliminary project plans have been formulated, based upon the field determination of substructure information, please forward a full sized set of drawings to this office showing KM pipelines in plan and profile (based on surveyed pothole data) relative to the planned improvements and existing conditions. Upon review of the preliminary plans we will provide necessary provisions for pipeline protection when working near these facilities.

To avoid delays in response to future correspondence, please refer to File Reference #13-659.

Sincerely,

T. C. Szto
Manager - Pipeline Engineering

T: Quinn\LETTERS\ENG4-2-1\13-659-1\jdf

Enclosures

cc: J. H. Townsend w/copy of inquiry
J. D. Farhat

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

Name of Company: _____

The list of design, construction and contractor requirements, including but not limited to the following, for the design and installation of foreign utilities or improvements on KM right-of-way (ROW) are not intended nor do they waive or modify any rights KM may have under existing easements or ROW agreements. Reference existing easements and amendments for additional requirements. This list of requirements is applicable for KM facilities on easements only. Encroachments on fee property should be referred to the ROW Department.

Design

- KM shall be provided sufficient prior notice of planned activities involving excavation, blasting, or any type of construction on KM's ROW to determine and resolve any location, grade or encroachment problems and provide protection of our facilities and the public **before** the actual work is to take place.
- Encroaching entity shall provide KM with a set of drawings for review and a set of final construction drawings showing all aspects of the proposed facilities in the vicinity of KM's ROW. The encroaching entity shall also provide a set of as-built drawings showing the proposed facilities in the vicinity of KM's ROW.
- Only facilities shown on drawings reviewed by (Company) will be approved for installation on KM's ROW. All drawing revisions that effect facilities proposed to be placed on KM's ROW must be approved by KM in writing.
- KM shall approve the design of all permanent road crossings.
- Any repair to surface facilities following future pipeline maintenance or repair work by KM will be at the expense of the developer or landowner.
- The depth of cover over the KM pipelines shall not be reduced nor drainage altered without KM's written approval.
- Construction of any permanent structure, building(s) or obstructions within KM pipeline easement is **not** permitted.
- Planting of shrubs and trees is not permitted on KM pipeline easement.
- Irrigation equipment i.e. backflow prevent devices, meters, valves, valve boxes, etc. shall not be located on KM easement.
- Foreign line, gas, water, electric and sewer lines, etc., may cross perpendicular to KM's pipeline within the ROW, provided that a minimum of two (2) feet of vertical clearance is maintained between KM pipeline(s) and the foreign pipeline. Constant line elevations must be maintained across KM's entire ROW width, gravity drain lines are the only exception. Foreign line crossings below the KM pipeline must be evaluated by KM to ensure that a significant length of the KM line is not exposed and unsupported during construction. When installing underground utilities, the last line should be placed beneath all existing lines unless it is impractical or unreasonable to do so. Foreign line crossings above the KM pipeline with less than 2 feet of clearance must be evaluated by KM to ensure that additional support is not necessary to prevent settling on top of the KM hazardous liquids pipeline.
- A foreign pipeline shall cross KM facilities at as near a ninety-degree angle as possible. A foreign pipeline shall not run parallel to KM pipeline within KM easement without written permission of KM.
- The foreign utility should be advised that KM maintains cathodic protection on their pipelines. The foreign utility must coordinate their cathodic protection system with KM's. At the request of KM, foreign utilities shall install (or allow to be installed) cathodic protection test leads at all crossings for the purposes of monitoring cathodic protection. The KM Cathodic Protection (CP) technician and the foreign utility CP technician shall perform post construction CP interference testing. Interference issues shall be resolved by mutual agreement between foreign utility and KM. All costs associated with the correction of cathodic protection problems on KM pipeline as a result of the foreign utility crossing shall be borne by the foreign utility for a period of one year from date the foreign utility is put in service.
- The metallic foreign line shall be coated with a suitable pipe coating for a distance of at least 10 feet on either side of the crossing unless otherwise requested by the KM CP Technician.

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

- AC Electrical lines must be installed in conduit and properly insulated.
- DOT approved pipeline markers shall be installed so as to indicate the route of the foreign pipeline across the KM ROW.
- No power poles, light standards, etc. shall be installed on KM easement
- No pipeline may be located within 50 feet (15 meters) of any private dwelling, or any industrial building or place of public assembly in which persons work, congregate, or assemble.

Construction

- Contractors shall be advised of KM's requirements and be contractually obligated to comply.
- The continued integrity of KM's pipelines and the safety of all individuals in the area of proposed work near KM's facilities are of the utmost importance. Therefore, contractor must meet with KM representatives prior to construction to provide and receive notification listings for appropriate area operations and emergency personnel. **KM's on-site representative will require discontinuation of any work that, in his opinion, endangers the operations or safety of personnel, pipelines or facilities.**
- The Contractor must expose all KM pipelines prior to crossing to determine the exact alignment and depth of the lines. A KM representative must be present. In the event of parallel lines, only one pipeline can be exposed at a time.
- KM will not allow pipelines to remain exposed overnight without consent of KM designated representative. Contractor may be required to backfill pipelines at the end of each day.
- A KM representative shall do all line locating. A KM representative shall be present for hydraulic excavation. The use of probing rods for pipeline locating shall be performed by KM representatives only, to prevent unnecessary damage to the pipeline coating.
- Notification shall be given to KM at least 72 hours before start of construction. A schedule of activities for the duration of the project must be made available at that time to facilitate the scheduling of Kinder Morgan, Inc.'s work site representative. Any Contractor schedule changes shall be provided to Kinder Morgan, Inc. immediately.
- Heavy equipment will not be allowed to operate directly over KM pipelines or in KM ROW unless written approval is obtained from (Company). Heavy equipment shall only be allowed to cross KM pipelines at locations designated by Kinder Morgan, Inc. Contractor shall comply with all precautionary measures required by KM to protect its pipelines. When inclement weather exists, provisions must be made to compensate for soil displacement due to subsidence of tires. Equipment excavating within ten (10) feet of KM Pipelines will have a plate guard installed over the teeth to protect the pipeline.
- Excavating or grading which might result in erosion or which could render the KM ROW inaccessible shall not be permitted unless the contractor/developer/owner agrees to restore the area to its original condition and provide protection to KM's facility.
- A KM representative shall be on-site to observe any construction activities within ten (10) feet of a KM pipeline or aboveground appurtenance. The contractor **shall not** work within this distance without a KM representative being on site. Only hand excavation shall be permitted within two (2) feet of KM pipelines, valves and fittings unless State requirements are more stringent. However, proceed with extreme caution when within three (3) feet of the pipe.
- A KM representative will monitor construction activity within 25 feet of KM facilities during and after the activities to verify the integrity of the pipeline and to ensure the scope and conditions agreed to have not changed. Monitoring means to conduct site inspections on a pre-determined frequency based on items such as: scope of work, duration of expected excavator work, type of equipment, potential impact on pipeline, complexity of work and/or number of excavators involved.
- Ripping is only allowed when the position of the pipe is known and not within ten (10) feet of KM facility unless company representative is present.
- Temporary support of any exposed KM pipeline by Contractor may be necessary if required by KM's on-site representative. Backfill below the exposed lines and 12" above the lines shall be replaced with sand or other selected material as approved by KM's on-site representative and thoroughly compacted in 12" lifts to 95% of standard proctor dry density minimum or as approved by KM's on-site representative. This is to adequately protect against stresses that may be caused by the settling of the pipeline.

KINDER MORGAN

Guidelines for Design and Construction near Kinder Morgan Hazardous Liquid Operated Facilities

- No blasting shall be allowed within 1000 feet of KM's facilities unless blasting notification is given to KM including complete Blasting Plan Data. A pre-blast meeting shall be conducted by the organization responsible for blasting.
  KM shall be indemnified and held harmless from any loss, cost of liability for personal injuries received, death caused or property damage suffered or sustained by any person resulting from any blasting operations undertaken within 500 feet of its facilities. The organization responsible for blasting shall be liable for any and all damages caused to KM's facilities as a result of their activities whether or not KM representatives are present. KM shall have a signed and executed Blasting Indemnification Agreement before authorized permission to blast can be given.

  No blasting shall be allowed within 300 feet of KM's facilities unless blasting notification is given to KM a minimum of one week before blasting. *(note: covered above)* KM shall review and analyze the blasting methods. A written blasting plan shall be provided by the organization responsible for blasting and agreed to in writing by KM in addition to meeting requirements for 500' and 1000' being met above. A written emergency plan shall be provided by the organization responsible for blasting. *(note: covered above)*

- Any contact with any KM facility, pipeline, valve set, etc. shall be reported immediately to KM. If repairs to the pipe are necessary, they will be made and inspected before the section is re-coated and the line is back-filled.

- KM personnel shall install all test leads on KM facilities.

- Burning of trash, brush, etc. is not permitted within the KM ROW.

Insurance Requirements

- All contractors, and their subcontractors, working on Company easements shall maintain the following types of insurance policies and minimum limits of coverage. All insurance certificates carried by Contractor and Grantee shall include the following statement: "Kinder Morgan and its affiliated or subsidiary companies are named as additional insured on all above policies (except Worker's Compensation) and waiver of subrogation in favor of Kinder Morgan and its affiliated or subsidiary companies, their respective directors, officers, agents and employees applies as required by written contract." **Contractor shall furnish Certificates of Insurance evidencing insurance coverage prior to commencement of work and shall provide thirty (30) days notice prior to the termination or cancellation of any policy.**

1. Statutory Coverage Workers' Compensation Insurance in accordance with the laws of the states where the work is to be performed. If Contractor performs work on the adjacent on navigable waterways Contractor shall furnish a certificate of insurance showing compliance with the provisions of the Federal Longshoreman's and Harbor Workers' Compensation Law.
2. Employer's Liability Insurance, with limits of not less than **$1,000,000** per occurrence and **$1,000,000** disease each employee.
3. Commercial General Liability Insurance with a combined single limit of not less than **$2,000,000** per occurrence and in the aggregate. All policies shall include coverage for blanket contractual liability assumed.
4. Comprehensive Automobile Liability Insurance with a combined single limit of not less than **$1,000,000.** If necessary, the policy shall be endorsed to provide contractual liability coverage.
5. If necessary Comprehensive Aircraft Liability Insurance with combined bodily injury, including passengers, and property damage liability single limits of not less than **$5,000,000** each occurrence.
6. Contractor's Pollution Liability Insurance this coverage shall be maintained in force for the full period of this agreement with available limits of not less then **$2,000,000** per occurrence.
7. Pollution Legal Liability Insurance this coverage must be maintained in a minimum amount of **$5,000,000** per occurrence.

El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7760

March 14, 2014

T.C. Szto
Manager – Pipeline Engineering
Kinder Morgan
SFPP, L.P. Operating Partnership
1100 Town & Country Road
Orange County, California 92868

RE: Proposed new 115 Transmission Line
File Reference #13-659-1

Dear T.C. Szto:

El Paso Electric Company is responding to your letter dated December 9, 2013 regarding the proposed new 115kV transmission Line. Below is a summary of our understanding of your comments and our responses. Enclosed is a drawing of the proposed Afton North Substation and a drawing indicating the proposed access road crossing location and with regard to right of way grant NMNM 18856.

Comment Summary: Overhead electrical facilities in proximity to buried pipelines are a concern and may require mitigation to maintain safe operation and pipeline maintenance. In this regard an agreement between the utility and KM will be required to engage an outside consultant to determine any adverse effects on KM pipelines and mitigation requirements.

Adherence to applicable provisions enumerated in the enclosed copy of L-OM200-29 "Guidelines for Design and Construction" relating to proposed projects affecting KM Pipelines.

Consideration/Response: Based on the information provided from Kinder Morgan, we believe that the three (3) Kinder Morgan pipelines in question are within the 50' wide right-of-way grant number 18856, See attached PDF for the approximate location. We understand that the three (3) pipelines are depicted on the Kinder Morgan provided drawing Line # 485EBDG12, sheet # 033, attached, as LS-127/128 16", LS-4/5 (NIS) 8", and LS-17/18 12", referenced North to South on the drawing. As far as we can tell, these pipelines do not intersect nor cross the proposed Afton to Airport transmission line, although the access road into the proposed Afton North Substation will cross over the KM pipelines. The EPE project design team will incorporate the requirements enumerated within the Kinder Morgan L-OM200-29 "Guidelines for Design and Construction" document.

The following specific sections are herein acknowledged.

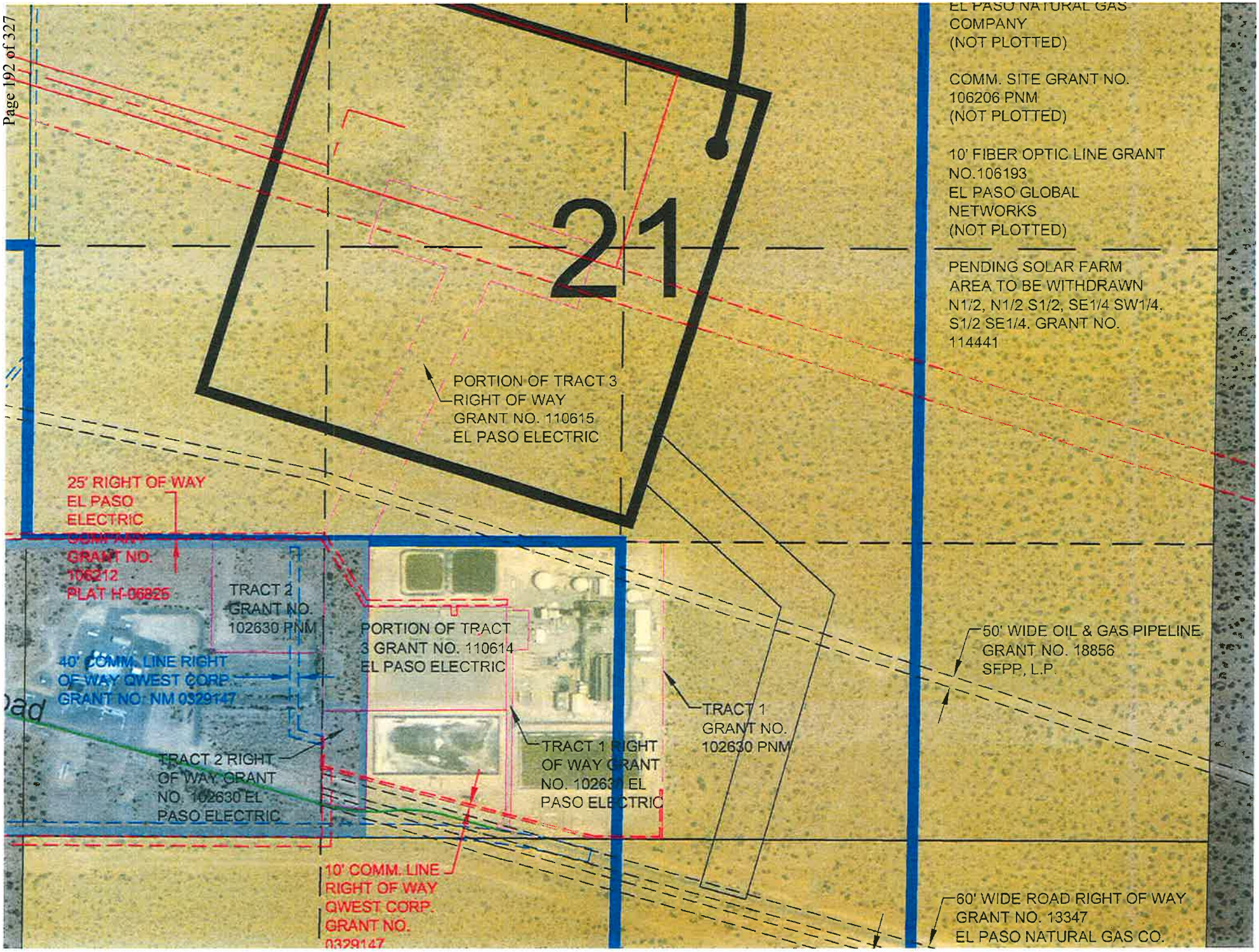
- KM shall approve the design of all permanent road crossings.
- Contractors shall be advised of KM's requirements and be contractually obligated to comply.
- The Contractor must expose all KM pipelines prior to crossing to determine the exact alignment and depth of the lines. A KM representative must be present. The pothole work must be done by hand excavation in the presence of the KM Representative. Arrangements for a pipeline representative can be made by contacting KM's Sr. ROW Specialist, Heath Townsend at (480) 261-0333, at least two weeks prior to commencement of work.
- Provide a construction schedule and notify KM of the pre-construction conference date and time at least two weeks prior to start of construction.
- A KM representative shall be on-site to observe any construction activities within ten (10) feet of a KM pipeline or above ground appurtenance. All excavations within 2 feet of the pipeline must be done by hand.
- Notification shall be given to KM at least 72 hours before start of construction.

Should you need additional information, please feel free to contact Martha A. Velasco at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager - Asset Management Services

Enclosure


EL PASO NATURAL GAS COMPANY (NOT PLOTTED)
COMM. SITE GRANT NO. 106206 PNM (NOT PLOTTED)
10' FIBER OPTIC LINE GRANT NO.106193 EL PASO GLOBAL NETWORKS (NOT PLOTTED)
PENDING SOLAR FARM AREA TO BE WITHDRAWN N1/2, N1/2 S1/2, SE1/4 SW1/4, S1/2 SE1/4. GRANT NO. 114441
21
PORTION OF TRACT 3 RIGHT OF WAY GRANT NO. 110615 EL PASO ELECTRIC
25' RIGHT OF WAY EL PASO ELECTRIC COMPANY GRANT NO. 106212 PLAT H-06825
TRACT 2 GRANT NO. 102630 PNM
PORTION OF TRACT 3 GRANT NO. 110614 EL PASO ELECTRIC
40' COMM. LINE RIGHT OF WAY QWEST CORP. GRANT NO. NM 0329147
50' WIDE OIL & GAS PIPELINE GRANT NO. 18856 SFPP, L.P.
TRACT 1 GRANT NO. 102630 PNM
TRACT 2 RIGHT OF WAY GRANT NO. 102630 EL PASO ELECTRIC
TRACT 1 RIGHT OF WAY GRANT NO. 102630 EL PASO ELECTRIC
10' COMM. LINE RIGHT OF WAY QWEST CORP. GRANT NO. 0329147
60' WIDE ROAD RIGHT OF WAY GRANT NO. 13347 EL PASO NATURAL GAS CO.

1650.00'
PONDING AS REQUIRED
BOUNDARY OF STUDY AREA
2000' X 2000'
PROPOSED SUBSTATION
EASEMENT
N: 408282.85
E: 1455121.29
834.00'
N: 408030.80
E: 1455916.29
915.00'
417.00'
NEWMAN 345KV LINE
N: 407633.30
E: 1455790.27
4215
AIRPORT 115KV LINE
CONTROL HOUSE
AFTON 345KV LINE
N: 407885.35
E: 1454995.26
CENTER POLES #200
CENTER POLES #197
150.00' RIGHT OF WAY GRANT NO. 29898
345 kV LUNA-AFTON LINE EL PASO
ELECTRIC PER RIGHT-OF-WAY MAP
FX-06552
CENTER POLES #199
60.00'
CENTER POLES #198
LUNA 345KV LINE
4215
CENTER POLE STEEL A75
CENTER POLE STEEL AN5
CENTER POLES #198A
4220
4225
4230
PORTION OF TRACT 3 RIGHT
OF WAY GRANT NO. 110615
EL PASO ELECTRIC
4235
50.00' EASEMENT
24.00' ACCESS ROAD
ARCH SITES TYP.
50.00' WIDE OIL & GAS PIPELINE
GRANT NO. 18856 SFPP, L.P.
25.00' WIDE 24kV THREE
PHASE DISTRIBUTION LINE
RIGHT OF WAY
GRANT NO. 61198
(PLAT NO. H-06405)
25.00' RIGHT OF WAY
EL PASO ELECTRIC CO
GRANT NO. 106212
PLAT H-06825
TRACT 2
GRANT NO.
102630 PNM
PORTION OF TRACT 3 GRANT
NO. 110614 EL PASO ELECTRIC
TRACT 1
GRANT NO. 102630 PNM
TRACT 1 RIGHT OF WAY GRANT
NO. 102630 EL PASO ELECTRIC
40.00' COMM. LINE
RIGHT OF WAY
QWEST CORP.
GRANT NO. 0329147
10.00' COMM. LINE
RIGHT OF WAY
QWEST CORP.
GRANT NO. 0329147
60.00' WIDE ROAD RIGHT OF WAY
GRANT NO. 13347
EL PASO NATURAL GAS CO.
50.00' WIDE POWER LINE
RIGHT OF WAY GRANT NO. 107835
EL PASO NATURAL GAS CO.
40.00' TELEPHONE
RIGHT OF WAY
GRANT NO. 0467924 QWEST
50.00' NATURAL GAS LINE
RIGHT OF WAY GRANT NO. 000161
EL PASO NATURAL GAS CO.
TRACT 2 RIGHT OF WAY GRANT
NO. 102630 EL PASO ELECTRIC
40.00' TELEPHONE
RIGHT OF WAY
GRANT NO. 0467924 QWEST
60.00' WIDE ROAD
RIGHT OF WAY
GRANT NO. 77527
COUNTY OF DONA ANA
GRAPHIC SCALE
(IN FEET)
1 inch = 200 ft.

M:\SGR\11-300-136-05\2.0_Project_Disciplines\Site_Design\Drawings\Sheets\1130013605_SITE.dwg

WILSON & COMPANY
4900 LANG AVE. NE.
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4055 FIRST FLOOR
FAX: 505-348-4155 SECOND FLOOR
www.wilsonco.com

CONSULTANTS

SEAL
NOT FOR CONSTRUCTION

PROJECT NAME
AFTON NORTH SUBSTATION

BY	DESCRIPTION	DATE	REV

PROJECT NO:	1130013605
DESIGNED BY:	DMD
DRAWN BY:	MIT
CHECKED BY:	—
DATE:	JAN 2014

SHEET TITLE
OVERALL SITE

SHEET NO:
3

Afton Transmission Line Right-of-Way Environmental Assessment

RECEIVED
LAS CRUCES DISTRICT OFFICE
2013 SEP -4 PM 2:08
BLM LAS CRUCES, NM 88005

BLM WANTS TO HEAR FROM YOU!
SCOPING COMMENT FORM

Please return this form by **September 5, 2013**. Additional sheets may be attached if more space is needed. Fold the form so the address is showing and tape or staple the edges together to mail it. **POSTAGE is required.**

City of Las Cruces Utilities Dept Technical Support
Name
680 Motel Blvd
Address
Las Cruces NM 88001
City State Zip

City of Las Cruces Utilities Department
Organization (if applicable)
Add to Mailing List ☒ YES ☐ NO

PLEASE PRINT

PLEASE READ CAREFULLY

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, are available for public inspection in their entirety.

1. Las Cruces Utilities (LCU) has an 8" high pressure gas line in the west mesa area. The proposed EPE transmission line will cross this HP gas line near I-25 S sections 9 & 10. In order to evaluate the impacts to the operation and maintenance of the HP gas line, LCU will like to know the history of AC current induced from the EPE transmission line (with similar transmission capacity) to other structures?

2. LCU has utility lines south of I-10 that currently serving businesses and institutions in the area. The proposed EPE transmission line will cross or parallel in multiple locations. For routine line O&M and future line rehabilitation, vertical and horizontal line separations will need to be maintained between LCU and EPE infrastructure. Since the drawing

attached to the Scoping Comment is too general to evaluate the necessary separations, LCU will like to obtain a set of EPE design drawing and meet with EPE to discuss comments.

3. Additional comments may be generated after reviewing EPE's drawing.

Hand deliver to Ms. Kendrah Penn on Sep 4, 2013.

---------- FOLD HERE ----------

U S DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAS CRUCES DISTRICTOFFICE
1800 MARQUESS STREET
LAS CRUCES NEW MEXICO 88005

OFFICIAL BUSINESS
Penalty for Private Use $300

NO POSTAGE
NECESSARY
IF MAILED
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UNITED STATES

BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO.14153 WASHINGTON DC

POSTAGE WILL BE PAID BY
THE BUREAU OF LAND MANAGEMENT

BUREAU OF LAND MANAGEMENT
ATTN: KENDRAH PENN
LAS CRUCES DISTRICT OFFICE
1800 MARQUESS STREET
LAS CRUCES NM 88005

The Electric Company
El Paso Electric

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

CERTIFIED MAIL: 7002 2410 0001 6986 7753

March 14, 2014

Ms. Meei Montoya, P.E.
Senior Operations Engineer
City of Las Cruces
Utilities Department Technical Support
680 Motel Blvd.
Lac Cruces, NM 88001

RE: Afton Transmission Line EA Project
BLM Las Cruces District Office

Dear Ms. Montoya:

El Paso Electric Company is responding to your comments delivered September 4th, 2013 regarding the Afton Transmission Line EA Project. Below is a summary of our understanding of your comments and our response. Enclosed is a drawing indicating the proposed crossing location regarding right of way grant NMNM 52930. Also included is the information regarding our on-call and field location activities for comment 2, which we previously provided via email correspondence.

Comment Summary 1: The proposed EPE transmission line will cross a Las Cruces Utility (LCU) 8" high pressure gas line in the West Mesa area. In order to evaluate the impacts to the operation and maintenance of the HP gas line, LCU "will like to know the history of AC current induced from the EPE transmission line (with similar transmission capacity) to other structures".

Consideration/Response 1: The 25 foot ROW for the line mentioned in part 1 of the comment parallels the 30 foot ROW of the Zia Natural Gas Company line from the other EA comment we received. The project team does not propose to place any transmission structures within either of the referenced right-of ways NMNM 107570 nor NMNM 52930. EPE's overhead transmission facilities will completely span the referenced right-of-ways.

Comment Summary 2: LCU has utility lines south of I-10 that currently serve businesses and institutions in the area. The proposed EPE transmission line will cross or parallel in multiple locations. For routine line operation and maintenance and future line rehabilitation, vertical and horizontal line separations will need to be maintained between LCU and EPE infrastructure. Since the drawing attached to the scoping comment is too general to evaluate the necessary separations, LCU "will like to obtain a set of EPE design drawing and meet with EPE to discuss comments".

Consideration/Response 2: The project team has contacted Ms. Meei Montoya, P.E., Senior Operations Engineer, with the City of Las Cruces, to verify the location of the LCU Utility lines. A survey crew has field located those lines marked by the one call center. Presently the project is in the design phase and final design drawings are not available. The project will be designed with regard to maintaining proper vertical and horizontal separations between current utility lines and proposed utility lines.

Comment Summary 3: Additional comments may be generated after reviewing EPE's drawing.

Consideration/Response 3: The project team will address additional comments if they arise.

Should you need additional information, please feel free to contact Martha Velasco at 915-543-4025 or email at martha.velasco@epelectric.com

Sincerely,

Omar Gallegos
Manager - Asset Management Services

Enclosures

Thomas Vick

From: Sparrow, Coyote M. <Coyote.Sparrow@wilsonco.com>
Sent: Thursday, January 23, 2014 7:22 AM
To: Thomas Vick; Mary Goins; mpetrie@triaxiseng.com; pbosanquet@triaxiseng.com; Croshaw,Christopher S.; Perkins, Scott F.; Steve Jones
Subject: FW: DO NOT REPLY: Request 2014032986 - proposed EPEC transmissionline in WMIP
Attachments: One call locations.pdf; BLM_proposed EPEC transmission line_CLC comments.pdf; BLM_proposed EPEC transmission line_CLC map.pdf

FYI. I sent the One call locations.pdf to Meei to help their spotters find the locations.

Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: Meei-Huey Montoya [mailto:mmontoya@las-cruces.org]
Sent: Wednesday, January 22, 2014 4:11 PM
To: Robin Pirtle; Glenn Ford; Gary Rivera; Tony Jimenez
Cc: Vincent Sanchez; Adrienne Widmer; Sparrow, Coyote M.
Subject: FW: DO NOT REPLY: Request 2014032986 - proposed EPEC transmission line in WMIP

Just an FYI...You may have received locate requests as shown on the following emails.

These locate requests are pertaining to a proposed EPEC transmission line in WMIP area. This project is in design and BLM permit stages. EPEC's surveyor contacted the city since we have provided comments to BLM a few months ago requesting additional information.

EPEC's surveyor provides maps (attachment 1) for the locate area just in case you have questions. Our comments to BLM regarding this project are shown as attachments 2 and 3.

Meei Montoya, P.E.
Senior Operations Engineer
Las Cruces Utilities
Regulatory Environmental Services & Technical Support
(575) 528-3525

-----Original Message-----
From: Sparrow, Coyote M. [mailto:Coyote.Sparrow@wilsonco.com]
Sent: Wednesday, January 22, 2014 9:21 AM
To: Meei-Huey Montoya
Subject: RE: DO NOT REPLY: Request 2014032986

Meei,
Attached are the more detailed maps for the utility spotters, if they need them. If they have any questions they can call me directly.

thanks
Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: Sparrow, Coyote M.
Sent: Friday, January 17, 2014 1:34 PM
To: 'mmontoya@las-cruces.org'
Cc: 'Thomas Vick'; Mary Goins
Subject: FW: DO NOT REPLY: Request 2014032986

Meei,
Here is the second NM One Call request, as we discussed I had them put the latitude and longitude in the request.
Thanks again

Coyote M. Sparrow, PS
Project Manager | Wilson & Company, Inc., Engineers & Architects | (505) 348-4062

-----Original Message-----
From: eticket@nm811.org [mailto:eticket@nm811.org]
Sent: Friday, January 17, 2014 10:16 AM
To: Sparrow, Coyote M.
Subject: DO NOT REPLY: Request 2014032986

New Mexico One Call
Locate Request Confirmation Header Code: DESIGN LOCATE
Request Type:
Ticket No: 2014032986 Seq. No: 0
Update of:
Original Call Date: 01/17/2014 Time: 10:06:21 AM OP: 273
Transmit Date: 01/17/2014 Time: 10:16:07 AM
Work to Begin Date: 01/22/2014 Time: 09:57:00 AM

Company: WILSON & COMPANY
Contact Name: COYOTE SPARROW Contact Phone: (505)239-0799
Alternate Contact: Alternate Phone:
Best Time to Call: Fax No: (505)348-4055
Cell Phone: Pager No:
Email: coyote.sparrow@wilsonco.com

State: NM County: DONA ANA City: RURAL DONA ANA
Address: , W AFTON RD
To Address:
Nearest Intersecting Street: CR-B008
2nd Intersecting Street:
Subdivision: 32°9'2.4"/106°56'22.4"
Latitude: 32.14082950 Longitude: -106.94017300
Zip Code:
Grid:

Location of Work: FR THE INTERSECTION OF CR B007 AND W AFTON GO W ON
AFTON FOR 3.3MI GO N FOR 1MI SPOT N ALONG DIRT
COUNTY ROAD FOR 2000FT

Remarks: CALL/E MAIL COYOTE SPARROW WITH ANY QUESTIONS OR
CLEARIFICATION

Type of Work: SURVEY
Private Property: Street: Overhead Lines: Blasting:
Easement: Mechanical Boring: Premarked:
Work Being Done For: EL PASO ELECTRIC CO
The following utility owners have been notified:
EP24 ELEL KMEP COLC QLNS
1NMPSO

IMPORTANT CONFIRMATION NOTICE

Your fax request has been received and processed. It is your responsibility to review the information provided on this faxback confirmation ticket and ensure it has been correctly interpreted from your request. Notify us immediately of any corrections or errors.
Acceptance of this faxback confirmation ticket means you accept responsibility for the accuracy of the information contained in the ticket and you agree to indemnify New Mexico One Call Systems, Inc. of all liability, claims, fees, or damages, including reasonable attorney fees arising from or resulting from the use of the information provided on this confirmation ticket.

New Mexico Law requires you to wait two working days from the date and time of this confirmation notice before you begin excavation. This request is valid for ten working days. Only the facility owners listed on this ticket will be notified. You can check the Locate Status of this ticket and request other tickets by visiting the our website at www.nmonecall.org.

****

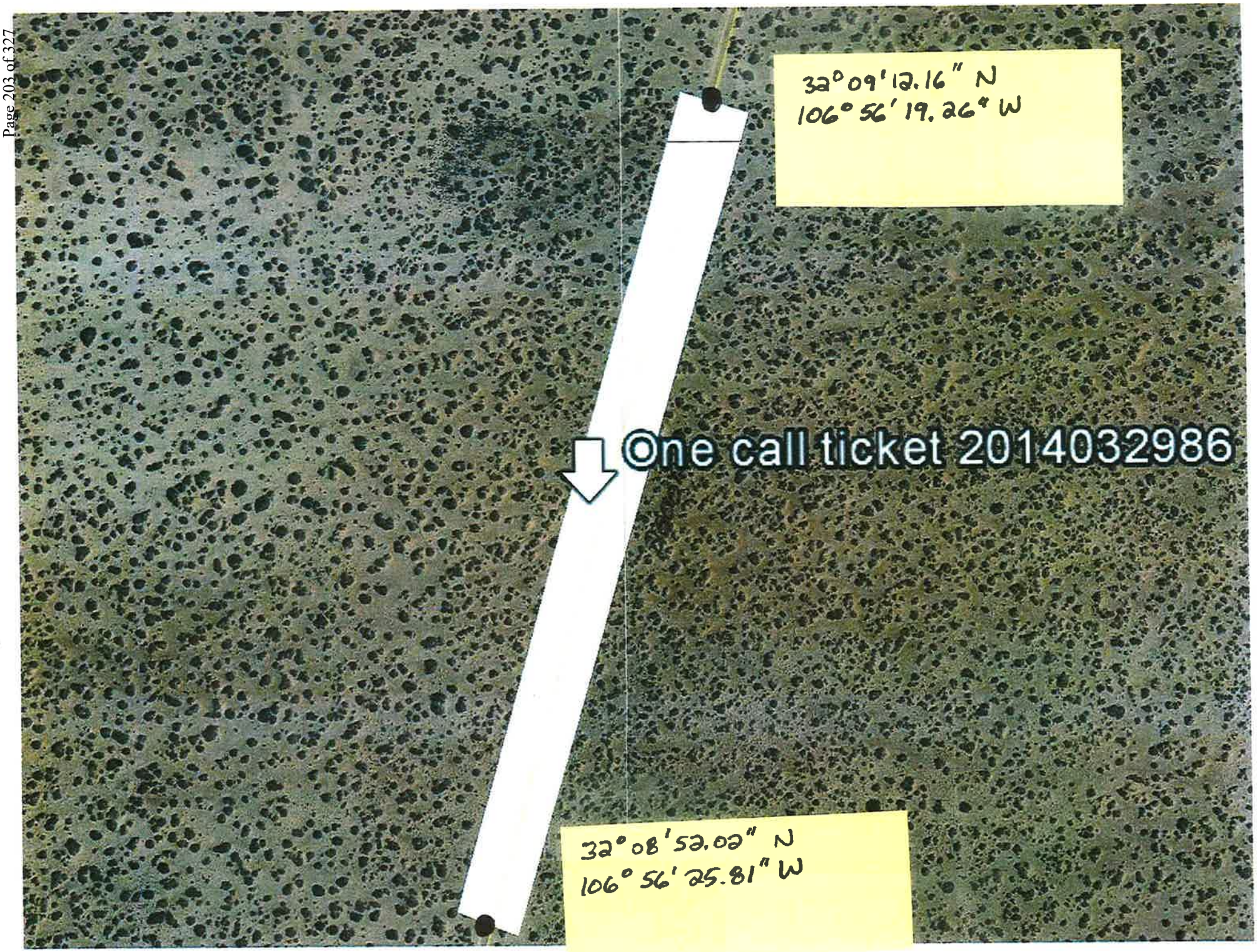
Confidential/Proprietary Note:

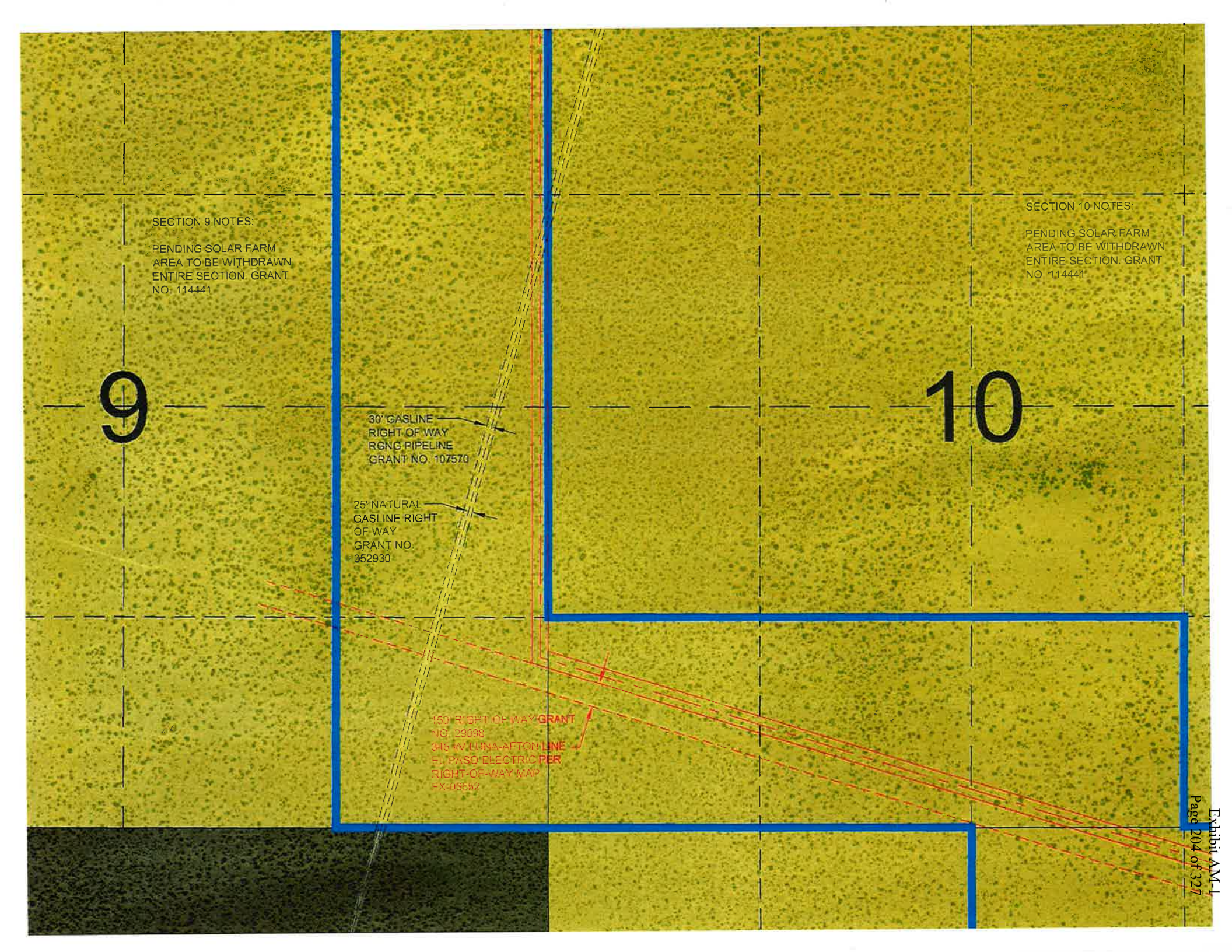
The information in this email is confidential and may be legally privileged.
Access to this email by anyone other than the intended addressee is unauthorized. If you are not the intended recipient of this message, any review, disclosure, copying, distribution, retention, or any action taken or omitted to be taken in reliance on it is prohibited and may be unlawful. If you are not the intended recipient, please reply to or forward a copy of this message to the sender and delete the message, any attachments, and any copies thereof from your system.
Thank you.

****

one call ticket 2014032980
DUSTY PRINTS
FRONTAGE
RAMP
SANDY BEACH
HELIOS FARM
FAIRACRES
TAURUS
ARIES
GLASS
CHIVALRY
PAISANO
NM 292
TIERRA DE MESILLA
SNOW
CALLE DE MEDANOS
CALLE DE PARIAN
ERMINDA
CALLE CUARTA
TRES SENDAS
CAMINO DE PAVOS
BILBO
LA MESILLA
CALLE DE
ARMORY
CRAWFORD
MOUNTAIN VISTA
INTERSTATE 10
FRIGG
ROBERT LARSON
VENTURE
ADVANCEMENT
REA
TONY FLORES
ENFORCERS ROW
Lt. RALPH J. SILVA
MESILLA HILLS
CASABLANCA
ESTRADA
LA PUENTE
VALDES
SALIDA DE
CRESTA
NIZHONI
UNION
LAS VISTAS
RAASAF
FAIR LADY
SELENE
SAN PASC
VISTA VERDE
WINTERSET
THIELMAN
MESILLA ACRES
FIESTA
NM 374
UNNAMED
COUNTY ROAD B-006
MESILLA DAM B
SOUTHERN UNION GASS
COUNTY ROAD B-007
One call ticket 2014032986
W AFTON RD
1 MILE
5 1/2
MILES
Afton Compr. Station

HARRY BURREL
Crawford Blvd
ARMORY
CRAWFORD
RAMP
INTERSTATE 10
RAMP
CRAWFORD
Robert Larson Blvd
CRAWFORD
10
one call ticket 2014032980


32° 09' 12.16" N
106° 56' 19.26" W
One call ticket 2014032986
32° 08' 52.02" N
106° 56' 25.81" W


SECTION 9 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
SECTION 10 NOTES:
PENDING SOLAR FARM AREA TO BE WITHDRAWN ENTIRE SECTION. GRANT NO. 114441
9
10
30' GASLINE RIGHT OF WAY RGNG PIPELINE GRANT NO. 107570
25' NATURAL GASLINE RIGHT OF WAY GRANT NO. 052930
150' RIGHT OF WAY GRANT NO. 29038 345 kV LUNA-AFTON LINE EL PASO ELECTRIC PER RIGHT-OF-WAY MAP FX-05552

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

January 20, 2014

Mr. Kenneth K. Cunningham
Ecological and Environmental Planning Division
New Mexico Department of Game and Fish
Post Office Box 25112
Santa Fe, NM 87504

RE: El Paso Electric Proposed Afton to Airport Transmission and Substation
Project No. DOI-NM-L000-2013-0099-EA

Dear Mr. Cunningham:

El Paso Electric (EPE) is contacting your office for comment regarding a proposed new 115 kilovolt (kV) transmission line and 345 kV substation in Doña Anna County, New Mexico. EPE has applied to the Bureau of Land Management (BLM), Las Cruces District Office, for a right-of-way to construct, operate, and maintain a new 14.3 mile transmission line that would extend from a new autotransformer (Afton North Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 on Robert Larsen Blvd, south of the Airport approximately one mile west of the I-10 and Crawford Blvd Interchange (Project Location Map).

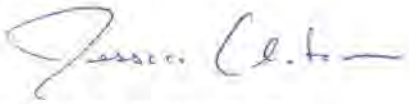
EPE and our consultants are working with the BLM to prepare an Environmental Assessment (EA) to analyze potential environmental impacts from the construction and operation of the transmission line, substation and the associated infrastructure. The transmission line would be located on Federal (12.75 miles), State trust (1.5 miles) and private lands (0.06 miles), paralleling existing utility lines and following parcel section lines as much as practicable. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round and include maintenance, replacement of equipment, and operation. Construction of the proposed project is estimated to take 20 to 25 weeks. Vegetation and land clearing activities would be scheduled as much as practicable outside the bird nesting season. If construction activities are to occur during nesting season, EPE would conduct nest surveys in advance of construction activities and provide monitors during construction, if appropriate.

High Desert Native Plants, LLC (HDNP) performed a biological survey of the proposed project area in August and September of 2012, using a combination of vehicle and intensive pedestrian surveys. The purpose of the survey was to identify the potential for the presence of special status species (SSS) and sensitive biological resources along the right-of-way. The survey area was approximately 15 miles long by 300 feet wide and also included an additional 92 acres at the site of the proposed Afton North Substation. A copy of the biological survey report is included with this correspondence.

At present, the right-of-way is vacant, undeveloped land. The biological survey identified no specific occurrences of SSS and no designated critical habitat within the proposed project area. However, areas capable of supporting Texas horned lizards (*Phrynosoma cornutum*) and western burrowing owls (*Athene cunicularia hypugaea)* were observed. HDNP qualified habitat quality for horned lizards as poor and identified no harvester ant nests on site, therefore making the determination that the proposed project would not likely adversely affect the species. Similarly HDNP noted that browsing habitat for burrowing owls is not abundant in the project area and no burrows suitable for nesting were observed, again resulting in the determination that the proposed project will not likely adversely affect the species. Please refer to the enclosed Survey Report for a full description of SSS and the determinations of effect.

Based on the findings documented by HDNP, the project will not adversely affect SSS. As previously mentioned, EPE is working with the BLM on an EA for the proposed project and would appreciate any input you may have regarding the observations and conclusions presented herein. We are working with Steven Torrez, Wildlife Biologist for the BLM in Las Cruces. Please feel free to direct any comments or concerns your agency may have pertaining to the proposed project to us and the BLM. If you have any questions or require additional information, please do not hesitate to contact me directly at (915) 351-4258 or via e-mail at jessica.christianson@epelectric.com.

Sincerely,



Jessica Christianson, PWS
Principal Environmental Scientist

Enclosures: Project Location Map
HDNP Biological Resources Survey- Proposed Powerline, October 2012
HDNP Biological Resources Survey- Proposed Afton Substation, October 2012

CC (w/o enclosures): Steven Torrez, BLM-LCDO
Patricia Zenone, USFWS
Martha Velasco, El Paso Electric Company
David Gamon, El Paso Electric Company

GOVERNOR
Susana Martinez

INTERIM DIRECTOR AND SECRETARY
TO THE COMMISSION
R.J. Kirkpatrick

DEPUTY DIRECTOR
Daniel E. Brooks

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

One Wildlife Way, Santa Fe, NM 87507

Post Office Box 25112, Santa Fe, NM 87504

Tel: (505) 476-8000 | Fax: (505) 476-8123

For information call: (888) 248-6866

www.wildlife.state.nm.us

STATE GAME COMMISSION

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Alto

RALPH RAMOS
Las Cruces

February 4, 2014

Jessica Christianson, PWS
Principal Environmental Scientist
The Electric Company
P.O. Box 982
El Paso, TX 79960-0982

RE: El Paso Electric Transmission Project; NMDGF No. 16173

Dear Mr. Christianson:

In response to your letter dated 20 January 2014 regarding the above referenced project, the Department of Game and Fish (Department) is providing the following recommendations to minimize or eliminate impacts to wildlife.

- 2003 Powerline Project Guidelines, updated February 2007
- 2003 Trenching Guidelines, updated September 2006

Major emphases of these guidelines include 1) designing transmission lines to prevent or minimize risk of electrocution of raptors (See *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* produced by the Avian Power Line Interaction Committee. A copy of this report may be purchased from APLIC at http://www.aplic.org.and 2) avoiding leaving open trenches during below-ground powerline construction to minimize injury or death to wildlife.

With implementation of these recommendations during construction, the Department believes that this project as proposed is unlikely to adversely affect wildlife or wildlife habitats. For your convenience, we have enclosed a copy of New Mexican Wildlife of Concern for Dona Ana County. Included below are sources of additional information:

1. For Biota Information System of New Mexico (BISON-M) species accounts, searches, and county lists go to bison-m.org.
2. For the Department's Habitat Handbook Project guidelines go to wildlife.state.nm.us/conservation/habitat_handbook/index.htm.
3. For custom, site-specific database searches on plants and wildlife go to nhnm.unm.edu, then go to Data, Free On-Line Data, and follow the directions.
4. For state-listed plants contact the New Mexico State Forestry Division at (505) 476-3334 or nmrareplants.unm.edu/index.html.
5. For the most current listing of federally listed species **always** check the U.S. Fish and Wildlife Service at (505) 346-2525 or fws.gov/southwest/es/NewMexico/SBC.cfm.

Thank you for the opportunity to review and comment on your project. If you have any questions, please contact Kevin Rodden, Southwest Regional Habitat Biologist at (575) 532-2111 or kevin.rodden.mathis@state.nm.us.

Sincerely,

Kenneth K. Cunningham, Assistant Chief
Ecological and Environmental Planning Division

Enc.: 1
cc: USFWS NMES Field Office

NEW MEXICO WILDLIFE OF CONCERN
DONA ANA COUNTY

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service NM Ecological Services Field Office website at http://www.fws.gov/southwest/es/NewMexico/SBC.cfm. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to http://nmrareplants.unm.edu/. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

Common Name	Scientific Name	NMGF	US FWS	critical habitat
Bleached Earless Lizard	Holbrookia maculata ruthveni	s		
Southwestern Fence Lizard	Sceloporus cowlesi	s		
Little White Whiptail	Aspidoscelis gypsi	s		
Brown Pelican	Pelecanus occidentalis	E		
Neotropic Cormorant	Phalacrocorax brasilianus	T		
Bald Eagle	Haliaeetus leucocephalus	T		
Northern Goshawk	Accipiter gentilis	s	SOC	
Common Black-Hawk	Buteogallus anthracinus	T	SOC	
Aplomado Falcon	Falco femoralis	E	Exp	
Peregrine Falcon	Falco peregrinus	T	SOC	
Mountain Plover	Charadrius montanus	s	SOC	
Least Tern	Sterna antillarum	E	E	
Black Tern	Chlidonias niger surinamensis		SOC	
Common Ground-Dove	Columbina passerina	E		
Yellow-billed Cuckoo	Coccyzus americanus	s	C	
Mexican Spotted Owl	Strix occidentalis lucida	s	T	Y
Burrowing Owl	Athene cunicularia		SOC	
Buff-collared Nightjar	Caprimulgus ridgwayi	E		
Broad-billed Hummingbird	Cynanthus latirostris	T		
Violet-crowned Hummingbird	Amazilia violiceps	T		
Costa's Hummingbird	Calypte costae	T		
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y
Loggerhead Shrike	Lanius ludovicianus	s		
Bell's Vireo	Vireo bellii	T	SOC	
Gray Vireo	Vireo vicinior	T		
Baird's Sparrow	Ammodramus bairdii	T	SOC	
Sprague's Pipit	Anthus spragueii		C	
Varied Bunting	Passerina versicolor	T		
Western Small-footed Myotis Bat	Myotis ciliolabrum melanorhinus	s		
Yuma Myotis Bat	Myotis yumanensis yumanensis	s		
Occult Little Brown Myotis Bat	Myotis lucifugus occultus	s		
Long-legged Myotis Bat	Myotis volans interior	s		
Fringed Myotis Bat	Myotis thysanodes thysanodes	s		
Western Red Bat	Lasiurus blossevillii	s	SOC	
Spotted Bat	Euderma maculatum	T		
Pale Townsend's Big-eared Bat	Corynorhinus townsendii pallescens	s	SOC	
Big Free-tailed Bat	Nyctinomops macrotis	s		
Organ Mountains Colorado Chipmunk	Neotamias quadrivittatus australis	T	SOC	

Desert Pocket Gopher	Geomys arenarius	s	SOC
Pecos River Muskrat	Ondatra zibethicus ripensis	s	SOC
Red Fox	Vulpes vulpes	s	
Ringtail	Bassariscus astutus	s	
Western Spotted Skunk	Spilogale gracilis	s	
Common Hog-nosed Skunk	Conepatus leuconotus	s	
Desert Bighorn Sheep	Ovis canadensis mexicana		
Dona Ana Talussnail	Sonorella todseni	T	SOC
Fairy Shrimp	Streptocephalus moorei	s	
Anthony Blister Beetle	Lytta mirifica		SOC
Desert Viceroy Butterfly	Limenitis archippus obsoleta		SOC

P.O. Box 982
El Paso, Texas
79960-0982
(915) 543-5711

January 20, 2014

Ms. Patricia Zenone, Biologist
U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
2105 Osuna Road NE
Albuquerque, NM 87113

RE: El Paso Electric Proposed Afton to Airport Transmission and Substation
Project No. DOI-NM-L000-2013-0099-EA

Dear Ms. Zenone:

El Paso Electric (EPE) is contacting your office for informal consultation regarding a proposed new 115 kilovolt (kV) transmission line and 345 kV substation in Doña Anna County, New Mexico. EPE has applied to the Bureau of Land Management (BLM), Las Cruces District Office, for a right-of-way to construct, operate, and maintain a new 14.3 mile transmission line that would extend from a new autotransformer (Afton North Substation) just north of the Afton Generating Station and end at EPE's existing Las Cruces Airport Substation (Airport Substation) located just south of I-10 on Robert Larsen Blvd, south of the Airport approximately one mile west of the I-10 and Crawford Blvd Interchange (Project Location Map).

EPE and our consultants are working with the BLM to prepare an Environmental Assessment (EA) to analyze potential environmental impacts from the construction and operation of the transmission line, substation and the associated infrastructure. The transmission line would be located on Federal (12.75 miles), State trust (1.5 miles) and private lands (0.06 miles), paralleling existing utility lines and following parcel and section lines as much as practicable. If granted, the permit would include permanent access with rights to clear, grade, and maintain an access road. Use of the right-of-way would be year-round and include maintenance, replacement of equipment, and operation. Construction of the proposed project is estimated to take 20 to 25 weeks. Vegetation and land clearing activities would be scheduled as much as practicable outside the bird nesting season. If construction activities are to occur during nesting season, EPE would conduct nest surveys in advance of construction activities and provide monitors during construction, if appropriate.

High Desert Native Plants, LLC (HDNP) performed a biological survey of the proposed project area in August and September of 2012, using a combination of vehicle and intensive pedestrian surveys. The purpose of the survey was to identify the potential for the presence of special status species (SSS) and sensitive biological resources along the right-of-way. The survey area was approximately 15 miles long by 300 feet wide and also included an additional 92 acres at the site of the proposed Afton North Substation. A copy of the biological survey report is included with this correspondence. This report itemizes the list of SSS occurring in Doña Ana County and identifies target species that could potentially occupy the proposed project area.

At present, the right-of-way is vacant, undeveloped land. The biological survey identified no specific occurrences of SSS and no designated critical habitat within the proposed project area. Of the federally listed species occurring in Doña Ana County, only the Aplomado falcon (*Falco femoralis septentrionalis*) (endangered) and night-blooming cereus (*Peniocereus greggii*) (species of concern) were identified as potentially occurring within the project area. HDNP observed neither species during the survey area and noted no breeding habitat for Aplomado falcons, consequently making a determination that the propose project will not adversely affect these or other SSS. Please refer to the enclosed Survey Report for a full description of SSS and the determinations of effect.

Based on the findings documented by HDNP, the project will not adversely affect SSS. As previously mentioned, EPE is working with the BLM on an EA for the proposed project and would appreciate any input you may have regarding the observations and determinations presented herein.

Steven Torrez, Wildlife Biologist for the BLM in Las Cruces, is aiding in the review of the project and instructed us to initiate this informal consultation with you. Please feel free to direct any comments or concerns your agency may have pertaining to the proposed project to us and the BLM. If you have any questions or require additional information, please do not hesitate to contact me directly at (915) 351-4258 or via e-mail at jessica.christianson@epelectric.com.

Sincerely,

Jessica Christianson, PWS
Principal Environmental Scientist

Enclosures:
Project Location Map
HDNP Biological Resources Survey- Proposed Powerline, October 2012
HDNP Biological Resources Survey- Proposed Afton Substation, October 2012

CC (w/o enclosures):
Steven Torrez, BLM-LCDO
Kenneth Cunningham, NMDGF
Martha Velasco, El Paso Electric Company
David Gamon, El Paso Electric Company

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, CORPS OF ENGINEERS
LAS CRUCES REGULATORY FIELD OFFICE
505 S. MAIN ST SUITE 142
LAS CRUCES, NM 88001
(575)-652-3708

REPLY TO ATTENTION OF

August 7, 2014

Regulatory Division

SUBJECT: No Permit Required – Action No. SPA-2014-00363-LCO, El Paso Electric - Proposed Airport to Afton Transmission Line

Jessica Christianson
El Paso Electric Company
Rio Grande Power Plant
PO Box 982
El Paso, TX 79960

Dear Ms. Christianson:

I am writing this letter in response to your request for a determination of Department of the Army permit requirements for the proposed El Paso Electric - Proposed Airport to Afton Transmission Line located at approximately latitude 32.269025, longitude -106.939408, in Dona Ana County, New Mexico. The El Paso Electric Company (EPE) is in the in the process of performing an environmental review pursuant to the National Environmental Policy Act (NEPA) for the Bureau of Land Management (BLM) to assess the environmental impacts of a proposed 14.3 mile long, 115 kilovolt (kV) transmission line and access road. The proposed line would be built within a single ROW corridor starting at a new 345/115-kV autotransformer just north of the Afton Generating Station and ending at EPE's existing Las Cruces Airport Substation located just south of Interstate 10. We have assigned Action No. SPA-2014-00363-LCO to this project. Please reference this number in all future correspondence concerning the project.

Based on the information provided, we have determined that a Department of the Army permit is not required since the project would not result in the discharge of dredged/fill material into waters of the United States, the project site consists entirely of uplands. However, it is incumbent upon you to remain informed of any changes in the Corps Regulatory Program regulations and policy as they relate to your project. If your plans change such that waters of the U.S. could be impacted by the proposed project, please contact our office for a reevaluation of permit requirements.

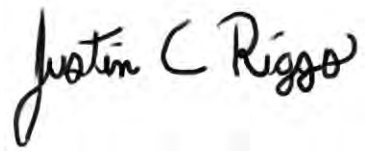
This decision is based on an approved jurisdictional determination (JD) (attached) that there are no waters of the United States on the project site. The basis for this JD is that the project site contains entirely uplands. A copy of this JD is also available at

http://www.spa.usace.army.mil/reg/JD. This approved JD is valid for five years unless new information warrants revision of the determination before the expiration date.

You may accept or appeal this approved JD or provide new information in accordance with the attached Notification of Administration Appeal Options and Process and Request for Appeal (NAAOP-RFA). If you elect to appeal this approved JD, you must complete Section II of the form and return it to the Army Engineer Division, South Pacific, CESPD-PDS-O, Attn: Tom Cavanaugh, Administrative Appeal Review Officer, 1455 Market Street, Room 1760, San Francisco, CA 94103-1399 within 60 days of the date of this notice. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

If you have any questions concerning our regulatory program, please contact me at 575-652-3708 or by e-mail at Justin.C.Riggs@usace.army.mil. At your convenience, please complete a Customer Service Survey on-line available at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,



Justin Riggs
Regulatory Manager for
Southern New Mexico and West Texas

Enclosure(s)
Approved JD

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 7, 2014

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, El Paso Electric - Proposed Airport to Afton Transmission Line, SPA-2014-00363-LCO

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **New Mexico** County/parish/borough: **Dona Ana** City: **Las Cruces**
Center coordinates of site (lat/long in degree decimal format): Lat. **32.269025°**, Long. **-106.939408333333°**
Universal Transverse Mercator: **13 317334.3 3571906.66**
Name of nearest waterbody: **Grande, Rio**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows:
Name of watershed or Hydrologic Unit Code (HUC): **El Paso-Las Cruces. New Mexico, Texas., 13030102**
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form:

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): **August 7, 2014**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet, wide, and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW:

   Summarize rationale supporting determination:

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **Pick List** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **Pick List** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain:

   Identify flow route to TNW[5]:
   Tributary stream order, if known:

   (b) General Tributary Characteristics (check all that apply):
   Tributary is: ☐ Natural
   ☐ Artificial (man-made). Explain:
   ☐ Manipulated (man-altered). Explain:

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime:
Other information on duration and volume:

Surface flow is: **Pick List.** Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:
Identify specific pollutants, if known:

(iv) Biological Characteristics. Channel supports (check all that apply):
☐ Riparian corridor. Characteristics (type, average width):
☐ Wetland fringe. Characteristics:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain:
Wetland quality. Explain:
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain:

Surface flow is**: Pick List**
Characteristics:

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain:
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent

wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet, wide, Or acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet, wide.
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.

[8]See Footnote # 3.

☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Jessic Christianson**
☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps:
☐ Corps navigable waters' study:
☐ U.S. Geological Survey Hydrologic Atlas:
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; NM-PICACHO MOUNTAIN**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **NAIP 2013**
  or ☒ Other (Name & Date): **Photos taken in 2014 by Jessic Christianson**
☐ Previous determination(s). File no. and date of response letter:
☐ Applicable/supporting case law:
☐ Applicable/supporting scientific literature:
☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The project location is comprised entirely of uplands and upland drainage.

APPENDIX C

BEST MANAGEMENT PRACTICES
And BLM STIPULATIONS

Standard Best Management Practices. El Paso Electric 115-kV Transmission Line from Afton North Substation to Airport Substation, Doña Ana County, New Mexico

1. Prior to construction, a detailed Final POD would be developed to further describe Project features, mitigation, and procedures. The POD will address construction and operation considerations, biological considerations (including noxious weed management and migratory birds), cultural resources, paleontological considerations, hazardous materials management, and reclamation considerations.

2. Prior to construction, all supervisory construction personnel would be instructed on the protection of cultural and ecological resources. To assist in this effort, a resource specialist would address: (a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; (b) the importance of these resources and the purpose and necessity of protecting them.

3. All construction vehicles and equipment would be cleaned using compressed water before proceeding to new locations when moving from weed-contaminated areas to other areas along the transmission line right-of-way to reduce the spread of noxious weeds.

4. All vehicle movement outside the right-of-way would be restricted to designated access or public roads.

5. The boundary of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate activity limits.

6. In areas of special concern for water erosion water bars would be placed along access roads or routes, and maintenance use areas. They should approximate the contour of the slope. Runoff would be diverted to vegetated or rocky areas to dissipate the erosive forces of the concentrated flows.

7. In structure work areas and along access roads, where grading is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for regrowth.

8. Construction holes left open overnight would be appropriately fenced or covered to prevent damage to wildlife or livestock.

9. Access routes or roads would be improved as near as possible at right angles to the streams and washes. All construction and operations activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks.

10. All requirements of those entities having jurisdiction over air quality matters would be adhered to, any necessary dust control plans would be developed, and permits for construction activities would be obtained. Open burning of construction trash would not be allowed.

11. On agricultural land, right-of-way would be aligned, in so far as practicable, to reduce the impact to farm operations and agricultural production.

12. Watering facilities (e.g., tanks, developed springs, water lines, wells, etc.) would be repaired or replaced if they are damaged or destroyed by construction activities. Temporary watering facilities would be provided for wildlife and livestock until permanent repair or replacement is complete. Any new water facility constructed on BLM administered lands would be installed to BLM standards (i.e. wildlife escape ramps in new water troughs or open topped storages).

13. Fences, cattle guards and gates would be repaired or replaced to their original, pre-disturbed condition, as required by the landowner or the BLM Authorized Officer if they are damaged or destroyed by construction activities. New temporary and/or permanent gates would be installed only with the permission of the landowner or the BLM. Temporary gates not required for post-construction access control would be removed following construction completion.

14. Non-specular conductors would be used, where specified by the BLM Authorized Officer, to reduce visual impacts

15. Transmission line materials would be designed and tested to minimize corona. Bundle configuration and larger diameter conductors would be used along 345 kV lines to limit the audible noise, radio interference, and television interference due to corona. Tension would be maintained on all insulator assemblies to ensure positive contact between insulators, avoiding sparking. Caution would be exercised during construction and operations to avoid scratching or nicking the conductor surface, which may provide points for corona to occur.

16. Project Owners would respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures. The transmission line would be evaluated on a regular basis so that damaged insulators or other line materials that could cause interference are repaired or replaced.

17. “Dulled” metal or self-weathering finish structures would be used to reduce visual impacts.

18. Structures and/or shield wire would be marked with high-visibility devices where required by government agencies (e.g., Federal Aviation Administration).

19. Electrical facility design would be in accordance with “Suggested Practices for Raptor Protection on Power Lines” (APLIC 2012).

20. During operation of the transmission lines, the right-of-way would be maintained free of non-biodegradable debris. Slash would be left in place or disposed of in accordance with requirements of the land owner or management agency.

21. In consultation with appropriate land-management agencies, specific mitigation measures for paleontological resources would be developed and implemented to mitigate any identified adverse impacts. These measures may include: preparation of a PRMP; paleontological surveys; personnel education; monitoring ground disturbance for fossils; curation of fossils; and deposition of fossils in a paleontological repository.

22. Cultural resources would continue to be considered during post-NEPA phases of Project implementation. This would involve the preparation and implementation of an approved cultural resource treatment plan to address monitoring and data recovery of sites that cannot be avoided during construction.

23. Paleontological resources would continue to be considered during post-NEPA phases of Project implementation. This would include onsite monitoring or spot checking during construction activities, assessment of the disturbance, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential.

24. Preconstruction surveys for species listed under the ESA or specified by the appropriate land management agency as sensitive or of concern would be conducted as required in areas of known occurrence or suitable habitat. Timing and extent of the surveys would be determined by species, coordinated with agency wildlife biologists, and completed prior to construction. Monitoring of construction activities may be required in some areas to ensure that effects to these species are avoided during construction. If Bald Eagle or Golden Eagle nests are identified during preconstruction surveys, seasonal restrictions on construction within a specified buffer would be implemented in coordination with the USFWS and/or species survey protocols, as appropriate, and comply with the BGEPA. Preconstruction nesting-season surveys for migratory birds, and surveys for Burrowing Owls in suitable habitat, would be conducted as needed to comply with the MBTA.

25. If nesting birds or other sensitive wildlife not previously identified were to be encountered during construction activities, EPE would consult with USFWS to determine appropriate avoidance measures to prevent disturbance.

26. Weed control measures would be taken on disturbed areas within the limits of the project. The Authorized Officer and/or local authorities/landowners would be consulted for acceptable weed control methods, which include following BLM requirements and seed mixture recommendations.

27. Periodic water spraying of unpaved roads during construction and reseeding with native vegetation upon construction completion would be used to minimize ongoing fugitive dust emissions.

Table C.1 Selective Best Management Practices. El Paso Electric 115-kV Transmission Line from Afton North Substation to Airport Substation, Doña Ana County, New Mexico.

Best Management Practice	Application Phase			Effectiveness								
				Water Resources		Earth Resources		Biological Resources				
	Engineering, Design, and Location	Construction	Operations	Streams/ Washes	Wetlands/ Springs	Geology/ Soils	Paleontology	Sensitive Wildlife Species	Sensitive Plant Species	Land Use	Visual Resources	Cultural Resources
1. No widening or upgrading of existing access roads would be undertaken in the area of construction and operations where soils and vegetation are very sensitive to disturbance, or where existing archaeological sites are present.	•	•	•	•	•	•			•	•	•	•
				Avoiding unnecessary access road upgrades would limit the amount of habitat disturbed or removed. In addition, the avoidance of road upgrades would minimize increases to vehicular traffic, thereby reducing the potential for indirect effects such as damage or loss of vegetation, spread of noxious weeds, harassment of wildlife, vandalism of cultural resources, and disturbance to sensitive land uses.								
2. Access roads required for operations purposes would be gated or otherwise blocked if directed by the BLM or other applicable agency/ owner. Fences, gates and cattle guards would meet BLM or other applicable agency/owner specifications.		•	•					•	•	•		•
				Limiting access to sensitive areas would reduce the potential for indirect effects associated with increased traffic.								
3. In developing the final designs for the proposed Afton North – Airport Transmission Line EPE would incorporate the appropriate requirements from guideline L-OM200-29 with design approval by Kinder Morgan (SFPP LP). Should Kinder Morgan (SFPP LP) establish that an outside consultant is needed to determine any adverse effects on the pipelines, EPE will enter into an agreement with Kinder Morgan (SFPP LP) at that time. EPE will also incorporate requirements for contractors conducting construction activities near Kinder Morgan (SFPP LP) pipelines and provide advance notification of construction schedules and provisions for Kinder Morgan (SFPP LP) representatives to observe construction work (**Appendix B**).	•	•	•									
				Designs to consider construction activity requirements and not designed to address impacts to environmental resources.								

Table C.1 Selective Best Management Practices. El Paso Electric 115-kV Transmission Line from Afton North Substation to Airport Substation, Doña Ana County, New Mexico.

Best Management Practice	Application Phase			Effectiveness								
				Water Resources		Earth Resources		Biological Resources				
	Engineering, Design, and Location	Construction	Operations	Streams/ Washes	Wetlands/ Springs	Geology/ Soils	Paleontology	Sensitive Wildlife Species	Sensitive Plant Species	Land Use	Visual Resources	Cultural Resources
4. In designated areas, structures would be placed so as to avoid, and/or to allow conductors to span sensitive features such as water courses, roads, and cultural sites within limits of standard tower design. This would minimize the amount of sensitive features disturbed and/or reduce visual contrast.	•			•	•	•		•	•	•	•	•
				Flexibility in the placement of structures allows for sensitive features to be avoided. Realigning the structures along a route can result in avoiding or minimizing direct impacts on resources, such as cultural and biological, as well as land uses such as agriculture and recreation areas.								
5. Standard tower design would be modified to correspond with spacing of existing transmission line structures where feasible, and within limits of standard tower design. The typical span would be modified to correspond with existing structures, but not necessarily at every location. This would reduce visual contrast and/or potential operational conflicts.	•							•		•	•	•
				Matching tower spacing with existing parallel lines reduces the visual space occupied by the structures and minimizes the amount of contrast between the man-made structures and the landscape.								
6. At road crossings, structures are to be placed at the maximum distance practicable from the crossing to reduce visual impacts.	•									•	•	•
				Placing structures at a maximum distance from major or sensitive crossings would reduce visual impacts and potential safety hazards.								
7. With the exception of emergency repair situations, right-of-way construction, restoration, maintenance, and termination activities in designated areas would be modified or discontinued during sensitive periods (e.g., nesting and breeding periods) for candidate, proposed threatened and endangered, or other sensitive animal species. Sensitive periods, species affected, and areas of concern would be approved in advance of construction or operations by the BLM Authorized Officer.		•	•					•				
				Restricting construction activities or maintenance during breeding or nesting periods eliminates potential disturbance of wildlife during these critical periods of their life cycles.								

Table C.1 Selective Best Management Practices. El Paso Electric 115-kV Transmission Line from Afton North Substation to Airport Substation, Doña Ana County, New Mexico.

Best Management Practice	Application Phase			Effectiveness								
				Water Resources		Earth Resources		Biological Resources				
	Engineering, Design, and Location	Construction	Operations	Streams/ Washes	Wetlands/ Springs	Geology/ Soils	Paleontology	Sensitive Wildlife Species	Sensitive Plant Species	Land Use	Visual Resources	Cultural Resources
8. To minimize disturbance to riparian vegetation and woodlands, and to reduce visual contrast, clearing of vegetation in and adjacent to the right-of-way would be minimized to the extent practicable to satisfy conductor-clearance requirements (NESC and up to 10 years of timber growth).		•						•		•	•	
				Selectively removing vegetation (i.e., trees) within and along the edges of the right-of-way reduces disruption of habitat, minimizes removal of timber resources, and reduces the visual contrast between the right-of-way and the surrounding environment. Furthermore, "feathering" the edges of the right-of-way instead of cutting trees and vegetation in a straight line results in a more gradual modification to the environment.								
9. To minimize bird collisions, bird diverters would be installed and maintained on shield wires, transmission lines, and/or guywires in areas of heavy bird use (i.e., Rio Grande and other riparian corridors). Shield wires would be replaced with OPGWs to increase visibility where practicable and appropriate.		•	•					•				
				Conductor, shield wire or guywire markings on segments of the transmission lines that cross through, or are adjacent to, heavy bird migration corridors and/or habitat would minimize the risk of avian collision.								
10. To reduce ground disturbance and visual contrast, the separation between the transmission lines and existing utilities, roads, or railroads would be minimized to the extent practicable.								•		•	•	
	•			Consolidating the transmission lines with existing facilities such as roads, railroads, or other utilities (e.g., transmission lines, distribution lines, pipelines, etc.) would typically minimize ground disturbance, habitat fragmentation, and visual contrast. Furthermore, locating the transmission lines within designated utility corridors (where established) minimizes potential land use conflicts and other resource impacts.								

STANDARD STIPULATIONS
NMNM 129489
AUGUST 2015

1. Right-of-way (ROW) Construction Administration

The Holder shall contact the authorized officer (AO) at least seven days prior to the anticipated start of construction and/or any surface disturbing activities. The AO shall require and schedule a preconstruction conference with the Holder prior to the Holder's commencing construction and/or surface disturbing activities on the ROW. The Holder and/or his representative shall attend this conference. The Holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development (POD).

The Holder shall submit a POD that describes in detail the construction, operation, maintenance, and termination of the ROW and its associated improvements and/or facilities. The plan shall include drawings in sufficient detail to enable a complete evaluation of all proposed structures, facilities, and landscaping to ensure compliance with the requirements of the grant and to ensure visual compatibility with the site. These drawings shall be the construction documents and must show dimensions, materials, finishes, etc. to demonstrate compliance with all requirements. The plans will be reviewed and, if appropriate, modified and approved by the AO. An approved POD shall be made a part of the ROW grant.

The Holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with these stipulations, POD and the terms and conditions of the ROW grant. Any relocation, additional construction, or use that is not in accord with the approved stipulations, shall not be initiated without the prior written approval of the AO. A copy of the complete ROW grant, including all stipulations, shall be made available on the ROW area during construction, operation, and termination to the AO. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

The Holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the AO. The Holder's representative shall be available for communication with the AO within a reasonable time when construction or other surface disturbing activities are underway.

The Holder shall perform the necessary transportation studies and recommend a road standard to meet the purpose of the road. This standard and the topography, soils, and geologic hazards of the lands crossed will define the level of survey and design necessary. Accepted standards for road design, including the BLM Manual Section may be used.

All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.

The Holder shall not initiate any construction or other surface disturbing activities on the ROW without the prior written authorization of the AO. Such authorization shall be a written notice to proceed issued by the AO. Any notice to proceed shall authorize construction or use only as therein expressly stated and only for the particular location or use therein described.

The AO may suspend or terminate in whole, or in part, any notice to proceed which has been issued when, in his judgment, unforeseen conditions arise which result in the approved terms and conditions being inadequate to protect the public health and safety or to protect the environment.

The Holder shall file a proof of construction within 90 days after completion of construction.

2. Work Limits

The Holder shall survey and clearly mark the centerline and/or exterior limits of the right-of-way, as determined by the authorized officer.

Specific sites as identified by the AO (e.g., archaeological sites, areas with threatened and endangered species, or fragile watersheds) where construction equipment and vehicles are not be allowed, shall be clearly marked onsite by the Holder before any construction or surface disturbing activities begin. The Holder shall be responsible for assuring that construction personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.

The Holder shall conduct all activities associated with new construction, operation, and termination of the ROW within the authorized limits of the ROW.

Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the AO in advance of excavation. All waste material resulting from construction or use of the site by Holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the AO in advance of use.

Holder shall remove only the minimum amount of vegetation necessary for the construction of structures and facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.

Materials encountered on the project and needed for select borrow, surfacing, riprap, or other special needs shall be conserved.

Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.

The holder shall recontour disturbed areas, or designated sections of the right-of-way, by grading to restore the site to approximately the original contour of the ground as determined by the authorized officer.

As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway by water baring, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.

3. Access to and Along the ROW During New Construction

Construction-related traffic shall be restricted to routes approved by the AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the AO. Authorized roads used by the Holder shall be rehabilitated or maintained when new constructions activities are complete as approved by the AO.

The Holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the AO to protect the public, wildlife, livestock, or facilities constructed within the ROW.

The Holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to, barricades for open trenches, flagmen/women with communication systems for single-lane roads without visible turnouts, and attached gates for blasting operations.

Construction excavations, holes and trenches in roadways or in areas where pedestrians or vehicular traffic is present will be flagged, plated or appropriately marked as required.

4. Use of ROW

Except rights-of-way expressly authorizing a road after construction of the facility is completed, the Holder shall not use the ROW as a road for purposes other than routine maintenance as determined necessary by the AO in consultation with the Holder.

5. Maintenance of ROW

No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of three inches deep, the soil shall be deemed too wet to adequately support maintenance equipment.

Holder shall maintain the ROW in a safe, usable condition, as directed by the AO. A regular maintenance program shall include, but is not limited to, blading, ditching, culvert installation and surfacing.

The ROW site shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

6. Cattle Guards/Fences

When construction activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the authorized officer and fenced by the Holder as per instruction of the authorized officer.

Cattle guards shall be constructed and installed as shown on attached drawings and specifications as provided by the authorized officer.

Fences, gates, and brace panels shall be reconstructed to appropriate Bureau standards and/or specifications as determined by the authorized officer.

7. Cultural and Paleontological Resources

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the Holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO. An evaluation of the discovery will be made by the AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The Holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the AO after consulting with the Holder.

8. Industrial and Toxic Waste Disposal

The Holder(s) shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the Holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the AO concurrent with the filing of the reports to the involved Federal agency or State government.

The Holder of ROW No. **NMNM 129489** agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the ROW (unless the release or threatened release is wholly unrelated to the ROW Holder's activity on the ROW. This agreement applies without regard to whether a release is caused by the Holder, its agent, or unrelated third parties.

9. Air and Dust Control

The Holder shall meet Federal, State, and local emission standards for air quality. The Holder shall furnish and apply water or other means satisfactory to the AO for dust control.

10. Raptor Protection

Unless otherwise agreed to by the AO in writing, power lines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Power lines," Raptor Research Foundation, Inc., 1981. The Holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "eagle safe." Such proof shall be provided by a raptor expert approved by the AO. The BLM reserves the right to require modifications or additions to all power line structures placed on this ROW, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the Holder without liability or expense to the United States.

11. Signs

No signs or advertising devices shall be placed on the premises or on adjacent public land except those posted by or at the direction of the AO.

12. The Holder of this ROW grant or the Holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.

13. In the event that the public land underlying the ROW encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under Federal laws, statutes, and

regulations, including the regulations at 43 CFR Part [2800], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

14. Indemnification

The United States, its officers and employees shall be held harmless from and indemnified against any damage, injury, or liability resulting from the construction, operation, or maintenance arising from the occupancy or use of public lands under this authorization.

15. Civil Rights

The Holder of this ROW grant or the Holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.

16. Corp of Engineers 404 Permits

The Holder shall comply with the construction practices and mitigating measures established by 33 CFR 323.4, which sets forth the parameters of the "nationwide permit" required by Section 404 of the Clean Water Act. If the proposed action exceeds the parameters of the nationwide permit, the Holder shall obtain an individual permit from the appropriate office of the Army Corps of Engineers and provide the AO with a copy of same. Failure to comply with this requirement shall be cause for suspension or termination of this ROW grant.

17. Other

In the event that the public land underlying the ROW encompassed in this grant, or a portion thereof, is conveyed out of Federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR Part [2800][2880], including any rights to have the Holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

18. Survey Monuments

The Holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or

disturbance of any of the above, the Holder shall immediately report the incident, in writing, to the AO and the respective installing authority if known. Where General Land Office or Bureau of Land Management ROW monuments or references are obliterated during operations, the Holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The Holder shall record such survey in the appropriate county and send a copy to the AO. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the Holder shall be responsible for the survey cost.

19. Termination

Prior to termination of the ROW, the Holder shall contact the AO to arrange a joint inspection of the ROW. This inspection will be held to agree to an acceptable termination (and rehabilitation) plan. This plan shall include, but is not limit to, removal of facilities, drainage structures, or surface material, re-contouring, top-soiling, or seeding. The AO must approve the plan in writing prior to the Holder's commencement of any termination activities.

SPECIAL STIPULATIONS
NMNM 129489
AUGUST 2015

1. Noxious Weeds

Power or high-pressure clean all equipment of all mud, dirt, and plants immediately prior to moving into the project area. Any gravel or fill to be used must come from weed-free sources. Inspect gravel pits and fill sources to identify weed-free sources. No soil spoil that could potentially contain noxious weed seeds shall be transported out of the area where it is created.

The project applicants shall be responsible for conducting a survey for and control of noxious weeds along the route proposed for construction. If during construction noxious weeds are identified that were not originally encountered during the survey, the project applicant shall avoid driving vehicles and equipment through or over the infested area. If avoidance measures cannot be taken within the area originally cleared, construction shall cease and the project inspector or the authorized officer (AO) contacted.

Any use of herbicides/pesticides shall comply with the applicable Federal and State laws. Herbicides/pesticides and shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior. Prior to the use of pesticides, Holder shall obtain from the AO **written** approval of a plan showing the type and quantity of materials to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the AO. Emergency use of pesticides shall be approved in writing by the AO prior to use.

2. Cultural Resources

Avoidance is recommended for all archaeological sites eligible for listing in the NRHP. However, if avoidance is not feasible, 100% data recovery shall be required prior to construction activities. The tribes shall be given the opportunity to review the data recovery plan when it is ready and provide comments.

If cultural resource materials are uncovered during construction or earth-disturbing activities, work in the area shall cease immediately and the appropriate agency (BLM or the State Land Office, depending on the land owner) and the SHPO shall be notified. In cooperation with the appropriate agency and/or the SHPO, necessary steps shall be taken to evaluate, document, protect, or remove material or remains, in compliance with the applicable laws.

3. Realty

Final design for the proposed Afton North – Airport Transmission Line shall incorporate the appropriate vertical and horizontal separations required to be maintained between existing utilities and proposed transmission lines. Transmission design information will be communicated to Zia Natural Gas and the City of Las Cruces for their review and determination of any effects on their respective pipelines. If determined the proximity of the transmission line will affect the pipeline(s), EPE shall enter into a mitigation agreement to remedy the potential effect.

In developing the final designs for the proposed Afton North – Airport Transmission Line, EPE shall incorporate the appropriate requirements from the Kinder Morgan (KM) guidelines (L-OM200-29), including design approval by KM, requirements for contractors conducting construction activities near

KM pipelines, advance notification of construction schedules, provisions for KM representatives to observe construction work, and advance notification prior to the start of any construction activities. EPE shall coordinate with KM after completion of the transmission line design to ascertain the need for an outside consultant to determine any adverse effects on the pipelines and establish mitigation if necessary. If required, at that time EPE shall enter into an agreement with KM.

4. Livestock Grazing

Fencing between allotments shall not be removed. If necessary, three cattle guards shall be installed to BLM specifications along the proposed route of the ROW to allow access for maintenance of the transmission line, and grazing shall continue. To avoid the need for a fourth cattle guard, existing pasture fencing in section 9, township 25 south, range 1 west, shall be realigned to include a BLM Type 'A' fence parallel to the Afton North-South trajectory of the transmission line ROW (see attached map and **BLM Fence and Cattle Guard Specifications**). These modifications to existing pasture fencing shall be conducted using procedures to minimize the potential for noxious or invasive weeds.

5. Migratory Birds

Recommendation that site disturbance activities (e.g. construction activities and especially initial site clearing and grubbing) be conducted outside of the bird breeding season, which is generally March through September in the region. If construction were to occur during the avian nesting season (March through September), a pre-construction migratory bird and raptor nesting survey shall be performed during the breeding season prior to disturbance of an otherwise undisturbed area. If no active nests are found on the subject property, the USFWS may not require a permit based on the "Empty Nest Policy." Areas with active bird nests shall be avoided during construction. If avoidance is not practical, bird's nests shall be monitored to evaluate the birds' responses to nearby construction activities and consultation with USFWS shall be initiated.

The transmission line shall be designed and built to be consistent with avian protection guidelines in APLIC (2006, 2012). Examples of design features to protect bird species may include standard raptor-safe design for poles, and bird diverters on the shield wire/fiber optic cable to deter raptor nesting.

6. Threatened, Endangered, and Special Status Species

The habitat along the ROW is capable of supporting populations of sand prickly pear and night blooming cereus. However, these species were not observed during the biological survey. If plants or species of concern are noted during future activities at the site, efforts shall be made to avoid impacts to their populations. If impacts to individual plants were to be unavoidable, mitigation measures involving salvage and transplanting shall be used.

A biological survey along the ROW for the transmission line identified no specific occurrences of threatened, endangered, or special status species. However, if nesting birds or other sensitive wildlife not previously identified were to be encountered during construction activities, EPE shall consult with USFWS to determine appropriate avoidance measures to prevent disturbance.

7. Water Resources

Construction of access roads crossing intermittent surface water features (arroyos) shall be constructed with the minimum footprint required to safely transfer building materials and construction equipment.
Holder shall consult with USACE to ensure compliance with Section 404 of the Clean Water Act.
Holder shall comply with all necessary local, state, and federal rules and regulations and obtain all necessary local, state, and federal permits (National Pollution Discharge Elimination System permit, Stormwater Pollution Prevention Plan, Spill Prevention, Control and Countermeasures Plan, etc.).

8. Paleontological Resources

Paleontological onsite monitoring or spot checking is required during construction activities for assessment of the disturbance, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. A certified paleontological monitor shall be present during ground disturbing activities.

9. Clearances and separations are specified National Electrical Safety Code (NESC) or EPE internal standards, whichever is more stringent. These standards shall be applied during the design and confirmed upon completion of construction in order to verify compliance.

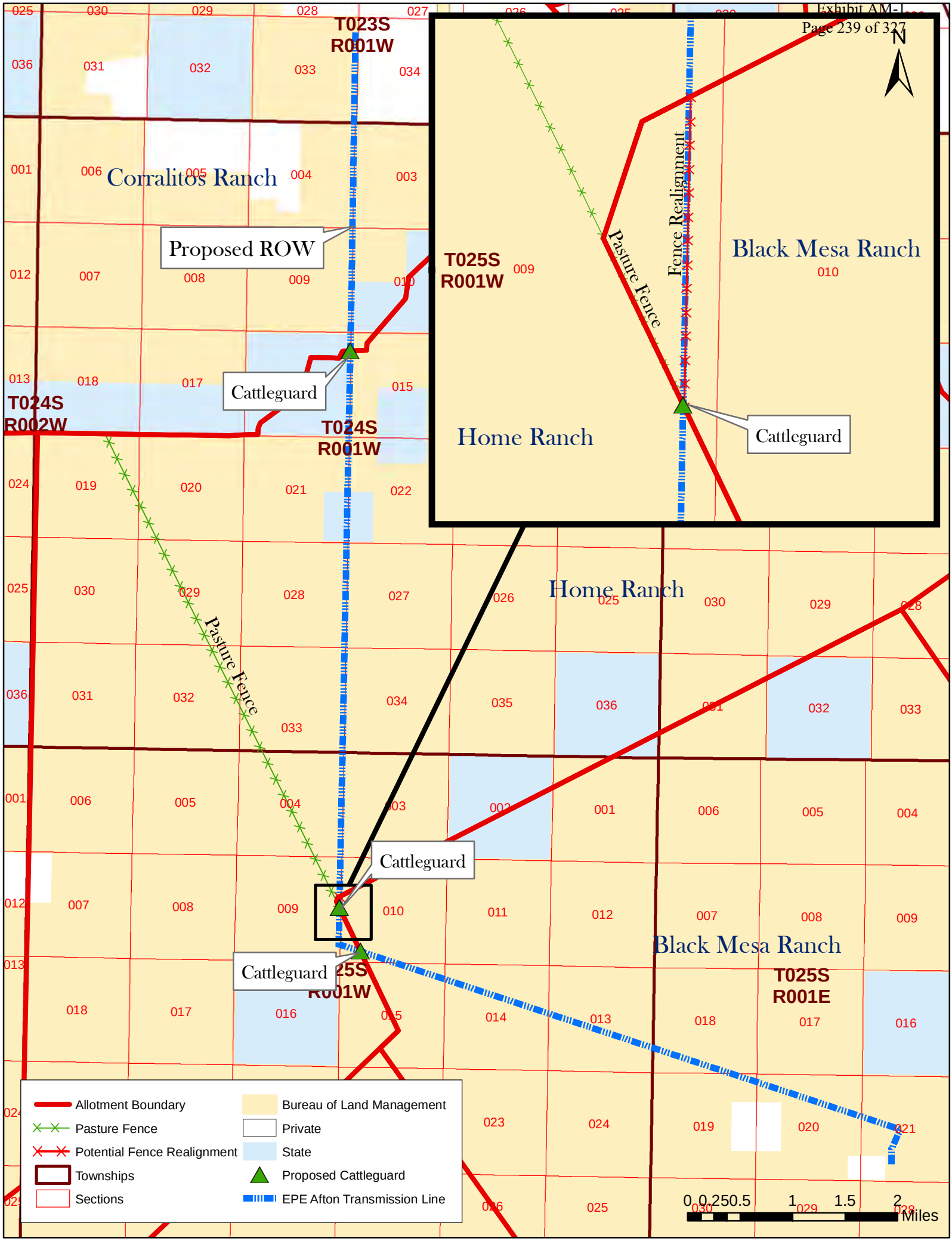
10. Clearances and separations are specified National Electrical Safety Code (NESC) or EPE internal standards, whichever is more stringent. These standards shall be applied during the design and confirmed upon completion of construction in order to verify compliance.

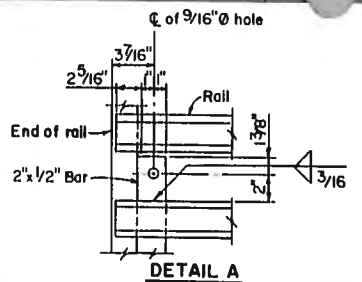
11. Onsite compliance monitoring is required prior to any ground disturbance and during construction activities, for assessment of surface disturbance.

BLM FENCE AND CATTLE GUARD SPECIFICATIONS

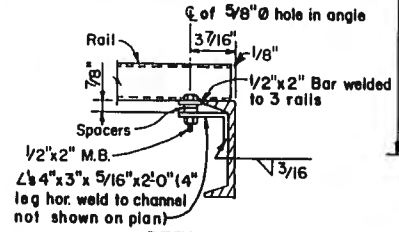
BLM Type 'A' Fence Specifications

The proposed fence shall consist of BLM Type "A" design fence with four strands; the upper three strands shall be barbed, while the bottom strand shall be smooth wire. Wire spacing shall be 16" from the ground to the first wire, 6" from the bottom wire, 8" from the second wire, and 12" from the third wire (42" from ground level). Braces and corners shall be constructed of wood or angle iron. Line post spacing shall be approximately 16.5'. Routes shall be surveyed for noxious weeds, areas with established noxious weeds shall be completely avoided or at least till measures of control could be taken. All equipment used in the construction of the fences shall be washed with a high pressure washer to remove any possible noxious weed seed from the equipment. Routes of disturbance shall be monitored in the future to determine if noxious or invasive weeds have spread.

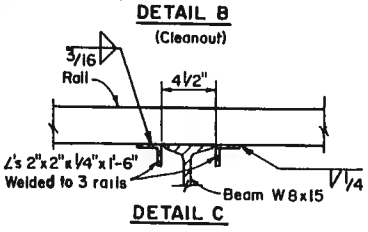

T023S
R001W
Corralitos Ranch
Proposed ROW
Cattleguard
T024S
R002W
T024S
R001W
Pasture Fence
Home Ranch
Cattleguard
Cattleguard
Cattleguard
Black Mesa Ranch
T025S
R001E
T025S
R001W
Fence Realignment
Pasture Fence
Black Mesa Ranch
T025S
R001W
Home Ranch
Cattleguard
N
Allotment Boundary
Pasture Fence
Potential Fence Realignment
Townships
Sections
Bureau of Land Management
Private
State
Proposed Cattleguard
EPE Afton Transmission Line
0 0.250.5 1 1.5 2
Miles



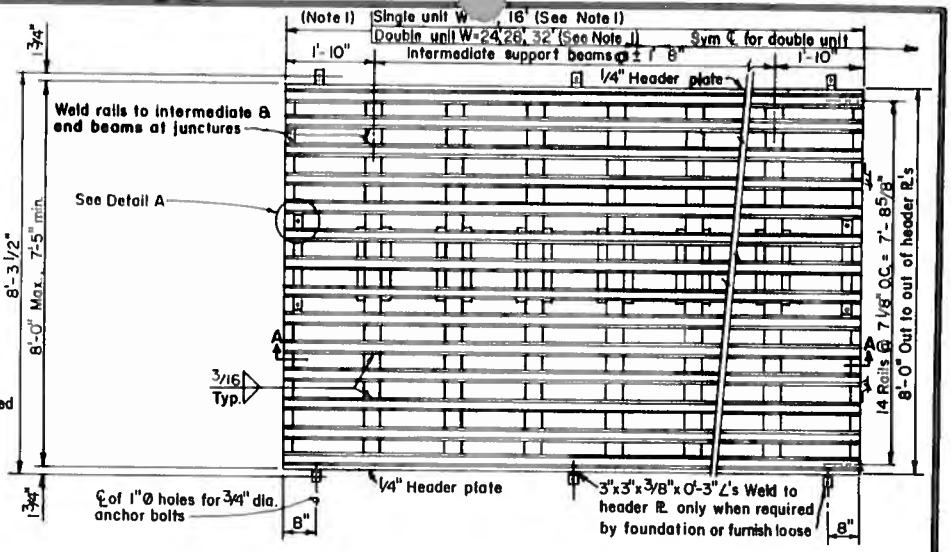
DETAIL A
(Both ends of 3 rail cleanout similar)



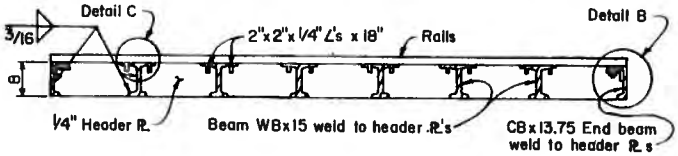
DETAIL B
(Cleanout)



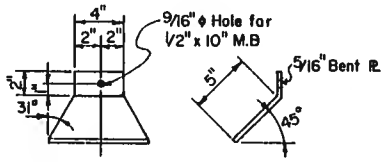
DETAIL C



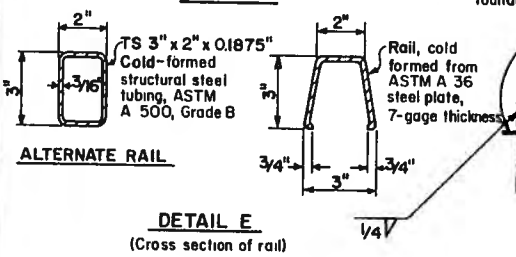
PLAN



SECTION A-A
(3 rail cleanout)

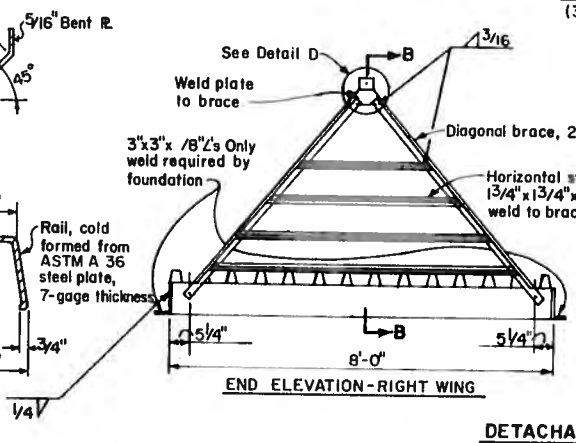


DETAIL D

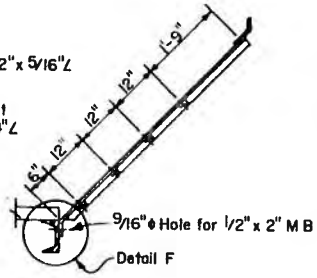


ALTERNATE RAIL

DETAIL E
(Cross section of rail)

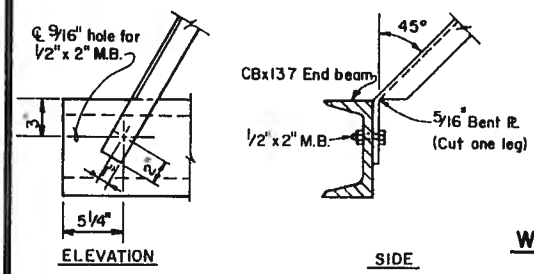


END ELEVATION-RIGHT WING

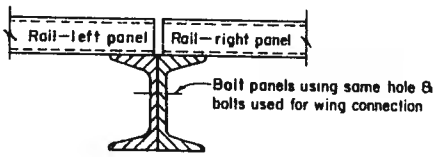


SECTION B-B

DETACHABLE WING

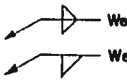


DETAIL F



CONNECTION FOR MULTIPLE INSTALLATION

WELDING SYMBOL LEGEND



NOTES:

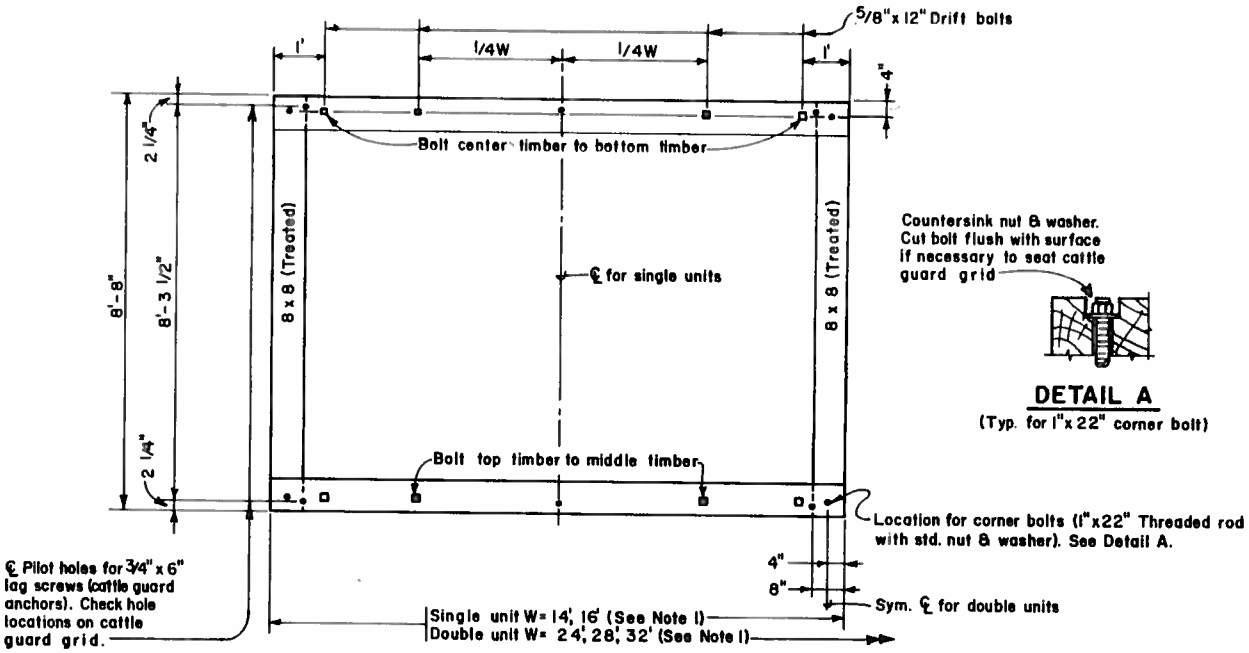
1. See Bid Schedule for width (W).
2. Bolts to be supplied with standard nuts & washers
3. Furnish grid with cleanout only when specified in the Bid Schedule.
4. Provide 4-7'-10"x2"x 1/4" torque bars, equally spaced, welded by 3/16" fillet welds to top of rails when alternate rectangular structural tube rails are provided
5. Steel for components shall be ASTM A 36, unless indicated otherwise on drawing
6. Design loading of grid shall conform to AASHTO H-20

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF ENGINEERING SYSTEMS — DENVER SERVICE CENTER

STEEL CATTLE GUARD GRID AND WINGS

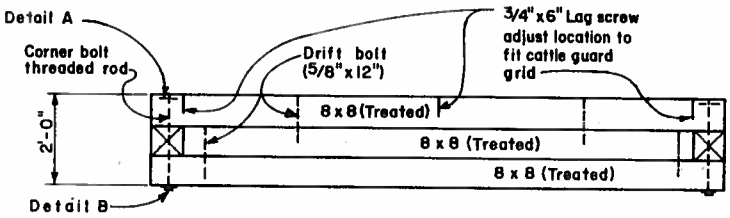
DESIGNED BY OTHERS	
REVIEWED	
APPROVED Richard L Eager	
DRAWN P.W. TWIST	SCALE NONE
DATE APRIL 5, 1984	SHEET OF
DRAWING NO. 02881-4	



PLAN

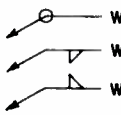
Countersink nut & washer. Cut bolt flush with surface if necessary to seat cattle guard grid

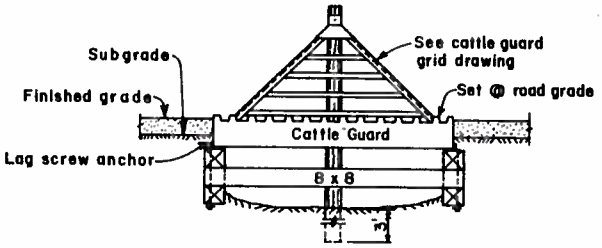
DETAIL A
(Typ. for 1"x 22" corner bolt)



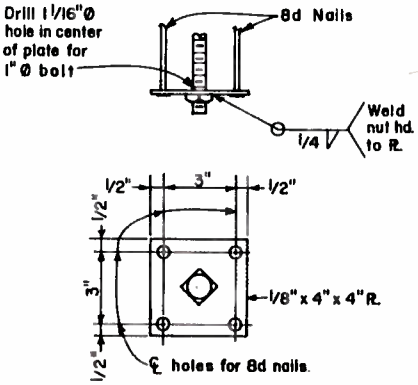
SIDE ELEVATION

WELDING SYMBOL LEGEND





SECTION AT ROAD ℄
(With grid & wings in place)



DETAIL B
(Typ. for 1"x 22" corner bolt)

NOTES:

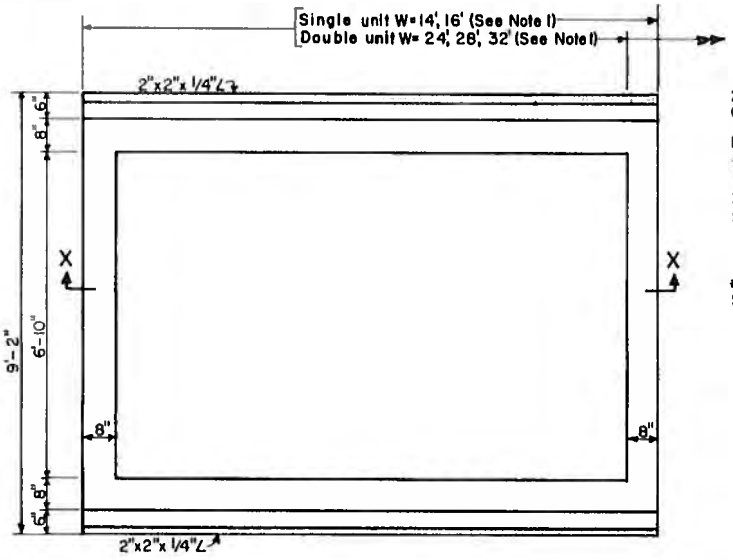
1. See Bid Schedule for width(W).
2. Cattle guard anchor angles with 3/4"x6" lag screws with standard washer to be furnished with each single grid.
3. On earth-surfaced roads, set top of cattle guard eight inches above subgrade unless plans or stakes indicate another elevation. Taper fill back from cattle guard approx. 50 ft. in both directions.
4. Dimensions for lumber are nominal unless otherwise noted.

ALWAYS THINK SAFETY

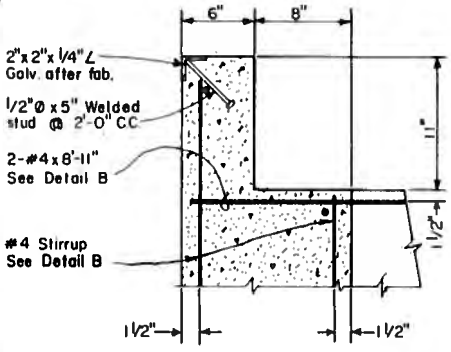
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF ENGINEERING SYSTEMS — DENVER SERVICE CENTER

CATTLE GUARD FOUNDATION
(Timber)

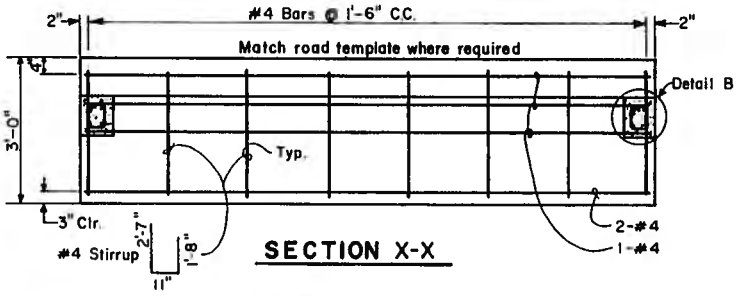
DESIGNED BY OTHERS	
REVIEWED	
APPROVED Richard E. Engel	
DRAWN J.D.Sedillo	SCALE NONE
DATE APRIL 4, 1984	SHEET OF
DRAWING NO. 02881-3	



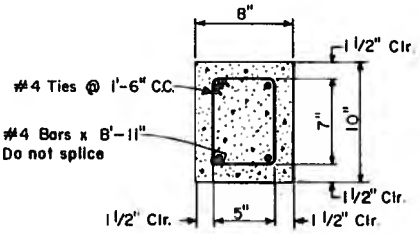
PLAN



DETAIL A



SECTION X-X



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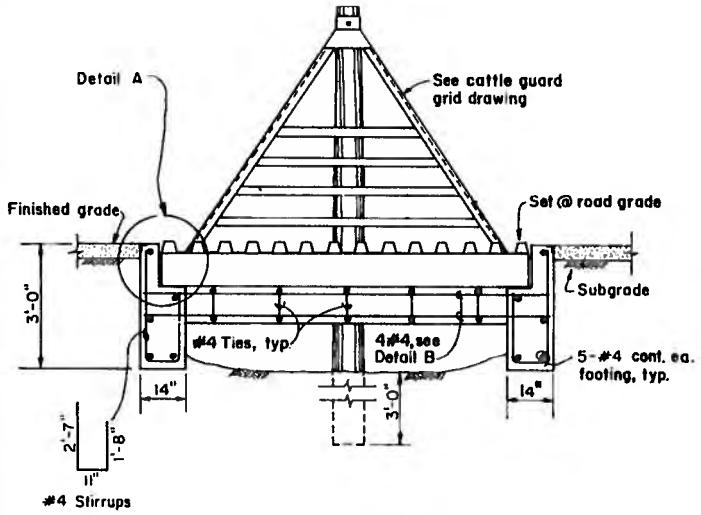


SECTION AT ROAD ℄
(With grid and wings in place)

NOTES:

1. See Bid Schedule for width (W).
2. Cattle guard grid dimensions shall be verified prior to construction.
3. On earth-surfaced roads, set top of cattle guard foundation eight inches above subgrade unless plans or stakes indicate another elevation. Taper fill back from cattle guard approx. 50 ft. in both directions.
4. #4 Reinforcement may be spliced with 24" lap unless prohibited.

ESTIMATED QUANTITIES FOR REINFORCED CONCRETE FOUNDATION

DESCRIPTION	QUANTITIES				
UNIT WIDTHS	14'	16'	24'	28'	32'
CONCRETE	3.3 c.y.	3.7 c.y.	5.4 c.y.	6.3 c.y.	7.1 c.y.
#4 REINFORCING STEEL	324 L.F.	355 L.F.	486 L.F.	547 L.F.	618 L.F.
∠2"x2"x 1/4"	28 L.F.	32 L.F.	48 L.F.	56 L.F.	64 L.F.

ALWAYS THINK SAFETY

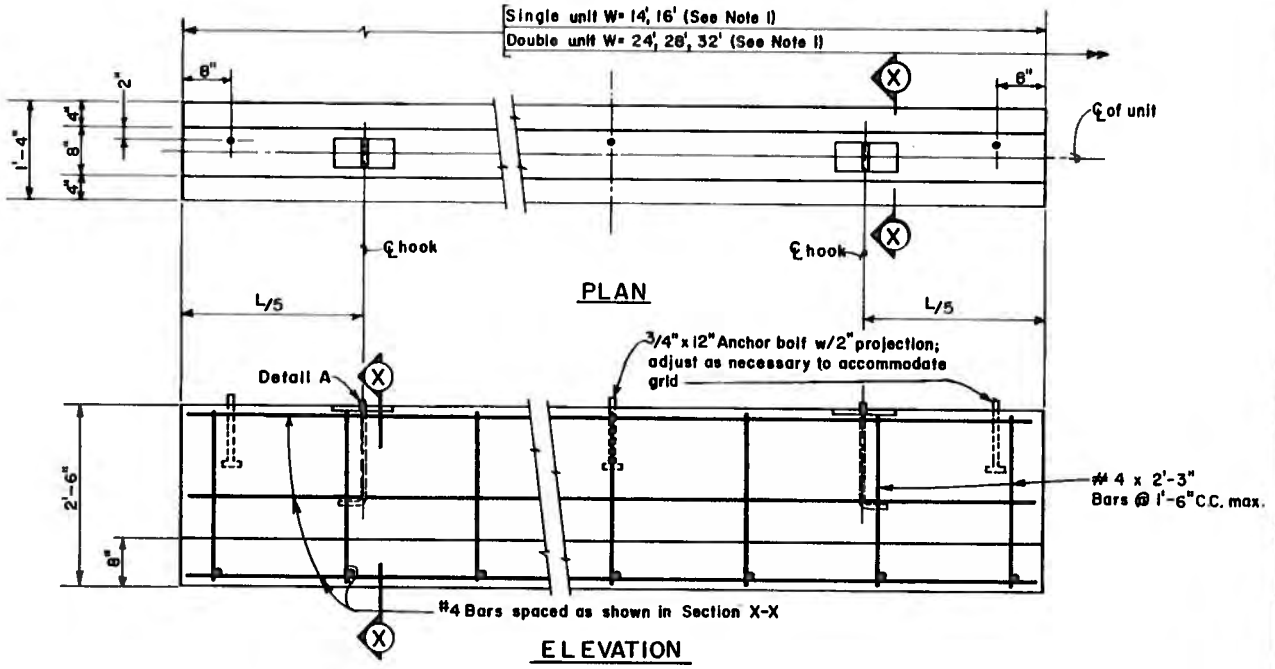
UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF ENGINEERING SYSTEMS — DENVER SERVICE CENTER

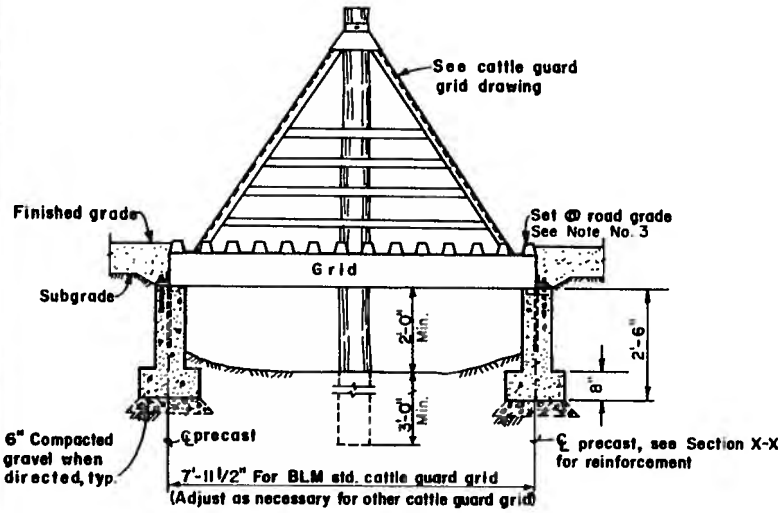
CATTLE GUARD FOUNDATION

(Poured-in-Place Concrete)

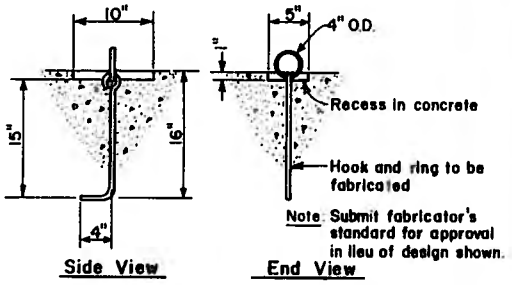
DESIGNED BY OTHERS
REVIEWED
APPROVED Richard E. Engen

DRAWN J.D.Sedillo | SCALE NONE
DATE APRIL 4, 1984 | SHEET OF
DRAWING NO. 0288I-2

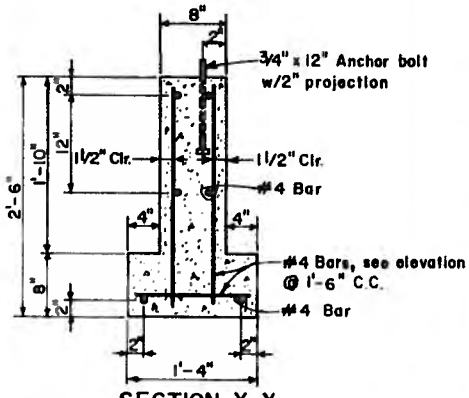




SECTION AT ROAD ℄
(With grid and wings in place)



DETAIL A



SECTION X-X

NOTES:

1. See Bid Schedule for width (W).
2. Standard nuts & washers shall be furnished with each foundation unit including anchor angles. Weld or bolt anchor angles to cattle guard.
3. On earth-surfaced roads, set top of cattle guard eight inches above subgrade unless plans or stakes indicate another elevation. Taper fill back from cattle guard approx. 50' in both directions.
4. #4 Reinforcement may be spliced with 24" lap unless prohibited.

ESTIMATED QUANTITIES FOR FOUNDATION					
DESCRIPTION	QUANTITIES				
UNIT WIDTHS	14'	16'	24'	28'	32'
CONCRETE	2.2 C.Y.	2.5 C.Y.	3.8 C.Y.	4.4 C.Y.	5.0 C.Y.
#4 REINFORCING STEEL	276 L.F.	311 L.F.	471 L.F.	545 L.F.	624 L.F.

ALWAYS THINK SAFETY

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
DIVISION OF ENGINEERING SYSTEMS — DENVER SERVICE CENTER

CATTLE GUARD FOUNDATION
(Precast Concrete)

DESIGNED BY OTHERS
REVIEWED
APPROVED

DRAWN J.D.Sedillo | SCALE NONE
DATE APRIL 6, 1984 | SHEET OF
DRAWING NO. 02881-1

APPENDIX D

BIOLOGICAL SURVEY

Biological Resources Survey
Proposed Power Line
Airport to Afton Substation
Doña Ana County, New Mexico

Prepared for:
Raba-Kistner Environmental, Inc.
12821 West Golden Lane
San Antonio, TX 78249

Prepared By:
High Desert Native Plants LLC
5404 Fleetwood Road
El Paso, Texas 79932
www.highdesertnativeplants.com

HDNP Project Number 2012-033

October 3, 2012

HighDesert
Environmental Consulting
& Native Plants

High Desert Native Plants LLC
5404 Fleetwood Rd. El Paso, TX 79932
915-490-8601 - office
www.highdesertnativeplants.com
info@highdesertnativeplants.com

Ocotber 3, 2011

Raba-Kistner Environmental, Inc.
12821 West Golden Lane
San Antonio, TX 78249

Attn: Steve Jones, V.P.

Re: Biological Resources Survey
Proposed Airport to Afton Power Line
Doña Ana County, New Mexico
HDNP Project #2012-033

Dear Mr. Jones:

This report presents the findings and conclusions of a Biological Resources Survey at the above referenced site. Included in this report are discussions concerning the methods utilized, the results obtained, and our recommendations. We appreciate the opportunity to have been of service to you for this project. Should you have any questions regarding this report, please contact us at your convenience.

Thank you,

Michael D. Gaglio
Biologist/Managing Member
mike@hd-env.com

TABLE OF CONTENTS

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2.0 METHODS AND MATERIALS
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- 2.2 Field Survey

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- 3.2 Vegetation
- 3.3 Wildlife
- 3.4 Species of Concern

4.0 DISCUSSION AND RECOMMENDATIONS
- 4.1 Limitations

5.0 REFERENCES

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APPENDIX B - MAPS
APPENDIX C - SPECIES LISTS

1.0 INTRODUCTION

High Desert Native Plants, LLC (HDNP) performed a biological survey at the proposed site of a new El Paso Electric Company power line in August and September 2012. The proposed alignment runs from an existing substation on Robert Larson Boulevard near the Las Cruces International Airport to the existing Afton Substation in Doña Ana County, New Mexico. The purpose of the survey was to identify the potential for the presence of special status species and sensitive biological resources at the subject property. The biological survey report was conducted to support an Environmental Assessment being conducted for the proposed installation of a new power line by El Paso Electric Company (EPEC).

The survey area was nearly 15 miles long by 300 feet wide. An additional area measuring approximately 92 acres located near the Afton Substation at the south end of the alignment was also surveyed. The survey area is located almost entirely on federal lands managed by the Bureau of Land Management (BLM) with the exception of three areas of New Mexico state lands totalling approximately 2 miles in length. The subject property is found on the Picacho Mountain, Afton NW, Afton, and Little Black Mountain-NM 7.5' quadrangle USGS Topographic Maps. The geographic coordinates of the northern terminus of the survey area were 32°16'8.49"N, 106°56'21.87"W. From this point, the site trends due south for nearly nine miles. At 32° 8'37.00"N, 106°56'22.17"W the alignment bears to the southeast for approximately six miles. The eastern end of site is located in at 32° 7'1.80"N, 106°50'41.94"W. The site is entirely vacant and undeveloped land.

2.0 METHODS AND MATERIALS

2.1 Background Research

Lists of threatened, endangered, and special status species of plants and wildlife that occur in Doña Ana County were compiled using a variety of sources including the U.S. Fish and Wildlife Service (USFWS) online Threatened and Endangered Species System (TESS), online listings of state threatened and endangered wildlife species by the New Mexico Department of Game and Fish (NMGF), and endangered plants listed by the New Mexico Energy Minerals and Natural Resources Department (EMNRD). Lists of sensitive species tracked by biologists in the BLM Las Cruces District Office were also requested and obtained as part of our resesarch. These lists are attached to this report in Appendix C. The USFWS Online Critical Habitat Mapper was utilized to search for designated critical habitat in the project area. Additional resources utilized to characterize the site included: Soil Survey data obtained from the National Resources Conservation Service (NRCS), U.S. Geological Survey 7.5-minute topographic maps, Federal Emergency Management Administration (FEMA) flood maps, and USFWS National Wetland Inventory (NWI) Maps.

2.2 Field Survey

Field surveys were conducted on 14 and 15 August 2012 by biologists Michael Gaglio of HDNP and Brian Strye of Raba-Kistner Environmental, Inc. (RK) and on 11 and 15 September 2012 by biologists Michael Gaglio and Scott Holcomb of HDNP. Surveys were conducted

during daylight hours and included a combination of vehicle and pedestrian surveys in August. The entire project area was walked during the September surveys and intense pedestrian surveys were conducted at every fifth proposed pole location (22 locations). Weather during the surveys was calm, clear, sunny, approximately 90°F to 95°F and did not interfere with the performance of the surveys. The locations of project site features were determined in the field by using digital and paper maps, geographic positioning system (GPS) receivers preloaded with feature coordinates, and referencing visible structural and topographic landmarks. Habitat types, dominant plant species, and evidence of special status species (i.e. tracks, scat, food species and other signs) were noted. General habitat types characterized by dominant vegetation and soil types were recorded at each of the intense pedestrian survey locations.

3.0 RESULTS

3.1 Site Description

The subject property is located centrally in the northern portion of the West Mesa. The West Mesa is a plateau that occupies a vast expanse of land in southern Dona Ana County and is bound to the west by the West Potrillo Mountains and to the east by an escarpment that drops 250 feet into Rio Grande's Mesilla Valley. The elevation of the subject property changes only 200 feet in 15 miles from approximately 4,400 feet above mean sea level (msl) at the north end of the site near Interstate Highway 10 to 4,200 feet above msl at the east end of the site near the Afton Substation. While the West Mesa is overall relatively level, it is marked by rolling coppice dunes that can individually measure 5 to 10 feet high.

Vegetation on the west mesa is predominantly Chihuahuan Desert scrub (Dick-Peddie 1993) with honey mesquite and creosotebush being dominant, yet present in varying abundance. It is believed that this area was once occupied by grasslands and has experienced significant shrub invasion and desertification as a result of historic cattle grazing and other environmental effects. Isolated areas of grasslands remain present on the West Mesa, but none were observed on the subject property. The subject property passes through areas of primarily mesquite, mesquite/ creosotebush, and creosotebush dominated habitat.

Our review of USFWS NWI maps (USFWS NWI 2012) and onsite conditions indicated that Pole Numbers 37 and 39 of the proposed alignment are located within or near one isolated wetland area at approximately 32°12'3.23"N, 106°56'22.37"W. Based on the NWI map, this wetland is classified as PUSJ (Palustrin, Unconsolidated shore, Intermittently flooded). Field investigation of this area however indicated that this area is not a wetland because soils are not hydric and vegetation is not dominated by wetland species.

NRCS soil survey maps indicated that the following soil groups are present on the subject property: Bluepoint Loamy Sand, Cacique-Cruces association, Onite-Pajarito association, Simona-Harrisburg association, Tencee-Upton association, Wink-Harrisburg association, and Wink-Pintura complex. For the most part, these soils are all sandy loams. Tencee-Upton association soils are very gravelly sandy loams. All soils are excessively to somewhat excessively drained, or they have calcium carbonate induration (caliche). No USDA designated prime or unique farmland soils are present on the subject property and none of the soils are classified as hydric soils (NRCS, 2012a).

3.2 Vegetation

The vegetation communitues at the site ranged from mesquite dominated series to creosote dominated series of Chihuahuan Desert scrubland. Vegetation species observed at the site included: *Ipomopsis longiflora, Lepidium montanum, Verbesina encelioides, Atriplex canescens, Gutierrezia microcephela*, *Senna bauhinioides, Amaranthus palmeri, Prosopis glandulosa, Sporobolus cryptandrus, Sporobolus wrightii, Flourensia cernua, Yucca elata, Eriogonum rotundifolium, Berberis* spp., *Zinnia grandiflora, Zinnia acerosa, Yucca bacata, Muhlenberghia porteri, Rumex crispus, Sphraelcea coccinea, Descurania pinnata, Dimorphocarpa wiszlizeni, Ambronia fragrans, Bahia absinthifolia, Baileya multiradiata, Amaranthus* spp., *Kochia scoparia*, *Solanum eleagnifolium, Salsola kali, Tribulus terrestris, Sporobolus* airoides, *Dyssodia pentachaeta, Muhlenbergia asperifolia, Hilaria mutica, Ambrosia acanthicarpa, Mentzelia spp., Ephedra trifurca, Psorothamnus scoparius, Helianthus annus, Helianthus ciliaris, Sporobolus flexuosus, Probiscidia parviflora, Acleisanthes chenopodiodes, Alliona incarnata, Oenothera pallida, Plantago patagonica, Hoffmannseggia glauca, Croton pottsii, Dieteria canescens, Chenopodium incanum, Acourtia nana.* No federal or state-listed threatened or endangered species were observed on the subect property. In addition, no BLM listed species of concern were noted.

The site is probably capable of supporting populations of sand pricklypear (*Opuntia arenaria*) and night blooming cereus (*Peniocereus greggii*). However, these species were not observed during our intensive pedestrian surveys. These species, especially night blooming cereus, are cryptic and tend to occur within the cover of larger shrubs. If these species are identified during future construction activities, it is recommended that all efforts possible be made to avoid disturbance to individual plants. If necessary, mitigation involving salvage and relocation of individual plants of these species should be conducted (and would likely be required by the BLM) if disturbance is unavoidable.

3.3 Wildlife

Wildlife observed during the survey included: black-tailed jackrabbit, whiptail lizards (*Cnemidophorus tesselatus* and *C. inornatus*), Western kingbird, Golden eagle, Swainson's Hawk, Red-tail hawk, House sparrow, House finch, Say's phoebe, Verdin, Mourning dove, and White wing dove. Evidence of cattle, deer, coyote, and a variety of small burrowing mammals was observed either by tracks, scat, or burrows. The site provides habitat and burrows suitable for burrowing owls, however, none were observed during our field surveys.

No evidence of state or federally listed threatened or endangered species of wildlife were noted on the subject property during the survey.

Several bird species were noted utilizing the subject property for foraging during our site visit. Most bird species are protected under the Federal Migratory Bird Treaty Act (MBTA). The presence of these birds will not preclude site development; however, it should be noted that the MBTA requires that no portion of individual birds or their nests may be harmed or disturbed. Typically, the USFWS recommends that site disturbance activities (*e.g.* construction activities and especially initial site clearing and grubbing) be conducted outside of the bird breeding season, which is generally March through September in El Paso County. If an active nest is identified on the site, and site development activities are planned during the breeding season, it may be necessary to consult with the USFWS in order to facilitate removal of birds or nests.

USFWS typically recommends that development activities be phased to avoid disturbance to nesting birds and rarely issues nest relocation permits.

Several bird nests were observed on-site during the survey. Raptor nests are also located on existing utility poles along the southern leg of the project site. If *any* construction activities are to occur between March through September, it is recommended that pre-construction nest surveys be conducted during the breeding season prior to disturbance of an otherwise undisturbed area. If no active nests are found on the subject property, the USFWS will not likely require a permit based on the "Empty Nest Policy." Areas where active bird nests are identified will need to be avoided during construction activities. If avoidance is not practical, monitoring of birds nests during nearby construction activities should be conducted to gauge the birds response to the activities. The USFWS typically does not issue incidental take permits once a nest has been identified. In rare cases, bird nests may be relocated or taken down and placed in the care of a licensed wildlife rehabilitator.

3.4 Species of Concern

Table 1 provides a summary list of threatened, endangered, and special status species occurring in Doña Ana County, NM and identifies which species were identified as target species for this project. Lists of threatened, endangered and special status species obtained during the literature review are presented in Appendix C. Although a target species may not be listed as threatened, endangered, or a species of concern by USFWS or NM (NMGF or EMNRD), its inclusion on this table is indicative of a special status listing with BLM.

None of the target species listed in Table 1 were observed in the project area during the field survey. No designated critical habitat is located on the subject property.

Following Table 1, a summary of Target Species that could potentially occupy the site based on locale or habitat preferences as defined by TPWD is presented. Included in the summary is discussion regarding the potential for the species to be encountered on the site or affected by the proposed project.

Table 1
Treatened (T), Endangered (E), and Selected Special Status (s) Species in Doña Ana County

Common Name	Scientific Name	FWS-ESA	NM WCA	BLM-NM	NM-Sen	Target Species	Found On Site
Minnow, Rio Grande Silvery	*Hybognathus amarus*	E	E	s	s	No	No
Frog, Leopard, Northern	*Rana pipiens*	-	-	-	-	No	No
Lizard, Earless, Bleached	*Holbrookia maculata ruthveni*	-	-	-	s	Yes	No
Lizard, Fence, Southwestern	*Sceloporus cowlesi*	-	-	-	s	Yes	No
Lizard, Horned, Texas	*Phrynosoma cornutum*	-	-	s	-	Yes	No

Massasauga, Desert	*Sistrurus catenatus edwardsii*	-	-	-	-	Yes	No
Kingsnake, Desert	*Lampropeltis getula splendida*	-	-	-	-	Yes	No
Whiptail, White, Little	*Aspidoscelis gypsi*	-	-	-	s	Yes	No
Bittern, American	*Botaurus lentiginosus*	-	-	-	-	No	No
Black-Hawk, Common	*Buteogallus anthracinus anthracinus*	-	T	-	-	No	No
Bunting, Varied	*Passerina versicolor*	-	T	-	-	Yes	No
Catbird, Gray	*Dumetella carolinensis ruficrissa*	-	-	-	-	No	No
Cormorant, Neotropic	*Phalacrocorax brasilianus*	-	T	-	-	No	No
Cuckoo, Yellow-billed	*Coccyzus americanus occidentalis* (western pop)	C	-	-	s	No	No
Curlew, Long-billed	*Numenius americanus americanus*	-	-	-	-	No	No
Eagle, Bald	*Haliaeetus leucocephalus alascanus*	-	T	-	-	No	No
Egret, Great	*Ardea alba egretta*	-	-	-	-	No	No
Egret, Snowy	*Egretta thula brewsteri*	-	-	-	-	No	No
Falcon, Aplomado	*Falco femoralis septentrionalis*	E	E	-	-	Yes	No
Falcon, Peregrine	*Falco peregrinus anatum*	-	T	-	-	No	No
Falcon, Peregrine, Arctic	*Falco peregrinus tundrius*	-	T	-	-	No	No
Flycatcher, Willow, SW.	*Empidonax traillii extimus*	E	E	-	-	No	No
Goshawk, Northern	*Accipiter gentilis atricapillus*	-	-	s	s	Yes	No
Ground-dove, Common	*Columbina passerina pallescens*	-	E	-	-	Yes	No
Hawk, Ferruginous	*Buteo regalis*	-	-	s	-	Yes	No
Hawk, Swainson's	*Buteo swainsoni*	-	-	-	-	Yes	Yes

Heron, Green	*Butorides virescens*	-	-	-	-	No	No
Night-Heron, Black-crowned	*Nycticorax nycticorax hoactli*	-	-	-	-	No	No
Hummingbird, Broad-billed	*Cynanthus latirostris magicus*	-	T	-	-	Yes	No
Hummingbird, Costa's	*Calypte costae*	-	T	-	-	Yes	No
Hummingbird, Violet-crowned	*Amazilia violiceps ellioti*	-	T	-	-	No	No
Ibis, White-faced	*Plegadis chihi*	-	-	s	-	No	No
Kingfisher, Belted	*Megaceryle alcyon*	-	-	-	-	No	No
Kite, Mississippi	*Ictinia mississippiensis*	-	-	-	-	No	No
Nightjar, Buff-collared	*Caprimulgus ridgwayi ridgwayi*	-	E	-	-	Yes	No
Osprey	*Pandion haliaetus carolinensis*	-	-	-	-	No	No
Owl, Burrowing	*Athene cunicularia hypugaea*	-	-	s	-	Yes	No
Owl, Spotted, Mexican	*Strix occidentalis lucida*	T	-	-	s	No	No
Pelican, Brown	*Pelecanus occidentalis carolinensis*	-	E	-	-	No	No
Plover, Mountain	*Charadrius montanus*	-	-	-	s	No	No
Plover, Snowy, Western	*Charadrius alexandrinus nivosus*	-	-	-	-	No	No
Redstart, American	*Setophaga ruticilla tricolora*	-	-	-	-	No	No
Shrike, Loggerhead	*Lanius ludovicianus*	-	-	s	s	Yes	No
Sora	*Porzana carolina*	-	-	-	-	No	No
Sparrow, Baird's	*Ammodramus bairdii*	-	T	s	-	No	No
Stilt, Black-necked	*Himantopus mexicanus*	-	-	-	-	No	No
Tern, Black	*Chlidonias niger surinamensis*	-	-	s	-	No	No
Tern, Least	*Sterna antillarum athalassos*	E	E	-	-	No	No
Vireo, Bell's	*Vireo bellii*	-	T	-	-	No	No

Vireo, Gray	*Vireo vicinior*	-	T	-	-	No	No
Bat, Big-eared, Townsend's, Pale	*Corynorhinus townsendii pallescens*	-	-	s	s	No	No
Bat, Myotis, Brn., Little, Occult	*Myotis lucifugus occultus*	-	-	s	s	No	No
Bat, Free-tailed, Big	*Nyctinomops macrotis*	-	-	s	s	No	No
Bat, Myotis, Fringed	*Myotis thysanodes thysanodes*	-	-	s	s	No	No
Bat, Myotis, Long-legged	*Myotis volans interior*	-	-	s	s	No	No
Bat, Red, Western	*Lasiurus blossevillii*	-	-	-	s	No	No
Bat, Myotis, Small-footed, W.	*Myotis ciliolabrum melanorhinus*	-	-	s	s	No	No
Bat, Spotted	*Euderma maculatum*	-	T	s	-	No	No
Bat, Myotis, Yuma	*Myotis yumanensis yumanensis*	-	-	s	s	No	No
Chipmunk, Colorado, Organ Mtns.	*Neotamias quadrivittatus australis*	-	T	s	-	No	No
Fox, Red	*Vulpes vulpes*	-	-	-	s	Yes	No
Gopher, Pocket, Botta's	*Thomomys bottae albatus*	-	-	-	-	No	No
Gopher, Pocket, Desert	*Geomys arenarius arenarius*	-	-	s	s	Yes	No
Gopher, Pocket, Yellow-faced	*Cratogeomys castanops*	-	-	-	-	yes	No
Muskrat, Pecos River	*Ondatra zibethicus ripensis*	-	-	s	s	No	No
Pronghorn, Chihuahuan	*Antilocapra americana*	-	-	-	-	Yes	No
Rat, Wood, White Sands	*Neotoma micropus leucophaea*	-	-	-	-	Yes	No
Ringtail	*Bassariscus astutus*	-	-	-	s	Yes	No
Sheep, Bighorn, Desert	*Ovis canadensis Mexicana*	-	E	-	-	No	No
Shrew, Desert, Crawford's	*Notiosorex crawfordi crawfordi*	-	-	-	-	Yes	No
Skunk, Hog-nosed, Common	*Conepatus leuconotus*	-	-	-	s	Yes	No

Skunk, Spotted, Western	*Spilogale gracilis*	-	-	-	s	Yes	No
Talussnail, Dona Ana	*Sonorella todseni*	-	T	s	-	No	No
Mountainsnail, Bearded	*Oreohelix barbata*	-	-	-	-	No	No
Shrimp, Fairy, Moore's	*Streptocephalus moorei*	-	-	-	s	No	No
Beetle, Blister, Anthony	*Lytta mirifica*	-	-	s	-	Yes	No
Butterfly, Hairstreak, Poling's	*Fixsenia polingi*	-	-	-	-	Yes	No
Butterfly, Viceroy, Obsolete	*Basilarchia archippus obsoleta*	-	-	-	-	Yes	No
Cactus, Sneed's Pincushion	*Coryphantha sneedii var. sneedii*	E	-	E	E	No	No
Cactus, Sand Prickly Pear	*Opuntia arenaria*	-	-	s	E	Yes	No
Cereus, Night Blooming	*Peniocereus greggii var. greggii*	SoC	-	s	E	Yes	No

The mountain short-horned and Texas horned lizards are diurnal lizards that prefer open, arid to semi-arid regions, typically with sparse vegetation. The mountain short-horned lizard is more commonly found in mountain areas with wooded or shrubby vegetation, whereas the Texas horned lizard can be more readily found in lower lying areas. Soil types range from loamy to rocky soils (TPWD 2007). These lizards feed on ants and other invertebrates (Stebbins 2003). Reports of occurrence of these lizards vary widely both spatially and temporally. The Texas horned lizard's average length is 6.8 cm, however males can measure up to 9.4 cm and females up to 11.4 cm. The mountain short-horned lizard can range in size from 5 cm to 12.7 cm. The colors can range from gray, yellowish, or reddish brown depending on its location, habitat and if its being threatened. Mating season is from May to June. Texas horned lizards oviparous and lay eggs underground while mountain short-horned lizards are viviparous. Mountain short-horned lizards are more cold tolerant than other horned lizard species and can reach higher elevations and greater distribution where the temperature is much cooler.

The subject property contains areas capable of supporting Texas Horned Lizards however, none were observed during the survey. Habitat quality on the subject property is considered to be poor. No Harvester Ant nests were observed on site. The proposed development project will not likely adversely affect this species.

Western burrowing owls can be found in deserts or any other open dry area with low vegetation. They have yellow eyes and their beaks can range from dark yellow to gray depending on the subspecies. Adults have brown heads and wings with white spots. The chest and abdomen can have different shades of brown depending on the subspecies and locality. The average size is of 24.5 cm in length and a wingspan of 53.3 cm. Their nesting

season starts in late March. They nest underground cavities excavated by other burrowing animals and their breeding habitat can range from open grassland to agricultural fields and occasionally vacant lots near urban areas. Burrowing owls are frequently observed in El Paso County and are known from a wide variety of habitat types but, in general, they appear to be more commonly associated with lower elevation sites along the Rio Grande. While they have been known to return to a nesting site year after year, the variation in nest fidelity is high and new sites are apparently colonized and abandoned at will.

No burrowing owls were observed on the subject property during the survey. Suitable burrowing substrate is present on the subject property and browsing habitat is present though not abundant in the area. However, no burrows suitable for nesting were observed on-site. The proposed development project will not likely adversely affect this species.

Peregrine falcons are 40 to 48.3 cm long and have wingspans up to 107 cm. Their plumage consists of black coloring on their head and nape and characteristic black wedges extending below the eyes. Chest and under-part coloring is white to buff with black bars. Upper-parts of the wings and tail are dark brown and the tail feathers are tipped with light yellow brown. Both Arctic and American peregrine falcons have a notably wide range and occur in Texas. The American peregrine falcon nests in the western US and is found in the Texas Trans-Pecos area; whereas the Arctic peregrine falcon nests in the arctic region and only spends winters along the Gulf Coast. Although American peregrines are known for selecting a wide range of nesting sites, selection is typically along large mountain cliffs and adjacent to water courses (Campbell 2003). In El Paso, they occur as a migratory species, utilizing a variety of habitats, but primarily following the mountain range and water courses.

No peregrine falcons were observed on the subject property during site visit. In addition, the site does not contain nesting habitat preferred by peregrine falcons. The proposed development project will not adversely affect this species.

Northern aplomado falcons are distinguished by their steel grey back, reddish breast, black "sash" on the belly, and striking black markings on the top of the head, around the eyes, and extending down the cheeks of the face. These falcons do not build their own nest, but instead occupy an abandoned nest built in a mesquite or yucca by other raptors or ravens. They require open grassland for hunting and typically hunt in pairs as adults or in groups as juveniles. The species ranges from southern Arizona, New Mexico, and Texas in the U.S. southward to the southern tip of South America; however, aplomado populations have been in significant decline in the northern extent of their range since the 1930s (TPWD 2008).

Aplomado falcons are very rare in the region and are not anticipated to be present at the site. No breeding habitat for Aplomado falcons was noted on the site. The proposed development project will not adversely affect this species.

The southwestern willow flycatcher is a small bird that has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish belly. Two wingbars are visible; the eye ring is faint or absent. Visually it is very difficult to distinguish from other species of willow flycathcer, but the diagnostic characteristic of the southwestern willow flycatchers is their song,

a sneezy “fitz-bew”. These birds require dense gallery forested riparian areas along open water for breeding. Non-breeding habitat, while typically riparian, is less selective than during the breeding season. Southwestern willow flycatchers have been observed along the Rio Grande and in upland areas in Dona Ana County and adjacent El Paso County; however the potential for them to occupy the subject property is very low.

The subject property does not have any suitable breeding habitat for southwestern willow flycatchers. The proposed development project will not adversely affect this species.

Black-tailed prairie dogs have large eyes, short tails and brownish-tan pelage. Their habitats are native to short-grass prairies in western North America. They mainly avoid heavy brush and tall grass areas because such places reduce their visibility and ability to detect predators. They serve as a food source for different predators and help other animals such as the burrowing owl, the black-footed ferret, and the Texas horned lizard by leaving vacant burrows for them to use. They usually live in groups in areas that can range from 1 to 1,000 acres. Their breeding season is in March through April. Each female prairie dog produces four to five young each year. They have a life span of 5 to 8 years.

There are no known populations of black-tailed prairie dogs in Doña Ana County and none were observed during the survey. The proposed development project will not adversely affect this species.

Sand prickly pear cactus have stems consisting of loosely attached flattened joints up to 8 cm in length by 2-3 cm in width. The joints of sand prickly pear are highly varied in size and shape, bearing areoles with dense clumps of yellowish glochids. They mainly flower from May to June and have flowers that are 3-6 cm across that can be yellow and/or orange with green stigmas. In Texas, their distribution is generally limited to El Paso County. They are also found in southern Doña Ana, Luna, and Socorro counties in New Mexico. Their main habitats are sandy areas, especially semi-stabilized sand dunes among open Chihuahuan desert.

No sand prickly pear cactus plants were observed on the subject property during the survey. The proposed development project will not adversely affect this species.

Sneed’s pincushion cactus is a small cactus characterized by globular-shaped stems (heads) approximately 5 cm long and 2 cm in diameter with short fine stout spines growing from the tips of tubercles densely arranged in a more or less spiral pattern around the head. Several heads grow from a single root, often giving the cactus the appearance of a spiny white mat that appears to be several plants. Flowers are about 1.3 cm tall, open to approximately 1.3 cm wide, and are typically pink to pale rose or greenish yellow in color (Weniger 1970). These cacti are only found growing within cracks and crevices on limestone outcrops in the Franklin, Organ, and Guadalupe Mountains in west Texas and southern New Mexico (USFWS 2011). In Doña Ana County, the only known populations occur in the Organ Mountains.

No Sneed’s pincushion cactus plants were observed on the subject property during the survey. The proposed development project will not adversely affect this species.

The night-blooming cereus is a cactus that typically grows within a larger shrub and utilizes that shrub for support and shelter. It is characterized by long, narrow branching growth habit, grey color, and large white flower. It occurs in Chihuahuan desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations (3900-4900 ft), on slopes, benches, arroyos, flats, and washes. Flowering is synchronized amongst nearby plants over a few nights in early May to late June when almost all mature plants bloom. Flowers last only one day and open just after dark. This species is difficult to identify due to its appearance and growth habit. Although not listed by state and federal agencies in Texas, it is a very rare plant and thus considered a species of concern by many federal agencies such as the Bureau of Land Management and US Forest Service.

No night-blooming cereus cactus plants were observed on the subject property during the survey. The proposed development will not adversely affect this species.

4.0 DISCUSSION AND RECOMMENDATIONS

The proposed project will not likely negatively affect any federal or state-listed threatened, endangered, or rare species. Although no listed threatened, endangered, or sensitive species were observed during this biological survey, it should be noted that the potential for their presence may still exist, especially with respect to wildlife species of concern.

If plants of species of concern, such as sand prickly pear or night blooming cereus are noted during future activities at the site, all efforts to avoid impacts to their populations should be made. If impacts to individual plants are unavoidable, mitigation involving salvagie and transplanting should be conducted and will likely be required by the BLM.

Wildlife may enter and utilize the site at any time. If nesting birds or other sensitive wildlife are encountered during construction activities, avoidance measures should be taken by work crews to prevent disturbance to sensitive wildlife. It may be necessary to relocate these individuals or monitor their response to activities. In rare cases, when impacts are otherwise unavoidable either by timing or location restrictions to work activities, active bird nests may be put under the care of a licensed wildlife rehabilitator, but such actions should be thought of only as a last resort.

4.1 Limitations

It should be noted that the survey performed on the subject property is a cursory overview of the major habitat types on the site with the intent of identifying the potential for sensitive biological resources. An exhaustive inventory of all plant an animal species that inhabit, or have the potential to inhabit, the site was not performed as it was beyond the scope of this project. Plant identification to species and variety levels typically requires flowering parts of the plants. Plants on the site were identified utilizing plant parts present at the time of the survey. Due to the time of the survey, some of the plants were not flowering. Identification of specific animal and bird species would require trapping and other additional effort which was considered beyond the scope of this project. Furthermore, such activities would require obtaining permits from appropriate State and Federal wildlife agencies. If justified, recommendations for additional surveys to further investigate potential biological resources of concern are presented above.

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APPENDIX A - SITE PHOTOGRAPHS

Photo 1 - Veiw facing north at Proposed Pole Group 20. Overview of typical mesquite coppice dune vegetation community present over much of the north end of the site.

Photo 2 - View facing north at Proposed Pole Group 30. Typical Creosote-dominated vegetation commnunity on calcium-carbonate indurated (caliche) soils found throughout much of the project site.

Photo 3 - View facing east from propsed Pole Group 45. Mixed shrub community on sandy soils. Species present include tarbush, pepperweed, creosote, and various forbs.

Photo 4 - Cattle and deer tracks in soft sandy soils near proposed Pole Group 60.

Photo 5 - View facing north near the existing power line poles in the vicinity of proposed Pole Group 80. Note the disturbed vegetation.

Photo 6 - View facing south from the eastern end of the subject property, in the vicinity of proposed pole group 109. Vegetation in this area consists of the widespread mesquite coppice dune community. Dunes in this area are approach five feet in height.

APPENDIX B - MAPS

APPENDIX C - SPECIES LISTS

Ecological Services

Southwest Region

Ecological Services
Endangered Species
Electronic Library
Environmental Contaminants
Energy
Partners Program
Texas Coastal Program
National Wetlands Inventory
Field Offices

Back to Start

List of species by county for New Mexico:

Counties Selected: Dona Ana

Select one or more counties from the following list to view a county list:

Bernalillo
Catron
Chaves
Cibola
Colfax

View County List

Dona Ana County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
least tern	*Sterna antillarum*	Birds	E				P
northern aplomado falcon	*Falco femoralis septentrionalis*	Birds	E, EXPN				P
Rio Grande silvery minnow	*Hybognathus amarus*	Fishes	E				P
Sneed pincushion cactus	*Coryphantha sneedii var. sneedii*	Flowering Plants	E				P
southwestern willow flycatcher	*Empidonax traillii extimus*	Birds	E				P
yellow-billed Cuckoo	*Coccyzus americanus*	Birds	C				P

Last Updated: September 20, 2012

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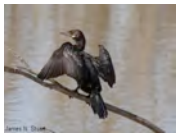
Report County Federal/State Species Status for

Dona Ana

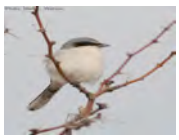
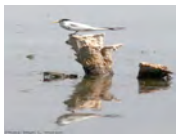
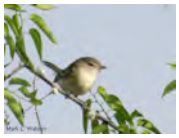
50 species returned.

Taxonomic Group	# Species	Taxonomic Group	# Species
Reptiles	3	Molluscs	1
Birds	27	Crustaceans	1
Mammals	18		

Export to Excel

Common Name	Scientific Name	Habitat Map	Species Photo (click photo to enlarge)	Status
Lizard, Earless, Bleached	Holbrookia maculata ruthveni (NM)	no map		State NM: Sensitive taxa (informal)
Lizard, Fence, Southwestern	Sceloporus cowlesi	no map		State NM: Sensitive taxa (informal)
Whiptail, White, Little	Aspidoscelis gypsi	no map	no photo	State NM: Sensitive taxa (informal)
Black-Hawk, Common	Buteogallus anthracinus anthracinus (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Bunting, Varied	Passerina versicolor versicolor (NM);dickeyae (NM)	no map		State NM: Threatened
Cormorant, Neotropic	Phalacrocorax brasilianus	no map		State NM: Threatened
Cuckoo, Yellow-billed	Coccyzus americanus occidentalis (western pop)	no map		Federal: Candidate State NM: Sensitive taxa (informal)

Eagle, Bald	Haliaeetus leucocephalus alascanus (NM)	no map		State NM: Threatened
Falcon, Aplomado	Falco femoralis septentrionalis (NM)	no map		Federal: Endangered State NM: Endangered
Falcon, Peregrine	Falco peregrinus anatum	no map		Federal: FWS Species of Concern State NM: Threatened
Falcon, Peregrine, Arctic	Falco peregrinus tundrius	no map	no photo	Federal: FWS Species of Concern State NM: Threatened
Flycatcher, Willow, SW.	Empidonax traillii extimus	no map		Federal: Critical Hab. Designated (NM) Federal: Endangered State NM: Endangered
Goshawk, Northern	Accipiter gentilis atricapillus (NM,AZ);apache (NM,AZ)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Ground-dove, Common	Columbina passerina pallescens (NM)	no map		State NM: Endangered
Hummingbird, Broad-billed	Cynanthus latirostris magicus (NM)	no map		State NM: Threatened
Hummingbird, Costa's	Calypte costae	no map		State NM: Threatened
Hummingbird, Violet-crowned	Amazilia violiceps ellioti (NM)	no map		State NM: Threatened
Nightjar, Buff-collared	Caprimulgus ridgwayi ridgwayi (NM)	no map	no photo	State NM: Endangered
Owl, Boreal	Aegolius funereus		no photo	State NM: Threatened
Owl, Burrowing	Athene cunicularia hypugaea (NM,AZ)	no map		Federal: FWS Species of Concern
				Federal: Critical

Owl, Spotted, Mexican	Strix occidentalis lucida (NM,AZ)	no map		Hab. Designated (NM) Federal: Threatened State NM: Sensitive taxa (informal)
Pelican, Brown	Pelecanus occidentalis carolinensis (NM)	no map		State NM: Endangered
Pipit, Sprague's	Anthus spragueii	no map	no photo	Federal: Candidate
Plover, Mountain	Charadrius montanus		no photo	State NM: Sensitive taxa (informal)
Shrike, Loggerhead	Lanius ludovicianus excubitorides (NM);sonoriensis (NM);gambeli (NM)	no map		State NM: Sensitive taxa (informal)
Sparrow, Baird's	Ammodramus bairdii	no map		Federal: FWS Species of Concern State NM: Threatened
Tern, Black	Chlidonias niger surinamensis (NM)	no map		Federal: FWS Species of Concern
Tern, Least	Sterna antillarum athalassos (NM)	no map		Federal: Endangered State NM: Endangered
Vireo, Bell's	Vireo bellii arizonae (NM,AZ);medius (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Vireo, Gray	Vireo vicinior			State NM: Threatened
Bat, Big-eared, Townsend's, Pale	Corynorhinus townsendii pallescens (NM,AZ)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Bat, Myotis, Brn., Little, Occult	Myotis lucifugus occultus (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Free-tailed, Big	Nyctinomops macrotis	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Myotis, Fringed	Myotis thysanodes thysanodes (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Myotis, Long-legged	Myotis volans interior (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Red, Western	Lasiurus blossevillii	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive

				taxa (informal)
Bat, Myotis, Small-footed, W.	Myotis ciliolabrum melanorhinus (NM,AZ)	no map		State NM: Sensitive taxa (informal)
Bat, Spotted	Euderma maculatum			State NM: Threatened
Bat, Myotis, Yuma	Myotis yumanensis yumanensis (NM,AZ)	no map		State NM: Sensitive taxa (informal)
Chipmunk, Colorado, Organ Mtns.	Neotamias quadrivittatus australis (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Fox, Red	Vulpes vulpes fulva (NM);macroura (NM)	no map		State NM: Sensitive taxa (informal)
Gopher, Pocket, Desert	Geomys arenarius arenarius (NM)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Muskrat, Pecos River	Ondatra zibethicus ripensis (NM)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Rat, Wood, White Sands	Neotoma micropus leucophaea	no map	no photo	Federal: FWS Species of Concern
Ringtail	Bassariscus astutus arizonensis (NM,AZ);flavus (NM);yumanensis (AZ);nevadensis (AZ)	no map		State NM: Sensitive taxa (informal)
Sheep, Bighorn, Desert	Ovis canadensis mexicana (listed pops)	no map		State NM: Threatened
Skunk, Hog-nosed, Common	Conepatus leuconotus mearnsi (NM);venaticus (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Skunk, Spotted, Western	Spilogale gracilis	no map	no photo	State NM: Sensitive taxa (informal)
Talussnail, Dona Ana	Sonorella todseni	no map	no photo	Federal: FWS Species of Concern State NM: Threatened
Shrimp, Fairy, Moore's	Streptocephalus moorei	no map	no photo	State NM: Sensitive taxa (informal)

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TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 21 ENDANGERED PLANTS
PART 2 ENDANGERED PLANT SPECIES LIST AND COLLECTION PERMITS

19.21.2.1 ISSUING AGENCY: Energy, Minerals and Natural Resources Department, Forestry Division.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.1 NMAC - Rn & A, 19 NMAC 21.2.1, 11/30/06]

19.21.2.2 SCOPE: The general public that collects, transports, or offers for sale native, vascular plants within the state of New Mexico, with the exceptions of federal employees working on lands within their jurisdiction, and any plant collection activities within lands owned by, or held in trust for, Native American tribes.
[8/31/95; 19.21.2.2 NMAC - Rn, 19 NMAC 21.2.2, 11/30/06]

19.21.2.3 STATUTORY AUTHORITY: Section 75-6-1 NMSA 1978 directs the energy, minerals and natural resources department (department) to investigate all plant species in the state for the purpose of establishing a list of endangered plant species. It also authorizes the department to prohibit the taking of endangered species, with the exception of permitted scientific collections or propagation and transplantation activities that enhance the survival of endangered species. The forestry division (state forester) is the department secretary's designated representative for the purposes of endangered plant investigations and for issuing collection and transplantation permits.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.3 NMAC - Rn & A, 19 NMAC 21.2.3, 11/30/06]

19.21.2.4 DURATION: Permanent
[8/31/95; 19.21.2.4 NMAC - Rn, 19 NMAC 21.2.4, 11/30/06]

19.21.2.5 EFFECTIVE DATE: August 31, 1995, unless a later date is cited at the end of a section.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.5 NMAC - Rn & A, 19 NMAC 21.2.5, 11/30/06]

19.21.2.6 OBJECTIVE: Native plant resources contribute to the economic, ecological, and aesthetic well-being of New Mexico citizens. This part's objective is to prevent the extinction or extirpation of native plant species in the state of New Mexico. It establishes the criteria for the recognition of endangered plant species and a list of plant species perceived, by the department, to be endangered within the state. This part also prescribes rules and permitting requirements for taking endangered plants during scientific investigations or propagation and transplantation activities that enhance survival.
[8/31/95; 19.21.2.6 NMAC - Rn & A, 19 NMAC 21.2.6, 11/30/06]

19.21.2.7 DEFINITIONS:

A. "Population site" means an area of occurrence of a particular species.

B. "Specimen" means the physical parts or a plant in its entirety, taken from a population site for the purpose of scientific study.

C. "Taking" means the removal, with the intent to possess, transport, export, sell, or offer for sale any of the plants listed in 19.21.2.9 NMAC, from the places in the state of New Mexico where they naturally grow.

D. "Voucher specimen" means an identifiable and representative specimen taken by a botanical collector from a population site for the purpose of documenting that site as occupied habitat. It should be accompanied by pertinent information on location, habitat, collector, date taken, and any other notes the collector can present concerning the population site.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.7 NMAC - Rn & A, 19 NMAC 21.2.7, 11/30/06]

19.21.2.8 CRITERIA FOR INCLUSION ON THE ENDANGERED PLANT SPECIES LIST:

A. The taxon is listed as threatened or endangered under the provisions of the Federal Endangered Species Act (16 U.S.C. Sections 1531 *et seq*.), or is considered proposed under the tenets of the Act; or

B. The taxon is a rare plant across its range within the state, and of such limited distribution and population size that unregulated taking could adversely impact it and jeopardize its survival in New Mexico.
[10/29/85, 8/31/95; 19.21.2.8 NMAC - Rn, 19 NMAC 21.2.8, 11/30/06]

19.21.2.9 LIST OF NEW MEXICO STATE ENDANGERED PLANT SPECIES: The following list of plants constitutes the New Mexico state endangered plant species list. Listed are the plant's scientific name, its common name, and the criterion for inclusion by the subsection in 19.21.2.8 NMAC:

Aliciella formosa (Aztec gilia)	Subsection B of 19.21.2.8 NMAC
Allium gooddingii (Goodding's onion)	Subsection B of 19.21.2.8 NMAC
Amsonia tharpii (Tharp's bluestar)	Subsection B of 19.21.2.8 NMAC
Argemone pleiacantha subsp. pinnatisecta (Sacramento prickle-poppy)	Subsection A of 19.21.2.8 NMAC
Astragalus humillimus (Mancos milkvetch)	Subsection A of 19.21.2.8 NMAC
Peniocereus greggii (night-blooming cereus)	Subsection B of 19.21.2.8 NMAC
Cirsium vinaceum (Sacramento Mountains thistle)	Subsection A of 19.21.2.8 NMAC
Cirsium wrightii (Wright's marsh thistle)	Subsection B of 19.21.2.8 NMAC
Cleome multicaulis (slender spiderflower)	Subsection B of 19.21.2.8 NMAC
Coryphantha scheeri var. scheeri (Scheer's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Cylindropuntia viridiflora (Santa Fe cholla)	Subsection B of 19.21.2.8 NMAC
Cypripedium parviflorum var. pubescens (golden lady's slipper)	Subsection B of 19.21.2.8 NMAC
Echinocereus fendleri var. kuenzleri (Kuenzler's hedgehog cactus)	Subsection A of 19.21.2.8 NMAC
Erigeron hessii (Hess' fleabane)	Subsection B of 19.21.2.8 NMAC
Erigeron rhizomatus (Zuni fleabane)	Subsection A of 19.21.2.8 NMAC
Eriogonum gypsophilum (gypsum wild buckwheat)	Subsection A of 19.21.2.8 NMAC
Escobaria duncanii (Duncan's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Escobaria organensis (Organ Mountain pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Escobaria sneedii var. leei (Lee's pincushion cactus)	Subsection A of 19.21.2.8 NMAC
Escobaria sneedii var. sneedii (Sneed's pincushion cactus)	Subsection A of 19.21.2.8 NMAC
Escobaria villardii (Villard's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Hedeoma todsenii (Todsen's pennyroyal)	Subsection A of 19.21.2.8 NMAC
Helianthus paradoxus (Pecos sunflower)	Subsection A of 19.21.2.8 NMAC
Hexalectris nitida (shining coralroot)	Subsection B of 19.21.2.8 NMAC
Hexalectris spicata (crested coralroot)	Subsection B of 19.21.2.8 NMAC
Ipomopsis sancti-spiritus (Holy Ghost ipomopsis)	Subsection A of 19.21.2.8 NMAC
Lepidospartum burgessii (gypsum scalebroom)	Subsection B of 19.21.2.8 NMAC
Lilium philadelphicum (wood lily)	Subsection B of 19.21.2.8 NMAC
Mammillaria wrightii var. wilcoxii (Wilcox pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Opuntia arenaria (sand prickly pear)	Subsection B of 19.21.2.8 NMAC
Pediocactus knowltonii (Knowlton's cactus)	Subsection A of 19.21.2.8 NMAC
Pediomelum pentaphyllum (Chihuahua scurfpea)	Subsection B of 19.21.2.8 NMAC
Polygala rimulicola var. mescalerorum (San Andres milkwort)	Subsection B of 19.21.2.8 NMAC
Puccinellia parishii (Parish's alkali grass)	Subsection B of 19.21.2.8 NMAC
Sclerocactus cloveriae subsp. brackii (Brack's cactus)	Subsection B of 19.21.2.8 NMAC
Sclerocactus mesae-verdae (Mesa Verde cactus)	Subsection A of 19.21.2.8 NMAC
Spiranthes magnicamporum (lady tresses orchid)	Subsection B of 19.21.2.8 NMAC

[10/29/85, 12/23/91, 8/31/95; 19.21.2.9 NMAC - Rn & A, 19 NMAC 21.2.9, 11/30/06]

19.21.2.10 PERMITS:

A. The state forester may issue permits to take state endangered plant species for the purpose of conducting scientific studies that enhance understanding for the distribution of, or conditions required for survival of, endangered plant species; or for propagation or transplantation activities that enhance the survival of endangered plant species.

B. The state forester shall only issue permits to individuals. No one may operate under the authority of another's permit.

C. Each person applying for a permit must demonstrate sufficient expertise to carry out the permitted activities in a competent manner. The following information may be used to support the request for a permit:

education in botany or related area, field experience, collection numbers, accessions into a recognized herbarium, publications, and recommendations from recognized authorities.

D. The permittee's signature on the permit will acknowledge willingness to comply with all applicable laws, regulations, and permit conditions.

E. The permittee shall carry a copy of the permit at all times during the collection and transportation of endangered species.

F. A permit does not give the bearer authority to take federally threatened or endangered plants. Taking of these species also requires a federal permit issued by the U.S. fish and wildlife service.

G. A permit does not extend to the permittee the privilege to trespass or enter on lands without the owner’s permission. The permittee should contact the appropriate management agency or landowner before beginning studies or taking specimens on federal, state, or private lands.

H. A state permit to take, propagate, or transplant the endangered plant species listed in 19.21.2.9 NMAC is not required for federal employees working within the lands of their jurisdiction, nor for activities within tribal reservations.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.10 NMAC - Rn & A, 19 NMAC 21.2.10, 11/30/06]

19.21.2.11 SCIENTIFIC INVESTIGATIONS:

A. The state forester may issue a permit to take endangered plants for scientific studies if the studies will generate new knowledge in the genetic, anatomical, chemical, morphological, life history, or in other relevant areas of research enhancing the understanding of the conditions required for the survival of the endangered species.

B. Known population sites will be provided with the permit when the permittee requires them for the permitted study. The permit will contain any special parameters for the taking.

C. If the permittee takes any specimens, the permittee shall deposit at least one voucher specimen at either the university of New Mexico herbarium or New Mexico state university herbarium.

D. When possible, the investigator shall take specimens in such a way as to not reduce the population (e.g. take a single stem from an herbaceous perennial, leaving the root intact, or other methods appropriate to the particular species).

E. The state forester may prohibit taking in some known locations where survival is especially precarious.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.11 NMAC - Rn & A, 19 NMAC 21.2.11, 11/30/06]

19.21.2.12 VOUCHER SPECIMENS:

A. The state forester may issue a permit to take endangered plant voucher specimens during botanical inventories and environmental surveys for the purposes of species verification and documentation of population sites.

B. Taking specimens for the sole purpose of exchange with other herbaria is prohibited.

C. The collection of voucher specimens shall make no long-term detrimental effect on the population. The permittee may take a maximum of three specimens, if the population is sufficient. If the population is very small and the taking of a single individual is detrimental, then the permittee may take only a fragment of an individual for voucher purposes.

D. The permittee shall deposit at least one specimen of the three taken from each locality at the university of New Mexico herbarium or New Mexico state university herbarium. The permittee may send duplicates to the western New Mexico university herbarium, government agency collections within New Mexico, or herbaria in other states that are formally listed in index herbariorum. The label affixed to each specimen shall contain information on collection location, description of the habitat, collector's name, date of collection, and estimated size of the population.

E. To assist in the identification and preservation of endangered plant species in New Mexico, permittees shall report all permitted collections of voucher specimens to the state forester by December 31 of each year. The report shall contain the voucher specimen label information and the place or places of deposition of specimens.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.12 NMAC - Rn & A, 19 NMAC 21.2.12, 11/30/06]

19.21.2.13 PROPAGATION AND TRANSPLANTATION:

A. The state forester may issue a permit to take endangered plants to propagate or transplant when evidence is presented that the activity will enhance that particular species’ survival capability.

B. The state forester may issue a permit to transplant endangered species (not including federally listed taxa) when such species occur on areas of land use conversion.

C. The state forester may issue a permit for transplantation upon approval of a proposal the applicant submits outlining the need for such transplantation, the method to be employed, the site to which the plants will be taken for transplantation, and the qualifications of the person carrying out the transplantation.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.13 NMAC - Rn & A, 19 NMAC 21.2.13, 11/30/06]

19.21.2.14 PERMIT REVOCATION: Prohibited activities that shall render a collection permit invalid and may cause the permittee to be subject to prosecution under applicable federal and state laws include: taking of specimens of endangered plant species outside the scope of the permit's provisions, failure to deposit a voucher specimen in a designated New Mexico herbarium, taking specimens under permit for commercial use, providing false information on the permit application, or allowing someone else to use the permit.

[10/29/85, 8/31/95; 19.21.2.14 NMAC - Rn & A, 19 NMAC 21.2.14, 11/30/06]

19.21.2.15 PROTECTION AND PENALTIES:

A. The taking of plants listed in 19.21.2.9 NMAC, other than taking under valid permit issued by the state forester, is hereby prohibited.

B. Pursuant to Section 75-6-1 NMSA 1978, violation of 19.21.2 NMAC is a misdemeanor punishable by a fine of not less than $300.00, nor more than $1000.00 or imprisonment for a term of not more than 120 days or both.

C. Any law enforcement officer may seize any plants taken, transported, exported, processed, sold, or offered for sale or shipped in violation of 19.21.2 NMAC.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.15 NMAC - Rn & A, 19 NMAC 21.2.15, 11/30/06]

HISTORY OF 19.21.2 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the state records center and archives:

NRD Rule No. 85-3, Endangered Plant Species in New Mexico, filed 10/29/85;

NMFRCD Rule No. 91-1, Regulations Governing Endangered Plant Species, filed 12/23/91.

History of Repealed Material: [RESERVED]

Other History:

NMFRCD Rule No. 91-1, Regulations Governing Endangered Plant Species (filed 12/23/91) was renumbered, reformatted and replaced by 19 NMAC 21.2, Endangered Plant Species List and Collection Permits, effective 8-31-95.

19 NMAC 21.2, Endangered Plant Species List and Collection Permits (filed 8-17-95) was renumbered, reformatted, amended and replaced by 19.21.2 NMAC, Endangered Plant Species List and Collection Permits, effective 11/30/06.

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Results of County Search

DOÑA ANA	
Scientific name	County-NM
Agastache cana	Doña Ana, Grant, Luna, Sierra
Agastache pringlei var. verticillata	Doña Ana
Astragalus castetteri	Doña Ana, Sierra
Castilleja organorum	Doña Ana
Draba standleyi	Doña Ana, Otero, Sierra, Socorro
Escobaria organensis	Doña Ana
Escobaria sandbergii	Doña Ana, Sierra
Escobaria sneedii var. sneedii	Doña Ana
Escobaria villardii	Doña Ana, Otero
Hexalectris arizonica	Doña Ana, Hidalgo, Otero, Sierra
Hymenoxys vaseyi	Doña Ana, Sierra
Oenothera organensis	Doña Ana
Opuntia arenaria	Doña Ana, Luna, Socorro
Peniocereus greggii var. greggii	Doña Ana, Grant, Hidalgo, Luna
Penstemon alamosensis	Doña Ana, Lincoln, Otero
Perityle cernua	Doña Ana
Perityle staurophylla var. staurophylla	Doña Ana, Otero, Sierra
Polygala rimulicola var. mescalerorum	Doña Ana
Salvia summa	Chaves, Doña Ana, Eddy
Scrophularia laevis	Doña Ana
Silene plankii	Bernalillo, Doña Ana, Sandoval, Sierra, Socorro, Torrance

Photo credits in header *Peniocereus greggii var. greggii* © T. Todsen, *Lepidospartum burgessii* © M. Howard, *Argemone pleiacantha ssp. pinnatisecta* © R. Sivinski
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Agency Status of New Mexico Rare Plants

Please Note: Plants followed by the statement "(Not NMRPTC Rare)" **do not** meet NMRPTC criteria for rarity, but do have status with one or more agencies.

Taxon	USFWS	State of NM	USFS	BLM	Navajo Nation	Natural Heritage NM	Global Rank
	List	List	List	List	List		
Abronia bigelovii	SoC	SoC	Sen	Sen	.	S3	G3
Abronia bolackii	SoC	SoC	.	.	.	SNR	GNR
Adenophyllum wrightii var. wrightii (Not NMRPTC Rare)	SoC	.	Sen	.	.	SH	G1?
Agalinis calycina	SoC	SoC	.	.	.	S1	G1
Agastache cana	SoC	SoC	.	.	.	S3	G4
Agastache pringlei var. verticillata	SoC	SoC	.	.	.	S2	G3G4T2
Aliciella cliffordii	SoC	SoC	.	.	.	SNR	GNR
Aliciella formosa	SoC	E	.	Sen	Gp 4	S2	G2
Allium gooddingii (Not NMRPTC Rare)	SoC	E	Sen	.	Gp 3	S1	G4
Amsonia fugatei	SoC	SoC	.	Sen	.	S2	G2
Amsonia tharpii	SoC	E	.	Sen	.	S1	G1
Anticlea mogollonensis	SoC	SoC	Sen	.	.	S3	G3
Anulocaulis leiosolenus var. gypsogenus	SoC	SoC	.	.	.	S4	G4T4
Anulocaulis leiosolenus var. howardii	SoC	SoC	.	Sen	.	SNR	G4T2
Aquilegia chaplinei	SoC	SoC	Sen	Sen	.	S2	G4T2
Argemone pinnatisecta	E	E	E	E	.	S2	G4G5T2
Arida blepharophylla	SoC	SoC	.	.	.	SH	G1
Asclepias sanjuanensis	SoC	SoC	.	Sen	Gp 4	S3	GUQ
Asclepias uncialis ssp. uncialis (Not NMRPTC Rare)	SoC	.	Sen	.	.	S2	G3G4T2T3
Astragalus altus	SoC	SoC	Sen	.	.	S2	G2
Astragalus castetteri	SoC	SoC	.	.	.	S3	G3
Astragalus chuskanus	SoC	SoC	.	.	.	S2?	G3

Astragalus cliffordii	SoC	SoC	.	.	.	SNR	GNR
Astragalus cobrensis var. maguirei	SoC	SoC	Sen	Sen	.	S2	G4T2
Astragalus cottamii	SoC	SoC	.	.	.	S3	G4
Astragalus cyaneus	SoC	SoC	.	.	.	S4	G4
Astragalus feensis	SoC	SoC	.	.	.	S3	G3
Astragalus gypsodes	SoC	SoC	.	Sen	.	S2	G2
Astragalus heilii	SoC	SoC	.	.	Gp 4	SNR	G1?
Astragalus humillimus	E	E	.	E	Gp 2	S1	G1
Astragalus humistratus var. crispulus	SoC	SoC	Sen	.	.	SNR	G4G5T3?
Astragalus kerrii	SoC	SoC	Sen	.	.	S2	G2
Astragalus knightii	SoC	SoC	.	Sen	.	S2	G2
Astragalus micromerius	SoC	SoC	Sen	.	.	S2	G2
Astragalus missouriensis var. accumbens	SoC	SoC	Sen	.	.	S3	G3
Astragalus missouriensis var. humistratus	SoC	SoC	Sen	.	.	SNR	G5T1
Astragalus naturitensis	SoC	SoC	.	.	Gp 3	S2	G2G3
Astragalus neomexicanus	SoC	SoC	.	.	.	S3	G3
Astragalus nutriosensis	SoC	SoC	.	.	.	SNR	G3?
Astragalus oocalycis	SoC	SoC	.	.	.	S3	G4
Astragalus puniceus var. gertrudis	SoC	SoC	.	.	.	S3?	G4T3?Q
Astragalus ripleyi	SoC	SoC	Sen	Sen	.	S3?	G3?
Astragalus siliceus	SoC	SoC	.	.	.	S3	G3
Astragalus wittmannii	SoC	SoC	Sen	.	.	S3	G3
Atriplex griffithsii	SoC	SoC	.	.	.	S2	G2G3
Brickellia chenopodina	SoC	SoC	.	.	.	SH	GHQ
Calochortus gunnisonii var. perpulcher	SoC	SoC	Sen	.	.	S4?	G5T4?
Carex ultra (Not NMRPTC Rare)	SoC	.	Sen	.	.	S3?	G3?
Castilleja organorum	SoC	SoC	.	.	.	S3	G3Q
Castilleja ornata	SoC	SoC	.	.	.	S1	G3?
Chaetopappa hersheyi	SoC	SoC	.	.	.	S3	G3
Cirsium gilense	SoC	SoC	Sen	.	.	S2	G3G5Q
Cirsium inornatum	SoC	SoC	.	.	.	S4	G4
Cirsium vinaceum	T	E	T	.	.	S2	G2
Cirsium wrightii	Can	E	Sen	.	.	S2	G1G2
Coryphantha scheeri var. scheeri	SoC	E	.	.	.	S2?	G4T3?
Crataegus wootoniana	SoC	SoC	Sen	.	.	S2	G2
Cuscuta warneri	SoC	SoC	.	.	.	SNR	GH

Cymopterus davidsonii	SoC	SoC	Sen	.	.	S2	G2
Cymopterus spellenbergii	SoC	SoC	.	.	.	SNR	GNR
Cypripedium parviflorum var. pubescens (Not NMRPTC Rare)	SoC	E	Sen	.	Gp 4	S2?	G5T5
Dalea scariosa	SoC	SoC	.	.	.	S4	G4
Delphinium alpestre	SoC	SoC	Sen	.	.	S2?	G2
Delphinium novomexicanum	SoC	SoC	.	.	.	S2	G2
Delphinium robustum	SoC	SoC	Sen	.	.	SNR	G2?
Delphinium sapellonis	SoC	SoC	.	.	.	S4?	G4?
Dermatophyllum guadalupense	SoC	SoC	Sen	Sen	.	S1	G1T1
Desmodium metcalfei	SoC	SoC	Sen	.	.	S3?	G3G4
Draba heilii	SoC	SoC	Sen	.	.	SNR	GNR
Draba mogollonica	SoC	SoC	.	.	.	S3	G3
Draba smithii	SOC	SOC	Sen	.	.	S1	G2
Draba standleyi	SoC	SoC	.	.	.	S2	G2G3
Echinocereus fendleri var. kuenzleri	E	E	E	E	.	S1	G4G5T1
Ericameria nauseosa var. texensis	SoC	SoC	Sen	.	.	S2	G5T2
Erigeron acomanus	SoC	SoC	.	Sen	Gp 3	S1S2	G1G2
Erigeron hessii	SoC	E	Sen	.	.	S1	G1
Erigeron rhizomatus	T	E	T	T	Gp 2	S2	G2
Erigeron rybius	SoC	SoC	.	.	.	S3	G3
Erigeron scopulinus	SoC	SoC	.	.	.	S3?	G3?
Erigeron sivinskii	SoC	SoC	Sen	.	Gp 4	S2	G2
Erigeron subglaber	SoC	SoC	Sen	.	.	S3	G3
Eriogonum aliquantum	SoC	SoC	.	.	.	S3	G3
Eriogonum gypsophilum	T	E	.	T	.	S1	G1
Eriogonum lachnogynum var. colobum	SoC	SoC	.	.	.	SNR	GNR
Eriogonum lachnogynum var. sarahiae	SoC	SoC	.	.	Gp 4	SNR	GNR
Eriogonum wootonii	SoC	SoC	.	.	.	S2	G5T2
Escobaria duncanii	SoC	E	.	Sen	.	S1	G1G2
Escobaria guadalupensis	SoC	SoC	.	.	.	SR	G1
Escobaria orcuttii	SoC	SoC	.	.	.	S3	G3?
Escobaria organensis	SoC	E	.	.	.	S2	G2
Escobaria sandbergii	SoC	SoC	.	.	.	S2	G2
Escobaria sneedii var. leei	T	E	.	T	.	S2?	G2T2
Escobaria sneedii var. sneedii	E	E	.	E	.	S2	G2T2

! "#$%&'(&)*(+&', ((	SoC	E	Sen	Sen	.	S2	G2
- . '&/ (01), $, . #&23. $(, . "	SoC	SoC	Sen	.	.	SNR	GNR
- '(/ , . +(&)&'(4$/ (#&)*&'5 / . $1 . 6(#&/ &	SoC	SoC	.	.	.	SR	G4T3?
7 &#8. +(&)3('"02&	SoC	SoC	.	.	.	SNR	G4?
7 . , . $1 &)&9(#0+&2&	SoC	SoC	.	.	.	S3	G3
7 . , . $1 &)90+#3. ''(1 &	SoC	SoC	.	.	.	S2	G2
7 . , . $1 &)2$, ". / ((	E	E	E	E	.	S2	G2
7 . +(&/ 230")&'(4$/ . / "("	SoC	SoC	Sen	.	.	S4?	G4?
7 . +(&/ 230")9&'&, $60"	T	E	.	T	.	S2	G2
7 . +(&/ 230")9'& 2 '1 (""0"	SoC	SoC	.	.	.	SH	GHQ
7 . 0#3. '&)90+#3. +&	SoC	SoC	Sen	.	.	S2	G2
7 . 0#3. '&): $$, "(&93(+&	SoC	SoC	Sen	.	.	S1	G1
7 . 0#3. '&): $$2$/ ((	SoC	SoC	.	.	.	S3	G3Q
7 . 6&+ #2(")&'(4$/ (#&	SoC	E	Sen	.	.	SNR	G5T2T4
7 . 6&+ #2(")/ (2(, &	SoC	E	.	.	.	S1	G3
7 . 6&+ #2(")'. *$+02&	SOC	SOC	Sen	.	.	SNR	G1G2
7 . 6&+ #2(")"9(#&2&)*&'5 "9(#&2&);<$2)<=>?@A >&'. B	SOC	E	.	.	.	SNR	G5T4T5
7 (. '&#(01)%. *(9(+01	SoC	SoC	Sen	.	.	S2?	G4T2?
7 C1 . / $6C")&1 %(D. / ")*&'5 / . $1 . 6(#&/ &	SoC	SoC	Sen	.	.	S2?	G3?T2?
7 C1 . / $6C")%&#3C&#2("	SoC	SoC	Sen	.	.	S3	G3
7 C1 . / $6C")*&". C(	SoC	SoC	.	.	.	S2?	G2?
E$/ &#2("). + D&/ "	SoC	SoC	Sen	.	.	S2	G2
E9$1 $9"(")"&/ #2(F"9('(20"	E	E	E	.	.	S1	G1
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=. / 21. +(&)#$/ "9(#0&	SoC	SoC	Sen	.	.	S2	G2
=. / 21. +(&)301 (+(")*&'5 D0&, &+09. / "("	SoC	SoC	.	Sen	.	S2	G4T2
=. / 21. +(&)"9'(/ D. '(	SoC	SoC	Sen	.	.	SNR	GNR
=. / 21. +(&)2$, (+2$. / "("	SoC	SoC	.	.	.	SNR	GNR

Microthelys rubrocallosa	SoC	SoC	Sen	.	.	SNR	GNR
Muhlenbergia arsenei	SoC	SoC	.	.	.	SNR	G5
Muhlenbergia villiflora var. villosa	SoC	SoC	.	.	.	SNR	G5T2
Nama xylopodum	SoC	SoC	.	.	.	S4?	G4?
Oenothera organensis	SoC	SoC	.	.	.	S2	G2
Opuntia arenaria	SoC	E	.	Sen	.	S2	G2
Opuntia viridiflora	SoC	E	.	Sen	.	S1	G1Q
Packera cardamine	SoC	SoC	Sen	.	.	S3	G3
Packera spellenbergii	SoC	SoC	Sen	.	.	S2	G2?
Panicum mohavense	SoC	SoC	.	.	.	S1	G1
Pediocactus knowltonii	E	E	.	E	.	S1	G1
Pediomelum pentaphyllum	SoC	E	Sen	Sen	.	S1	G1
Peniocereus greggii var. greggii	SoC	E	.	Sen	.	S1	G3G4T2
Penstemon alamosensis	SoC	SoC	Sen	Sen	.	S3	G3
Penstemon cardinalis ssp. cardinalis	SoC	SoC	Sen	.	.	S2	G3T2
Penstemon cardinalis ssp. regalis	SoC	SoC	Sen	Sen	.	S2	G3T2
Penstemon linarioides ssp. maguirei	SoC	SoC	Sen	.	.	SH	G5T1
Penstemon metcalfei	SoC	SoC	Sen	.	.	SNR	G1G3
Penstemon neomexicanus	SoC	SoC	.	.	.	S4	G4
Penstemon pseudoparvus	SoC	SoC	Sen	.	.	S3?	G3?Q
Peritoma multicaulis	SoC	E	.	.	.	SH	G2G3
Perityle cernua	SoC	SoC	.	Sen	.	S2	G2
Perityle quinqueflora	SoC	SoC	.	.	.	S3	G4
Perityle staurophylla var. homoflora	SoC	SoC	.	.	.	S2	G4T2
Perityle staurophylla var. staurophylla	SoC	SoC	.	.	.	SNR	G4T3T4
Phacelia cloudcroftensis	SoC	SoC	Sen	.	.	S1	G1
Phacelia serrata	SoC	SoC	.	.	.	S2	G2G3
Phacelia sivinskii	SoC	SoC	.	.	.	SNR	GNR
Phemeranthus humilis	SoC	SoC	Sen	.	.	S2	G2
Philadelphus microphyllus var. argyrocalyx	SoC	SoC	.	.	.	S3	G5T3
Phlox caryophylla	SoC	SoC	.	.	.	S2	G4
Phlox cluteana	SoC	SoC	.	.	.	SR	G2
Phlox vermejoensis	SoC	SoC	.	.	.	SNR	GNR
Physaria aurea	SoC	SoC	.	.	.	S2	G3
Physaria gooddingii	SoC	SoC	.	.	.	S3	G3?
Physaria lata	SoC	SoC	.	.	.	S1?	G1?Q

Physaria navajoensis	SoC	SoC	.	.	Gp 3	SNR	GNR
Physaria newberryi var. yesicola	SoC	SoC	.	.	.	SNR	G3G4T1T3
Physaria pruinosa	SoC	SoC	.	.	.	SNR	G2
Polygala rimulicola var. mescalerorum	SoC	E	.	.	.	S1	G3T1
Polygala rimulicola var. rimulicola	SoC	SoC	.	.	.	S2	G3T3
Potentilla sierrae-blancae	SoC	SoC	Sen	.	.	S2?	G2?
Proatriplex pleiantha	SoC	SoC	.	Sen	.	S3?	G3
Puccinellia parishii	SoC	E	Sen	Sen	Gp 4	S1	G2
Ribes mescalerium	SoC	SoC	.	.	.	S4?	G4?
Rubus aliceae	SoC	SoC	.	.	.	SH	GH
Rumex occidentalis var. tomentellus	SoC	SoC	.	.	.	SH	GH
Salix arizonica	SoC	SoC	Sen	.	.	S1	G2G3
Salvia summa	SoC	SoC	.	.	.	S3?	G3?
Sclerocactus cloverae ssp. brackii	SoC	E	.	Sen	Gp 4	S1	G3T1
Sclerocactus mesae-verdae	T	E	.	T	Gp 2	S2	G2
Scrophularia laevis	SoC	SoC	.	.	.	S2	G2
Scrophularia macrantha	SoC	SoC	Sen	Sen	.	S2	G2
Sedum integrifolium ssp. neomexicanum	SoC	SoC	Sen	.	.	S1	G5T1
Senecio cliffordii	SoC	SoC	.	.	.	SNR	GNR
Senecio sacramentanus	SoC	SoC	.	.	.	S3	G3
Sibara grisea	SoC	SoC	.	Sen	.	S3?	G3
Silene plankii	SoC	SoC	.	.	.	S2	G3
Silene thurberi	SoC	SoC	.	.	.	S3?	G4
Silene wrightii	SoC	SoC	.	.	.	S2	G3
Solidago capulinensis	SOC	SOC	.	.	.	SNR	GNR
Solidago wrightii var. guadalupensis	SOC	SOC	Sen	.	.	SNR	GNR
Sphaeralcea procera	SoC	SoC	.	.	.	SH	GHQ
Sphaeralcea wrightii	SoC	SoC	.	.	.	S3?	G4?
Spiranthes magnicamporum (Not NMRPTC Rare)	SoC	E	.	.	.	S3?	G4
Stellaria porsildii	SoC	SoC	Sen	.	.	S1	G1
Streptanthus sparsiflorus	SoC	SoC	Sen	Sen	.	S2	G2
Synthyris oblongifolia	SoC	SoC	Sen	.	.	S2	G2Q
Talinum brachypodum	SoC	SoC	.	.	.	SNR	GNR
Toumeya papyracantha (Not NMRPTC Rare)	SoC	.	.	Sen	.	S4	G4

Townsendia gypsophila	SoC	SoC	.	Sen	.	S2	G2
Trifolium longipes ssp. neurophyllum	SoC	SoC	Sen	.	.	S2	G2
Valeriana texana	SoC	SoC	.	.	.	S3	G3

AGENCY STATUS DEFINITIONS

U.S. Fish and Wildlife Service (USFWS)

Endangered - A species in danger of extinction throughout all or a significant portion of its range.

Threatened - A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Candidate - A species for which the USFWS has sufficient information to propose that it be added to the list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities.

Species of Concern - A taxon for which further biological research and field study are needed to resolve their conservation status OR are considered sensitive, rare, or declining on lists maintained by Natural Heritage Programs, State wildlife agencies, other Federal agencies, or professional/academic scientific societies.

Source: Charlie McDonald, Regional Botanist, U.S. Forest Service, Southwestern Region

State of New Mexico

Endangered - The taxon is listed as threatened or endangered under the provisions of the Federal Endangered Species Act (16 U.S.C. Sections 1531 et seq.), or is considered proposed under the tenets of the act [10-29-85,]; or the taxon is a rare plant across its range within the state, and of such limited distribution and population size that unregulated taking could adversely impact it and jeopardize its survival in New Mexico. [10-29-85, 8-31-95]

Species of Concern - A New Mexico plant species, which should be protected from land use impacts when possible because it is a unique and limited component of the regional flora.

Sources: New Mexico Administrative Code, Title 19, Chapter 21 Part 2.8 (Criteria for inclusion of the endangered plant species list), and Robert Sivinski, State Botanist

U.S. Forest Service (USFS)

Endangered - Any species designated as endangered by the U.S. Fish and Wildlife Service that is known to occur on national forest lands in New Mexico.

Threatened - Any species designated as threatened by the U.S. Fish and Wildlife Service that is known to occur on national forest lands in New Mexico.

Sensitive - A species that is likely to occur or have habitat on National Forest Service System lands and that has been identified by the Regional Forester as of

concern for reduction in population viability as evidenced by: significant current or predicted downward trends in population numbers or density, or; significant current or predicted downward trends in habitat capability that would reduce the species' distribution.

Source: Charlie McDonald, Regional Botanist, U.S. Forest Service, Southwestern Region

Bureau of Land Management (BLM)

Definition: BLM Special Status Species are those federally listed or proposed as threatened or endangered, and those designated as BLM Sensitive Species, which includes both Federal candidate species and federally delisted species within 5 years of delisting.

Designation of BLM Sensitive Species: State Directors shall designate species within their respective states as BLM sensitive using the following criteria. For species inhabiting multiple states, State Directors shall coordinate with one another in the designation of BLM Sensitive Species so that species status is consistent across the species' range on BLM-administered lands for which the BLM has the capability to significantly affect the conservation of the species through management, and either:
1) There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species' range, or
2) The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

Policy: BLM Sensitive Species will be managed consistent with species and habitat management objectives in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the Endangered Species Act.

Source: BLM Manual 6840, Special Status Species Management, December 2008. Summarized by Mike Howard, Botanist, BLM New Mexico State Office, December 2011.

Navajo Nation

GROUP 1: Those species or subspecies that no longer occur on the Navajo Nation.

GROUP 2 (G2) & GROUP 3 (G3): "Endangered"-- Any species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy or are likely within the foreseeable future to become so.

G2: A species or subspecies whose prospects of survival or recruitment are in jeopardy.

G3: A species or subspecies whose prospects of survival or recruitment are likely to be in jeopardy in the foreseeable future.

GROUP 4: Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife (NNDFWL) does not currently have sufficient information to support their being listed in G2 or G3 but has reason to consider them. The NNDFWL will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

Source: Navajo Nation, Division of Natural Resources, Department of Fish and Wildlife, Navajo Endangered Species List (NESL), Resources Committee Resolution No. RCMA-31-01, March 2001. Provided by Daniela Roth.

Natural Heritage New Mexico

State Ranks

SX Presumed Extirpated - Element is believed to be extirpated from NM. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
SH Possibly Extirpated (Historical) - Element occurred historically in NM, and there is some expectation that it may be rediscovered. Its presence may not have been verified in the past 20 years. An element would become SH without such a 20-year delay if the only known occurrences in NM were destroyed or if it had been extensively and unsuccessfully looked for.
S1 Critically Imperiled - Critically imperiled in NM because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from New Mexico. Typically 5 or fewer occurrences or very few remaining individuals (<1,000).
S2 Imperiled - Imperiled in NM because of rarity or because of some factor(s) making it very vulnerable to extirpation from New Mexico. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000).
S3 Vulnerable - Vulnerable in NM either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
S4 Apparently Secure - Uncommon but not rare, and usually widespread in NM. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
S5 Secure - Common, widespread, and abundant in NM. Essentially ineradicable under present conditions. Typically with considerably more than 100 occurrences and more than 10,000 individuals.
SNR Unranked - NM rank not yet assessed.
SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
HYB Hybrid - Element not ranked because it represents an interspecific hybrid, not a species.
SE - An exotic established in state; may be native elsewhere in North America; includes fish native to NM but introduced into watersheds where the species is non-native.
SE# Exotic Numeric - An exotic established in NM that has been assigned a numeric rank to indicate its status, as defined for S1 through S5.
SA Accidental - Accidental or casual in NM. In other words, infrequent and outside usual range. Includes species (usually birds or butterflies) recorded once or only a few times at a location. A few of these species may have bred on the one or two occasions they were recorded. Examples include European strays or western birds on the East Coast and vice-versa.
SZ Zero Occurrences - Present but lacking practical conservation concern in NM because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations have little or no conservation value for the migrant, as they are typically too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped, and protected. In other words, the migrant regularly passes through the state, but enduring, mappable Element Occurrences cannot be defined.
SP Potential - Potential that element occurs in the state but no extant or historic

occurrences are accepted.
SR Reported - Element reported in NM but without a basis for either accepting or rejecting the report, or the report not yet reviewed locally.
SRD Dubious Report - Element reported in NM but the report is likely to be invalid.
SRF False Report - Element reported in NM but the report is known to be invalid.

Global Ranks

GX Presumed Extinct - Believed to be extinct throughout its range. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
GH Possibly Extinct - Known from only historical occurrences, but may nevertheless still be extant; further searching needed.
G1 Critically Imperiled - Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically 5 or fewer occurrences or very few remaining individuals (<1,000) or acres (<2,000) or linear miles (<10).
G2 Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction or elimination. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or linear miles (10 to 50).
G3 Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction or elimination. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
G4 Apparently Secure - Uncommon but not rare (although it may be rare in parts of its range, particularly on the periphery), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.
G5 Secure - Common, widespread, and abundant (although it may be rare in parts of its range, particularly on the periphery). Not vulnerable in most of its range. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

Variant Global Ranks

G#G# Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.
GU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR Unranked - Global rank not yet assessed.
HYB Hybrid - Element not ranked because it represents an interspecific hybrid and not a species.

Global Rank Qualifiers

? Inexact Numeric Rank - Denotes inexact numeric rank (e.g. G3?).
Q Questionable taxonomy that may reduce conservation priority - Distinctiveness of this entity as a taxon at the current level is questionable.

Infraspecific Taxon Ranks

T# Infraspecific Taxon (trinomial) - The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1.

Source: New Mexico Natural Heritage Program Web Site viewed at:

http://nmnhp.unm.edu/ranks_status/ranks_status.pdf Definitions of New Mexico Natural Heritage Program Ranks of Endangerment

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Biological Resources Survey
Proposed Afton Substation
Ancillary Facility
Doña Ana County, New Mexico

Prepared for:
Raba-Kistner Environmental, Inc.
12821 West Golden Lane
San Antonio, TX 78249

Prepared By:
High Desert Native Plants LLC
5404 Fleetwood Road
El Paso, Texas 79932
www.highdesertnativeplants.com

HDNP Project Number 2012-033b

October 31, 2012

High Desert Native Plants LLC
5404 Fleetwood Rd. El Paso, TX 79932
915-490-8601 - office
www.highdesertnativeplants.com
info@highdesertnativeplants.com

Ocotber 31, 2011

Raba-Kistner Environmental, Inc.
12821 West Golden Lane
San Antonio, TX 78249

Attn: Steve Jones, V.P.

Re: Biological Resources Survey
Proposed Afton Substation Ancillary Facility
Doña Ana County, New Mexico
HDNP Project #2012-033b

Dear Mr. Jones:

This report presents the findings and conclusions of a Biological Resources Survey at the above referenced site. Included in this report are discussions concerning the methods utilized, the results obtained, and our recommendations. We appreciate the opportunity to have been of service to you for this project. Should you have any questions regarding this report, please contact us at your convenience.

Thank you,

Michael D. Gaglio
Biologist/Managing Member
mike@hd-env.com

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1.0 INTRODUCTION

High Desert Native Plants, LLC (HDNP) performed a biological survey at the proposed site of a El Paso Electric Company ancillary facility associated with a new power line on October 3, 2012. The project site was located north of the existing Afton Substation in Doña Ana County, New Mexico. The objective of the survey was to identify the potential for the presence of special status species and sensitive biological resources at the subject property. The biological survey report was conducted to support an Environmental Assessment being conducted for the proposed installation of a new power line and ancillary facilities by El Paso Electric Company (EPEC).

The survey area is nearly 1 mile long by 1 mile wide and located almost entirely on federal lands managed by the Bureau of Land Management (BLM). The subject property is found on the 2010 Little Black Mountain-NM 7.5' quadrangle USGS Topographic Map. The geographic coordinates of the corners of the site area are 32°07'19.48"N, 106°49'34.29"W (northeast); 32°06'29.12"N, 106°49'47.64"W (southeast); 32° 7'15.10"N, 106°50'36.61"W (northwest) and 32° 06'41.99"N, 106°50'42.28"W (southwest). The site is entirely vacant and undeveloped land.

High Desert was generally familiar with the subject property due to previous biological survey work conducted on portions adjacent to the site in 2012 in connection with the proposed Afton to Airport Power Line.

2.0 METHODS AND MATERIALS

2.1 Background Research

Lists of threatened, endangered, and special status species of plants and wildlife that occur in Doña Ana County, New Mexico were compiled using a variety of sources including the U.S. Fish and Wildlife Service (USFWS) online Threatened and Endangered Species System (TESS), online listings of state threatened and endangered wildlife species by the New Mexico Department of Game and Fish (NMGF), and endangered plants listed by the New Mexico Energy Minerals and Natural Resources Department (EMNRD). Lists of sensitive species tracked by biologists in the BLM Las Cruces District Office were also requested and obtained as part of our resesarch. The USFWS Online Critical Habitat Mapper was utilized to search for designated critical habitat in the project area. Additional resources utilized to characterize the site included: soil survey data obtained from the National Resources Conservation Service (NRCS), U.S. Geological Survey 7.5-minute topographic maps, Federal Emergency Management Administration (FEMA) flood maps, and USFWS National Wetland Inventory (NWI) Maps.

2.2 Field Survey

The field survey was conducted on October 3, 2012 by biologist Christina Hernandez of HDNP. A pedestrian survey was conducted during daylight hours by walking the perimeter of the site and two transects in a north to south direction and two transects in an east to west direction. Weather during the survey was calm, clear, sunny, approximately 95^{o}F and did not interfere with the performance of the work completed. The locations of project site boundaries and transect locations were determined in the field by using digital and paper maps, geographic positioning system (GPS) receivers preloaded with the site coordinates, and referencing visible structural and topographic landmarks. Habitat types, dominant plant species, and evidence of special status species (i.e. tracks, scat, food species and other signs) were noted. General habitat types characterized by dominant vegetation and soil types were recorded.

3.0 RESULTS

3.1 Site Description

The subject property is located centrally in the northern portion of an area locally referred to as the West Mesa. The West Mesa is a plateau that occupies a vast expanse of land in southern Doña Ana County and is bound to the west by the West Potrillo Mountains and to the east by an escarpment that drops 250 feet into Rio Grande's Mesilla Valley. The elevation of the subject property is approximately 4,200 feet above mean sea level. While the West Mesa is overall relatively level, it is marked by rolling coppice dunes that can individually measure 5 to 10 feet high.

Vegetation on the West Mesa is predominantly Chihuahuan Desert scrub (Dick-Peddie 1993) with honey mesquite and creosotebush being dominant, yet present in varying abundance. It is believed that this area was once occupied by grasslands and has experienced significant shrub invasion and desertification as a result of historic cattle grazing and other environmental effects. Isolated areas of grasslands remain present on the West Mesa, but none were observed on the subject property.

NRCS soil survey maps indicated that the following soil groups are present on the subject property: Wink-Harrisburg association and Wink-Pintura complex, which are both primarily sandy loams that are excessively to somewhat excessively drained. Calcium carbonate induration (caliche) is known to be common in these soils. No USDA designated prime or unique farmland soils are present on the subject property and none of the soils are classified as hydric soils (NRCS, 2012a).

3.2 Vegetation

The vegetation community at the site was predominantly from mesquite dominated series of Chihuahuan Desert scrubland. Vegetation species observed at the site included: *Proposis glandulosa, Larrea tridentata, Bouteloua barbata, Erioneuron pulchellum, Lepidium montanum, Verbesina encelioides, Gutierrezia microcephela*, *Senna bauhinioides, Yucca elata, Zinnia acerosa, Sphraelcea fendleri, Tribulus terrestris, and Ephedra trifurca.* No federal or state-

listed threatened or endangered plant species were observed on the subject property. In addition, no BLM listed species of concern were noted.

The site is probably capable of supporting populations of sand pricklypear (*Opuntia arenaria*) and night blooming cereus (*Peniocereus greggii*). However, these species were not observed during our pedestrian survey. These species, especially night blooming cereus, are cryptic and tend to occur within the cover of larger shrubs. If these species are identified during future construction activities, it is recommended that all efforts possible be made to avoid disturbance to individual plants. If necessary, mitigation involving salvage and relocation of individual plants of these species should be conducted (and would likely be required by the BLM) if disturbance is unavoidable. Based upon this and other recent surveys conducted by HDNP in the project vicinity, it is unlikely that night blooming cereus and sand prickley pear are present at the subject property.

3.3 Wildlife

Wildlife observed during the survey included: black-tailed jackrabbit, whiptail lizards (*Cnemidophorus tesselatus* and *C. inornatus*), House sparrow, House finch, Mourning dove, and White wing dove. Evidence of cattle, deer, coyote, and a variety of small burrowing mammals was observed either by tracks, scat, or burrows. The site provides habitat and burrows suitable for burrowing owls, however, none were observed during our field surveys.

No evidence of state or federally listed threatened or endangered species of wildlife were noted on the subject property during the survey.

Several bird species were noted utilizing the subject property for foraging during our site visit. Most bird species are protected under the Federal Migratory Bird Treaty Act (MBTA). The presence of these birds will not preclude site development; however, it should be noted that the MBTA requires that no portion of individual birds or their nests may be harmed or disturbed. Typically, the USFWS recommends that site disturbance activities (*e.g.* construction activities and especially initial site clearing and grubbing) be conducted outside of the bird breeding season, which is generally March through September in Dona Aña County. If an active nest is identified on the site, and site development activities are planned during the breeding season, it may be necessary to consult with the USFWS in order to facilitate removal of birds or nests. USFWS typically recommends that development activities be phased to avoid disturbance to nesting birds and rarely issues nest relocation permits.

Several bird nests were observed on-site during the survey. If *any* construction activities are to occur between March through September, it is recommended that pre-construction nest surveys be conducted during the breeding season prior to disturbance of an otherwise undisturbed area. If no active nests are found on the subject property, the USFWS will not likely require a permit based on the “Empty Nest Policy.” Areas where active bird nests are identified will need to be avoided during construction activities. If avoidance is not practical, monitoring of birds nests during nearby construction activities should be conducted to gauge the birds response to the activities. The USFWS typically does not issue incidental take permits once a nest has been identified. In rare cases, bird nests may be relocated or taken down and placed in the care of a licensed wildlife rehabilitator.

3.4 Species of Concern

Table 1 provides a summary list of threatened, endangered, and special status species occurring in Doña Ana County, NM and identifies which species were identified as target species for this project. Selected lists of threatened, endangered and special status species obtained during the literature review are presented in Appendix C. Although a target species may not be listed as threatened, endangered, or a species of concern by USFWS or NM (NMGF or EMNRD), its inclusion on this table is indicative of a special status listing with BLM.

None of the target species listed in Table 1 were observed in the project area during the field survey. No designated critical habitat is located on the subject property.

Following Table 1, a summary of Target Species that could potentially occupy the site based on locale or habitat preferences as defined by TPWD is presented. Included in the summary is discussion regarding the potential for the species to be encountered on the site or affected by the proposed project.

Table 1
Treatened (T), Endangered (E) and Species of Concern (s) Species in Doña Ana County

Common Name	Scientific Name	FWS-ESA	NM WCA	BLM-NM	Target Species	Found On Site
Lizard, Horned, Texas	*Phrynosoma cornutum*	-	-	sen	Yes	No
Black-Hawk, Common	*Buteogallus anthracinus anthracinus*	soc	T	-	No	No
Bunting, Varied	*Passerina versicolor*	-	T	-	No	No
Cormorant, Neotropic	*Phalacrocorax brasilianus*	-	T	-	No	No
Cuckoo, Yellow-billed	*Coccyzus americanus occidentalis* (western pop)	C	-	-	No	No
Eagle, Bald	*Haliaeetus leucocephalus alascanus*	-	T	-	No	No
Falcon, Aplomado	*Falco femoralis septentrionalis*	E	E	-	No	No
Falcon, Peregrine	*Falco peregrinus anatum*	soc	T	-	No	No

Falcon, Peregrine, Arctic	*Falco peregrinus tundrius*	soc	T	-	No	No
Flycatcher, Willow, SW.	*Empidonax traillii extimus*	E	E	-	No	No
Ground-dove, Common	*Columbina passerina pallescens*	-	E	-	No	No
Hummingbird, Broad-billed	*Cynanthus latirostris magicus*	-	T	-	No	No
Hummingbird, Costa's	*Calypte costae*	-	T	-	No	No
Hummingbird, Violet-crowned	*Amazilia violiceps ellioti*	-	T	-	No	No
Nightjar, Buff-collared	*Caprimulgus ridgwayi ridgwayi*	-	E	-	No	No
Owl, Burrowing	*Athene cunicularia hypugaea*	soc	-	sen	Yes	No
Pelican, Brown	*Pelecanus occidentalis carolinensis*	-	E	-	No	No
Sparrow, Baird's	*Ammodramus bairdii*	-	T	sen	No	No
Tern, Black	*Chlidonias niger surinamensis*	-	-	sen	No	No
Tern, Least	*Sterna antillarum athalassos*	E	E	-	No	No
Vireo, Bell's	*Vireo bellii*	-	T	-	No	No
Vireo, Gray	*Vireo vicinior*	-	T	-	No	No
Bat, Big-eared, Townsend's, Pale	*Corynorhinus townsendii pallescens*	-	-	sen	No	No
Bat, Spotted	*Euderma maculatum*	-	T	-	No	No
Chipmunk, Colorado, Organ Mtns.	*Neotamias quadrivittatus australis*	-	T	-	No	No
Gopher, Pocket, Desert	*Geomys arenarius arenarius*	-	-	s	No	No
Muskrat, Pecos River	*Ondatra zibethicus ripensis*	-	-	s	No	No
Sheep, Bighorn,	*Ovis canadensis*	-	T	-	No	No

Desert	*Mexicana*					
Talussnail, Dona Ana	*Sonorella todseni*	-	T	-	No	No
Beetle, Blister, Anthony	*Lytta mirifica*	-	-	s	No	No
Cactus, Sneed's Pincushion	*Coryphantha sneedii var. sneedii*	E	E	E	Yes	No
Cactus, Sand Prickly Pear	*Opuntia arenaria*	soc	E	sen	Yes	No
Cereus, Night Blooming	*Peniocereus greggii var. greggii*	soc	E	sen	Yes	No

The Texas horned lizard is a diurnal lizard that prefers open, arid to semi-arid regions, typically with sparse vegetation in low lying areas. Preferred soil types range from loamy to rocky soils (TPWD 2007). These lizards feed on a variety of invertebrates, however harvester ants are preferred (Stebbins 2003). Nests of harvestar ants are typically sought out during surveys as an indicator of potential habitat for the horned lizards. Reports of occurrence of these lizards vary widely both spatially and temporally. The Texas horned lizard's average length is 6.8 cm, however males can measure up to 9.4 cm and females up to 11.4 cm. Texas horned lizards have a distinct pale-colored dorsal stripe but otherwise coloration can range from gray, yellowish, or reddish brown depending on its location, habitat and if its being threatened. Mating season is from May to June and they are oviparous.

The subject property contains areas capable of supporting Texas Horned Lizards however, none were observed during the survey. Habitat quality on the subject property for this species is considered to be good, however, no harvester ant nests were observed on site. The proposed development project will result in a net loss of suitable habitat for the species but will not likely adversely affect this species.

Western burrowing owls can be found in deserts or any other open dry area with low vegetation. They have yellow eyes and their beaks can range from dark yellow to gray depending on the subspecies. Adults have brown heads and wings with white spots. The chest and abdomen can have different shades of brown depending on the subspecies and locality. The average size is of 24.5 cm in length and a wingspan of 53.3 cm. Their nesting season starts in late March. They nest underground cavities excavated by other burrowing animals and their breeding habitat can range from open grassland to agricultural fields and occasionally vacant lots near urban areas. Burrowing owls are frequently observed in Doña Ana County and are known from a wide variety of habitat types but, in general, they appear to be more commonly associated with lower elevation sites along the Rio Grande. While they have been known to return to a nesting site year after year, the variation in nest fidelity is high and new sites are apparently colonized and abandoned at will.

No burrowing owls were observed on the subject property during the survey. Suitable burrowing substrate is present on the subject property and browsing habitat is present and abundant in the area. However, no individual burrowing suitable for nesting were observed on-site. The proposed development project will not likely adversely affect this species.

Peregrine falcons are 40 to 48 cm long and have wingspans up to 107 cm. Their plumage consists of black coloring on their head and nape and characteristic black wedges extending below the eyes. Chest and under-part coloring is white to buff with black bars. Upper-parts of the wings and tail are dark brown and the tail feathers are tipped with light yellow brown. Both Arctic and American peregrine falcons have a notably wide range and occur in New Mexico. The American peregrine falcon nests in the western US whereas the Arctic peregrine falcon nests in the arctic region and only spends winters along the Gulf Coast. Although American peregrines are known for selecting a wide range of nesting sites, selection is typically along large mountain cliffs and adjacent to water courses (Campbell 2003). Along the Rio Grande they occur as a migratory species, utilizing a variety of habitats, but primarily following the mountain range and water courses.

No peregrine falcons were observed on the subject property during site visit. In addition, the site does not contain nesting habitat preferred by peregrine falcons. The proposed development project will not adversely affect this species.

Northern aplomado falcons are distinguished by their steel grey back, reddish breast, black "sash" on the belly, and striking black markings on the top of the head, around the eyes, and extending down the cheeks of the face. These falcons do not build their own nest, but instead occupy an abandoned nest built in a mesquite or yucca by other raptors or ravens. They require open grassland for hunting and typically hunt in pairs as adults or in groups as juveniles. The species ranges from southern Arizona, New Mexico, and Texas in the U.S. southward to the southern tip of South America; however, aplomado populations have been in significant decline in the northern extent of their range since the 1930s (TPWD 2008).

Aplomado falcons are very rare in the region and are not anticipated to be present at the site. No breeding habitat for Aplomado falcons was noted on the site. The proposed development project will not directly adversely affect this species.

The southwestern willow flycatcher is a small bird that has a grayish-green back and wings, whitish throat, light gray-olive breast, and pale yellowish belly. Two wingbars are visible; the eye ring is faint or absent. Visually it is very difficult to distinguish from other species of willow flycathcer, but the diagnostic characteristic of the southwestern willow flycatchers is their song, a sneezy “fitz-bew”. These birds require dense gallery forested riparian areas along open water for breeding. Non-breeding habitat, while typically riparian, is less selective than during the breeding season. Southwestern willow flycatchers have been observed along the Rio Grande and in upland areas in Dona Aña County and adjacent El Paso County; however the potential for them to occupy the subject property is very low.

The subject property does not have any suitable breeding habitat for southwestern willow flycatchers. The proposed development project will not adversely affect this species.

Sand prickly pear cactus have stems consisting of loosely attached flattened joints up to 8 cm in length by 2-3 cm in width. The joints of sand prickly pear are highly varied in size and shape, bearing areoles with dense clumps of yellowish glochids. They mainly flower from May to June and have flowers that are 3-6 cm across that can be yellow and/or orange with green stigmas. They are found in southern Doña Ana, Luna, and Socorro counties in New Mexico and in El Paso County in Texas. Their main habitats are sandy areas, especially semi-stabilized sand dunes among open Chihuahuan desert.

No sand prickly pear cactus plants were observed on the subject property during the survey. The proposed development project will not adversely affect this species.

Sneed's pincushion cactus is a small cactus characterized by globular-shaped stems (heads) approximately 5 cm long and 2 cm in diameter with short fine stout spines growing from the tips of tubercles densely arranged in a more or less spiral pattern around the head. Several heads grow from a single root, often giving the cactus the appearance of a spiny white mat that appears to be several plants. Flowers are about 1.3 cm tall, open to approximately 1.3 cm wide, and are typically pink to pale rose or greenish yellow in color (Weniger 1970). These cacti are only found growing within cracks and crevices on limestone outcrops in the Franklin, Organ, and Guadalupe Mountains in west Texas and southern New Mexico (USFWS 2011).

No Sneed's pincushion cactus plants were observed on the subject property during the survey. The proposed development project will not adversely affect this species.

The night-blooming cereus is a cactus that typically grows within a larger shrub and utilizes that shrub for support and shelter. It is characterized by long, narrow branching growth habit, grey color, and large white flower. It occurs in Chihuahuan desert shrublands or shrub invaded grasslands in alluvial or gravelly soils at lower elevations (3900-4900 ft), on slopes, benches, arroyos, flats, and washes. Flowering is synchronized amongst nearby plants over a few nights in early May to late June when almost all mature plants bloom. Flowers last only one day and open just after dark. This species is difficult to identify due to its appearance and growth habit.

No night-blooming cereus cactus plants were observed on the subject property during the survey. The proposed development will not adversely affect this species.

4.0 DISCUSSION AND RECOMMENDATIONS

The proposed project will not likely negatively affect any federal or state-listed threatened, endangered, or rare species. Although no listed threatened, endangered, or sensitive species

were observed during this biological survey, it should be noted that the potential for their presence may still exist, especially with respect to wildlife species of concern.

If plants of species of concern, such as sand prickly pear or night blooming cereus are noted during future activities at the site, all efforts to avoid impacts to their populations should be made. If impacts to individual plants are unavoidable, mitigation involving salvage and transplanting should be conducted and will likely be required by the BLM.

Wildlife may enter and utilize the site at any time. If nesting birds or other sensitive wildlife are encountered during construction activities, avoidance measures should be taken by work crews to prevent disturbance to sensitive wildlife. It may be necessary to relocate these individuals or monitor their response to activities. In rare cases, when impacts are otherwise unavoidable either by timing or location restrictions to work activities, active bird nests may be put under the care of a licensed wildlife rehabilitator, but such actions should be thought of only as a last resort.

4.1 Limitations

It should be noted that the survey performed on the subject property is a cursory overview of the major habitat types on the site with the intent of identifying the potential for sensitive biological resources. An exhaustive inventory of all plant an animal species that inhabit, or have the potential to inhabit, the site was not performed as it was beyond the scope of this project. Plant identification to species and variety levels typically requires flowering parts of the plants. Plants on the site were identified utilizing plant parts present at the time of the survey. Due to the time of the survey, some of the plants were not flowering. Identification of specific animal and bird species would require trapping and other additional effort which was considered beyond the scope of this project. Furthermore, such activities would require obtaining permits from appropriate State and Federal wildlife agencies. If justified, recommendations for additional surveys to further investigate potential biological resources of concern are presented above.

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APPENDIX A - SITE PHOTOGRAPHS

Photo 1 - Overview of typical mesquite coppice dune vegetation present at the site.

Photo 2 - Creosotebush and typical surrounding vegetation found on the subject property.

Photo 3 - View of *Verbesina encelioides* (horsepen daisy) field facing west to Afton Substation in Dona Aña, NM.

Photo 4 - *Gutierrezia microcephela* bush.

Photo 5 - *Zinnia acerosa*.

Photo 6 - Vegetation in this area consists of the widespread mesquite coppice dune community. Dunes in this area approach five feet in height.

APPENDIX B - MAPS

APPENDIX C - SPECIES LISTS

Ecological Services

Southwest Region

Ecological Services
Endangered Species
Electronic Library
Environmental Contaminants
Energy
Partners Program
Texas Coastal Program
National Wetlands Inventory
Field Offices

Back to Start

List of species by county for New Mexico:

Counties Selected: Dona Ana

Select one or more counties from the following list to view a county list:

Bernalillo
Catron
Chaves
Cibola
Colfax

View County List

Dona Ana County

Common Name	Scientific Name	Species Group	Listing Status	Species Image	Species Distribution Map	Critical Habitat	More Info
least tern	*Sterna antillarum*	Birds	E				P
northern aplomado falcon	*Falco femoralis septentrionalis*	Birds	E, EXPN				P
Rio Grande silvery minnow	*Hybognathus amarus*	Fishes	E				P
Sneed pincushion cactus	*Coryphantha sneedii var. sneedii*	Flowering Plants	E				P
southwestern willow flycatcher	*Empidonax traillii extimus*	Birds	E				P
yellow-billed Cuckoo	*Coccyzus americanus*	Birds	C				P

Last Updated: September 20, 2012

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Biota Information System Of New Mexico

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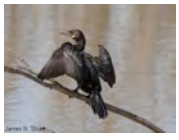
Report County Federal/State Species Status for

Dona Ana

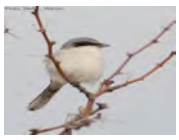
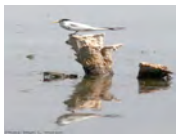
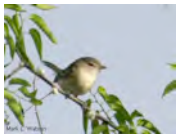
50 species returned.

Taxonomic Group	# Species	Taxonomic Group	# Species
Reptiles	3	Molluscs	1
Birds	27	Crustaceans	1
Mammals	18		

Export to Excel

Common Name	Scientific Name	Habitat Map	Species Photo (click photo to enlarge)	Status
Lizard, Earless, Bleached	Holbrookia maculata ruthveni (NM)	no map		State NM: Sensitive taxa (informal)
Lizard, Fence, Southwestern	Sceloporus cowlesi	no map		State NM: Sensitive taxa (informal)
Whiptail, White, Little	Aspidoscelis gypsi	no map	no photo	State NM: Sensitive taxa (informal)
Black-Hawk, Common	Buteogallus anthracinus anthracinus (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Bunting, Varied	Passerina versicolor versicolor (NM);dickeyae (NM)	no map		State NM: Threatened
Cormorant, Neotropic	Phalacrocorax brasilianus	no map		State NM: Threatened
Cuckoo, Yellow-billed	Coccyzus americanus occidentalis (western pop)	no map		Federal: Candidate State NM: Sensitive taxa (informal)

Eagle, Bald	Haliaeetus leucocephalus alascanus (NM)	no map		State NM: Threatened
Falcon, Aplomado	Falco femoralis septentrionalis (NM)	no map		Federal: Endangered State NM: Endangered
Falcon, Peregrine	Falco peregrinus anatum	no map		Federal: FWS Species of Concern State NM: Threatened
Falcon, Peregrine, Arctic	Falco peregrinus tundrius	no map	no photo	Federal: FWS Species of Concern State NM: Threatened
Flycatcher, Willow, SW.	Empidonax traillii extimus	no map		Federal: Critical Hab. Designated (NM) Federal: Endangered State NM: Endangered
Goshawk, Northern	Accipiter gentilis atricapillus (NM,AZ);apache (NM,AZ)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Ground-dove, Common	Columbina passerina pallescens (NM)	no map		State NM: Endangered
Hummingbird, Broad-billed	Cynanthus latirostris magicus (NM)	no map		State NM: Threatened
Hummingbird, Costa's	Calypte costae	no map		State NM: Threatened
Hummingbird, Violet-crowned	Amazilia violiceps ellioti (NM)	no map		State NM: Threatened
Nightjar, Buff-collared	Caprimulgus ridgwayi ridgwayi (NM)	no map	no photo	State NM: Endangered
Owl, Boreal	Aegolius funereus		no photo	State NM: Threatened
Owl, Burrowing	Athene cunicularia hypugaea (NM,AZ)	no map		Federal: FWS Species of Concern
				Federal: Critical

Owl, Spotted, Mexican	Strix occidentalis lucida (NM,AZ)	no map		Hab. Designated (NM) Federal: Threatened State NM: Sensitive taxa (informal)
Pelican, Brown	Pelecanus occidentalis carolinensis (NM)	no map		State NM: Endangered
Pipit, Sprague's	Anthus spragueii	no map	no photo	Federal: Candidate
Plover, Mountain	Charadrius montanus		no photo	State NM: Sensitive taxa (informal)
Shrike, Loggerhead	Lanius ludovicianus excubitorides (NM);sonoriensis (NM);gambeli (NM)	no map		State NM: Sensitive taxa (informal)
Sparrow, Baird's	Ammodramus bairdii	no map		Federal: FWS Species of Concern State NM: Threatened
Tern, Black	Chlidonias niger surinamensis (NM)	no map		Federal: FWS Species of Concern
Tern, Least	Sterna antillarum athalassos (NM)	no map		Federal: Endangered State NM: Endangered
Vireo, Bell's	Vireo bellii arizonae (NM,AZ);medius (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Vireo, Gray	Vireo vicinior			State NM: Threatened
Bat, Big-eared, Townsend's, Pale	Corynorhinus townsendii pallescens (NM,AZ)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Bat, Myotis, Brn., Little, Occult	Myotis lucifugus occultus (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Free-tailed, Big	Nyctinomops macrotis	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Myotis, Fringed	Myotis thysanodes thysanodes (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Myotis, Long-legged	Myotis volans interior (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Bat, Red, Western	Lasiurus blossevillii	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive

				taxa (informal)
Bat, Myotis, Small-footed, W.	Myotis ciliolabrum melanorhinus (NM,AZ)	no map		State NM: Sensitive taxa (informal)
Bat, Spotted	Euderma maculatum			State NM: Threatened
Bat, Myotis, Yuma	Myotis yumanensis yumanensis (NM,AZ)	no map		State NM: Sensitive taxa (informal)
Chipmunk, Colorado, Organ Mtns.	Neotamias quadrivittatus australis (NM)	no map		Federal: FWS Species of Concern State NM: Threatened
Fox, Red	Vulpes vulpes fulva (NM);macroura (NM)	no map		State NM: Sensitive taxa (informal)
Gopher, Pocket, Desert	Geomys arenarius arenarius (NM)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Muskrat, Pecos River	Ondatra zibethicus ripensis (NM)	no map	no photo	Federal: FWS Species of Concern State NM: Sensitive taxa (informal)
Rat, Wood, White Sands	Neotoma micropus leucophaea	no map	no photo	Federal: FWS Species of Concern
Ringtail	Bassariscus astutus arizonensis (NM,AZ);flavus (NM);yumanensis (AZ);nevadensis (AZ)	no map		State NM: Sensitive taxa (informal)
Sheep, Bighorn, Desert	Ovis canadensis mexicana (listed pops)	no map		State NM: Threatened
Skunk, Hog-nosed, Common	Conepatus leuconotus mearnsi (NM);venaticus (NM,AZ)	no map	no photo	State NM: Sensitive taxa (informal)
Skunk, Spotted, Western	Spilogale gracilis	no map	no photo	State NM: Sensitive taxa (informal)
Talussnail, Dona Ana	Sonorella todseni	no map	no photo	Federal: FWS Species of Concern State NM: Threatened
Shrimp, Fairy, Moore's	Streptocephalus moorei	no map	no photo	State NM: Sensitive taxa (informal)

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TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 21 ENDANGERED PLANTS
PART 2 ENDANGERED PLANT SPECIES LIST AND COLLECTION PERMITS

19.21.2.1 ISSUING AGENCY: Energy, Minerals and Natural Resources Department, Forestry Division.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.1 NMAC - Rn & A, 19 NMAC 21.2.1, 11/30/06]

19.21.2.2 SCOPE: The general public that collects, transports, or offers for sale native, vascular plants within the state of New Mexico, with the exceptions of federal employees working on lands within their jurisdiction, and any plant collection activities within lands owned by, or held in trust for, Native American tribes.
[8/31/95; 19.21.2.2 NMAC - Rn, 19 NMAC 21.2.2, 11/30/06]

19.21.2.3 STATUTORY AUTHORITY: Section 75-6-1 NMSA 1978 directs the energy, minerals and natural resources department (department) to investigate all plant species in the state for the purpose of establishing a list of endangered plant species. It also authorizes the department to prohibit the taking of endangered species, with the exception of permitted scientific collections or propagation and transplantation activities that enhance the survival of endangered species. The forestry division (state forester) is the department secretary's designated representative for the purposes of endangered plant investigations and for issuing collection and transplantation permits.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.3 NMAC - Rn & A, 19 NMAC 21.2.3, 11/30/06]

19.21.2.4 DURATION: Permanent
[8/31/95; 19.21.2.4 NMAC - Rn, 19 NMAC 21.2.4, 11/30/06]

19.21.2.5 EFFECTIVE DATE: August 31, 1995, unless a later date is cited at the end of a section.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.5 NMAC - Rn & A, 19 NMAC 21.2.5, 11/30/06]

19.21.2.6 OBJECTIVE: Native plant resources contribute to the economic, ecological, and aesthetic well-being of New Mexico citizens. This part's objective is to prevent the extinction or extirpation of native plant species in the state of New Mexico. It establishes the criteria for the recognition of endangered plant species and a list of plant species perceived, by the department, to be endangered within the state. This part also prescribes rules and permitting requirements for taking endangered plants during scientific investigations or propagation and transplantation activities that enhance survival.
[8/31/95; 19.21.2.6 NMAC - Rn & A, 19 NMAC 21.2.6, 11/30/06]

19.21.2.7 DEFINITIONS:

A. "Population site" means an area of occurrence of a particular species.

B. "Specimen" means the physical parts or a plant in its entirety, taken from a population site for the purpose of scientific study.

C. "Taking" means the removal, with the intent to possess, transport, export, sell, or offer for sale any of the plants listed in 19.21.2.9 NMAC, from the places in the state of New Mexico where they naturally grow.

D. "Voucher specimen" means an identifiable and representative specimen taken by a botanical collector from a population site for the purpose of documenting that site as occupied habitat. It should be accompanied by pertinent information on location, habitat, collector, date taken, and any other notes the collector can present concerning the population site.
[10/29/85, 12/23/91, 8/31/95; 19.21.2.7 NMAC - Rn & A, 19 NMAC 21.2.7, 11/30/06]

19.21.2.8 CRITERIA FOR INCLUSION ON THE ENDANGERED PLANT SPECIES LIST:

A. The taxon is listed as threatened or endangered under the provisions of the Federal Endangered Species Act (16 U.S.C. Sections 1531 *et seq*.), or is considered proposed under the tenets of the Act; or

B. The taxon is a rare plant across its range within the state, and of such limited distribution and population size that unregulated taking could adversely impact it and jeopardize its survival in New Mexico.
[10/29/85, 8/31/95; 19.21.2.8 NMAC - Rn, 19 NMAC 21.2.8, 11/30/06]

19.21.2.9 LIST OF NEW MEXICO STATE ENDANGERED PLANT SPECIES: The following list of plants constitutes the New Mexico state endangered plant species list. Listed are the plant's scientific name, its common name, and the criterion for inclusion by the subsection in 19.21.2.8 NMAC:

Aliciella formosa (Aztec gilia)	Subsection B of 19.21.2.8 NMAC
Allium gooddingii (Goodding's onion)	Subsection B of 19.21.2.8 NMAC
Amsonia tharpii (Tharp's bluestar)	Subsection B of 19.21.2.8 NMAC
Argemone pleiacantha subsp. pinnatisecta (Sacramento prickle-poppy)	Subsection A of 19.21.2.8 NMAC
Astragalus humillimus (Mancos milkvetch)	Subsection A of 19.21.2.8 NMAC
Peniocereus greggii (night-blooming cereus)	Subsection B of 19.21.2.8 NMAC
Cirsium vinaceum (Sacramento Mountains thistle)	Subsection A of 19.21.2.8 NMAC
Cirsium wrightii (Wright's marsh thistle)	Subsection B of 19.21.2.8 NMAC
Cleome multicaulis (slender spiderflower)	Subsection B of 19.21.2.8 NMAC
Coryphantha scheeri var. scheeri (Scheer's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Cylindropuntia viridiflora (Santa Fe cholla)	Subsection B of 19.21.2.8 NMAC
Cypripedium parviflorum var. pubescens (golden lady's slipper)	Subsection B of 19.21.2.8 NMAC
Echinocereus fendleri var. kuenzleri (Kuenzler's hedgehog cactus)	Subsection A of 19.21.2.8 NMAC
Erigeron hessii (Hess' fleabane)	Subsection B of 19.21.2.8 NMAC
Erigeron rhizomatus (Zuni fleabane)	Subsection A of 19.21.2.8 NMAC
Eriogonum gypsophilum (gypsum wild buckwheat)	Subsection A of 19.21.2.8 NMAC
Escobaria duncanii (Duncan's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Escobaria organensis (Organ Mountain pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Escobaria sneedii var. leei (Lee's pincushion cactus)	Subsection A of 19.21.2.8 NMAC
Escobaria sneedii var. sneedii (Sneed's pincushion cactus)	Subsection A of 19.21.2.8 NMAC
Escobaria villardii (Villard's pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Hedeoma todsenii (Todsen's pennyroyal)	Subsection A of 19.21.2.8 NMAC
Helianthus paradoxus (Pecos sunflower)	Subsection A of 19.21.2.8 NMAC
Hexalectris nitida (shining coralroot)	Subsection B of 19.21.2.8 NMAC
Hexalectris spicata (crested coralroot)	Subsection B of 19.21.2.8 NMAC
Ipomopsis sancti-spiritus (Holy Ghost ipomopsis)	Subsection A of 19.21.2.8 NMAC
Lepidospartum burgessii (gypsum scalebroom)	Subsection B of 19.21.2.8 NMAC
Lilium philadelphicum (wood lily)	Subsection B of 19.21.2.8 NMAC
Mammillaria wrightii var. wilcoxii (Wilcox pincushion cactus)	Subsection B of 19.21.2.8 NMAC
Opuntia arenaria (sand prickly pear)	Subsection B of 19.21.2.8 NMAC
Pediocactus knowltonii (Knowlton's cactus)	Subsection A of 19.21.2.8 NMAC
Pediomelum pentaphyllum (Chihuahua scurfpea)	Subsection B of 19.21.2.8 NMAC
Polygala rimulicola var. mescalerorum (San Andres milkwort)	Subsection B of 19.21.2.8 NMAC
Puccinellia parishii (Parish's alkali grass)	Subsection B of 19.21.2.8 NMAC
Sclerocactus cloveriae subsp. brackii (Brack's cactus)	Subsection B of 19.21.2.8 NMAC
Sclerocactus mesae-verdae (Mesa Verde cactus)	Subsection A of 19.21.2.8 NMAC
Spiranthes magnicamporum (lady tresses orchid)	Subsection B of 19.21.2.8 NMAC

[10/29/85, 12/23/91, 8/31/95; 19.21.2.9 NMAC - Rn & A, 19 NMAC 21.2.9, 11/30/06]

19.21.2.10 PERMITS:

A. The state forester may issue permits to take state endangered plant species for the purpose of conducting scientific studies that enhance understanding for the distribution of, or conditions required for survival of, endangered plant species; or for propagation or transplantation activities that enhance the survival of endangered plant species.

B. The state forester shall only issue permits to individuals. No one may operate under the authority of another's permit.

C. Each person applying for a permit must demonstrate sufficient expertise to carry out the permitted activities in a competent manner. The following information may be used to support the request for a permit:

education in botany or related area, field experience, collection numbers, accessions into a recognized herbarium, publications, and recommendations from recognized authorities.

D. The permittee's signature on the permit will acknowledge willingness to comply with all applicable laws, regulations, and permit conditions.

E. The permittee shall carry a copy of the permit at all times during the collection and transportation of endangered species.

F. A permit does not give the bearer authority to take federally threatened or endangered plants. Taking of these species also requires a federal permit issued by the U.S. fish and wildlife service.

G. A permit does not extend to the permittee the privilege to trespass or enter on lands without the owner's permission. The permittee should contact the appropriate management agency or landowner before beginning studies or taking specimens on federal, state, or private lands.

H. A state permit to take, propagate, or transplant the endangered plant species listed in 19.21.2.9 NMAC is not required for federal employees working within the lands of their jurisdiction, nor for activities within tribal reservations.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.10 NMAC - Rn & A, 19 NMAC 21.2.10, 11/30/06]

19.21.2.11 SCIENTIFIC INVESTIGATIONS:

A. The state forester may issue a permit to take endangered plants for scientific studies if the studies will generate new knowledge in the genetic, anatomical, chemical, morphological, life history, or in other relevant areas of research enhancing the understanding of the conditions required for the survival of the endangered species.

B. Known population sites will be provided with the permit when the permittee requires them for the permitted study. The permit will contain any special parameters for the taking.

C. If the permittee takes any specimens, the permittee shall deposit at least one voucher specimen at either the university of New Mexico herbarium or New Mexico state university herbarium.

D. When possible, the investigator shall take specimens in such a way as to not reduce the population (e.g. take a single stem from an herbaceous perennial, leaving the root intact, or other methods appropriate to the particular species).

E. The state forester may prohibit taking in some known locations where survival is especially precarious.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.11 NMAC - Rn & A, 19 NMAC 21.2.11, 11/30/06]

19.21.2.12 VOUCHER SPECIMENS:

A. The state forester may issue a permit to take endangered plant voucher specimens during botanical inventories and environmental surveys for the purposes of species verification and documentation of population sites.

B. Taking specimens for the sole purpose of exchange with other herbaria is prohibited.

C. The collection of voucher specimens shall make no long-term detrimental effect on the population. The permittee may take a maximum of three specimens, if the population is sufficient. If the population is very small and the taking of a single individual is detrimental, then the permittee may take only a fragment of an individual for voucher purposes.

D. The permittee shall deposit at least one specimen of the three taken from each locality at the university of New Mexico herbarium or New Mexico state university herbarium. The permittee may send duplicates to the western New Mexico university herbarium, government agency collections within New Mexico, or herbaria in other states that are formally listed in index herbariorum. The label affixed to each specimen shall contain information on collection location, description of the habitat, collector's name, date of collection, and estimated size of the population.

E. To assist in the identification and preservation of endangered plant species in New Mexico, permittees shall report all permitted collections of voucher specimens to the state forester by December 31 of each year. The report shall contain the voucher specimen label information and the place or places of deposition of specimens.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.12 NMAC - Rn & A, 19 NMAC 21.2.12, 11/30/06]

19.21.2.13 PROPAGATION AND TRANSPLANTATION:

A. The state forester may issue a permit to take endangered plants to propagate or transplant when evidence is presented that the activity will enhance that particular species' survival capability.

B. The state forester may issue a permit to transplant endangered species (not including federally listed taxa) when such species occur on areas of land use conversion.

C. The state forester may issue a permit for transplantation upon approval of a proposal the applicant submits outlining the need for such transplantation, the method to be employed, the site to which the plants will be taken for transplantation, and the qualifications of the person carrying out the transplantation.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.13 NMAC - Rn & A, 19 NMAC 21.2.13, 11/30/06]

19.21.2.14 PERMIT REVOCATION: Prohibited activities that shall render a collection permit invalid and may cause the permittee to be subject to prosecution under applicable federal and state laws include: taking of specimens of endangered plant species outside the scope of the permit's provisions, failure to deposit a voucher specimen in a designated New Mexico herbarium, taking specimens under permit for commercial use, providing false information on the permit application, or allowing someone else to use the permit.

[10/29/85, 8/31/95; 19.21.2.14 NMAC - Rn & A, 19 NMAC 21.2.14, 11/30/06]

19.21.2.15 PROTECTION AND PENALTIES:

A. The taking of plants listed in 19.21.2.9 NMAC, other than taking under valid permit issued by the state forester, is hereby prohibited.

B. Pursuant to Section 75-6-1 NMSA 1978, violation of 19.21.2 NMAC is a misdemeanor punishable by a fine of not less than $300.00, nor more than $1000.00 or imprisonment for a term of not more than 120 days or both.

C. Any law enforcement officer may seize any plants taken, transported, exported, processed, sold, or offered for sale or shipped in violation of 19.21.2 NMAC.

[10/29/85, 12/23/91, 8/31/95; 19.21.2.15 NMAC - Rn & A, 19 NMAC 21.2.15, 11/30/06]

HISTORY OF 19.21.2 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the state records center and archives:

NRD Rule No. 85-3, Endangered Plant Species in New Mexico, filed 10/29/85;

NMFRCD Rule No. 91-1, Regulations Governing Endangered Plant Species, filed 12/23/91.

History of Repealed Material: [RESERVED]

Other History:

NMFRCD Rule No. 91-1, Regulations Governing Endangered Plant Species (filed 12/23/91) was renumbered, reformatted and replaced by 19 NMAC 21.2, Endangered Plant Species List and Collection Permits, effective 8-31-95.

19 NMAC 21.2, Endangered Plant Species List and Collection Permits (filed 8-17-95) was renumbered, reformatted, amended and replaced by 19.21.2 NMAC, Endangered Plant Species List and Collection Permits, effective 11/30/06.

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Results of County Search

DOÑA ANA	
Scientific name	County-NM
Agastache cana	Doña Ana, Grant, Luna, Sierra
Agastache pringlei var. verticillata	Doña Ana
Astragalus castetteri	Doña Ana, Sierra
Castilleja organorum	Doña Ana
Draba standleyi	Doña Ana, Otero, Sierra, Socorro
Escobaria organensis	Doña Ana
Escobaria sandbergii	Doña Ana, Sierra
Escobaria sneedii var. sneedii	Doña Ana
Escobaria villardii	Doña Ana, Otero
Hexalectris arizonica	Doña Ana, Hidalgo, Otero, Sierra
Hymenoxys vaseyi	Doña Ana, Sierra
Oenothera organensis	Doña Ana
Opuntia arenaria	Doña Ana, Luna, Socorro
Peniocereus greggii var. greggii	Doña Ana, Grant, Hidalgo, Luna
Penstemon alamosensis	Doña Ana, Lincoln, Otero
Perityle cernua	Doña Ana
Perityle staurophylla var. staurophylla	Doña Ana, Otero, Sierra
Polygala rimulicola var. mescalerorum	Doña Ana
Salvia summa	Chaves, Doña Ana, Eddy
Scrophularia laevis	Doña Ana
Silene plankii	Bernalillo, Doña Ana, Sandoval, Sierra, Socorro, Torrance

Photo credits in header *Peniocereus greggii var. greggii* © T. Todsen, *Lepidospartum burgessii* © M. Howard, *Argemone pleiacantha ssp. pinnatisecta* © R. Sivinski
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Agency Status of New Mexico Rare Plants

Please Note: Plants followed by the statement "(Not NMRPTC Rare)" **do not** meet NMRPTC criteria for rarity, but do have status with one or more agencies.

Taxon	USFWS	State of NM	USFS	BLM	Navajo Nation	Natural Heritage NM	Global Rank
	List	List	List	List	List		
Abronia bigelovii	SoC	SoC	Sen	Sen	.	S3	G3
Abronia bolackii	SoC	SoC	.	.	.	SNR	GNR
Adenophyllum wrightii var. wrightii (Not NMRPTC Rare)	SoC	.	Sen	.	.	SH	G1?
Agalinis calycina	SoC	SoC	.	.	.	S1	G1
Agastache cana	SoC	SoC	.	.	.	S3	G4
Agastache pringlei var. verticillata	SoC	SoC	.	.	.	S2	G3G4T2
Aliciella cliffordii	SoC	SoC	.	.	.	SNR	GNR
Aliciella formosa	SoC	E	.	Sen	Gp 4	S2	G2
Allium gooddingii (Not NMRPTC Rare)	SoC	E	Sen	.	Gp 3	S1	G4
Amsonia fugatei	SoC	SoC	.	Sen	.	S2	G2
Amsonia tharpii	SoC	E	.	Sen	.	S1	G1
Anticlea mogollonensis	SoC	SoC	Sen	.	.	S3	G3
Anulocaulis leiosolenus var. gypsogenus	SoC	SoC	.	.	.	S4	G4T4
Anulocaulis leiosolenus var. howardii	SoC	SoC	.	Sen	.	SNR	G4T2
Aquilegia chaplinei	SoC	SoC	Sen	Sen	.	S2	G4T2
Argemone pinnatisecta	E	E	E	E	.	S2	G4G5T2
Arida blepharophylla	SoC	SoC	.	.	.	SH	G1
Asclepias sanjuanensis	SoC	SoC	.	Sen	Gp 4	S3	GUQ
Asclepias uncialis ssp. uncialis (Not NMRPTC Rare)	SoC	.	Sen	.	.	S2	G3G4T2T3
Astragalus altus	SoC	SoC	Sen	.	.	S2	G2
Astragalus castetteri	SoC	SoC	.	.	.	S3	G3
Astragalus chuskanus	SoC	SoC	.	.	.	S2?	G3

Astragalus cliffordii	SoC	SoC	.	.	.	SNR	GNR
Astragalus cobrensis var. maguirei	SoC	SoC	Sen	Sen	.	S2	G4T2
Astragalus cottamii	SoC	SoC	.	.	.	S3	G4
Astragalus cyaneus	SoC	SoC	.	.	.	S4	G4
Astragalus feensis	SoC	SoC	.	.	.	S3	G3
Astragalus gypsodes	SoC	SoC	.	Sen	.	S2	G2
Astragalus heilii	SoC	SoC	.	.	Gp 4	SNR	G1?
Astragalus humillimus	E	E	.	E	Gp 2	S1	G1
Astragalus humistratus var. crispulus	SoC	SoC	Sen	.	.	SNR	G4G5T3?
Astragalus kerrii	SoC	SoC	Sen	.	.	S2	G2
Astragalus knightii	SoC	SoC	.	Sen	.	S2	G2
Astragalus micromerius	SoC	SoC	Sen	.	.	S2	G2
Astragalus missouriensis var. accumbens	SoC	SoC	Sen	.	.	S3	G3
Astragalus missouriensis var. humistratus	SoC	SoC	Sen	.	.	SNR	G5T1
Astragalus naturitensis	SoC	SoC	.	.	Gp 3	S2	G2G3
Astragalus neomexicanus	SoC	SoC	.	.	.	S3	G3
Astragalus nutriosensis	SoC	SoC	.	.	.	SNR	G3?
Astragalus oocalycis	SoC	SoC	.	.	.	S3	G4
Astragalus puniceus var. gertrudis	SoC	SoC	.	.	.	S3?	G4T3?Q
Astragalus ripleyi	SoC	SoC	Sen	Sen	.	S3?	G3?
Astragalus siliceus	SoC	SoC	.	.	.	S3	G3
Astragalus wittmannii	SoC	SoC	Sen	.	.	S3	G3
Atriplex griffithsii	SoC	SoC	.	.	.	S2	G2G3
Brickellia chenopodina	SoC	SoC	.	.	.	SH	GHQ
Calochortus gunnisonii var. perpulcher	SoC	SoC	Sen	.	.	S4?	G5T4?
Carex ultra (Not NMRPTC Rare)	SoC	.	Sen	.	.	S3?	G3?
Castilleja organorum	SoC	SoC	.	.	.	S3	G3Q
Castilleja ornata	SoC	SoC	.	.	.	S1	G3?
Chaetopappa hersheyi	SoC	SoC	.	.	.	S3	G3
Cirsium gilense	SoC	SoC	Sen	.	.	S2	G3G5Q
Cirsium inornatum	SoC	SoC	.	.	.	S4	G4
Cirsium vinaceum	T	E	T	.	.	S2	G2
Cirsium wrightii	Can	E	Sen	.	.	S2	G1G2
Coryphantha scheeri var. scheeri	SoC	E	.	.	.	S2?	G4T3?
Crataegus wootoniana	SoC	SoC	Sen	.	.	S2	G2
Cuscuta warneri	SoC	SoC	.	.	.	SNR	GH

Cymopterus davidsonii	SoC	SoC	Sen	.	.	S2	G2
Cymopterus spellenbergii	SoC	SoC	.	.	.	SNR	GNR
Cypripedium parviflorum var. pubescens (Not NMRPTC Rare)	SoC	E	Sen	.	Gp 4	S2?	G5T5
Dalea scariosa	SoC	SoC	.	.	.	S4	G4
Delphinium alpestre	SoC	SoC	Sen	.	.	S2?	G2
Delphinium novomexicanum	SoC	SoC	.	.	.	S2	G2
Delphinium robustum	SoC	SoC	Sen	.	.	SNR	G2?
Delphinium sapellonis	SoC	SoC	.	.	.	S4?	G4?
Dermatophyllum guadalupense	SoC	SoC	Sen	Sen	.	S1	G1T1
Desmodium metcalfei	SoC	SoC	Sen	.	.	S3?	G3G4
Draba heilii	SoC	SoC	Sen	.	.	SNR	GNR
Draba mogollonica	SoC	SoC	.	.	.	S3	G3
Draba smithii	SOC	SOC	Sen	.	.	S1	G2
Draba standleyi	SoC	SoC	.	.	.	S2	G2G3
Echinocereus fendleri var. kuenzleri	E	E	E	E	.	S1	G4G5T1
Ericameria nauseosa var. texensis	SoC	SoC	Sen	.	.	S2	G5T2
Erigeron acomanus	SoC	SoC	.	Sen	Gp 3	S1S2	G1G2
Erigeron hessii	SoC	E	Sen	.	.	S1	G1
Erigeron rhizomatus	T	E	T	T	Gp 2	S2	G2
Erigeron rybius	SoC	SoC	.	.	.	S3	G3
Erigeron scopulinus	SoC	SoC	.	.	.	S3?	G3?
Erigeron sivinskii	SoC	SoC	Sen	.	Gp 4	S2	G2
Erigeron subglaber	SoC	SoC	Sen	.	.	S3	G3
Eriogonum aliquantum	SoC	SoC	.	.	.	S3	G3
Eriogonum gypsophilum	T	E	.	T	.	S1	G1
Eriogonum lachnogynum var. colobum	SoC	SoC	.	.	.	SNR	GNR
Eriogonum lachnogynum var. sarahiae	SoC	SoC	.	.	Gp 4	SNR	GNR
Eriogonum wootonii	SoC	SoC	.	.	.	S2	G5T2
Escobaria duncanii	SoC	E	.	Sen	.	S1	G1G2
Escobaria guadalupensis	SoC	SoC	.	.	.	SR	G1
Escobaria orcuttii	SoC	SoC	.	.	.	S3	G3?
Escobaria organensis	SoC	E	.	.	.	S2	G2
Escobaria sandbergii	SoC	SoC	.	.	.	S2	G2
Escobaria sneedii var. leei	T	E	.	T	.	S2?	G2T2
Escobaria sneedii var. sneedii	E	E	.	E	.	S2	G2T2

Escobaria villardii	SoC	E	Sen	Sen	.	S2	G2
Geranium dodecatheoides	SoC	SoC	Sen	.	.	SNR	GNR
Grindelia arizonica var. neomexicana	SoC	SoC	.	.	.	SR	G4T3?
Hackelia hirsuta	SoC	SoC	.	.	.	SNR	G4?
Hedeoma apiculata	SoC	SoC	.	.	.	S3	G3
Hedeoma pulcherrima	SoC	SoC	.	.	.	S2	G2
Hedeoma todsenii	E	E	E	E	.	S2	G2
Helianthus arizonensis	SoC	SoC	Sen	.	.	S4?	G4?
Helianthus paradoxus	T	E	.	T	.	S2	G2
Helianthus praetermissus	SoC	SoC	.	.	.	SH	GHQ
Heuchera pulchella	SoC	SoC	Sen	.	.	S2	G2
Heuchera woodsiaphila	SoC	SoC	Sen	.	.	S1	G1
Heuchera wootonii	SoC	SoC	.	.	.	S3	G3Q
Hexalectris arizonica	SoC	E	Sen	.	.	SNR	G5T2T4
Hexalectris nitida	SoC	E	.	.	.	S1	G3
Hexalectris revoluta	SOC	SOC	Sen	.	.	SNR	G1G2
Hexalectris spicata var. spicata (Not NMRPTC Rare)	SOC	E	.	.	.	SNR	G5T4T5
Hieracium brevipilum	SoC	SoC	Sen	.	.	S2?	G4T2?
Hymenoxys ambigens var. neomexicana	SoC	SoC	Sen	.	.	S2?	G3?T2?
Hymenoxys brachyactis	SoC	SoC	Sen	.	.	S3	G3
Hymenoxys vaseyi	SoC	SoC	.	.	.	S2?	G2?
Ionactis elegans	SoC	SoC	Sen	.	.	S2	G2
Ipomopsis sancti-spiritus	E	E	E	.	.	S1	G1
Justicia wrightii	SoC	SoC	.	.	.	S1	G2
Lepidospartum burgessii	SoC	E	.	Sen	.	S1	G2
Lilium philadelphicum (Not NMRPTC Rare)	SoC	E	Sen	.	.	S3?	G5
Limosella pubiflora	SoC	SoC	Sen	.	.	SH	GUGHQ
Linum allredii	SOC	SOC	.	Sen	.	SNR	GNR
Lorandersonia microcephala	SoC	SoC	Sen	.	.	S2	G2
Lupinus sierrae-blancae	SoC	SoC	.	.	.	S3	G3
Mammillaria wrightii var. wilcoxii (Not NMRPTC Rare)	SoC	E	.	.	.	S2	G4T4
Mentzelia conspicua	SoC	SoC	Sen	.	.	S2	G2
Mentzelia humilis var. guadalupensis	SoC	SoC	.	Sen	.	S2	G4T2
Mentzelia springeri	SoC	SoC	Sen	.	.	SNR	GNR
Mentzelia todiltoensis	SoC	SoC	.	.	.	SNR	GNR

Microthelys rubrocallosa	SoC	SoC	Sen	.	.	SNR	GNR
Muhlenbergia arsenei	SoC	SoC	.	.	.	SNR	G5
Muhlenbergia villiflora var. villosa	SoC	SoC	.	.	.	SNR	G5T2
Nama xylopodum	SoC	SoC	.	.	.	S4?	G4?
Oenothera organensis	SoC	SoC	.	.	.	S2	G2
Opuntia arenaria	SoC	E	.	Sen	.	S2	G2
Opuntia viridiflora	SoC	E	.	Sen	.	S1	G1Q
Packera cardamine	SoC	SoC	Sen	.	.	S3	G3
Packera spellenbergii	SoC	SoC	Sen	.	.	S2	G2?
Panicum mohavense	SoC	SoC	.	.	.	S1	G1
Pediocactus knowltonii	E	E	.	E	.	S1	G1
Pediomelum pentaphyllum	SoC	E	Sen	Sen	.	S1	G1
Peniocereus greggii var. greggii	SoC	E	.	Sen	.	S1	G3G4T2
Penstemon alamosensis	SoC	SoC	Sen	Sen	.	S3	G3
Penstemon cardinalis ssp. cardinalis	SoC	SoC	Sen	.	.	S2	G3T2
Penstemon cardinalis ssp. regalis	SoC	SoC	Sen	Sen	.	S2	G3T2
Penstemon linarioides ssp. maguirei	SoC	SoC	Sen	.	.	SH	G5T1
Penstemon metcalfei	SoC	SoC	Sen	.	.	SNR	G1G3
Penstemon neomexicanus	SoC	SoC	.	.	.	S4	G4
Penstemon pseudoparvus	SoC	SoC	Sen	.	.	S3?	G3?Q
Peritoma multicaulis	SoC	E	.	.	.	SH	G2G3
Perityle cernua	SoC	SoC	.	Sen	.	S2	G2
Perityle quinqueflora	SoC	SoC	.	.	.	S3	G4
Perityle staurophylla var. homoflora	SoC	SoC	.	.	.	S2	G4T2
Perityle staurophylla var. staurophylla	SoC	SoC	.	.	.	SNR	G4T3T4
Phacelia cloudcroftensis	SoC	SoC	Sen	.	.	S1	G1
Phacelia serrata	SoC	SoC	.	.	.	S2	G2G3
Phacelia sivinskii	SoC	SoC	.	.	.	SNR	GNR
Phemeranthus humilis	SoC	SoC	Sen	.	.	S2	G2
Philadelphus microphyllus var. argyrocalyx	SoC	SoC	.	.	.	S3	G5T3
Phlox caryophylla	SoC	SoC	.	.	.	S2	G4
Phlox cluteana	SoC	SoC	.	.	.	SR	G2
Phlox vermejoensis	SoC	SoC	.	.	.	SNR	GNR
Physaria aurea	SoC	SoC	.	.	.	S2	G3
Physaria gooddingii	SoC	SoC	.	.	.	S3	G3?
Physaria lata	SoC	SoC	.	.	.	S1?	G1?Q

Physaria navajoensis	SoC	SoC	.	.	Gp 3	SNR	GNR
Physaria newberryi var. yesicola	SoC	SoC	.	.	.	SNR	G3G4T1T3
Physaria pruinosa	SoC	SoC	.	.	.	SNR	G2
Polygala rimulicola var. mescalerorum	SoC	E	.	.	.	S1	G3T1
Polygala rimulicola var. rimulicola	SoC	SoC	.	.	.	S2	G3T3
Potentilla sierrae-blancae	SoC	SoC	Sen	.	.	S2?	G2?
Proatriplex pleiantha	SoC	SoC	.	Sen	.	S3?	G3
Puccinellia parishii	SoC	E	Sen	Sen	Gp 4	S1	G2
Ribes mescalerium	SoC	SoC	.	.	.	S4?	G4?
Rubus aliceae	SoC	SoC	.	.	.	SH	GH
Rumex occidentalis var. tomentellus	SoC	SoC	.	.	.	SH	GH
Salix arizonica	SoC	SoC	Sen	.	.	S1	G2G3
Salvia summa	SoC	SoC	.	.	.	S3?	G3?
Sclerocactus cloverae ssp. brackii	SoC	E	.	Sen	Gp 4	S1	G3T1
Sclerocactus mesae-verdae	T	E	.	T	Gp 2	S2	G2
Scrophularia laevis	SoC	SoC	.	.	.	S2	G2
Scrophularia macrantha	SoC	SoC	Sen	Sen	.	S2	G2
Sedum integrifolium ssp. neomexicanum	SoC	SoC	Sen	.	.	S1	G5T1
Senecio cliffordii	SoC	SoC	.	.	.	SNR	GNR
Senecio sacramentanus	SoC	SoC	.	.	.	S3	G3
Sibara grisea	SoC	SoC	.	Sen	.	S3?	G3
Silene plankii	SoC	SoC	.	.	.	S2	G3
Silene thurberi	SoC	SoC	.	.	.	S3?	G4
Silene wrightii	SoC	SoC	.	.	.	S2	G3
Solidago capulinensis	SOC	SOC	.	.	.	SNR	GNR
Solidago wrightii var. guadalupensis	SOC	SOC	Sen	.	.	SNR	GNR
Sphaeralcea procera	SoC	SoC	.	.	.	SH	GHQ
Sphaeralcea wrightii	SoC	SoC	.	.	.	S3?	G4?
Spiranthes magnicamporum (Not NMRPTC Rare)	SoC	E	.	.	.	S3?	G4
Stellaria porsildii	SoC	SoC	Sen	.	.	S1	G1
Streptanthus sparsiflorus	SoC	SoC	Sen	Sen	.	S2	G2
Synthyris oblongifolia	SoC	SoC	Sen	.	.	S2	G2Q
Talinum brachypodum	SoC	SoC	.	.	.	SNR	GNR
Toumeya papyracantha (Not NMRPTC Rare)	SoC	.	.	Sen	.	S4	G4

Townsendia gypsophila	SoC	SoC	.	Sen	.	S2	G2
Trifolium longipes ssp. neurophyllum	SoC	SoC	Sen	.	.	S2	G2
Valeriana texana	SoC	SoC	.	.	.	S3	G3

AGENCY STATUS DEFINITIONS

U.S. Fish and Wildlife Service (USFWS)

Endangered - A species in danger of extinction throughout all or a significant portion of its range.

Threatened - A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Candidate - A species for which the USFWS has sufficient information to propose that it be added to the list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities.

Species of Concern - A taxon for which further biological research and field study are needed to resolve their conservation status OR are considered sensitive, rare, or declining on lists maintained by Natural Heritage Programs, State wildlife agencies, other Federal agencies, or professional/academic scientific societies.

Source: Charlie McDonald, Regional Botanist, U.S. Forest Service, Southwestern Region

State of New Mexico

Endangered - The taxon is listed as threatened or endangered under the provisions of the Federal Endangered Species Act (16 U.S.C. Sections 1531 et seq.), or is considered proposed under the tenets of the act [10-29-85,]; or the taxon is a rare plant across its range within the state, and of such limited distribution and population size that unregulated taking could adversely impact it and jeopardize its survival in New Mexico. [10-29-85, 8-31-95]

Species of Concern - A New Mexico plant species, which should be protected from land use impacts when possible because it is a unique and limited component of the regional flora.

Sources: New Mexico Administrative Code, Title 19, Chapter 21 Part 2.8 (Criteria for inclusion of the endangered plant species list), and Robert Sivinski, State Botanist

U.S. Forest Service (USFS)

Endangered - Any species designated as endangered by the U.S. Fish and Wildlife Service that is known to occur on national forest lands in New Mexico.

Threatened - Any species designated as threatened by the U.S. Fish and Wildlife Service that is known to occur on national forest lands in New Mexico.

Sensitive - A species that is likely to occur or have habitat on National Forest Service System lands and that has been identified by the Regional Forester as of

concern for reduction in population viability as evidenced by: significant current or predicted downward trends in population numbers or density, or; significant current or predicted downward trends in habitat capability that would reduce the species' distribution.

Source: Charlie McDonald, Regional Botanist, U.S. Forest Service, Southwestern Region

Bureau of Land Management (BLM)

Definition: BLM Special Status Species are those federally listed or proposed as threatened or endangered, and those designated as BLM Sensitive Species, which includes both Federal candidate species and federally delisted species within 5 years of delisting.

Designation of BLM Sensitive Species: State Directors shall designate species within their respective states as BLM sensitive using the following criteria. For species inhabiting multiple states, State Directors shall coordinate with one another in the designation of BLM Sensitive Species so that species status is consistent across the species' range on BLM-administered lands for which the BLM has the capability to significantly affect the conservation of the species through management, and either:
1) There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species' range, or
2) The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

Policy: BLM Sensitive Species will be managed consistent with species and habitat management objectives in land use and implementation plans to promote their conservation and to minimize the likelihood and need for listing under the Endangered Species Act.

Source: BLM Manual 6840, Special Status Species Management, December 2008. Summarized by Mike Howard, Botanist, BLM New Mexico State Office, December 2011.

Navajo Nation

GROUP 1: Those species or subspecies that no longer occur on the Navajo Nation.

GROUP 2 (G2) & GROUP 3 (G3): "Endangered"-- Any species or subspecies whose prospects of survival or recruitment within the Navajo Nation are in jeopardy or are likely within the foreseeable future to become so.

G2: A species or subspecies whose prospects of survival or recruitment are in jeopardy.

G3: A species or subspecies whose prospects of survival or recruitment are likely to be in jeopardy in the foreseeable future.

GROUP 4: Any species or subspecies for which the Navajo Nation Department of Fish and Wildlife (NNDFWL) does not currently have sufficient information to support their being listed in G2 or G3 but has reason to consider them. The NNDFWL will actively seek information on these species to determine if they warrant inclusion in a different group or removal from the list.

Source: Navajo Nation, Division of Natural Resources, Department of Fish and Wildlife, Navajo Endangered Species List (NESL), Resources Committee Resolution No. RCMA-31-01, March 2001. Provided by Daniela Roth.

Natural Heritage New Mexico

State Ranks

SX Presumed Extirpated - Element is believed to be extirpated from NM. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
SH Possibly Extirpated (Historical) - Element occurred historically in NM, and there is some expectation that it may be rediscovered. Its presence may not have been verified in the past 20 years. An element would become SH without such a 20-year delay if the only known occurrences in NM were destroyed or if it had been extensively and unsuccessfully looked for.
S1 Critically Imperiled - Critically imperiled in NM because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from New Mexico. Typically 5 or fewer occurrences or very few remaining individuals (<1,000).
S2 Imperiled - Imperiled in NM because of rarity or because of some factor(s) making it very vulnerable to extirpation from New Mexico. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000).
S3 Vulnerable - Vulnerable in NM either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
S4 Apparently Secure - Uncommon but not rare, and usually widespread in NM. Possible cause of long-term concern. Usually more than 100 occurrences and more than 10,000 individuals.
S5 Secure - Common, widespread, and abundant in NM. Essentially ineradicable under present conditions. Typically with considerably more than 100 occurrences and more than 10,000 individuals.
SNR Unranked - NM rank not yet assessed.
SU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
S#S# Range Rank - A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the element. Ranges cannot skip more than one rank (e.g., SU is used rather than S1S4).
HYB Hybrid - Element not ranked because it represents an interspecific hybrid, not a species.
SE - An exotic established in state; may be native elsewhere in North America; includes fish native to NM but introduced into watersheds where the species is non-native.
SE# Exotic Numeric - An exotic established in NM that has been assigned a numeric rank to indicate its status, as defined for S1 through S5.
SA Accidental - Accidental or casual in NM. In other words, infrequent and outside usual range. Includes species (usually birds or butterflies) recorded once or only a few times at a location. A few of these species may have bred on the one or two occasions they were recorded. Examples include European strays or western birds on the East Coast and vice-versa.
SZ Zero Occurrences - Present but lacking practical conservation concern in NM because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations have little or no conservation value for the migrant, as they are typically too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped, and protected. In other words, the migrant regularly passes through the state, but enduring, mappable Element Occurrences cannot be defined.
SP Potential - Potential that element occurs in the state but no extant or historic

occurrences are accepted.
SR Reported - Element reported in NM but without a basis for either accepting or rejecting the report, or the report not yet reviewed locally.
SRD Dubious Report - Element reported in NM but the report is likely to be invalid.
SRF False Report - Element reported in NM but the report is known to be invalid.

Global Ranks

GX Presumed Extinct - Believed to be extinct throughout its range. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
GH Possibly Extinct - Known from only historical occurrences, but may nevertheless still be extant; further searching needed.
G1 Critically Imperiled - Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically 5 or fewer occurrences or very few remaining individuals (<1,000) or acres (<2,000) or linear miles (<10).
G2 Imperiled - Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction or elimination. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000) or acres (2,000 to 10,000) or linear miles (10 to 50).
G3 Vulnerable - Vulnerable globally either because very rare and local throughout its range, found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction or elimination. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.
G4 Apparently Secure - Uncommon but not rare (although it may be rare in parts of its range, particularly on the periphery), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.
G5 Secure - Common, widespread, and abundant (although it may be rare in parts of its range, particularly on the periphery). Not vulnerable in most of its range. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

Variant Global Ranks

G#G# Range Rank - A numeric range rank (e.g., G2G3) is used to indicate uncertainty about the exact status of a taxon.
GU Unrankable - Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.
GNR Unranked - Global rank not yet assessed.
HYB Hybrid - Element not ranked because it represents an interspecific hybrid and not a species.

Global Rank Qualifiers

? Inexact Numeric Rank - Denotes inexact numeric rank (e.g. G3?).
Q Questionable taxonomy that may reduce conservation priority - Distinctiveness of this entity as a taxon at the current level is questionable.

Infraspecific Taxon Ranks

T# Infraspecific Taxon (trinomial) - The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' global rank. Rules for assigning T-ranks follow the same principles outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1.

Source: New Mexico Natural Heritage Program Web Site viewed at:

http://nmnhp.unm.edu/ranks_status/ranks_status.pdf Definitions of New Mexico Natural Heritage Program Ranks of Endangerment

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FINDING OF NO SIGNIFICANT IMPACT

Bureau of Land Management Las Cruces District Office

Environmental Assessment

DOI-BLM-NM-L000-2015-0099-EA

El Paso Electric 115-kV Transmission Line From Afton North Substation to Airport Substation

Based on the analysis of potential environmental impacts contained in the attached environmental assessment (EA) (DOI-BLM-NM-L000-2015-0099-EA), and considering the significance criteria in 40 CFR 1508.27, I have determined that the Proposed Action contained in the EA for the El Paso Electric 115 kV transmission line and access road will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Assistant District Manager

8/20/15
Date

EL PASO ELECTRIC 345kV TRANSMISSION LINE
AFTON NORTH SUBSTATION TO AIRPORT SUBSTATION

Doña Ana County, New Mexico

Final Plan of Development

Submitted to:

Bureau of Land Management
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005

Submitted by:

El Paso Electric

May 6, 2025

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1. INTRODUCTION

El Paso Electric Company (EPE) is submitting this final Plan of Development (POD) to the Bureau of Land Management (BLM) – Las Cruces District Office. This document outlines a description of activities related to the construction, operation, maintenance, and termination of a new 14.3 mile long 345 kilovolt (kV) transmission line and access road. The project will follow a single right-of-way (ROW) corridor, starting at an existing Afton North Substation, just north of the Afton Generating Station and ending at EPE's existing Las Cruces Airport Substation (Airport Substation). Included in this POD is:

- an explanation of the purpose and need for the project
- a description of the project and location
- a description of construction activities
- a summary of permitting
- a description of the environmental concerns and mitigation measures associated with construction, operation, and maintenance of the transmission line
- stabilization and rehabilitation
- operation and maintenance
- termination and restoration

2. PURPOSE AND NEED FOR THE PROJECT

The purpose of the Action is to allow EPE to amend an existing 115kV transmission line to increase the voltage to 345kV, construct the 345kV transmission line, an access road within the transmission corridor. The need for the action is established by the BLM's responsibility under FLPMA to respond to a request for a ROW grant amendment for legal access across public land. BLM granted EPE a right-of-way pursuant to Title V of FLPMA effective July 11, 2017, NMNM 129489.

EPE's objectives for constructing the Afton North – Airport Transmission Line are to:

- Improve system reliability by providing an alternate transmission source to the Airport Substation.
- Complete infrastructure improvements to provide alternate paths that reduce loads to existing facilities and provide emergency overload options. The available transfer capacity on the existing Public Service Company of New Mexico (PNM) facilities limits EPE's potential to serve a growing load. Increasing the transmission capacity at the Airport Substation would relieve existing transmission congestion.
- Accommodate load growth in the El Paso and Las Cruces areas. In general, population growth in the region has been rapid, with growth projections for Las Cruces and Dona Ana County of more than 30 percent over the next 20 years (Bureau of Business and Economic Research, 2008). While this has been general throughout the County, EPE has had to increase capacity at the Airport Substation, replacing the original 20 Megavolt-Ampere (MVA) unit with a 50 MVA unit.

3. PROJECT DESCRIPTION

EPE proposes to construct a new 3-phase 345kV transmission line beginning at the Afton North Substation and extend to the existing Airport Substation. A 100-foot-wide ROW is granted from Airport Substation along the north-south trajectory of the line. Additionally, a 200-foot-wide ROW is requested along the southeast-northwest trajectory, where the project parallels the existing 345 kV corridor into Afton North Substation (Figure 2A-R). The new 14.3-mile transmission line will be constructed using:

- Three 954 kcmil Aluminum Conductor Steel Supoprted (ACSS) (Rail) conductors, two per phase.
- Two overhead shield wires of which one would be an overhead optical ground wire (OPGW) for EPE system communication purposes.

Features of the ROW and the amount of land impacted by the new transmission line and new Afton North Substation are summarized in Table 1.

Table 1. Land Ownership Along the Proposed Right of Way

Owner	Amount of Land Crossed (miles)	Maximum Surface Area (acres)[a]
Federal Land	12.79	223.4
State Land	1.5	18.2
City of Las Cruces	0.01	0.1
Total	**14.3**	**241.7**

[a]Calculated assuming 5.64 miles @ 200-foot ROW across Federal land along a southeast-northwest trajectory where the project parallels the existing 345 kV corridor into Afton North Substation, 7.15 miles @ 100-foot ROW for Federal Land along a north-trending section of the proposed ROW, and 100-foot ROW for all other lands near the Airport Substation.

The BLM has approved ROW grant NMNM 129489 for the construction, operation, maintenance, replacement, and termination of the Afton North – Airport Transmission Line and Afton North Substation through the BLM land parcels. Construction would start with the issuance of the "Notice to Proceed" by the BLM and last approximately 20 to 25 weeks and involve up to 20 workers.

4. RIGHT-OF-WAY LOCATION

The ROW grant allows for the construction, operation, maintenance, replacement and termination of the Afton North – Airport Transmission Line and Afton North Substation, and access to both through the BLM land parcels (identified below). EPE has acquired land rights from the New Mexico State Land Office and private ownership in the parcels also identified below.

Bureau of Land Management Parcels, New Mexico Principal Meridian

T. 23 S., R. 1 W.,
sec. 33, E½SE¼NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼.
T. 24 S., R. 1 W.,
sec. 4, lot 1, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼;
sec. 9, E½NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼;
sec. 21, E½NE¼NE¼, E½SE¼NE¼;
sec. 28, E½NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼;
sec. 33, E½NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼.

T. 25 S., R. 1 W.,
sec. 4, lot 1, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼;
sec. 9, E½NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼;
sec. 10, NE¼SW¼SW¼, SE¼SW¼SW¼, S½SE¼SW¼;
sec. 13, S½SW¼SW¼NW¼, SW¼SE¼SW¼NW¼, S½NE¼NE¼SW¼, N½NW¼NE¼SW¼, SW¼NE¼SE¼, S½SE¼NE¼SE¼, SW¼NW¼NW¼SE¼, N½SE¼NW¼SE¼;
sec.14, N½SW¼NE¼, S½SE¼NE¼, SW¼NE¼NW¼, S½NW¼NW¼, NE¼SE¼NW¼;
sec. 15, S½NE¼NE¼NE¼, NW¼NE¼NE¼, N½NE¼NW¼NE¼, NE¼NW¼NW¼NE¼;

T. 25 S., R. 1 E.,
sec. 18, lots 3 and 4, S½NW¼SE¼SW¼, N½SE¼SE¼SW¼, SW¼SW¼SE¼, S½SE¼SW¼SE¼;
sec. 19, N½NE¼NE¼NE¼; sec. 20, S½SW¼NW¼NE¼, N½NE¼1SW¼NE¼, S½NE¼SE¼NE¼, NW¼SE¼NE¼, S½NE¼NW¼, S½NE¼NW¼NW¼, NW¼NW¼NW¼;
sec. 21, SW¼NE¼, N½SW¼SW¼NW¼, SE¼NW¼, S½SW¼SE¼NW¼, E½NW¼NE¼SW¼, W½SW¼NE¼SW¼;

New Mexico State Lands Parcels, New Mexico Principal Meridian

T. 24 S., R. 1 W.,
sec. 16, E½NE¼NE¼, E½SE¼NE¼, E½NE¼SE¼, E½SE¼SE¼; sec. 21, E½NE¼SE¼, E½SE¼SE¼.

Private Land Parcel, New Mexico Principal Meridian

T. 24 S., R 1 W.
sec. 34, W½NW¼NW¼

5. FACILITY DESIGN FACTORS

5.1 Afton North – Airport Transmission Line Features

General design features of the Afton North-Airport Transmission Line are described in more detail in the following sections.

5.1.1 Transmission Line Design Features

The transmission line would have one 3/8-inch Extra High Strength (EHS) steel shield wire and one fiber-optic shield wire (Overhead Optical Ground Wire or OPGW), necessary for operational communications, for the entire length of the line. All tangent structures would be steel Monopole (Figure 3A), using davit arms to support the conductors. All dead-end structures and running angle structures would be self-supporting, three-pole steel structures on concrete foundations (Figure 3B) and will not require guy wires.

- Typical Ruling Span: 700 feet – 1,000 feet.
- Maximum structure height: 130 feet above ground
- Structures are designed to support a second circuit in the future, with up to 125 total structures planned for installation on this project.

Structures would be designed to meet the requirements of the NESC and the ASCE Standard 48-11 or the Latest Revision “Design of Steel Transmission Pole Structures”, and specific EPE 345kV Design Criteria specifications. To minimize potential impacts on birds, including raptors, the transmission line would be designed to incorporate the avian protection guidelines in Avian Power Line Interaction Committee (APLIC) (2006, 2012).

All steel transmission structures would include corrosion protection. This project would use weathering steel, which naturally resists corrosion. The steel forms a protective layer on the surface under the influence of the weather. This layer also develops a dull-brown patina that reduces light reflection.

The Afton North – Airport Transmission Line project may require crossing of other utilities. The location of the transmission line is dependent upon other linear facilities, topographical constraints and utility boundary constraints that exist as well as environmental constraints. The transmission line crossings would be coordinated with the facility owner or manager and the required licenses, permits or agreements obtained.

The general construction considerations associated with the construction of the EPE Project are described in Table 2.

Table 2. Construction Summary for the Afton North – Airport Transmission Line and Afton North Substation					
Project Feature	**Description**	**Overall Project**	**BLM Property**	**State Property**	**Municipal Property (1)**
Length of Lines	Total length of line excluding final spans into the project and interconnecting substations.	14.30 miles	12.79 miles	1.50 miles	0.01 miles
Type of Pole	Single-Circuit, Mono-Pole, Steel				
Pole Height	Maximum 130ft				
Span Length	Typically 700ft to 1,000				
Number of Poles	Total number of dead end, angle, or tangent poles excluding structures within interconnecting substations.	Up to 125	Up to 114	11	0
ROW Width	100ft wide on the North – South segment. 200ft on the East West segment	100ft/ 200ft	100ft/ 200ft	100ft	100ft
Guard Structures	100ft wide by 100ft long. Placed on either side of existing roads or electrical lines to maintain vertical clearance during construction activities only.	6	6	0	0
Permanent Access Roads within transmission corridor	Vegetation clearing and grading for equipment access. 14ft maximum width by length of the corridor.	14.87 miles	13.36 miles	1.50 miles	0.01 miles
Substation Access road	Maximum travel surface 25ft wide. 50ft maximum disturbance width		0.6 Miles	0	0

Table 2. Construction Summary for the Afton North – Airport Transmission Line and Afton North Substation					
Existing Access Roads along Alignment	Existing width and length varies. No adjustments to be made.	0 ft	0 ft	0 ft	0 ft
Afton North Substation	1600ft x 915ft ROW Area	33.6 acres	33.6 acres	0.00 acres	0.00 acres
Afton North Substation Power Service	Wood distribution poles for Substation Station Service and Construction Staging Power	10	10	0	0
Temporary Disturbance Areas					
Guard Structures	100ft wide by 100ft long. Placed on either side of existing roads or electrical lines to maintain vertical clearance during construction activities only.	1.38 acres	1.38 acres	0.00 acres	0.00 acres
Transmission Line Staging Areas	One staging area on 10-acres of private land (not BLM land).	10.0 acres	0.00 acres	0.00 acres	0.00 acres
Transmission Structure work areas	200ft x 200ft. temporary work areas at each structure location cleared of vegetation and leveled.	114.78 acres			
Wire Pulling and Tensioning Sites	100ft wide by 400ft long, extends past each dead end or angle structure.	10	9.5	0.5	0

(1) City property includes crossing of one parcel of City of Las Cruces property dedicated for a future 65' road easement adjacent to Airport Substation.
(2) Road disturbance area excludes disturbances included elsewhere for pole disturbance.

5.1.2 Temporary Work Areas

The project would require several types of temporary use areas during construction: a staging area, pulling/tensioning splicing sites, work areas at each structure

site, and guard structures. Each of the structure locations would require a temporary work area of 100ft wide by 200ft in length. Temporary work areas would be located within the ROW. Pulling/tensioning sites would be located within the ROW at approximately 9,000 foot intervals. Activities that would occur in temporary work areas include:

- Equipment Staging
- Equipment Refueling
- Pulling/tensioning splicing sites
- Temporary Water Use
- Construction Waste Storage

Previously disturbed lands would be used to the maximum extent possible for construction staging and personnel reporting. There would be one staging area, on private property, on about 1.2 acres of previously disturbed ground adjacent to the Afton Generating Station with material storage for this project (Figure 4). The staging area would be used throughout the duration of construction for receiving, storing and transferring of required materials.

The staging area may also serve as a field office, reporting location for construction workers, parking for vehicles and equipment, location for temporary toilets, and location for equipment maintenance.

Equipment Staging

Staging of equipment would be conducted at the staging area, pulling and tensioning sites or other temporary work areas within the surveyed project area. These areas would be used to temporarily lay out equipment.

Equipment Refueling

EPE or their contractor would implement standard refueling procedures for heavy equipment left in the ROW for extended periods of time. Examples of the heavy equipment are cranes, back-hoes and excavators, dozers and graders, bucket trucks and aerial lifts, and drill rigs. The equipment would be refueled in place. No personal or light duty vehicles would be refueled on the ROW.

Pulling/tensioning splicing sites

Pulling/tensioning sites would be located within the ROW at approximately 9,000 foot intervals (Figure 5). This project requires six temporary pulling and tensioning sites. Table 3 below shows the legal description location of each site.

Table 3. Location of Temporary Pulling/Tensioning Sites

Pulling/Tensioning Site	Legal Description	Land Ownership

1	SE¼NW¼ , Sec 21, T25S, R1E	BLM
2	NW¼SE¼ , Sec 13, T25S, R1W	BLM
3	SW¼SW¼ , Sec 10 in SE¼SE¼ , Sec 9, T25S, R1W	BLM
4	NE¼NE¼, Sec 33 in SE¼SE¼ , Sec 28, T24S, R1W	BLM
5	NE¼NE¼, Sec 16 in SE¼SE¼ of Sec 9, T24S, R1W	BLM & NMSLO
6	SE¼NE¼, Sec 33, T23S, R1W	BLM

Temporary Water Use

Water use is expected to be primarily for foundation construction of substations and transmission line structures. Water would be used for dust control during grading and site work. The water would be provided by municipal industrial sources or private sources. No new water rights would be required.

Construction Waste

Construction of the Afton North – Airport Transmission Line and the new Afton North Substation would generate minimal wastes, comprised of typical construction wastes. All wastes would be collected on-site and disposed of in accordance with federal, state and local regulations. Portable toilets would be used during construction. The waste from the portable toilets would be regularly pumped out, hauled away and disposed of by an appropriately licensed vendor.

5.2 Clean-up and Restoration of Affected Areas

Construction sites, staging areas, and access roads would be kept clean and orderly throughout construction. Refuse and trash would be removed and disposed of in an approved manner. In remote areas, trash and refuse would be contained temporarily at a designated site until it can be hauled to an approved landfill. No open burning of construction trash would occur.

During cleanup and restoration, any hazardous materials use and disposal would be properly managed. Bulk chemicals and hazardous materials are not expected to be produced or stored on-site. During clean-up and restoration, any hazardous materials such as petroleum products used for equipment would be properly managed in accordance with applicable federal, state, and local regulations regarding the use of hazardous substances.

During construction, topsoil would be stockpiled and used to restore disturbed areas to pre-construction conditions as much as possible. In addition, Best Management

Practices (BMPs) would be used during construction to minimize erosion of disturbed areas and stockpiled topsoil prior to restoration. Construction laydown areas would be graded and re-vegetated.

6. ADDITIONAL COMPONENTS

EPE will use existing access roads to the extent possible on and off public land. Although EPE proposes to clear vegetation at pulling and tensioning sites, the need for sand and gravel supplies from public land or other sources is not anticipated.

7. GOVERNMENT AGENCIES INVOLVED

Permitting conforms to the Resource Management Plan for the Las Cruces BLM District Office in New Mexico, and to relevant federal, state, and local statutes, regulations, and plans.

8. CONSTRUCTION OF FACILITIES

This section provides a brief summary of the typical activities associated with construction of the345kV transmission line and substation associated with this project. As project engineering becomes finalized, the descriptions will be updated and revised, as appropriate.

8.1. Construction Activities

Construction activities may commence once a Notice-to-Proceed for construction has been issued by the BLM. Construction activities include: (1) construction of 345kV transmission line, (2) construction of Afton North Substation, (3) modifications to the 345kV transmission lines, (4) installation of project access roads, (5) clearing and grading of structure sites where necessary, and (6) preparation of temporary work areas.

8.1.1 General Preliminary Construction / Site Preparation

The general preliminary activities required for the construction of both the EPE 345kV transmission line and Afton North Substation would consist of the completion of the following tasks and activities, which should occur in sequential order, as shown below:

- Conducting final surveys for the transmission centerline and other features, substation boundaries and work areas. Preliminary surveys have been completed
- Geologic evaluation and geotechnical investigation
- Upgrading or construction of permanent access roads within transmission corridor and access road into the substation off of Afton Rd. Clearing and grading along portions of the ROW and at structure sites
- Activities at temporary work areas

Surveying the Transmission Centerline and Other Features

Final ground survey and staking would be performed to locate the centerline of the ROW, structure centers, structure references, project substation boundaries, ROW boundaries, access roads, and temporary work areas. Temporary work areas would be located within the ROW and include: pulling and splicing sites, work areas at each structure site, and guard structures. Sensitive environmental features to be avoided would be flagged (if necessary). Environmental monitoring would be in place, if necessary.

Initial Clearing and grubbing of Access Route

In order to access the project location and perform the final survey work, geologic evaluation, and geological investigation the access route 14ft wide for the entire length of the transmission line ROW will be cleared and grubbed. This route will be performed 31ft from the transmission centerline. The Afton North substation site (1600ft by 915ft) will be cleared and grubbed of vegetation. This initial clearing and grubbing will allow the required access to perform the final geotechnical work and field surveys. All work will be performed within the ROW boundaries for the project. Equipment will access the locations off of existing public roads and authorized routes for the project. Top soil will be maintained within the ROW and used during final restoration. Vegetation will be grubbed, mulched within ROW boundaries, and will be scattered within ROW.

Geologic Evaluation and Geotechnical Investigation

The geologic evaluation and geotechnical investigations would be performed as part of the general construction activities in conjunction with final engineering in order to evaluate potential geologic and geotechnical hazards, and to determine specific requirements, such as ground conditions, soils types, depth to rock, depth to water, and soil strength properties, for foundation design and construction.

Structure Foundations

Direct-embedded foundations may be utilized where possible in order to lower overall costs. The preliminary assumption is that most tangent steel structures will be direct-embedded foundations with native, granular, or concrete backfill. Concrete backfill for direct-embedded foundations will be stopped 1ft below grade. Top 1ft will be backfilled with native soil. Direct embedment shall be a minimum of 10% + 2ft, of structure height unless soil conditions require additional embedment. Drilled-shaft foundations will require, full length anchor bolts for longitudinal reinforcement. Diameter will be limited to 6ft when possible. If certain soil conditions exist, it may be necessary to utilize casing or slurry methods to install direct-embedded or drilled-shaft foundations.

Road Construction

Access roads will be required during construction for the movement of trucks, cranes, concrete trucks, bulldozers, and other light and heavy construction equipment to

and along the ROW. Access roads will also serve as the primary means of movement for construction crews and Project materials. During operation, these roads will be needed to access transmission lines, substations, and ancillary facilities for period line inspections and scheduled and emergency maintenance over the life of the Project.

As such, access roads must be sufficient to support the weight of construction equipment; upon completion of the Project, access roads will be used by operation and maintenance vehicles.

Transmission Line Service Road

Existing roads will be used to access the project area. A permanent access road for the transmission line (see Figure 7) would be located entirely within the ROW. Access road will be installed approximately 31ft from the transmission line centerline on the north and west trajectories. It will consist of a maximum travel surface road of 14ft. Additional drainage features for the roads will remain within the ROW boundary of the project. The access roads would be level with existing topography depending on the terrain, site constraints, and equipment requirements. Given the lack of surface water and drainage features within the project, culverts and other crossing structures are not proposed. Surface access would be required to reach each transmission structure. The main access/maintenance road would be on one side of the structures and inside the ROW, with access points from existing roads. During the maintenance and operations phase of the project, grading would only be required where road conditions deteriorate. EPE typically inspects 345kV transmission lines on an annual basis by way of pickup truck or all-terrain vehicles.

Clearing and Grading

Clearing of natural vegetation would be required for construction purposes at the staging area (previously disturbed area), structure sites 200ft by 100ft (permanent clearance of 100ft by 100ft area around each structure), pulling and tensioning areas and Afton North Substation site. Clearances are also required along the ROW for electrical safety, maintenance and reliability of the transmission line. Within the ROW, mature vegetation would be selectively removed under or near the conductors to provide adequate electrical clearance as required by NESC and NERC. If required, planned removals and selective clearing plans would be submitted to the appropriate agencies for approval.

8.1.1.1 Transmission Line Construction

Subsequent to the completion of the general preliminary activities listed above, construction of the 345kV transmission line would consist of the completion of the following tasks and activities, which should occur in sequential order, as shown below:

- Excavating and installing concrete foundations

- Assembling and erecting structures on pad sites
- Conventional method of assembly and erection
- Structure grounding
- Stringing conductors, wires, and fiber optic cables

Excavating and Installing Foundations

Drilled shafts foundations would be excavated via a truck mounted drilling rig, with augers of various sizes, depending on the diameter and depth of the foundation to be installed. Foundation sizes would vary based on structural requirements and geotechnical conditions, but typical sizes for steel tangent poles would be approximately 36 inches in diameter by 10-14ft deep, and typical dead-end foundations would be up to 8ft in diameter and up to 30ft deep. On BLM property, excess spoils (excavated material) would be spread evenly around the structure site, or otherwise handled as required by BLM site inspectors.

Should solid rock be encountered during excavation, blasting, rock excavation and hauling, or use of a rock anchoring system may be required, and would be based on geotechnical conditions and the site specific requirements of the design engineer. EPE will address with the BLM should the need arise.

For drilled concrete pier foundations, rebar cages would be delivered to the structure site and installed in the excavated shaft, and commercially available concrete would be delivered to the site in concrete mixers with capacities of up to 10 cubic yards per truck. For direct embedded poles, the embedded pole would be lowered into the drilled shaft, and backfilled with native, granular, or concrete material. Locally available commercial ready-mix concrete would be used for all pertinent construction activities. No batch preparation would occur within the project area.

Assembling and Erecting Structures

Bundles of steel members and associated hardware (e.g., insulators, hardware, and stringing sheaves) would be transported to each structure site by truck. Structures would be assembled at each structure site on cribbing that provide for proper alignment of members. Steel sections would be laid out with hydraulic cranes.

After assembly, the structures would be erected via crane, and held level and plumb while the embedded poles are backfilled, or the anchor bolts are properly aligned and secured, depending on the type of foundation. Air compressors and air guns would be used to tighten bolts.

Structure Grounding

After the structures are erected, grounding would be installed adjacent to eachstructure. Structure grounds are installed to provide a path of low electrical resistance to allow electrical charge imposed on the steel structures(typically through

electrical failure or lightning strike) to be dissipated to earth. Grounding rods are typically 10ft long, are made from either steel or copper, would be driven into the earth adjacent to each pole, and would be attached to the steel structure with a connecting wire.

Stringing Conductors, Wires, and Fiber Optic Cable

Insulators, hardware, and stringing sheaves would be delivered to each structure site. The structures would be rigged with insulator strings and stringing sheaves at each ground (shield) wire and conductor position.

For protection of the public during wire installation, guard structures would be erected over highways, railroads, power lines, structures, and other barriers. Guard structures would consist of temporary wood poles placed on either side of the barriers or by using boom trucks raising a guard cross beam. These structures would prevent ground wires, conductors, or equipment from falling across obstacles.

Pilot lines would be pulled (strung) from structure to structure by land operated equipment and threaded through the stringing sheaves at each structure. Following pilot lines, a stronger, larger diameter line would be attached to conductors to pull them onto the structures. The process would be repeated until the shield wire, OPGW and conductor is pulled through all sheaves.

Shield wires, fiber optic cable, and conductors would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. Sites for tensioning equipment and pulling equipment would be approximately 9,000ft apart. The tensioning and pulling sites would be typically 1.8 acres each (approximately 100ft by 400ft in both directions opposite the line angle). The sites may differ in size and dimensions, depending on the structure's purpose (mid-span or dead-end) and site specific topographic conditions. Tensioners, pullers, line trucks, wire trailers, dozers, pickups, and tractors needed for stringing and anchoring the ground wire and conductor would be located at these sites. The tensioner, with the puller, would maintain tension on the ground wires and conductor while they are fastened to the structures. Once each type of wire has been pulled in, the tension and sag would be adjusted, the stringing sheaves removed and the conductors would be permanently attached to the insulators.

Table 4. Typical Transmission Construction Crew Estimated Personnel and Equipment

Activity	Number of People	Quantity and Type of Equipment
Survey Crew	2 to 4	2 pick-up trucks
Line Construction	8 to 10	1 pressure digger
		1 18 wheeler hauler
		1 bulldozer (D-6/D-8 Cat or equivalent)
		1 bobcat
		1 water truck
		2 cranes

		2	4 wheel drive pick-up trucks
		3	bucket trucks
Foundation (each one)	4 to 6	1	flatbed
		1	crane
		3-4	cement trucks
		2	pick-up trucks
Pulling and Tensioning Crew	8 to 10	1	bulldozer (D-6/D-8 Cat or equivalent)
		2	cranes
		2	bucket trucks
		1	backhoe
		1	boom truck
		1	puller
		1	tensioner

8.2. Access to and along Right-of-Way during Construction

Agencies will be consulted before project construction activities begin. Temporary construction areas will be built or improved in accordance with EPE standards and BLM requirements (e.g., BLM Manual 9113 [1985 and 2007]), and the applicable mitigation measures will be developed during the NEPA process. Existing paved and unpaved highways and access roads will be used for transportation of materials and equipment from the staging and storage areas to locations where they will be needed along the right-of-way.

A representative who will have the authority to receive and carry out instructions from the BLM will be selected by EPE to provide routine and emergency planning for situations such as power outages, equipment upgrades, and fire control.

EPE Contact:
Riley Gibbs
El Paso Electric
P.O. Box 982
El Paso, Texas 79960
(575) 499-7786

BLM Contact:
Anthony Hom or Paula Montez
Las Cruces District Office
1800 Marquess Street
Las Cruces, New Mexico 88005
(575) 525-4385

8.3. Safety Requirements

All construction, operation, and maintenance activities will be required to comply with Occupational Safety and Health Administration regulations. Specific health and safety information, including a description of the safety requirements specifically associated with construction activities (e.g., improve construction areas, fire protection), and notification

procedures for emergencies in accordance with EPE's Emergency Preparedness and Response Plan.

8.4. Industrial Wastes and Toxic Substances

Construction sites and material storage yards will be kept in an orderly condition throughout the construction period. Refuse and trash will be removed from the sites and disposed of in an approved manner (e.g., in an approved landfill). In remote areas, trash and refuse could be removed to a construction staging area and contained temporarily until such time as it could be hauled to an approved site. No open burning of construction trash will occur. Contaminants such as oils, hydraulic fluids, antifreeze, and fuels will not be dumped on the ground, and all spills will be cleaned up.

No hazardous material will be produced, transplanted, or stored on or within the right-of-way. Petroleum products, such as gasoline, diesel fuel, and lubricants, will be present onsite during temporary work area improvements, where necessary. These products will be used to fuel and lubricate vehicles and equipment, but contained within fuel trucks or in approved containers. Vehicle fueling and maintenance activities will not occur in any environmentally sensitive areas. When not in use, such materials will be stored properly to prevent drainage or accidents.

Construction and maintenance activities will comply with applicable federal, state, and local regulations regarding the use of hazardous substances. Hazardous materials will not be drained onto the ground or into streams or drainage areas. Totally enclosed containment will be provided for all trash. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, will be removed and transported to a disposal facility authorized to accept such materials. Spills are not expected, but should they occur, would likely be minimal and immediately addressed.

8.5. Seasonal Restrictions on Various Activities

No seasonal restrictions are anticipated at this time. Any applicable seasonal restrictions will be coordinated with the BLM prior to initiation of construction or maintenance activities.

9. RESOURCE VALUES AND ENVIRONMENTAL MITIGATION MEASURES

Environmental effects of the project were addressed extensively in the Environmental Assessment for El Paso Electric 345kV Transmission Line from Afton North Substation to Airport Substation and completed by the BLM. As a result, detailed BMPs were developed and will be supplemented, where necessary, to minimize potential environmental impacts to natural and human resources. Following is a summary resulting from previous studies.

(a) Air Quality

The Afton North – Airport Transmission Line would largely be a passive facility with respect to air quality, there may be potential impacts associated with the construction phase of the Afton North – Airport Transmission Line project, and the termination and dismantling of structures and equipment at the end of the useful lifecycle for the project. The construction phase is anticipated to last 20 to 25 weeks, and the resulting impacts to air quality would be short-term.

(b) Visual Resources

The ROW for the Afton North – Airport project would be located in a VRM IV area. The structures would be constructed of weathering steel, a material that becomes less reflective as it weathers, further reducing contrast and potential visual impacts. These design and construction features would reduce the overall visual impact associated with the project and be consistent with the BLM visual resource management Class IV objectives for the surrounding area.

(c) Surface and Ground Water Quality and Quantity

Potential impacts during construction include erosion, increased runoff and sedimentation during rain events. It is also possible that hazardous materials could be accidentally released from construction and maintenance equipment, as well as substation transformers.

(d) Control or Structural Change on Any Stream or Other Body of Water

The Action would not alter the course of any perennial streams or rivers in the region, and there would be no direct impacts to perennial surface water. There could, however, be impacts to ephemeral and intermittent surface water features, including water use, erosion and sedimentation associated with land disturbing activities The ROW for the Afton North – Airport Transmission Line would not cross any wetlands and there would be no direct impacts to wetlands from the Action.

(e) Existing noise levels

During construction, noise levels would decrease to ambient (background) conditions at a distance of approximately 2,100ft from construction activities. No sensitive receptors exist close to the ROW for the Afton North – Airport Transmission Line. Relative short-term increases in noise levels associated with passing traffic would not be significant for the larger roads that cross the area, as the number of additional trips due to the project would be very small relative to the annual average daily traffic reported for these roads. Noise-impacts related to construction would therefore be small and temporary.

Noise levels resulting from the project will be almost entirely due to construction area improvement or construction-related activities, which could result in a temporary increase in noise levels during daytime hours. Measures will be implemented to mitigate potential noise effects to receivers during construction activities. For example, levels of noise will be reduced to low or none during periods when the greatest nuisance is perceived, typically during nighttime hours. The project will comply with all local noise ordinances during construction and maintenance of the access roads.

(f) Surface of Land (including vegetation, soil, and soil stability)

The project would permanently disturb 90 acres. Construction would result in impacts to vegetation in the project corridor. A road would be cleared along the transmission line, and construction vehicles traveling across relatively undisturbed land would result in vegetation removal.

Topsoil from disturbed areas would be stockpiled and used in the reclamation effort. In addition, BMPs would be used during construction to minimize erosion of disturbed areas and stockpiled topsoil prior to restoration. As a result, potential impacts to soil resources would be short-term and temporary in nature.

(g) Biology

Wildlife may enter the ROW site at any time during the life cycle of the project, and habitat fragmentation that might limit wildlife movement is a potential impact. However, given the temporary nature of the construction, the small area (90 acres) that would be permanently disturbed, and the limiting of fencing to key structures, habitat fragmentation along the ROW would be minimal. Incidental takes or temporary displacement of wildlife may occur during construction along the ROW, but the impacts would be on an individual basis rather than affecting an entire population. The project is expected to have negligible impacts on wildlife in the vicinity. No specific occurrence of threatened, endangered, or special status species (wildlife or vegetation) were identified during the biological survey along the ROW, nor was any designated critical habitat identified.

(h) Cultural

Seven archaeological sites (five along the ROW and two at the substation) are recommended eligible for listing in the NRHP. Cultural resource treatment plan will has been developed, approved and be implement in accordance with BLM and SHPO in advance of construction. In the event that cultural resource materials are uncovered during construction or earth-disturbing activities, work in the area would cease immediately. The appropriate agency (BLM or the State Land Office, depending on the land owner), and the New Mexico SHPO

would be notified to determine the best approach to evaluate, document, protect, or remove the materials or remains, in compliance with the law.

10. BEST MANAGEMENT PRACTICES

EPE would implement, or cause to be implemented, BMPs. BMPs are specific methods, measures, or practices that make up the Action and are intended to reduce or eliminate adverse effects of the project, whether they are significant or not. Two types of BMPs would be applied: standard BMPs and selectively committed mitigation BMPs. Standard BMPs are incorporated, where applicable, to the Project as a whole and are listed in Appendix A. Selective BMPs address specific environmental impacts or localized conditions and are prescribed on a case by case basis. A list of potential selective BMPs is provided as Appendix A. Where temporary disturbance occurs, the right-of-way will be restored as near to its original condition as practicable when construction is complete as specified by the BLM. The method of reclamation will normally consist of, but is not limited to, returning disturbed areas back to their natural contour, reseeding, and installing cross drains for erosion control, where necessary.

11. OPERATION AND MAINTENANCE

11.1. Introduction

Regular inspection and maintenance of transmission lines, substations, and support systems is critical for safe, efficient, and economical operation of the Project. This section provides information describing operation and maintenance activities, including transmission line patrols, inspections, structure and wire maintenance, vegetation maintenance, maintenance of access roads, and emergency maintenance.

11.2. System Inspection, Maintenance, and Repair

Routine conducted inspections and maintenance activities are anticipated to have minimal impacts and are usually authorized under the transmission line easements and ROW grant. While carrying out routine maintenance activities, field personnel and contractors will adhere to basic standards and guidelines contained in other sections of the Project POD, special use stipulations, and any additional requirements (such as periodic review of the implementation plans associated with operation and maintenance) identified in the decision documents that apply to the specific area where work is to be done.

BLM will coordinate with EPE representative if any new BLM-specific information is received. Environmental Mitigation Measures developed as BMPs during the permitting and EA of the project apply to construction and operation and maintenance activities. If for any reason the operation or maintenance activities on BLM managed lands require deviation from the approved or basic standards and guidelines, field personnel and contractors will coordinate with the BLM prior to initiating the activity and/or during the

activity if any unanticipated biological, cultural, or paleontological resource issues are encountered.

Routine Inspection

Regular ground and aerial inspections will be performed in accordance with the applicable EPE requirements, which are based on regulations, industry standards, and BMPs. The transmission lines and substations will be inspected for corrosion, equipment misalignment, loose fittings, vandalism, and other mechanical problems. The need for vegetation management will also be determined during inspection patrols. Annual maintenance activities are typically conducted by using helicopters, ground vehicles (four-wheel-drive trucks or four-wheel all-terrain vehicles), or on foot. Visual or infrared inspections of the entire Project will be conducted annually. Typically, 10 percent of all structures will be inspected during annual structure-climbing inspections, so that each structure is inspected every 10 years. Aerial inspection will be conducted by helicopter, generally in the spring and fall.

Ground inspections will be done on approved access roads or along the transmission line ROW to each structure as appropriate and are anticipated to occur twice annually. The inspector will access each of the structures and check all equipment and other components that could require repairs. Inspections assess the condition of the line and hardware to determine whether any component needs to be repaired or replaced and whether other conditions exist that may require maintenance or modification. Inspections also assess any unauthorized encroachments and/or trash dumping in the ROW that could constitute a safety hazard. Inspectors performing such inspections will use conventional four-wheel-drive trucks or four-wheel-drive all-terrain vehicles, or the inspector may walk the line. The annual ground inspection will be conducted at a time deemed appropriate based on the weather conditions, results of aerial inspections, and other conditions subject to change on an annual basis. EPE may perform minor repairs during its ground inspections such as installing new numbers, installing/repairing ground wire, or performing other minor tasks that will not involve long duration, specialized equipment, or large work crews.

Routine Maintenance

Routine maintenance activities are ordinary maintenance tasks that have historically been performed on a routine basis. Routine maintenance will include the replacement of individual structures, components, cables, lines, insulators, and other facilities that, due to obsolescence, age, wear, or isolated damage such as lightning or gunshot, are in need of replacement or repair. The work performed is typically repair or replacement of individual components, performed by relatively small crews using a minimum of equipment, and usually is conducted within a period from a few hours up to a few days. Routine maintenance activities may consist of more immediate activities, where repairs must be made within a short period of time in order to ensure the line does not suffer an outage or cause safety concerns, or longer-term routine maintenance activities, where repairs may be made during regularly scheduled maintenance activities.

The type of equipment used to perform routine maintenance activities varies depending on the extent of the work to be performed. Typical equipment used for these kinds of activities include four-wheel-drive pickups, man-lifts, material flatbeds, line trucks, cranes, tractor trailer, high-reach boom trucks, and bulldozer/caterpillar/compact tractor.

Routine maintenance is scheduled and is typically required due to issues found during inspections. Typical items that may require periodic replacement on the structures include conductors, insulators, shield wires, fiber-optic lines, and related equipment. It is expected these replacements will be required infrequently (every 5 to 10 years) or as determined by inspection.

Maintenance on transmission lines can often be completed safely using Bare-Hand techniques in order to avoid interruption of service to critical transmission line infrastructure. High-reach boom trucks, along with other equipment, are used to conduct these activities.

Typically, maintenance vehicles and equipment will remain within the permanent maintenance work area that surrounds the structure, and no new ground disturbance will be required. If maintenance activities and/or equipment are required beyond the permanent maintenance work area, maintenance crews will coordinate with the land management agency to obtain any required temporary use approval/permits to complete the work, and maintenance activities will be conducted within the previously disturbed temporary work areas from Project construction. In such cases, reapplication of reclamation treatments may be required after completion of maintenance activities, as determined by the appropriate land management agency. All BMPs outlined in this POD apply to design, construction, and maintenance activities as reflected in Environmental Mitigation Measures section.

Routine Right-of-Way and Access Road Maintenance

Repairs to access roads within the ROW will be scheduled as a result of line inspections or will occur in response to a significantly degraded condition or an emergency situation. Where access will be required for maintenance of the line, EPE shall maintain the approved access roads in a safe, usable condition, as directed in consultation with the appropriate land management agency. Required maintenance equipment may include a bulldozer, a backhoe, a four-wheel-drive pickup truck, a front-end loader, and a motor grader. The bulldozer has steel tracks, whereas the grader, backhoe, and truck typically have rubber tires, and the compact tractor has rubber tracks.

Access road repairs include grading or repair of existing maintenance access roads and work areas and spot repair of sites subject to flooding or scouring. In some cases, cut and/or fill of foreign material may be required to prevent erosion or to repair the access roads into suitable condition for safe travel of maintenance repair vehicles such as high-reach boom trucks.

Vegetation within the 100ft by 100ft permanent work sites at each structure location will be cleared and maintained for safe vehicle access and use of service equipment line boom trucks, cranes, and buckets trucks. EPE will use the compact tractor with the masticator mulching attachment for clearing vegetation at ground level, eliminating the need to blade soil. Vegetation management of work sites will be performed prior to maintenance activities and the need will be identified during routine inspections. EPE will perform vegetation management and inspection on a 2, 5, and 10 year intervals based on growth rate of vegetation and maintenance activities. EPE will only perform vegetation clearing on necessary vegetation that can damage EPE equipment or restrict safe operation of equipment within work area. Vegetation that does not interfere with EPE activities will not be targeted specifically, and left in place if possible.

If EPE need to perform vegetation clearing and management outside of the permanent work areas between transmission structures to maintained clearance standards set by NERC, EPE will contact the land agency prior to performing that activity.

Major Maintenance Activities

Major maintenance activities will be relatively large-scale efforts that occur on an infrequent basis. These activities require planning and budgeting in advance, as well as agency coordination. They may involve larger work crews than routine maintenance activities and a variety of equipment, including heavy equipment, and usually require several days or longer to complete. Examples of major maintenance activities include structure relocation, conductor replacement, or access route reconstruction and relocations.

EPE will identify major maintenance activities and notify the designated contact for the appropriate land management agency before initiating major maintenance activities. EPE and the land management agency will identify what, if any, special notification or additional clearance approvals are required prior to conducting major activities.

When EPE personnel and contractors carry out major maintenance activities on BLM- managed land, they will be required to adhere to all standards and guidelines contained in the approved POD, terms and conditions of the ROW, any site-specific activity or timing constraints, and the requirements of any mutually agreed-upon additional clearance or special notification requirements.

Emergency Maintenance Activities

During the operation and maintenance of the transmission line, EPE will reduce or prevent, to the greatest extent possible, any emergency activities (defined as situations that could threaten life, property, or resources). Even so, unforeseen emergency conditions may arise.

Examples of emergency maintenance include activities necessary to restore power due to a transmission structure or conductor failure due to natural hazard, fire, or

human-caused damages to a line. Such work is required to eliminate a safety hazard, prevent imminent damage to the power line, or restore service if there is an outage. In an emergency, EPE must respond as quickly as possible to restore power.

In practice, as soon as an incident is detected, the control room dispatchers will notify the responsible operations staff in the area(s) affected and crews and equipment will be organized and dispatched to respond to the incident. EPE will adhere to the same constraints identified for routine and major maintenance activities to minimize impacts to resources, when possible.

The equipment necessary to carry out emergency repairs is similar to that necessary to conduct routine maintenance, in most cases. Emergency response to outages may require additional equipment to complete the repairs.

EPE employees and contractors will be equipped with approved suppression tools and equipment. EPE or their construction contractor(s) will notify local fire authorities and the appropriate land management agency if a Project-related fire occurs within or adjacent to a construction area.

If EPE becomes aware of an emergency situation caused by a fire on or threatening agency-managed lands and that could damage the transmission lines or their operation, they will notify the appropriate agency contact. Specific construction-related activities and safety measures will be implemented during construction of the transmission line to prevent fires and to ensure quick response and suppression if a fire occurs.

Emergencies are events requiring immediate response to a condition and may include fires, car-to-pole contact, downed poles, transformer outages, vandalism, etc. All applicable fire laws and regulations, including land management agency fire-safety standards, will be observed during the operation period. If extreme fire conditions occur, the land management agency representatives will be contacted and access could be restricted. Maintenance personnel will coordinate with the agency representatives and implement practical measures to report and suppress fires. Measures may include brush clearing, stationing a water truck at the site to keep ground vegetation moist in extreme fire conditions, enforcing red flag warnings, etc.

All public roads or authorized access roads will be used for operation and maintenance purposes upon completion of construction. The transmission line will be inspected twice a year, or as required, by using ground vehicles, all-terrain vehicles, or on foot. Maintenance is performed, as needed, on a year round basis.

12. TERMINATION AND RESTORATION

One year prior to termination of the right-of-way, the holder shall contact the appointed BLM Authorized Officer to arrange a joint inspection of the right-of-way. This inspection will be held in order to agree to an acceptable termination and rehabilitation plan. The

BLM Authorized Officer must approve the plan in writing prior to commencement of any termination activities.

Restoration and termination procedures will attempt to restore and reclaim the landscape as near to original conditions as possible. The termination and restoration plan will be reviewed and approved by the BLM Authorized Officer and will include stabilization and reclamation techniques to be used during restoration.

APPENDIX A

Standard Best Management Practices
El Paso Electric 345kVTransmission Line from Afton North Substation to Airport Substation, Doña Ana County, New Mexico

1. Prior to construction, all supervisory construction personnel would be instructed on the protection of cultural and ecological resources. To assist in this effort, a resource specialist would address: (a) federal and state laws regarding antiquities and plants and wildlife, including collection and removal; (b) the importance of these resources and the purpose and necessity of protecting them.

2. All equipment will be cleaned and power washed to remove all dirt, mud, and any plant material before entering project area to prevent spread of noxious weeds.

3. All vehicle movement outside the right-of-way would be restricted to designated access or public roads.

4. The boundary of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate activity limits.

5. In areas of special concern for water erosion water bars would be placed along access roads or routes, and maintenance use areas. They should approximate the contour of the slope. Runoff would be diverted to vegetated or rocky areas to dissipate the erosive forces of the concentrated flows.

6. In structure work areas and along access roads, where grading is not required, vegetation would be left in place wherever possible, and original contour would be maintained to avoid excessive root damage and allow for regrowth.

7. Construction holes left open overnight would be appropriately fenced or covered to prevent injury to wildlife or livestock.

8. Access routes or roads would be improved as near as possible at right angles to the streams and washes. All construction and operations activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks.

9. All requirements of those entities having jurisdiction over air quality matters would be adhered to, any necessary dust control plans would be developed, and permits for construction activities would be obtained. Open burning of construction trash would not be allowed.

10. Watering facilities (e.g., tanks, developed springs, water lines, wells, etc.) would be repaired or replaced if they are damaged or destroyed by construction activities. Temporary watering facilities would be provided for wildlife and livestock until permanent repair or replacement is complete. Any new water facility constructed on BLM administered lands would be installed to BLM standards (i.e., wildlife escape ramps in new water troughs or open topped storages).

11. Fences, cattle guards and gates would be repaired or replaced to their original, pre-disturbed condition, as required by the landowner or the BLM Authorized Officer if they are damaged or destroyed by construction activities. New temporary and/or permanent gates would be installed only with the permission of the landowner or the BLM. Temporary gates not required for post-construction access control would be removed following construction completion.

12. Non-specular conductors would be used, where specified by the BLM Authorized Officer, to reduce visual impacts

13. Tension would be maintained on all insulator assemblies to ensure positive contact between insulators, avoiding sparking. Caution would be exercised during construction and operations to avoid scratching or nicking the conductor surface, which may provide points for corona to occur.

14. Project Owners would respond to complaints of line-generated radio or television interference by investigating the complaints and implementing appropriate mitigation measures. The transmission line would be evaluated on a regular basis so that damaged insulators or other line materials that could cause interference are repaired or replaced.

15. “Dulled” metal or weathering steel structures would be used to reduce visual impacts.

16. Structures and/or shield wire would be marked with high-visibility devices where required by government agencies (e.g., Federal Aviation Administration).

17. Electrical facility design would be in accordance with “Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006”.

18. During operation of the transmission lines, the right-of-way would be maintained free of non-biodegradable debris. Slash would be left in place or disposed of in accordance with requirements of the land owner or management agency.

19. In consultation with appropriate land-management agencies, specific mitigation measures for paleontological resources would be developed and implemented to mitigate any identified adverse impacts. These measures may include: preparation of a PRMP; paleontological surveys; personnel education; monitoring ground

disturbance for fossils; curation of fossils; and deposition of fossils in a paleontological repository.

20. Cultural resources would continue to be considered during post-NEPA phases of Project implementation. This would involve the preparation and implementation of an approved cultural resource treatment plan to address monitoring and data recovery of sites that cannot be avoided during construction.

21. Paleontological resources would continue to be considered during post-NEPA phases of Project implementation. This would include onsite monitoring or spot checking during construction activities, assessment of the disturbance, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential.

22. Preconstruction surveys for species listed under the ESA or specified by the appropriate land management agency as sensitive or of concern would be conducted as required in areas of known occurrence or suitable habitat. Timing and extent of the surveys would be determined by species, coordinated with agency wildlife biologists, and completed prior to construction. Monitoring of construction activities may be required in some areas to ensure that effects to these species are avoided during construction. If Bald Eagle or Golden Eagle nests are identified during preconstruction surveys, seasonal restrictions on construction within a specified buffer would be implemented in coordination with the USFWS and/or species survey protocols, as appropriate, and comply with the BGEPA. Preconstruction nesting-season surveys for migratory birds, and surveys for Burrowing Owls in suitable habitat, would be conducted as needed to comply with the MBTA.

23. EPE will conduct bird surveys two weeks prior to construction if activities are planned during breeding/nesting season, which is March 1st through September 31st. If migratory birds are found with active nests EPE would consult with USFWS to determine appropriate avoidance measures to prevent disturbance.

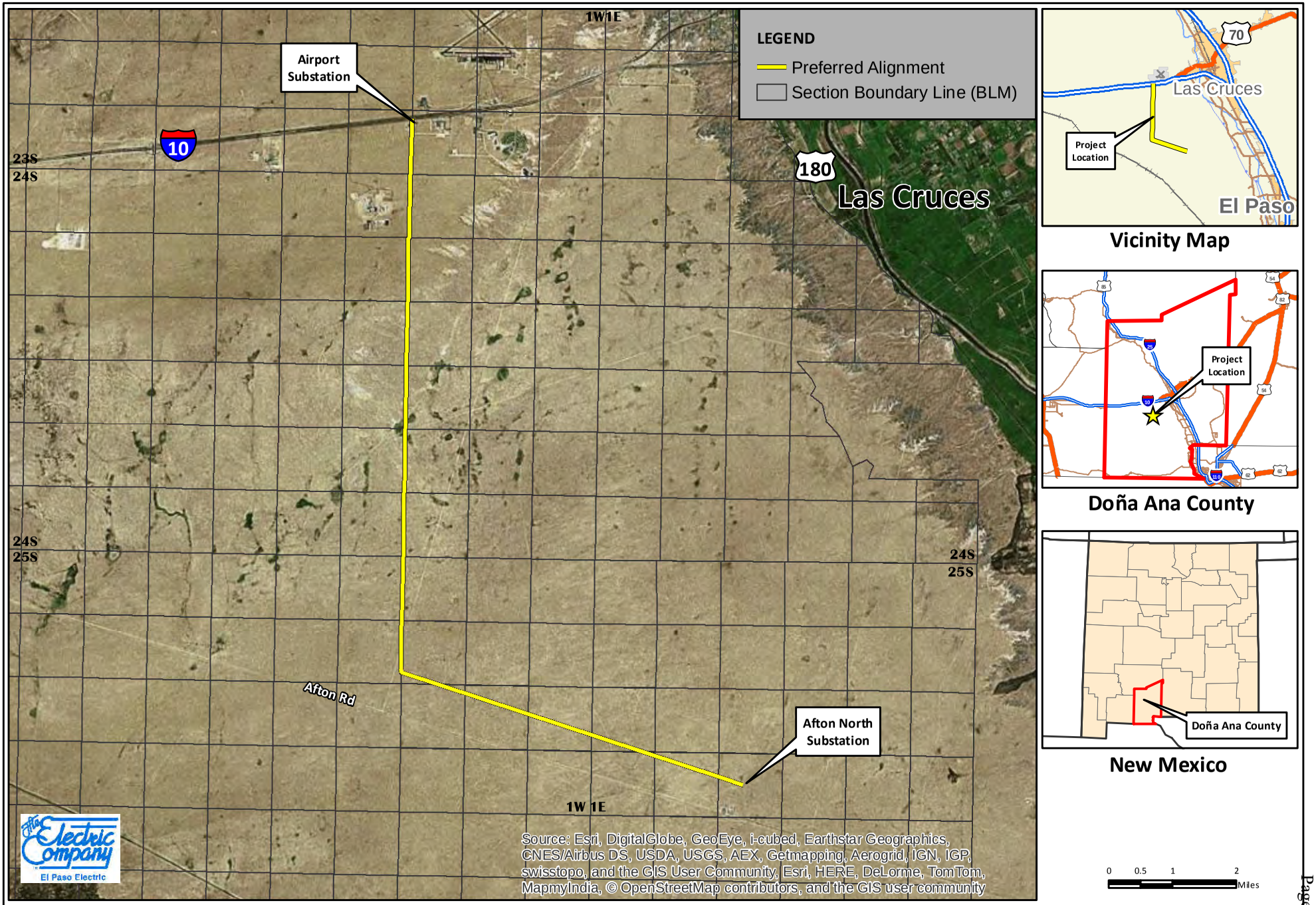
24. Weed control measures would be taken on disturbed areas within the limits of the project. The Authorized Officer and/or local authorities/landowners would be consulted for acceptable weed control methods, which include following BLM requirements and seed mixture recommendations.

25. Periodic water spraying of unpaved roads during construction and reseeding of temporary work areas with native vegetation upon construction completion would be used to minimize ongoing fugitive dust emissions.

APPENDIX B

LIST OF FIGURES

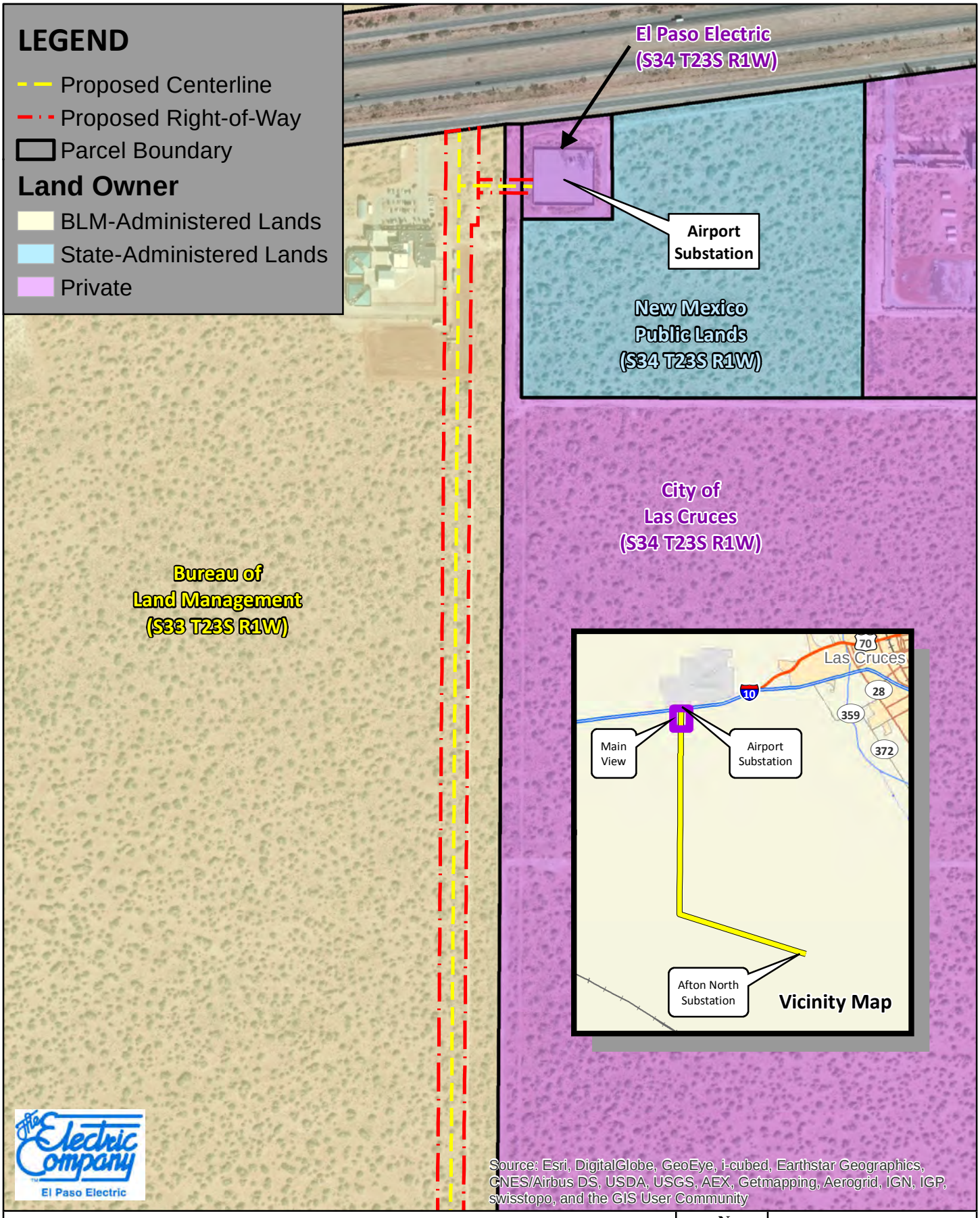
Figure 1	Project Location Map
Figure 2A – 2R	Right-of-Way
Figure 3A & 3B	Transmission Structure Designs
Figure 4	Staging Area
Figure 5	Temporary Pulling/Tensioning Sites
Figure 6	Afton North Substation 345kV Connection
Figure 7	Access



PROJECT LOCATION MAP

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 1



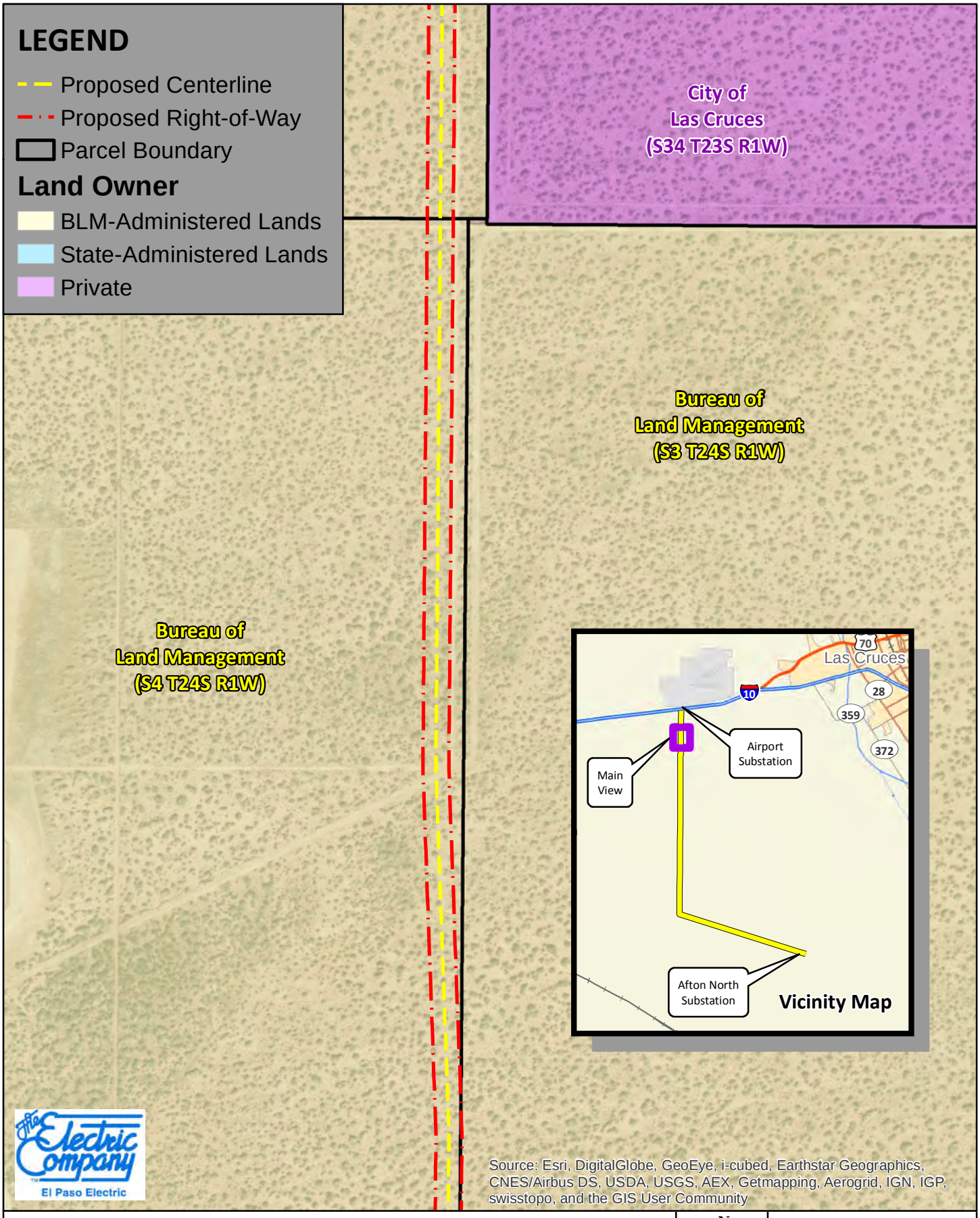
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2A



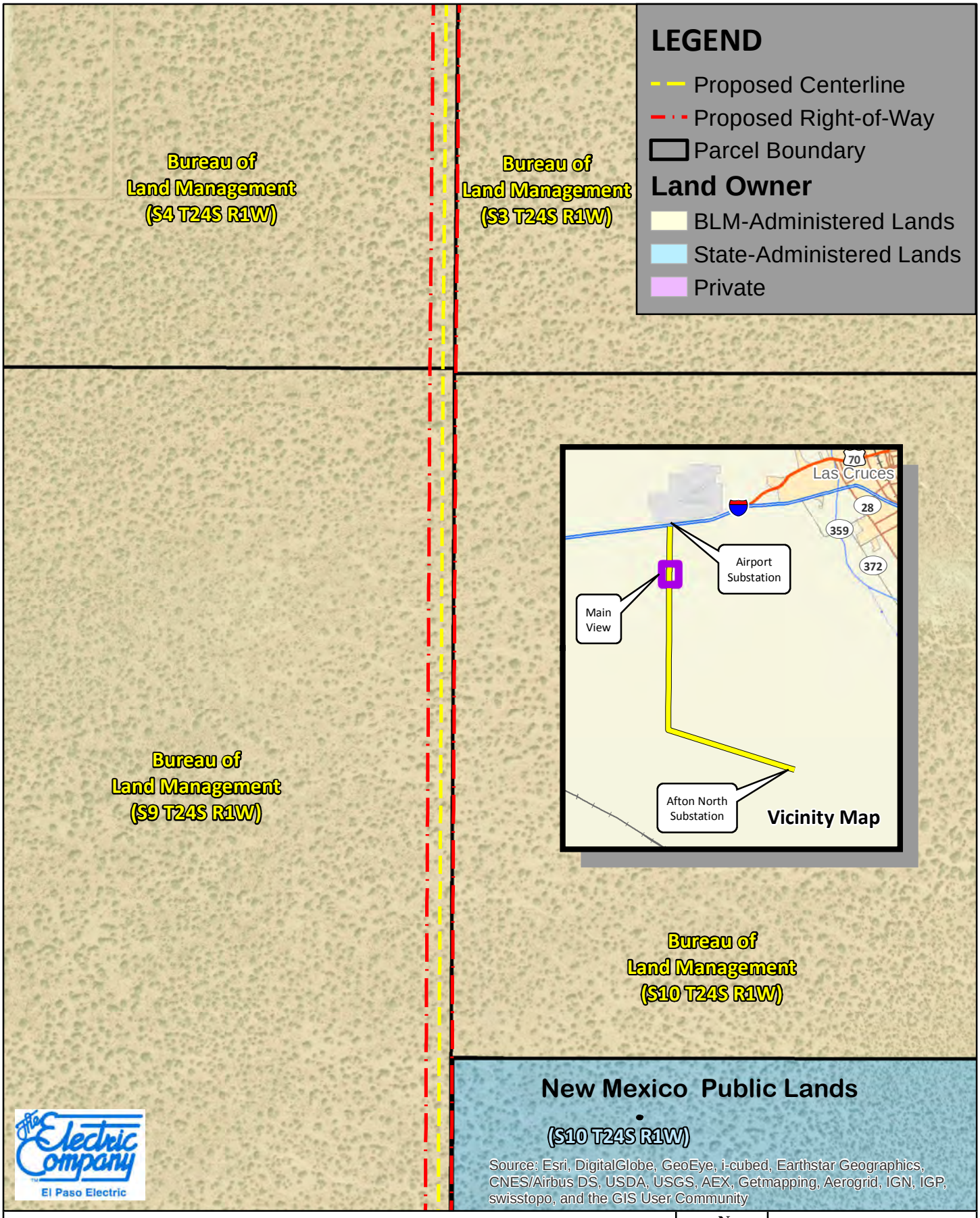
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

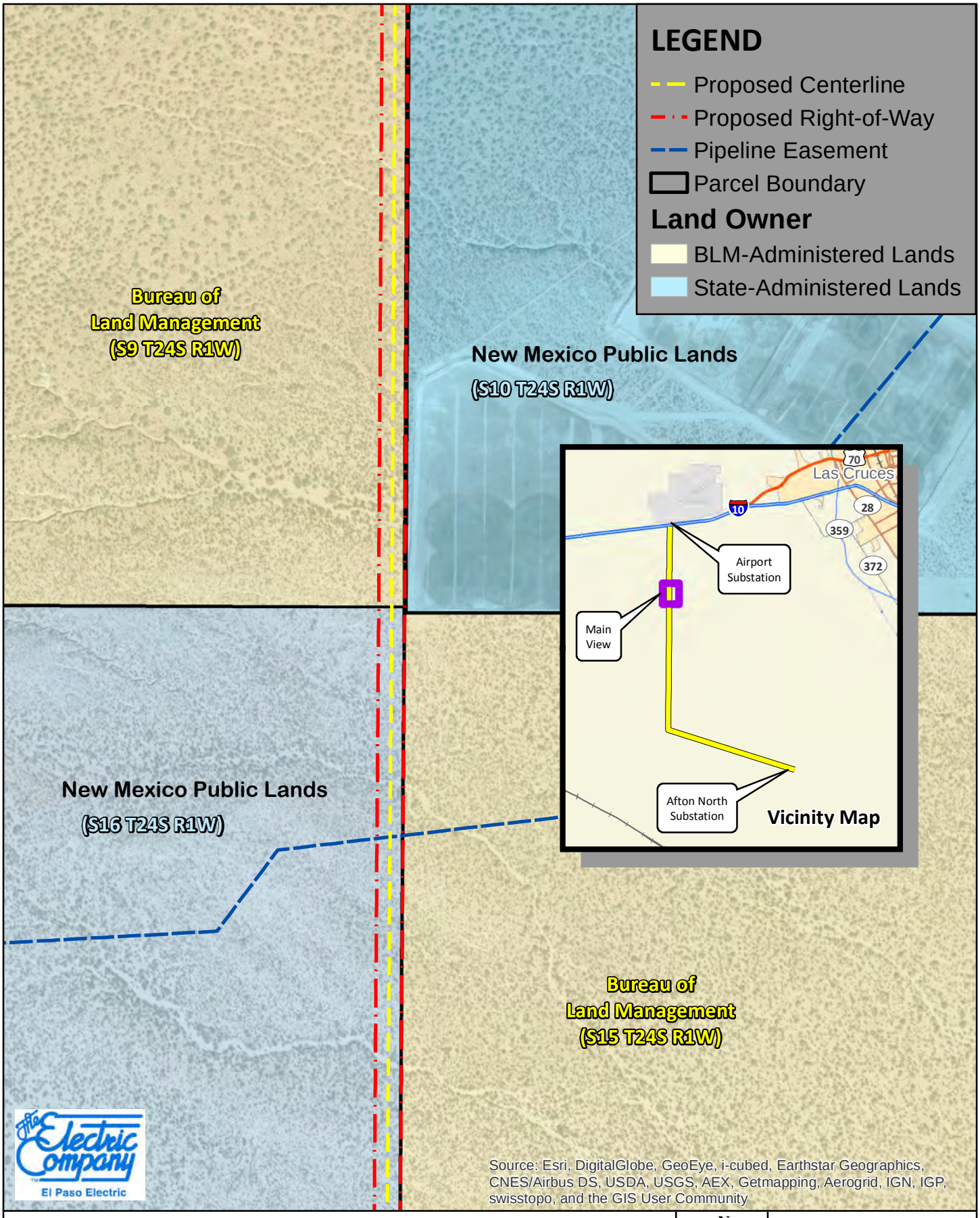
FIGURE 2B



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 2C



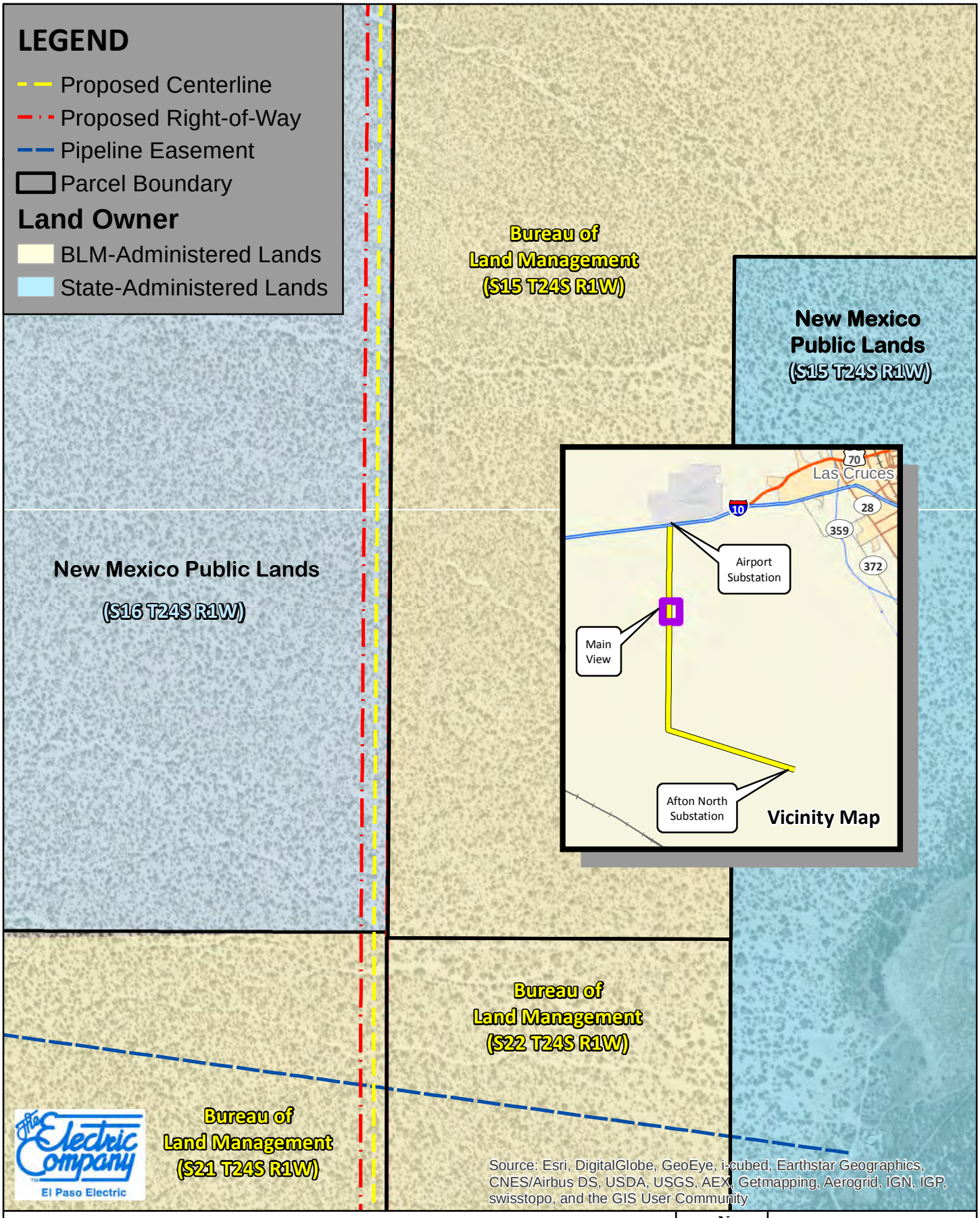
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2D



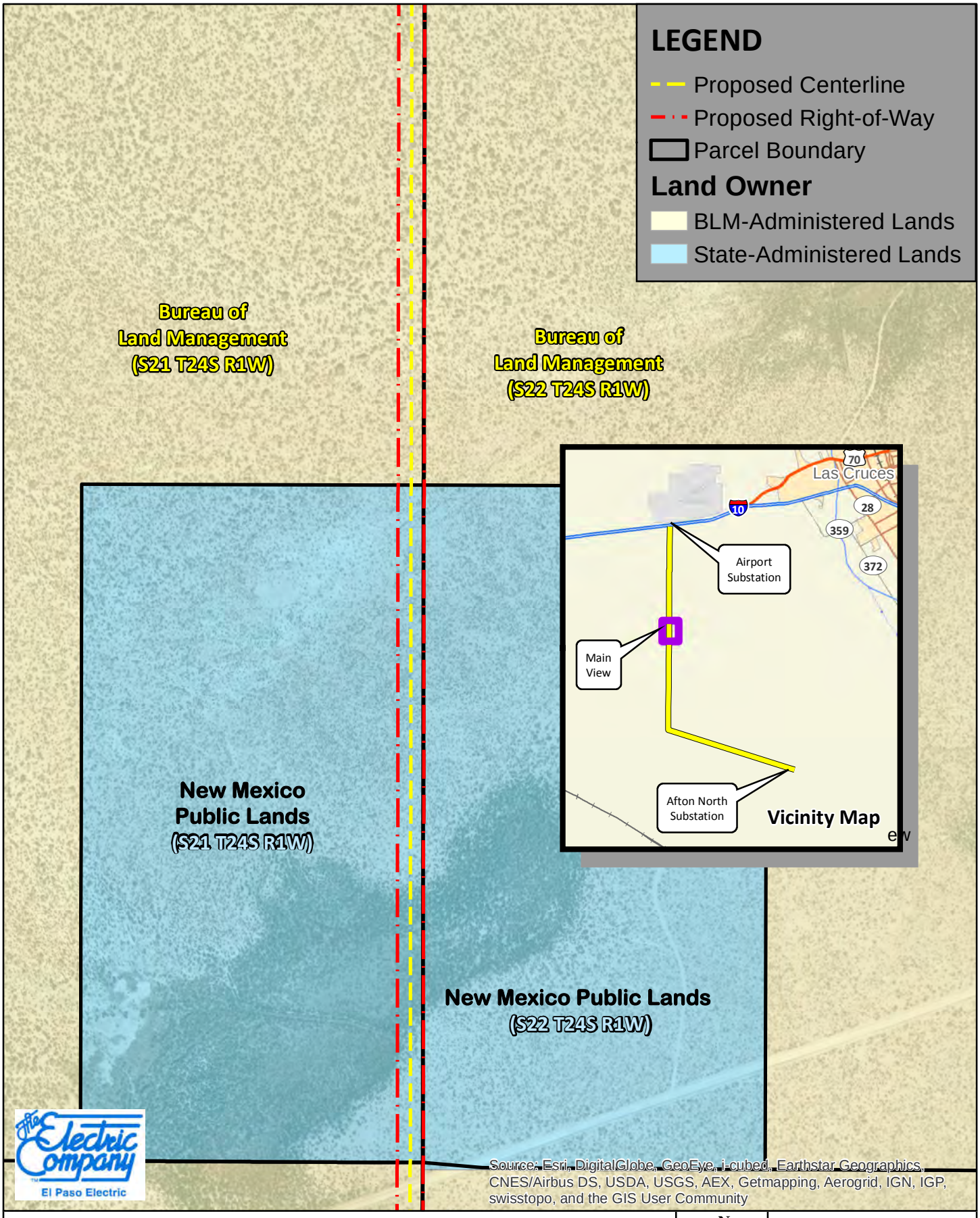
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2E



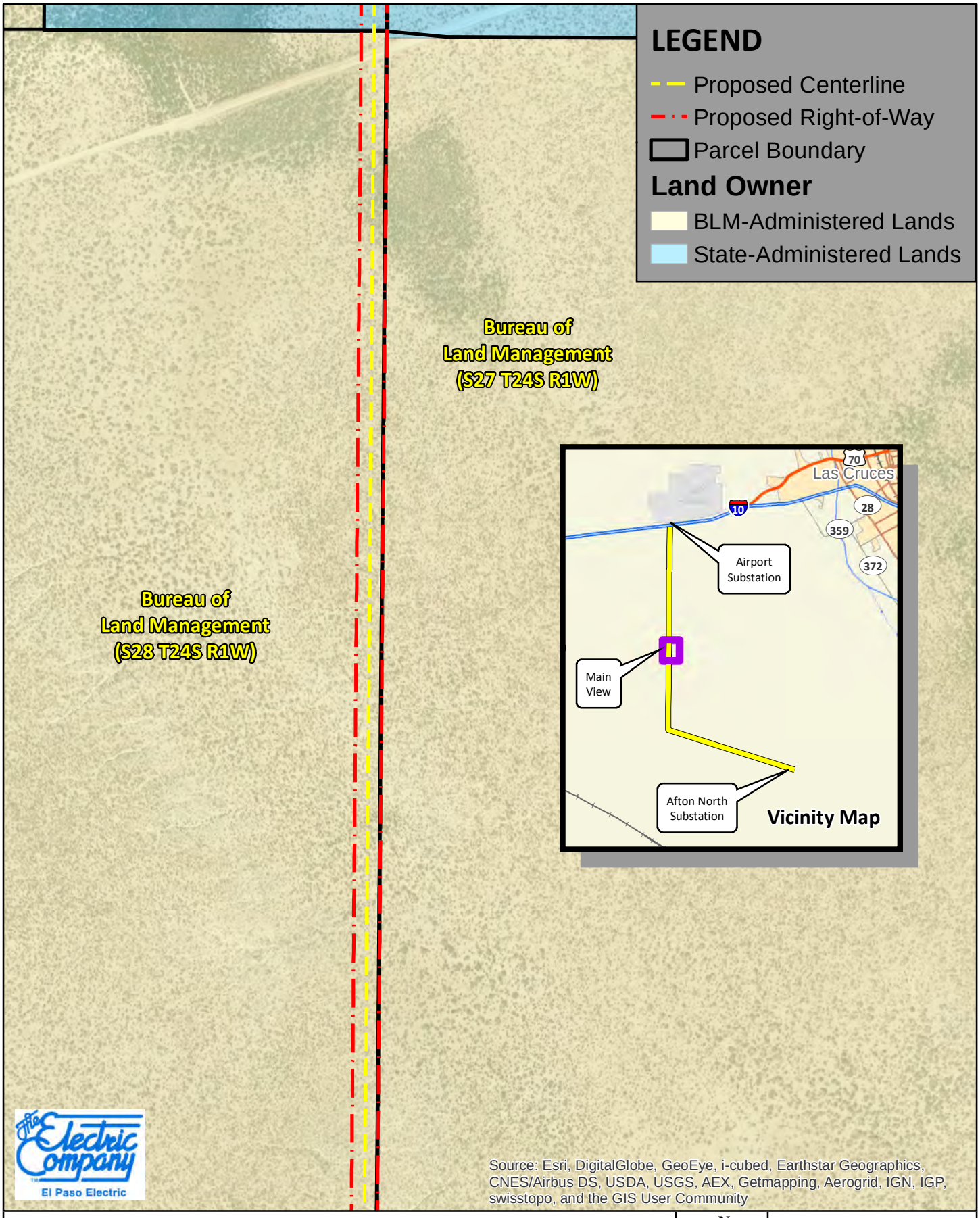
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

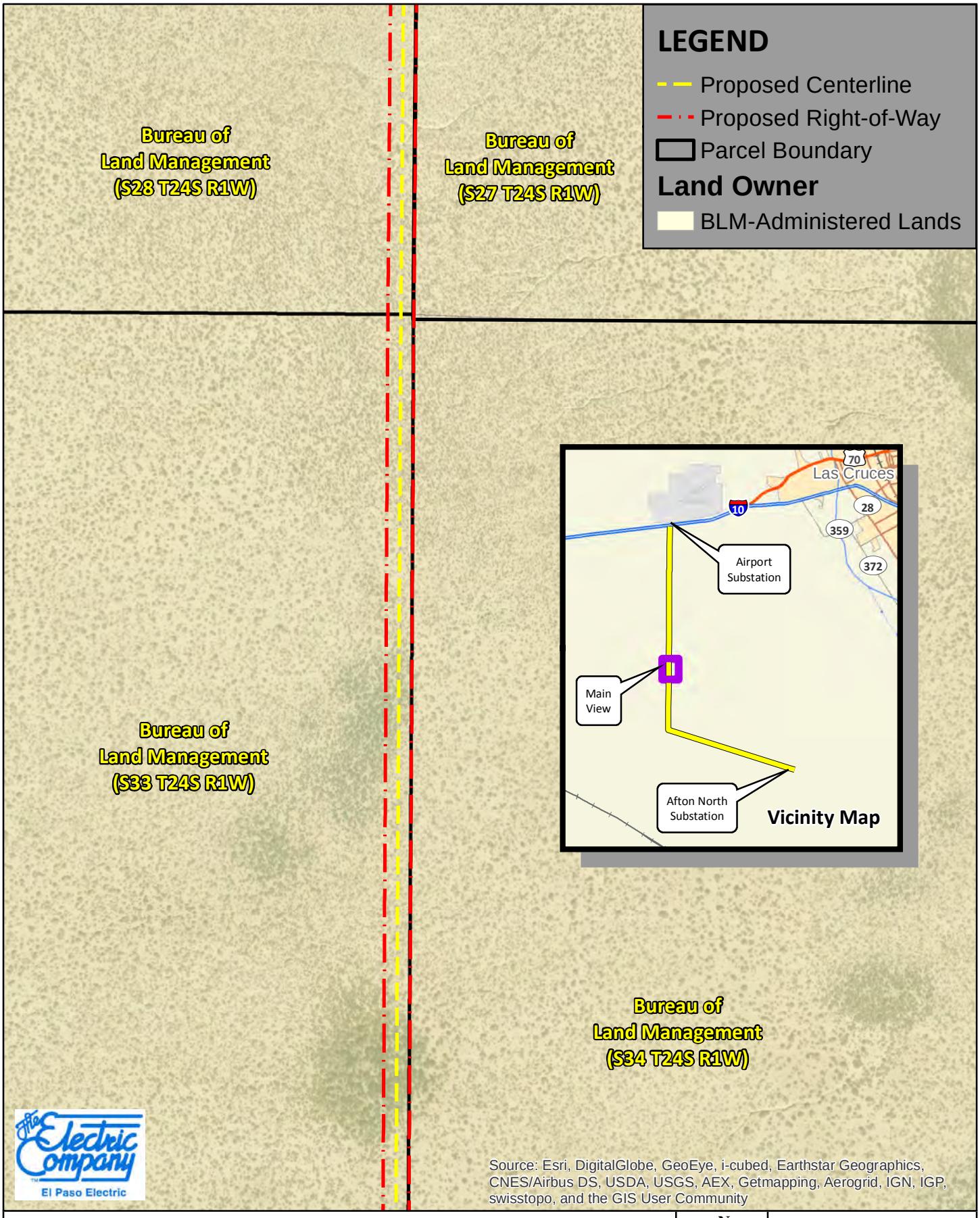
FIGURE 2F



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 2G



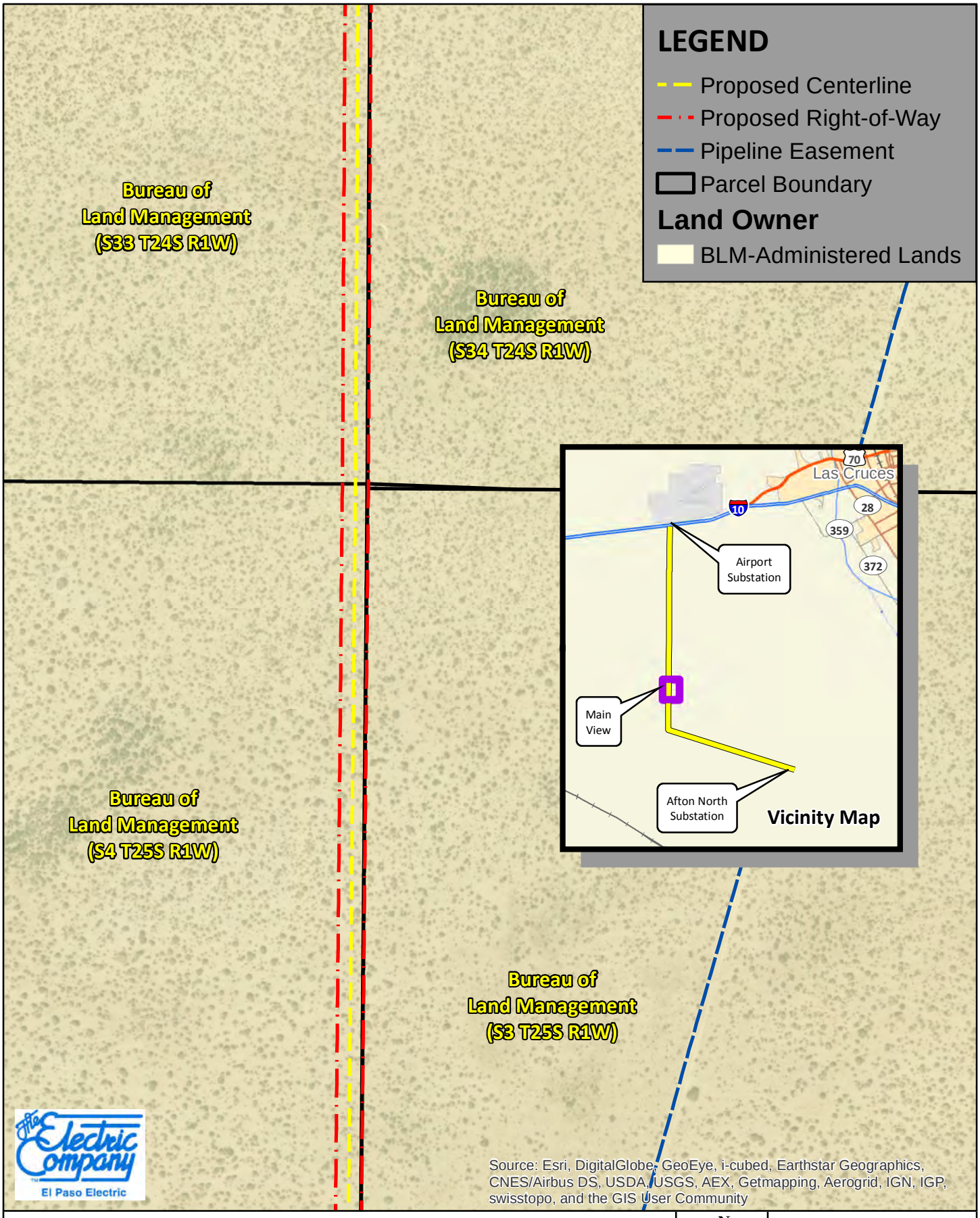
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2H



El Paso Electric

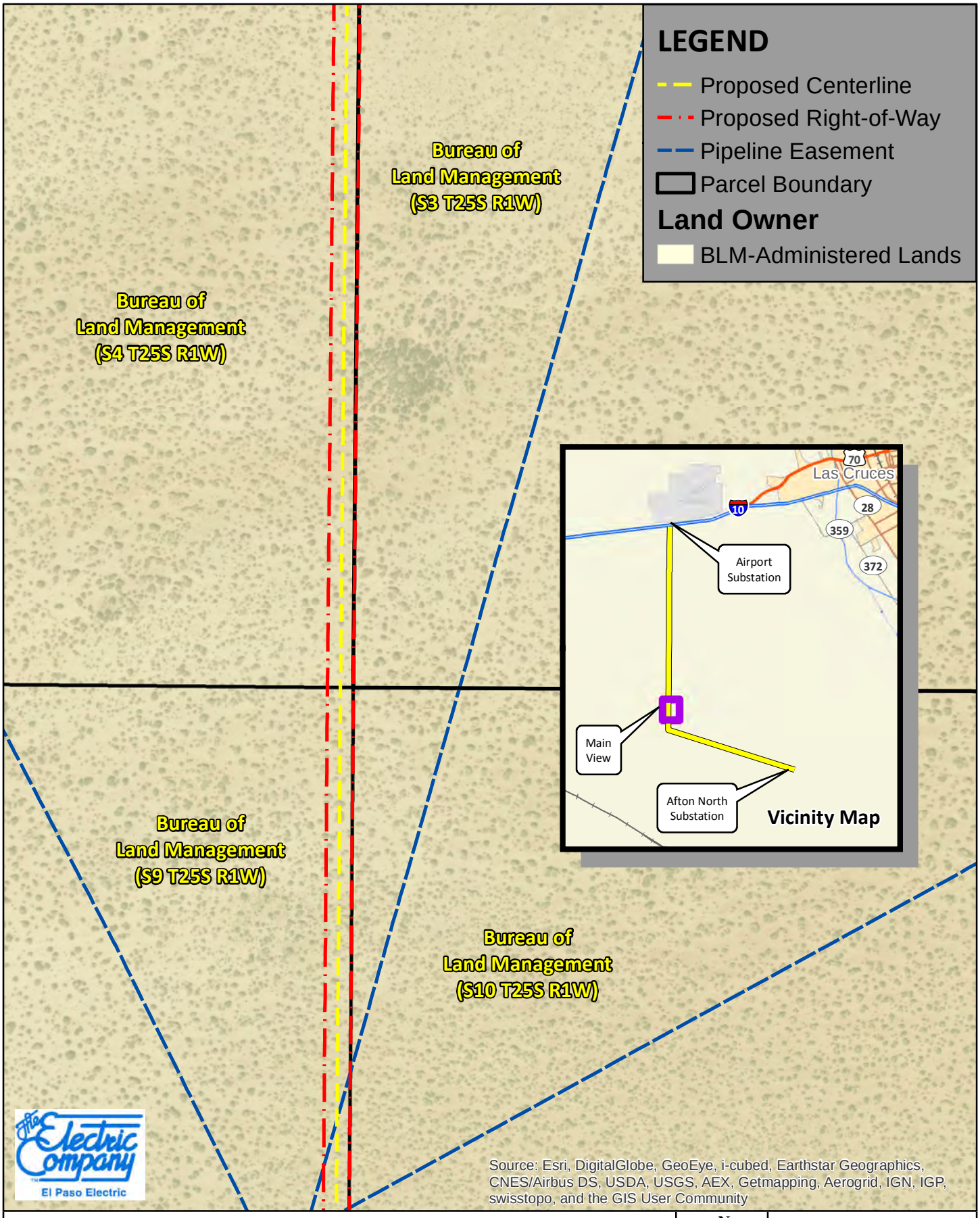
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2I



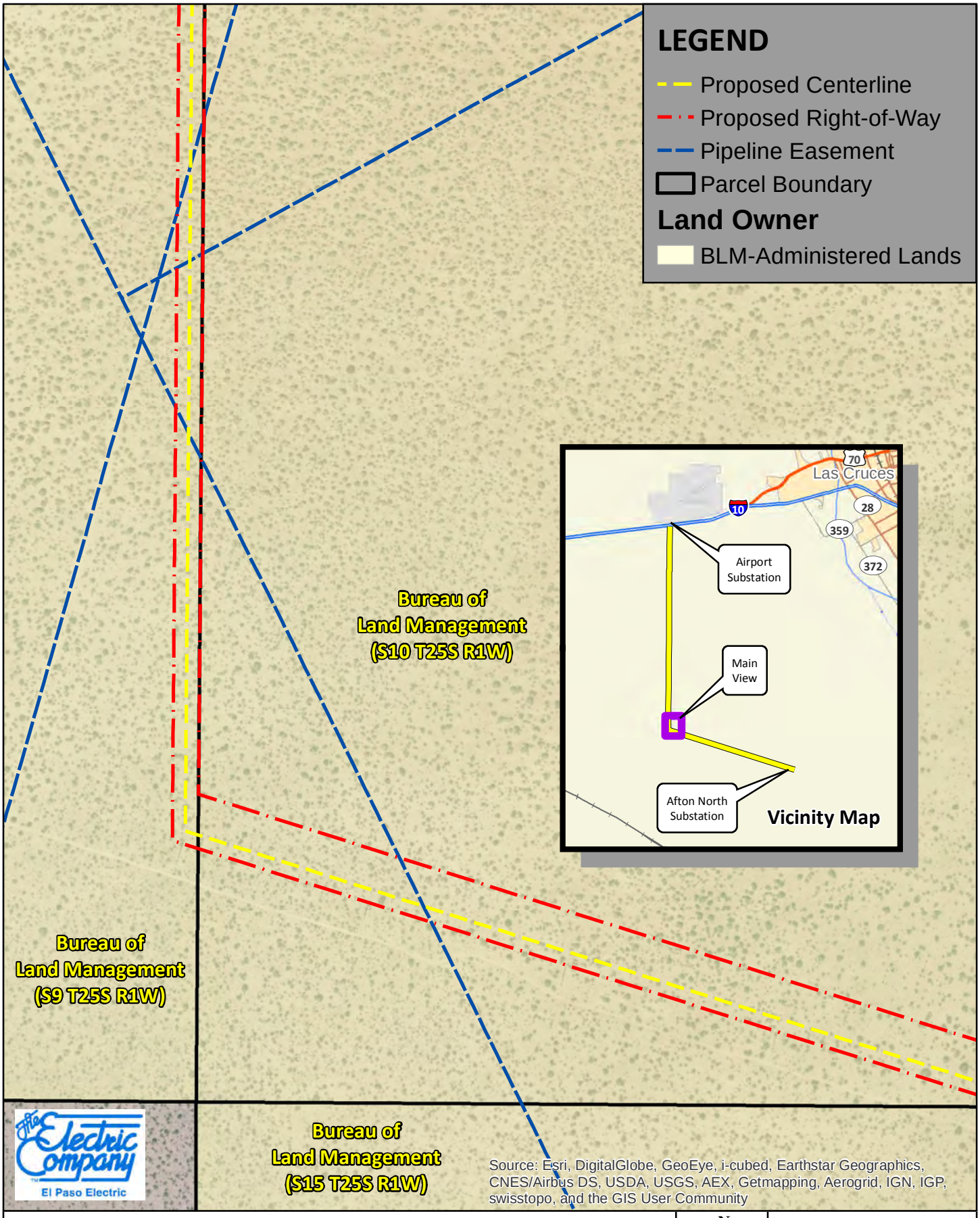
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

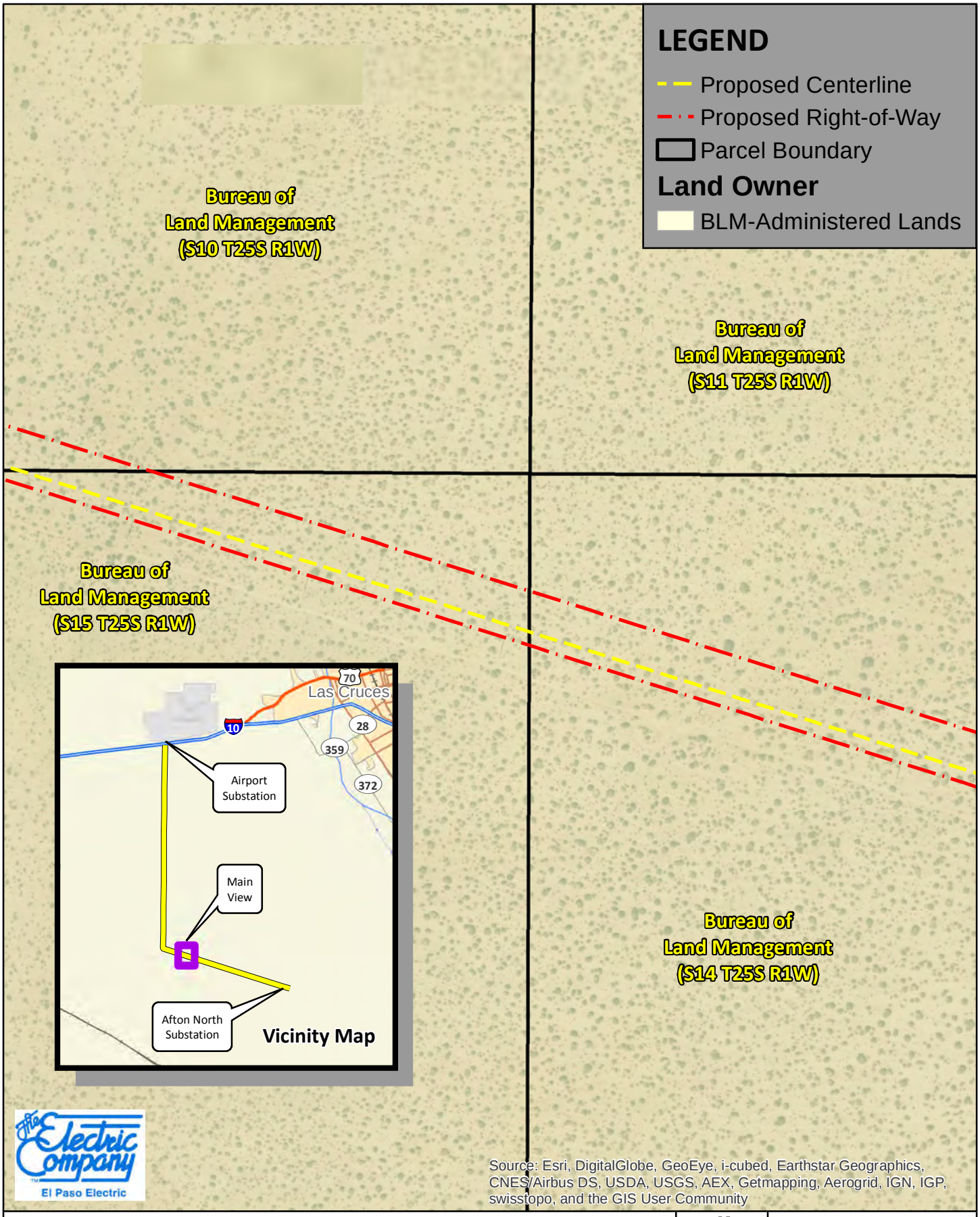
FIGURE 2J



PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

FIGURE 2K



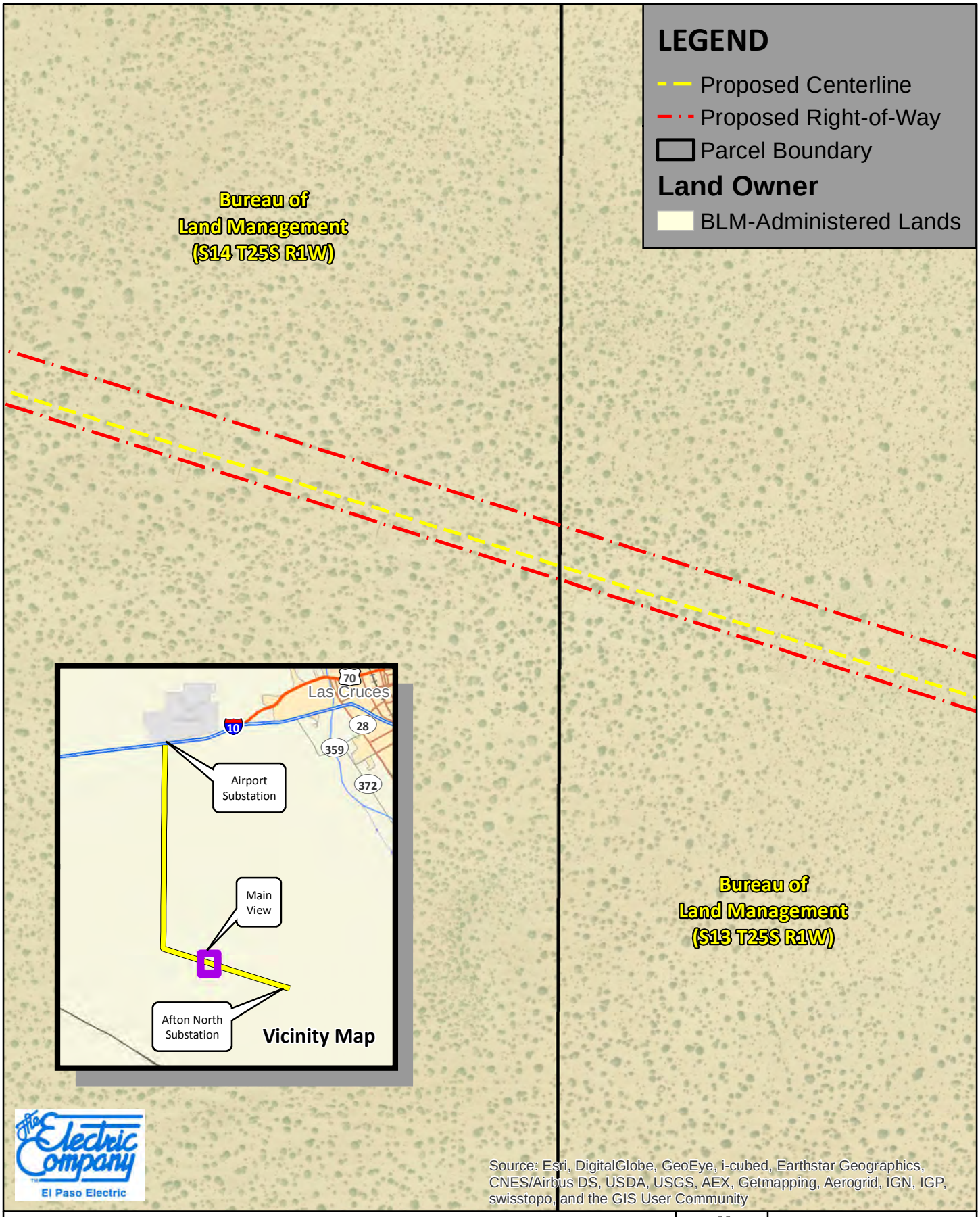
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2L



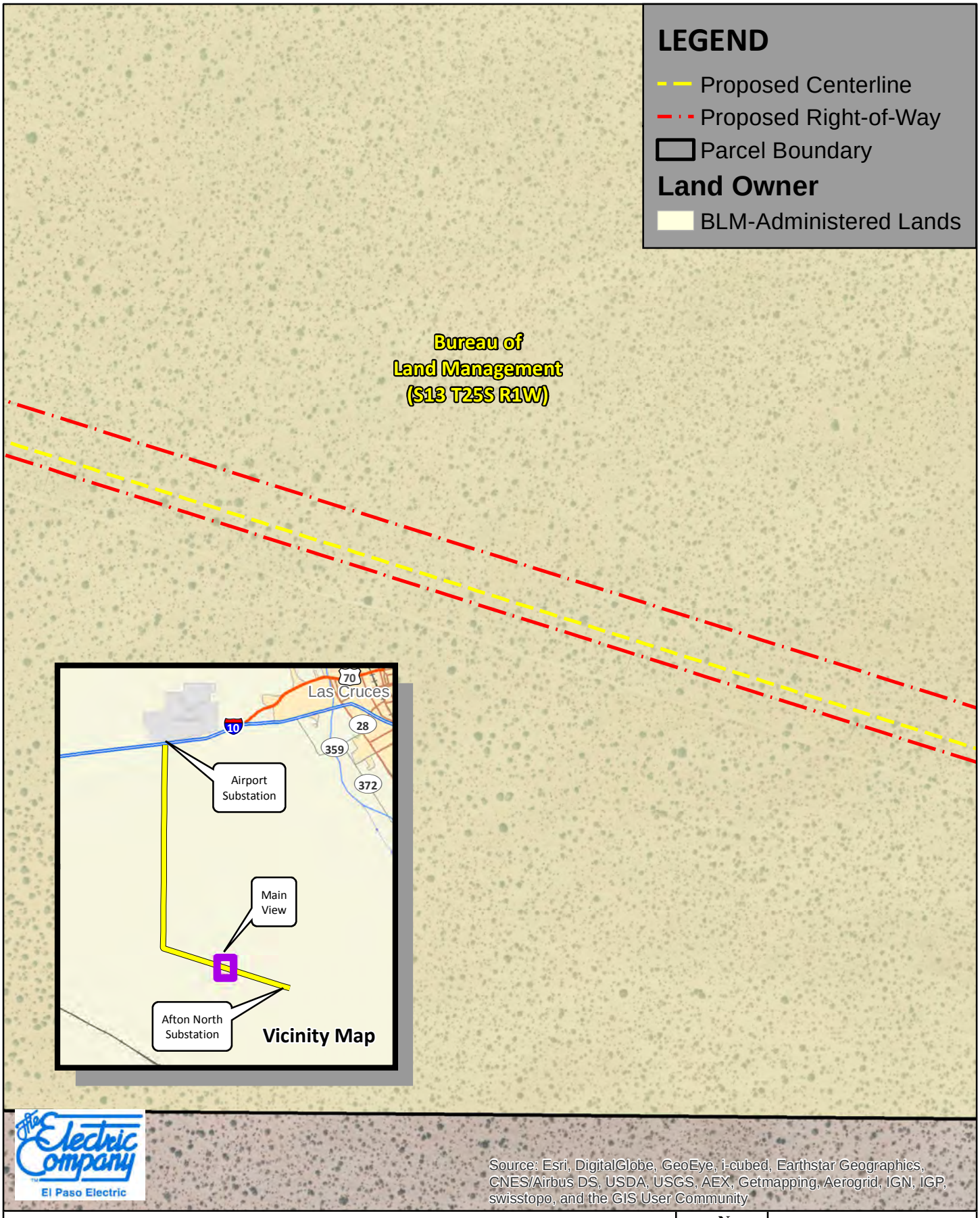
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2M



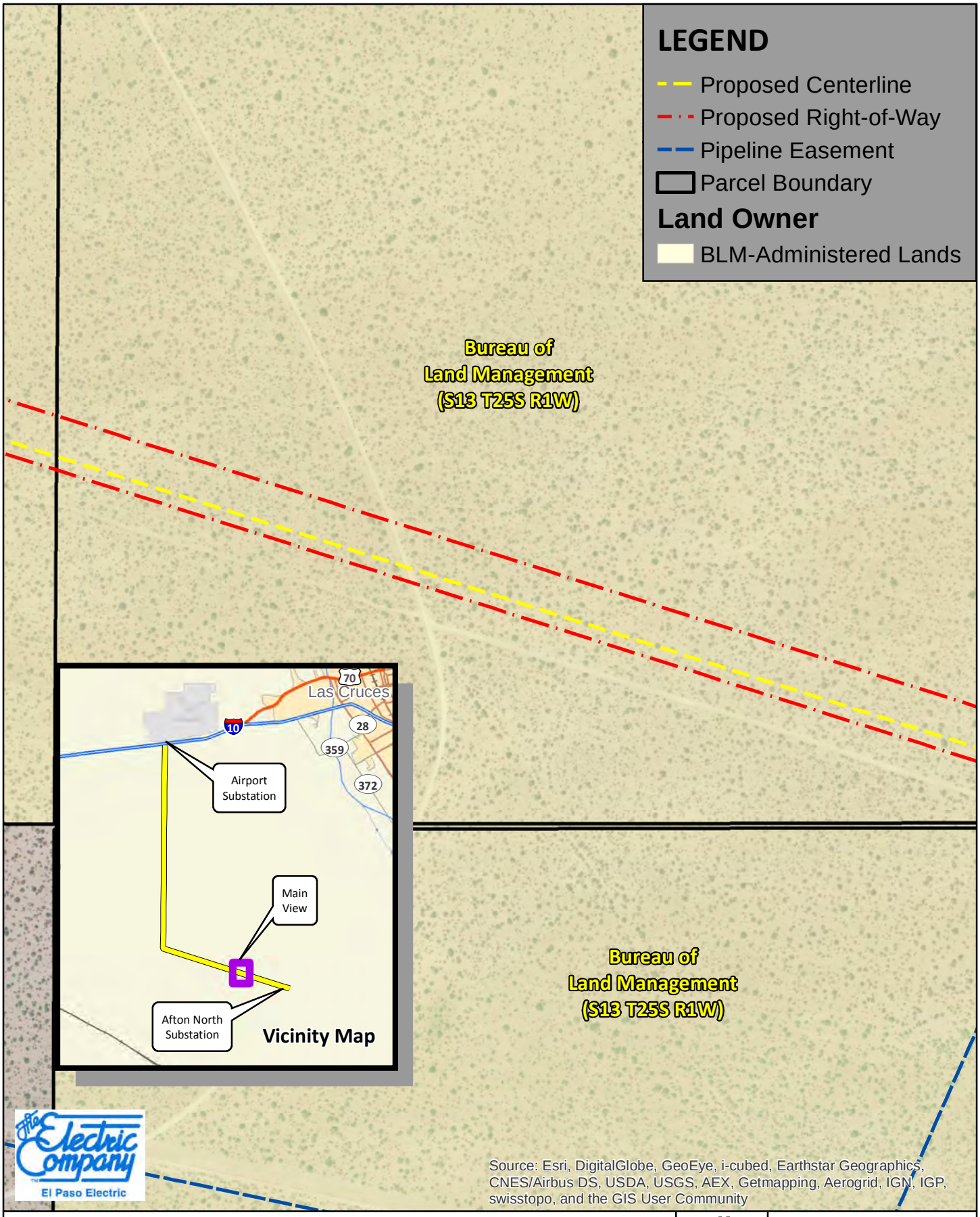
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2N



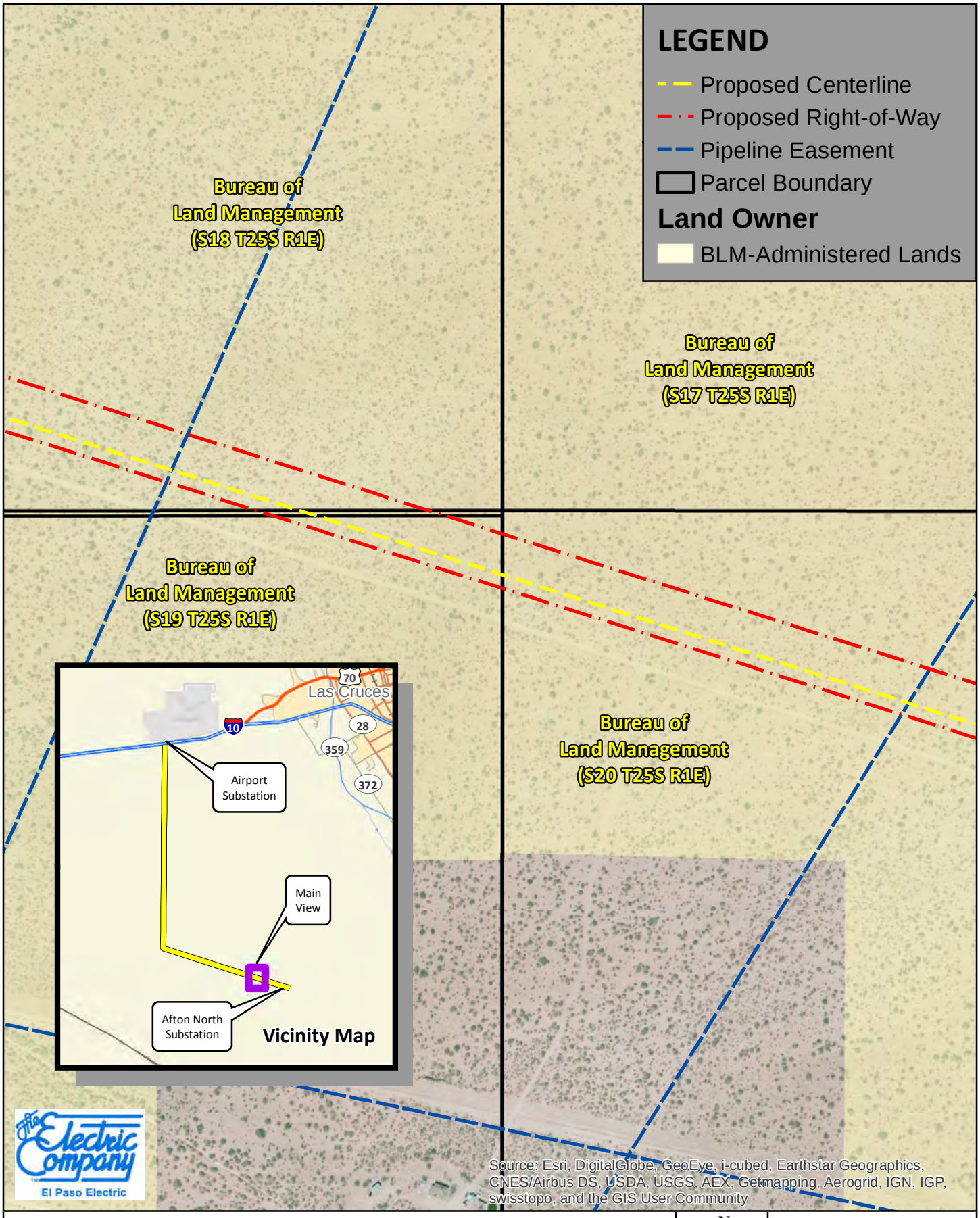
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2O



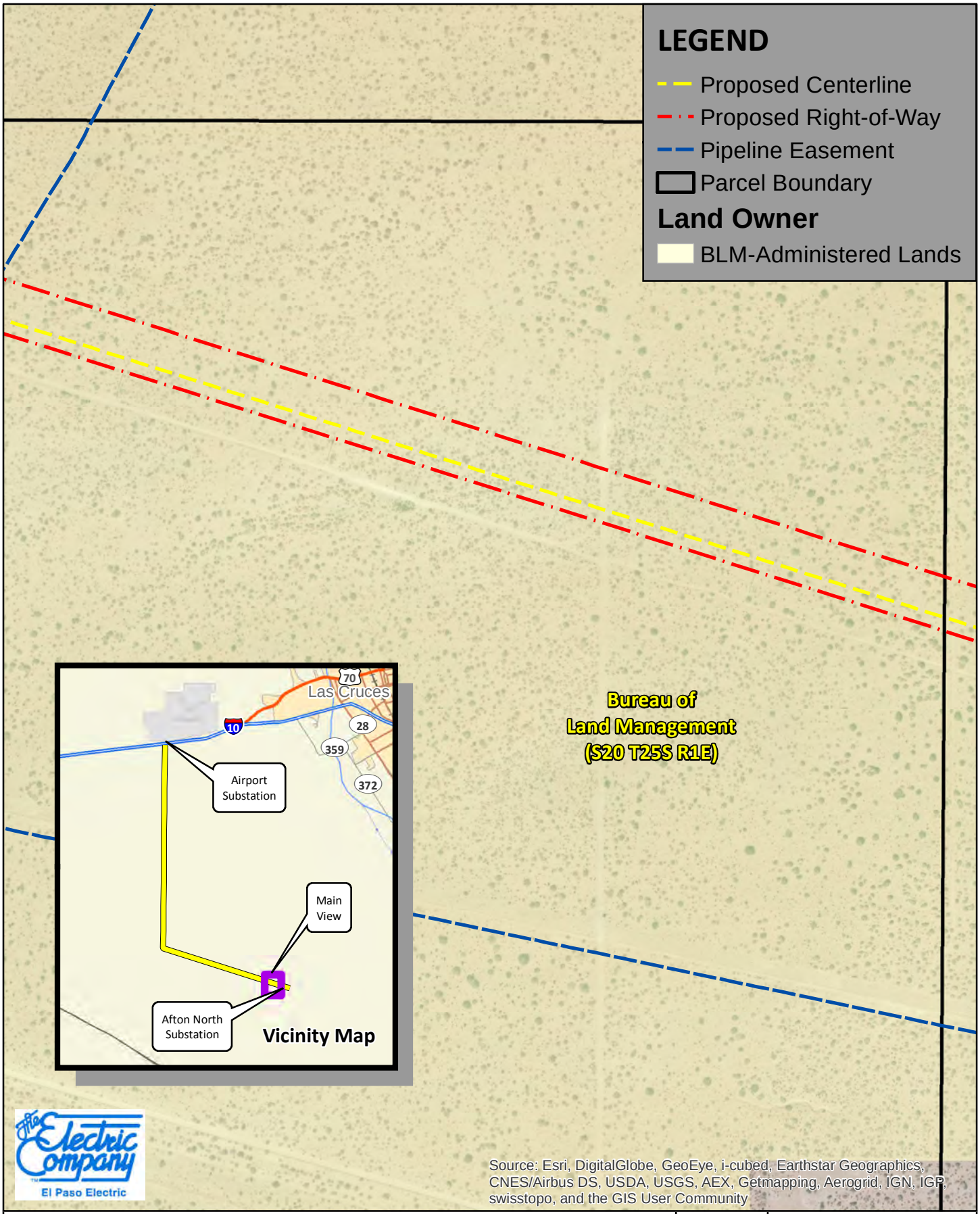
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2P



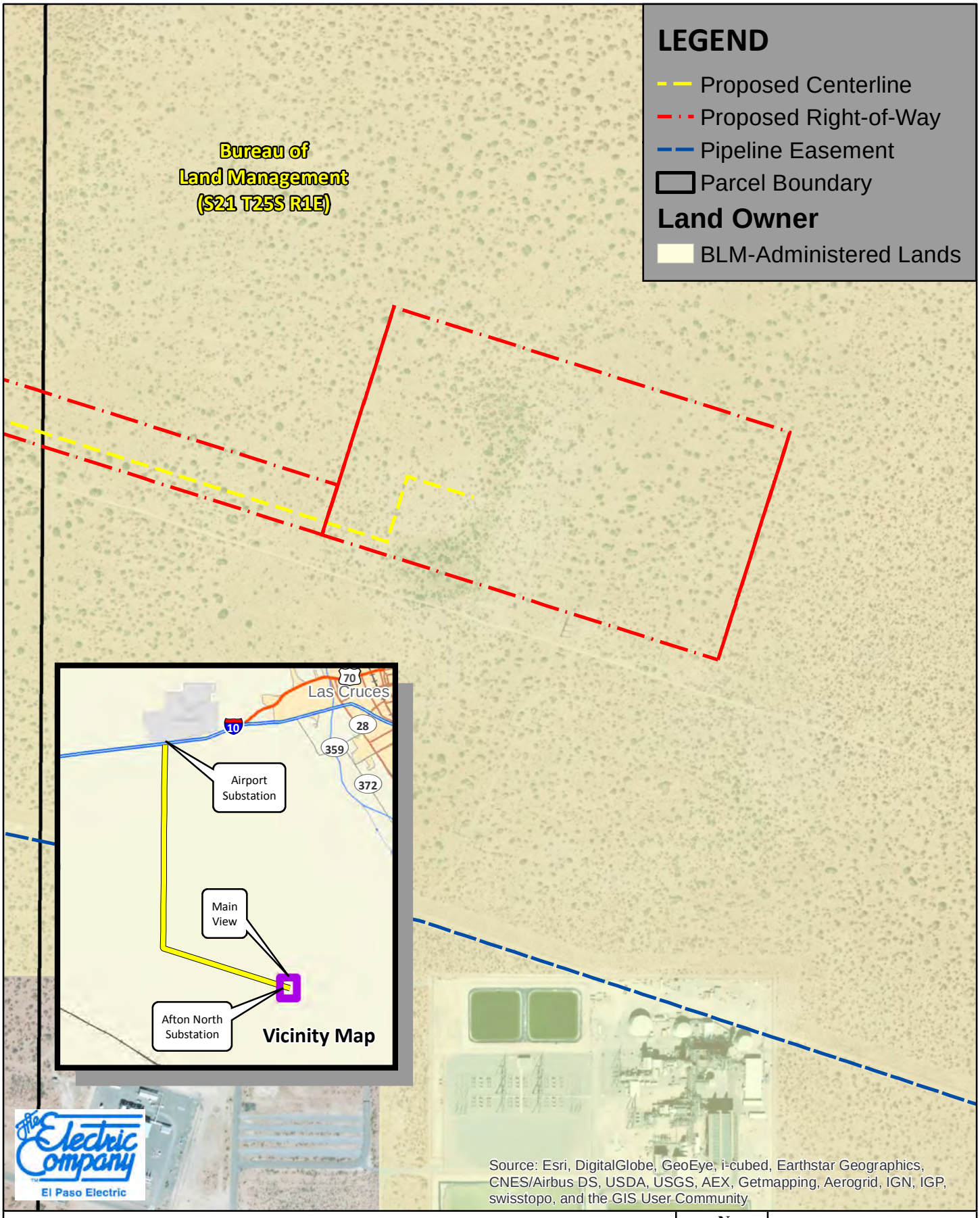
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

FIGURE 2Q



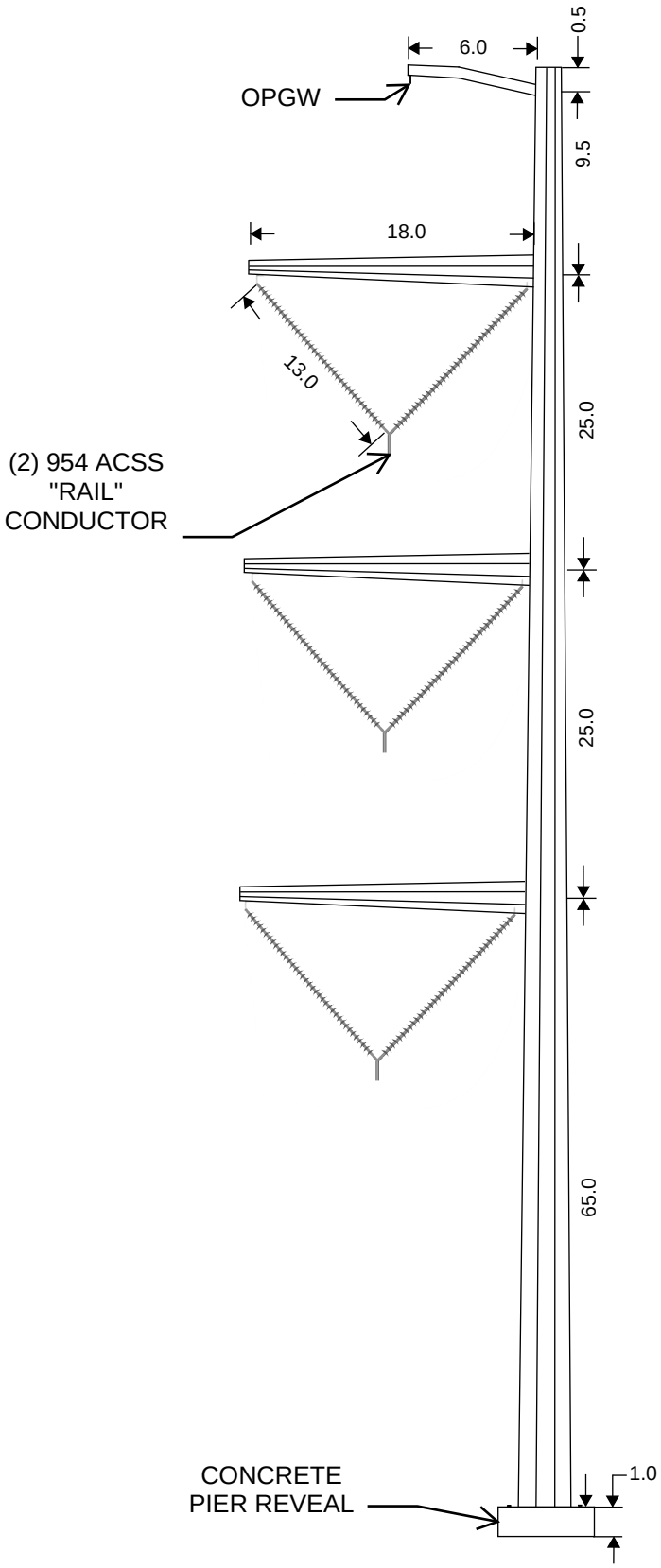
PROPOSED RIGHT-OF-WAY

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation
Doña Ana County, New Mexico
NMNM 129489

N W E S

0 125 250 500 Feet

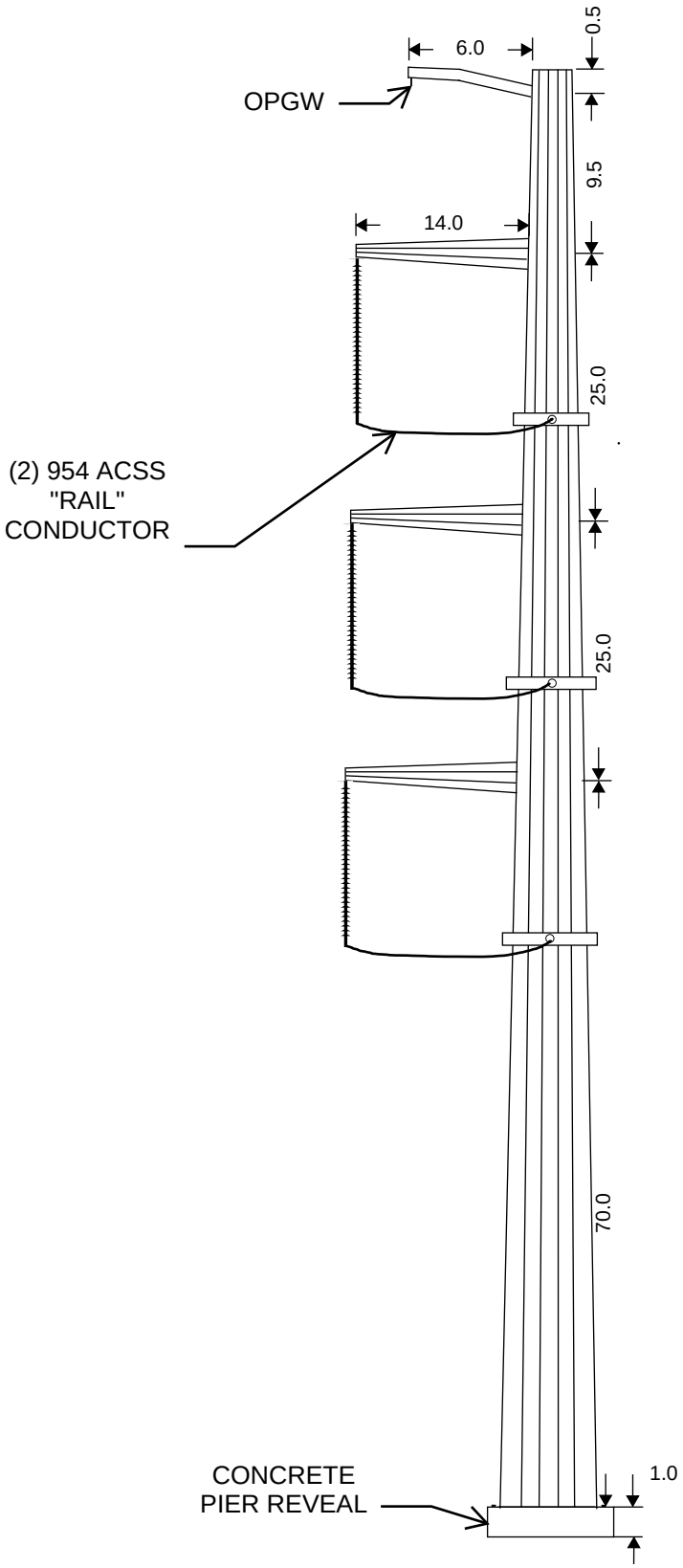
FIGURE 2R



NOTE: PRELIMINARY DRAWING NOT TO BE USED FOR CONSTRUCTION OR BIDDING.

CONCEPTUAL 345kV MONOPOLE TANGENT STRUCTURE DESIGN
EL PASO ELECTRIC COMPANY 345kV TRANSMISSION LINE FROM AFTON NORTH SUBSTATION TO AIRPORT SUBSTATION
DONA ANA COUNTY, NEW MEXICO
NMNM 129489

FIGURE 3A



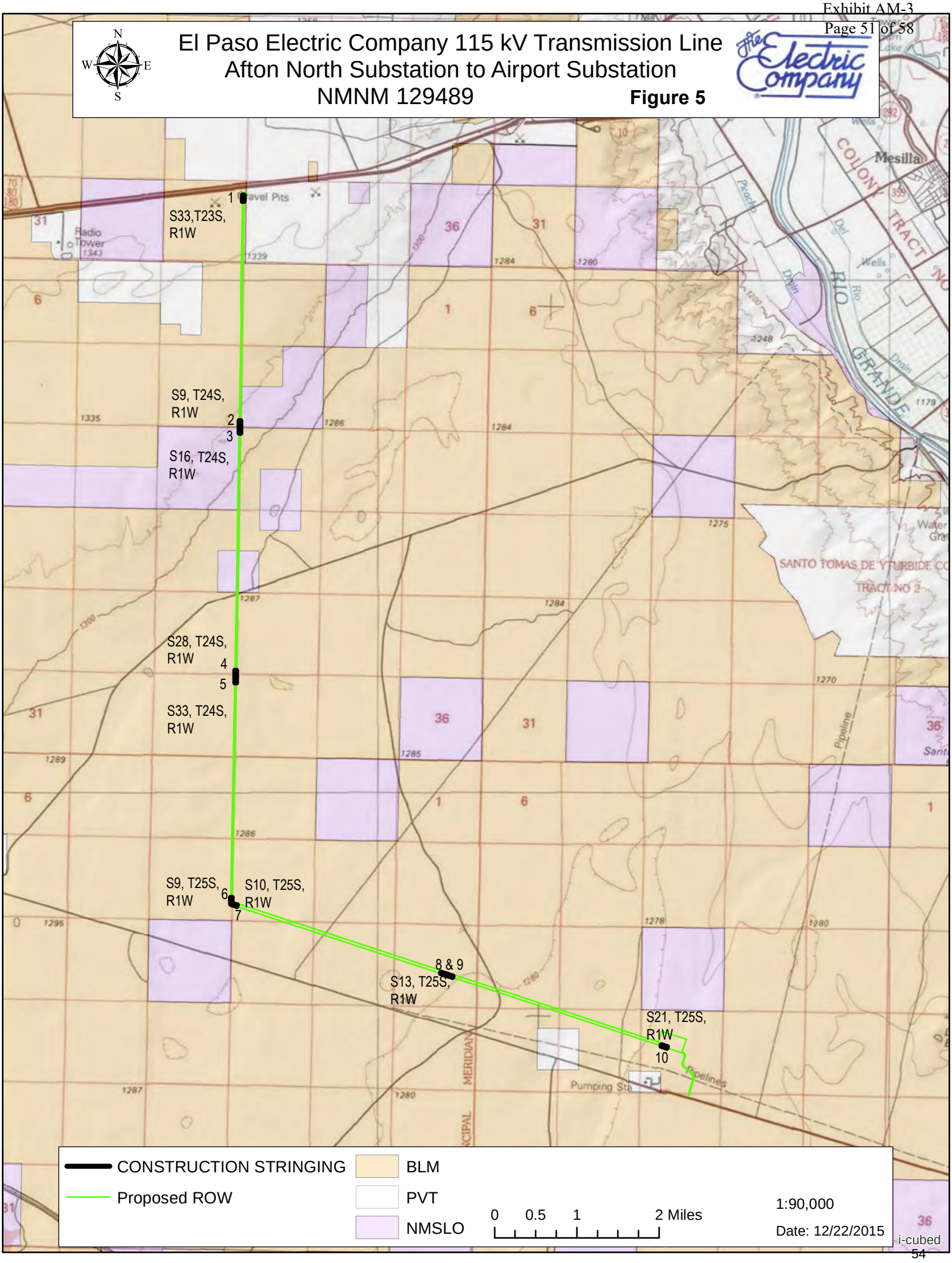
NOTE: PRELIMINARY DRAWING NOT TO BE USED FOR CONSTRUCTION OR BIDDING.

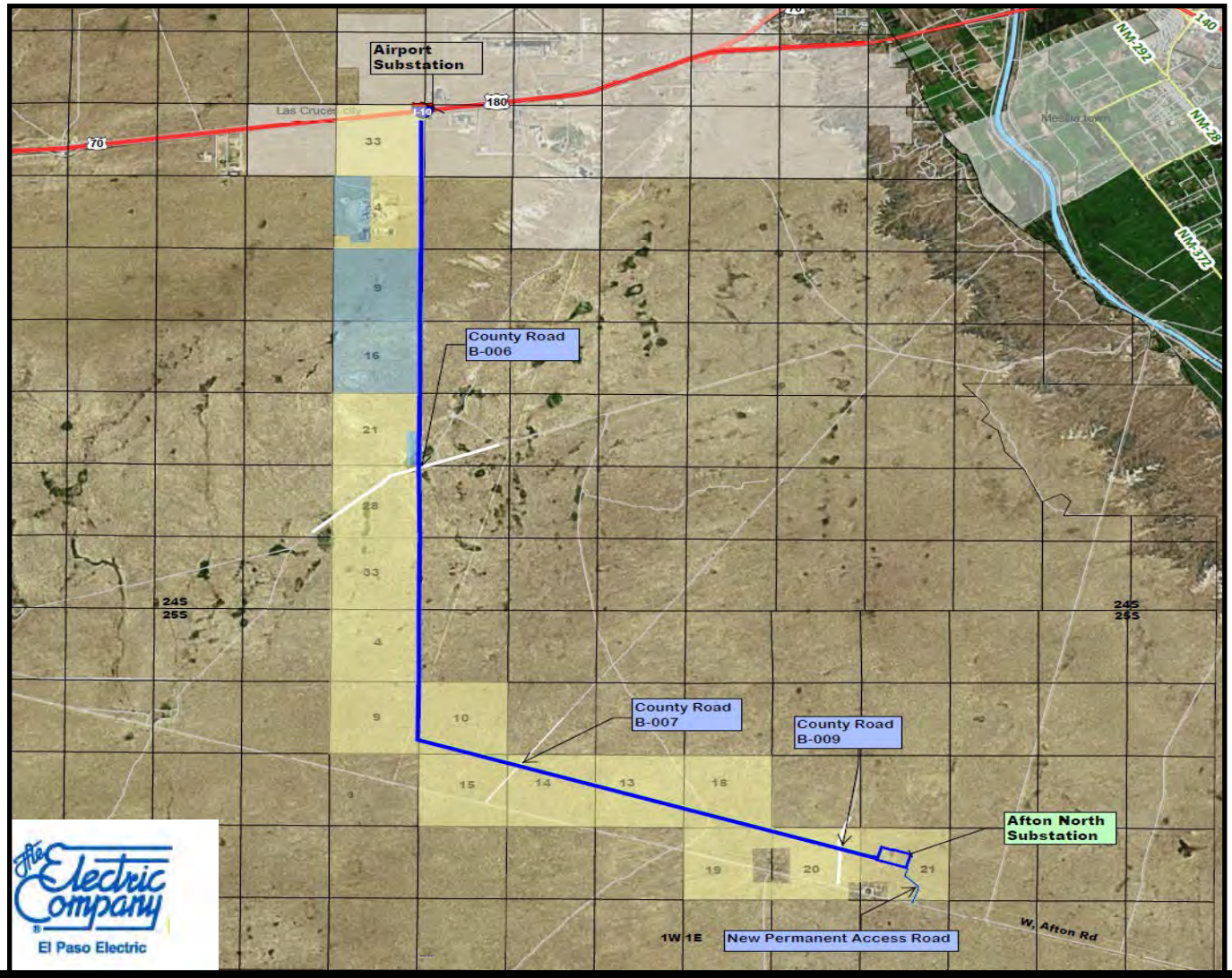
CONCEPTUAL 345kV MONOPOLE DEADEND STRUCTURE DESIGN
EL PASO ELECTRIC COMPANY 345kV TRANSMISSION LINE FROM AFTON NORTH SUBSTATION TO AIRPORT SUBSTATION
DONA ANA COUNTY, NEW MEXICO
NMNM 129489

FIGURE 3B

El Paso Electric Company 115 kV Transmission Line
Afton North Substation to Airport Substation
NMNM 129489

Figure 5





ACCESS

El Paso Electric Company 115-kV Transmission Line From Afton North Substation to Airport Substation and to Afton North Substation

Dona Ana County, New Mexico

NMNM 129489

Figure 7

APPENDIX C

LIST OF TABLES

Table 1 Land Ownership Along the Right-of-Way

Table 2 Construction Summary for the Afton North – Airport Transmission Line and Afton North Substation

Table 3 Location of Temporary Pulling/Tensioning Sites

Table 4 Typical Transmission Construction Crew Estimated Personnel and Equipment

Table 5 Typical Substation Construction Crew Estimated Personnel and Equipment

TABLE 1

Land Ownership Along the Proposed Right of Way		
Owner	**Amount of Land Crossed (miles)**	**Maximum Surface Area (acres)[a]**
Federal Land	12.79	223.4
State Land	1.5	18.2
City of Las Cruces	0.01	0.1
Total	**14.3**	**241.7**

[a]Calculated assuming 5.64 miles @ 200-foot ROW across Federal land along a southeast-northwest trajectory where the project parallels the existing 345 kV corridor into Afton North Substation, 7.15 miles @ 100-foot ROW for Federal Land along a north-trending section of the proposed ROW, and 100-foot ROW for all other lands near the Airport Substation.

TABLE 2

Construction Summary for the Afton North – Airport Transmission Line and Afton North Substation					
Project Feature	**Description**	**Overall Project**	**BLM Property**	**State Property**	**Municipal Property (1)**
Length of Lines	Total length of line excluding final spans into the project and interconnecting substations.	14.30 miles	12.79 miles	1.50 miles	0.01 miles
Type of Pole	Single-Circuit, H-Frame, Steel				
Pole Height	Maximum 125ft				
Span Length	Typically 700ft to 800ft				
Number of Poles	Total number of dead end, angle, or tangent poles excluding structures within interconnecting substations.	Up to 125	Up to 114	11	0
ROW Width	100ft wide on the North – South segment. 200ft on the East West segment	100ft/ 200ft	100ft/ 200ft	100ft	100ft
Guard Structures	100ft wide by 100ft long. Placed on either side of existing roads or electrical lines to maintain vertical clearance during construction activities only.	6	6	0	0
Permanent Access Roads within transmission corridor	Vegetation clearing and grading for equipment access. 14ft maximum width by length of the corridor.	14.87 miles	13.36 miles	1.50 miles	0.01 miles
Substation Access road	Maximum travel surface 25ft wide. 50ft maximum disturbance width		0.6 Miles	0	0

TABLE 2

Construction Summary for the Afton North – Airport Transmission Line and Afton North Substation					
Project Feature	**Description**	**Overall Project**	**BLM Property**	**State Property**	**Municipal Property (1)**
Existing Access Roads along Alignment	Existing width and length varies. No adjustments to be made.	0 ft	0 ft	0 ft	0 ft
New Afton North Substation	1600ft x 915ft ROW Area	33.6 acres	33.6 acres	0.00 acres	0.00 acres
Afton North Substation Power Service	Wood distribution poles for Substation Station Service and Construction Staging Power	10	10	0	0
Temporary Disturbance Areas					
Guard Structures	100ft wide by 100ft long. Placed on either side of existing roads or electrical lines to maintain vertical clearance during construction activities only.	1.38 acres	1.38 acres	0.00 acres	0.00 acres
Transmission Line Staging Areas	One staging area on 10-acres of private land (not BLM land).	10.0 acres	0.00 acres	0.00 acres	0.00 acres
Transmission Structure work areas	200ft x 200ft. temporary work areas at each structure location cleared of vegetation and leveled.	114.78 acres			
Wire Pulling and Tensioning Sites	100ft wide by 400ft long, extends past each dead end or angle structure.	10	9.5	0.5	0

TABLE 3

Location of Temporary Pulling/Tensioning Sites		
Pulling/Tensioning Site	**Legal Description**	**Land Ownership**
1	SE¼NW¼ , Sec 21, T25S, R1E	BLM
2	NW¼SE¼ , Sec 13, T25S, R1W	BLM
3	SW¼SW¼ , Sec 10 in SE¼SE¼ , Sec 9, T25S, R1W	BLM
4	NE¼NE¼, Sec 33 in SE¼SE¼ , Sec 28, T24S, R1W	BLM
5	NE¼NE¼, Sec 16 in SE¼SE¼ of Sec 9, T24S, R1W	BLM & NMSLO
6	SE¼NE¼, Sec 33, T23S, R1W	BLM

TABLE 4

Typical Transmission Construction Crew Estimated Personnel and Equipment		
Activity	**Number of People**	**Quantity and Type of Equipment**
Survey Crew	2 to 4	2 pick-up trucks
Line Construction	8 to 10	1 pressure digger
		1 18 wheeler hauler
		1 bulldozer (D-6/D-8 Cat or equivalent)
		1 bobcat
		1 water truck
		2 cranes
		2 4 wheel drive pick-up trucks
		3 bucket trucks
Foundation (each one)	4 to 6	1 flatbed
		1 crane
		3-4 cement trucks
		2 pick-up trucks
Pulling and Tensioning Crew	8 to 10	1 bulldozer (D-6/D-8 Cat or equivalent)
		2 cranes
		2 bucket trucks
		1 backhoe
		1 boom truck
		1 puller
		1 tensioner

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	
EL PASO ELECTRIC COMPANY, Applicant	)	**Docket No. 26-00___**

DECLARATION OF ANDREA R. MCARDLE IN SUPPORT OF THE FOREGOING DIRECT TESTIMONY OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL

I ***Andrea R. McArdle***, pursuant to Rule 1-011 NMRA, state as follows:

1. I affirm in writing under penalty of perjury under the laws of the State of New Mexico that the following statements are true and correct.

2. I am over 18 years of age and have personal knowledge of the facts stated herein. I am a consultant for El Paso Electric Company ("EPE or Company") and employed by SWCA, Inc. d.b.a. SWCA Environmental Consultants, Inc. ("SWCA") as *Lead Environmental Planner.*

3. The foregoing Direct Testimony of Andrea R. McArdle, together with all exhibits sponsored therein and attached thereto, is true and accurate based on my knowledge and belief.

4. I submit this Declaration, based upon my personal knowledge and upon information and belief, in support of EPE's ***Application for a Certificate of Convenience and***

Necessity to Construct, Own, and Operate a New 345kV Transmission Line Between the Afton North and Airport Substations and for Right-of-Way Width Approval.

FURTHER, DECLARANT SAYETH NAUGHT.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2026.

/s/ *Andrea R. McArdle*

ANDREA R. MCARDLE

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE THE AFTON NORTH TO AIRPORT 345 KV TRANSMISSION PROJECT AND FOR RIGHTS OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DIRECT TESTIMONY

OF

ALEJANDRO GALVIS

ON BEHALF OF

EL PASO ELECTRIC COMPANY

JULY 10, 2026

TABLE OF CONTENTS

SECTION		PAGE
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II.	PURPOSE AND SCOPE OF TESTIMONY	3
III.	TRANSMISSION LINE DESIGN, INCLUDING CONDUCTOR AND STRUCTURE SELECTION	4
IV.	CONDUCTOR BLOWOUT ANALYSIS AND CORRIDOR CONSIDERATIONS	5
V.	EVALUATION OF FEASIBLE ALTERNATIVES	9
VI.	RIGHT OF WAY WIDTH APPROVAL	10
VII.	SUMMARY AND CONCLUSION	15

EXHIBITS

Exhibit AG-1 Plan and Profile Drawings (Proposed Project Design)

Exhibit AG-2 Blowout Calculation Report (Conductor Blowout Envelope for ROW Evaluation)

Exhibit AG-3 Resume of Alejandro Galvis

Exhibit AG-4 ROW Width Determination Using Conductor Blowout

Exhibit AG-5 EPE 345 kV Design Criteria

EL PASO ELECTRIC COMPANY
DIRECT TESTIMONY OF
ALEJANDRO GALVIS

I. INTRODUCTION AND QUALIFICATIONS

Q1. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Alejandro Galvis. My business address is 8005 Brockman Street, Austin, Texas 78757.

Q2. WHAT IS YOUR CURRENT POSITION?

A. I am a Transmission Line Engineer with Coalesce Management Consulting and have been engaged by El Paso Electric Company ("EPE" or "Company").

Q3. PLEASE SUMMARIZE YOUR EDUCATION AND PROFESSIONAL QUALIFICATIONS.

A. I hold a Bachelor of Science in Electrical Engineering from the University of Memphis (2010) and a Master of Science in Electrical and Computer Engineering from Indiana University–Purdue University Indianapolis (2012). I am a licensed Professional Engineer, including in the State of New Mexico (PE No. 31694). Since 2013, I have specialized in transmission line design for utilities across the United States, with experience spanning key aspects of transmission line engineering, including line layout and structure spotting, conductor selection, sag-and-tension and clearance evaluations, and coordination of structure and foundation design in accordance with the National Electrical Safety Code ("NESC") and applicable utility standards. My resume is attached as Exhibit AG-3.

Q4. PLEASE DESCRIBE YOUR CURRENT JOB DUTIES.

A. My responsibilities include developing and reviewing transmission line designs, performing conductor sag, tension, and clearance evaluations, and supporting structure spotting and layout using industry-standard engineering tools. In performing these responsibilities, I apply EPE's transmission design standards and the National Electrical Safety Code ("NESC") to ensure the Project is designed for safe construction, operation, and maintenance.

Q5. PLEASE SUMMARIZE YOUR PROFESSIONAL EXPERIENCE.

A. I have worked in transmission line design and engineering roles for utilities across the United States, including Pacific Gas and Electric, Westar Energy, Lower Colorado River Authority, Georgia Transmission Company, and El Paso Electric. My experience includes design and analysis of transmission facilities ranging from 12.5 kV to 500 kV, with primary emphasis on 69 kV to 345 kV systems. In addition to my engagement supporting EPE, I provide consulting professional engineering services in transmission line design through Coalesce Management Consulting, focusing on renewable energy, generator interconnection, and greenfield transmission line projects.

II. PURPOSE AND SCOPE OF TESTIMONY

Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to explain the engineering basis for EPE's proposed right-of-way ("ROW") widths and to confirm that the Project's design and ROW corridor, particularly the portion of ROW width greater than 100 feet, provide sufficient clearance and vegetation-management space for safe construction, operation, inspection, and maintenance, consistent with applicable standards and EPE criteria. Since a portion of the Project requires a ROW of greater than 100 feet, EPE is seeking ROW width approval from the Commission to the extent the Commission determines it is necessary.

Q7. ARE YOU SPONSORING EXHIBITS TO YOUR TESTIMONY?

A. Yes. I am sponsoring the exhibits listed in the Table of Contents and identified below:

- Exhibit AG-1 Plan and Profile Drawings (Proposed Project Design)
- Exhibit AG-2 Blowout Calculation Report (Conductor Blowout Envelope for ROW Evaluation)
- Exhibit AG-3 Resume of Alejandro Galvis
- Exhibit AG-4 ROW Width Determination Using Conductor Blowout
- Exhibit AG-5 EPE 345 kV Design Criteria

Q8. PLEASE DESCRIBE THE PROPOSED PROJECT.

A. As described in more detail in the direct testimony of EPE witness Michelle Veloz, the proposed project consists of the construction of approximately 14.4 miles of new single-circuit 345 kilovolt ("kV") transmission line between the Afton North and Airport Substations in New Mexico. The Project includes transmission structures, conductors, shield wire, foundations, and related facilities necessary for the safe and reliable operation of the transmission line.

III. TRANSMISSION LINE DESIGN, INCLUDING CONDUCTOR AND STRUCTURE SELECTION

Q9. WHAT CONDUCTOR AND STRUCTURES DID EPE SELECT FOR CONSTRUCTION OF THE PROJECT?

A. As discussed in more detail in EPE witness Veloz's testimony, EPE will construct the Project as a single-circuit 345 kV transmission line using double-bundle 954 kilo circular mils ("kcmil") Rail Aluminum Conductor Steel Supported ("ACSS") phase conductors with one optical ground wire ("OPGW"). The line will use steel monopole tangent and deadend structures. For the bundled phase conductors, the Project uses a vertical bundle configuration, which helps maintain a compact conductor envelope while meeting required clearances. The selected steel monopole structure types and conductor configuration are shown in the plan and

profile drawings included as Exhibit AG-1, and are suitable for safe construction and long-term operation and maintenance along the route.

Q10. DOES THE TRANSMISSION LINE DESIGN COMPLY WITH APPLICABLE SAFETY AND DESIGN STANDARDS?

A. Yes. The Project will be designed and constructed to meet or exceed applicable requirements of the NESC, applicable North American Electric Reliability Corporation ("NERC") Reliability Standards (including standards in the FAC family of standards addressing vegetation management and clearance maintenance), and EPE's 345 kV transmission line design criteria and standard practices. The design process includes conductor sag and tension modeling, structure loading checks, and clearance evaluations under the applicable weather cases to ensure safe clearances for construction, operation, and maintenance.

IV. CONDUCTOR BLOWOUT ANALYSIS AND CORRIDOR CONSIDERATIONS

Q11. PLEASE EXPLAIN WHAT IS MEANT BY CONDUCTOR BLOWOUT AND WHY IT IS IMPORTANT.

A. "Blowout" is the lateral displacement of a suspended conductor due to wind. Suspended conductors are flexible and are supported by insulator assemblies; under transverse wind loading, the energized conductors can displace laterally from their

still-air position. Blowout is evaluated so the transmission line can be designed with an adequate clearance envelope for all expected operating and weather conditions, including maintaining safe separation from the ground, structures, and any vegetation that may be present now or in the future.

Q12. WHAT DATA DID YOU REVIEW TO EVALUATE CONDUCTOR BLOWOUT FOR THE PROJECT?

A. I prepared Exhibit AG-1 and the conductor blowout results presented in Exhibit AG-2. Exhibit AG-2 is based on the PLS-CADD Blowout Report for the Project and presents the maximum horizontal offset of the energized phase conductors from the transmission line centerline under the applicable weather cases. The PLS-CADD Blowout Report is the controlling engineering output I used to evaluate the conductor movement envelope for the ROW analysis

The PLS-CADD Blowout Report evaluates three weather cases: (1) 0 psf (pounds per square foot) wind, no ice, 60°F final; (2) the NESC blowout case at 6 psf wind, no ice, 60°F final; and (3) the EPE extreme wind case at 100 mph, 25.58 psf, no ice, 60°F final. For the wind cases, the report evaluates conductor offset with wind applied from both the left and right directions. The analysis reflects the structure layout and the use of double-bundle 954 kcmil Rail ACSS phase conductors.

Exhibit AG-2 also includes a simplified manual hand-calculation check. That hand check does not replace the PLS-CADD Blowout Report. It is included only as a reasonableness check to confirm that the PLS-CADD results are within a reasonable engineering range. For purposes of my ROW evaluation, the PLS-CADD Blowout Report remains the controlling analysis for the conductor movement envelope.

Q13. WHAT IS THE MAXIMUM CONDUCTOR BLOWOUT IDENTIFIED IN THE BLOWOUT ANALYSIS, AND WHAT DOES IT REPRESENT?

A. For corridor planning purposes, the relevant value is the maximum absolute horizontal offset of the energized phase conductor from the transmission line centerline, measured in feet. For wind cases, this centerline-based offset reflects the conductor's at-rest position together with the additional lateral movement associated with conductor swing under wind loading. These offsets are used to evaluate whether the energized conductor movement envelope can be maintained within the available ROW corridor with an appropriate margin for safe operation, inspection, maintenance, and long-term clearance management.

Based on the blowout analysis and using the greater absolute offset from the left- and right-wind results, the largest span NESC blowout is 32.89 feet from centerline. The largest span EPE extreme wind blowout is 48.98 feet from centerline. Both maximum blowouts occur in the span between Structure 109 and

Structure 110. These values represent the conductor movement envelope used for the route ROW corridor evaluation.

The analysis also includes the separate span from Structure 110 to the Airport substation termination, which is located on EPE-controlled substation property or ROW. In that span, the largest values are 113.04 feet for the NESC blowout case and 113.30 feet for the EPE extreme wind case. Those termination-span values are not included in the primary route ROW-width evaluation because they are located within EPE-controlled substation property or ROW, not within the route ROW corridor being evaluated.

Q14. HOW DOES THE MANUAL HAND-CALCULATION CHECK SUPPORT THE PLS-CADD BLOWOUT RESULTS?

A. The manual hand-calculation check included in Exhibit AG-2 does not replace the PLS-CADD Blowout Report. It is used only as a reasonableness check.

The hand check uses simplified engineering inputs, including conductor diameter, conductor weight, and wind pressure, to confirm that the wind-loading assumptions used in the blowout analysis are within a reasonable engineering range. The PLS-CADD Blowout Report remains the controlling engineering output because it evaluates the conductor, span geometry, structure geometry, and loading conditions in more detail.

For this Project, the PLS-CADD results remain the controlling engineering results for the conductor movement envelope used in the ROW evaluation.

Q15. HOW DO CONDUCTOR BLOWOUT RESULTS RELATE TO THE RIGHT-OF-WAY CORRIDOR?

A. Blowout results inform the lateral movement envelope that the energized conductors may occupy under wind loading. In establishing a ROW corridor for a high-voltage transmission line, utilities consider the conductor movement envelope, required electrical clearances, and safe work access for construction and ongoing operations and maintenance. The corridor must also support long-term clearance management, recognizing that vegetation may grow into the corridor over time and that conductor movement under wind and other rated operating conditions must be accounted for when maintaining safe separation distances.

V. EVALUATION OF FEASIBLE ALTERNATIVES

Q16. WHY IS IT NOT PRACTICAL TO SIMPLY ADD MORE STRUCTURES TO REDUCE BLOWOUT?

A. While reducing span length can reduce conductor swing in some cases, the layout already includes additional structures and shorter spans in portions of the route where appropriate. Even so, it is not practical to simply add many more structures along the entire route. Structure placement must be balanced with constructability,

foundation and work areas, temporary construction disturbance, environmental resources, landowner uses, access needs, visual considerations, structure height and footprint, and required crossing geometry.

In addition, the spans that tend to control blowout are often special crossing spans or constrained segments where structure placement is limited by existing infrastructure, permitting constraints, terrain, or required crossing geometry. For those locations, the practical design approach is to use appropriate structure types, structure placement, conductor configuration, and span lengths to maintain the necessary clearance envelope, rather than attempting to eliminate blowout through structure density alone.

VI. RIGHT OF WAY WIDTH APPROVAL

Q17. WHAT IS YOUR UNDERSTANDING OF THE REQUIREMENTS OF THE RIGHT OF WAY WIDTH STATUTE AT NMSA 1978, SECTION 62-9-3.2?

A. I understand that the ROW Width Statute states as follows:

> Unless otherwise agreed to by the parties, no person shall begin the construction of any transmission line requiring a width for right of way of greater than one hundred feet without first obtaining from the commission a determination of the necessary right-of-way width to construct and maintain the transmission line. For the purposes of this subsection, "construction" does not include acquisition of rights of way, preparation of surveys or ordering of equipment.

Q18. PLEASE EXPLAIN THE PURPOSE OF YOUR ROW WIDTH EVALUATION.

A. I reviewed the conductor blowout calculations and results summarized in Exhibit AG-2, together with the Project design reflected in Exhibit AG-1. I used those materials to evaluate the engineering adequacy of the Project's ROW configuration and, specifically, the portion of ROW width exceeding 100 feet for which EPE seeks Commission approval. Exhibit AG-2 reports the maximum horizontal offset of the energized phase conductors from the transmission line centerline under applicable weather cases, with wind applied from both left and right directions. For corridor planning purposes, the reported centerline-based offsets represent the conductor's lateral movement under wind loading and are used to evaluate whether the conductor movement envelope can be maintained within the available corridor with appropriate operating, maintenance, and vegetation-management margins.

Q19. HAS EPE DETERMINED THE WIDTH OF THE RIGHT OF WAY NEEDED FOR THE PROJECT?

A. Yes. EPE acquired ROW widths ranging from approximately 100 feet to 200 feet along the Project route. For most of the route, approximately 8.6 miles, EPE acquired an approximately 100-foot-wide ROW corridor for the Project along the transmission line route. The Project's steel monopole structure configuration, together with the vertical bundle arrangement of the bundled phase conductors

where practicable, supports a narrower line profile than many conventional horizontal configurations. A 100-foot ROW is commonly used for 345 kV transmission lines where the structure configuration, conductor movement envelope, and required clearances can be maintained within that corridor. Exhibit AG-4 illustrates the concept of conductor blowout to either side under wind loading and the relationship between the blowout envelope and the ROW boundary for purposes of maintaining a safe operating and maintenance corridor.

There is a segment of the Project approximately 5.6 miles in length from Structure 1 through Structure 43 where the new 345 kV line is routed adjacent to an existing transmission line. In that segment, EPE acquired an overall corridor width of approximately 200 feet, which represents an addition to the existing corridor. In this area, the Project is on a new, independent corridor that runs adjacent to the existing line's corridor (i.e., the facilities do not share a single ROW). This is the portion of the ROW width for which EPE seeks Commission approval.

The wider corridor in this segment is required to maintain the necessary electrical clearances and vegetation management separation between the two high-voltage facilities for safe operation and maintenance over the life of the lines. FAC-003 reflects a vegetation management approach that considers conductor movement under rated operating conditions and maintaining safe clearances through vegetation management within and adjacent to the ROW. In practical

corridor terms, this requires sufficient width to manage vegetation and preserve clearance envelopes where two transmission lines run side-by-side.

Exhibit AG-2 and Exhibit AG-4 support this evaluation by calculating and depicting conductor blowout, including the relationship of the conductor movement envelope and vegetation-management margin to the ROW boundary used for clearance and corridor adequacy evaluations.

FAC-003 and Exhibit AG-4 also illustrate that vegetation management planning commonly includes a practical buffer measured from the ROW edge that allows vegetation growth before it approaches the conductor clearance envelope, while still allowing vegetation to be trimmed up to the ROW boundary as needed for safe operation and maintenance.

Q20. ARE THE PROPOSED RIGHT OF WAY WIDTHS SUFFICIENT FOR THIS PROJECT?

A. Yes.

Q21. PLEASE EXPLAIN WHY THE PROPOSED RIGHT OF WAY WIDTH IS SUFFICIENT FOR THIS PROJECT.

A. The proposed ROW width for the portion of the Project requiring Commission approval is sufficient because it provides the corridor space needed to maintain appropriate separation between the new 345 kV transmission line and the adjacent

existing transmission line, while also supporting safe construction, inspection, operation, maintenance, and vegetation-management activities. Exhibit AG-2 summarizes the maximum horizontal offsets of the energized conductors from the transmission line centerline under the applicable weather cases, including the NESC blowout wind condition used for corridor evaluation.

For the route spans within the line ROW corridor, the project-specific blowout analysis shows that, when the maximum blowout offset is evaluated using the absolute value of the left- and right-wind offsets, the NESC blowout maximum reaches 32.89 feet from centerline in the span from Structure 109 to Structure 110, and the EPE extreme wind maximum reaches 48.98 feet from centerline in that same span. Those controlling blowout values confirm the conductor movement envelope used for the ROW adequacy review.

Commission approval is requested for the portion of the Project where the ROW width exceeds 100 feet. That portion occurs from Structure 1 through Structure 43, where the new 345 kV transmission line runs adjacent to an existing transmission line and the overall side-by-side corridor is approximately 200 feet wide. Based on the Project stationing, this greater-than-100-foot ROW segment is approximately 29,627.4 feet, or approximately 5.6 miles. The approximately 200-foot overall corridor provides appropriate separation between the two facilities, accommodates conductor movement under wind loading, and provides the access space needed for inspection, maintenance, and vegetation-management practices

intended to maintain safe and reliable operation over the service life of both facilities.

VII. SUMMARY AND CONCLUSION

Q22. PLEASE SUMMARIZE YOUR TESTIMONY.

A. The Project design reflected in Exhibit AG-1 and the conductor blowout analysis summarized in Exhibit AG-2 demonstrate that the proposed 100-foot and 200-foot ROW widths are appropriate for safe construction, operation, inspection, and maintenance of the Project. The blowout analysis evaluates the conductor movement envelope under the applicable weather cases and confirms that the controlling span blowout value is 48.98 feet from centerline under the EPE extreme wind case, occurring in the span from Structure 109 to Structure 110. The corresponding NESC blowout value for that span is 32.89 feet from centerline. These results support EPE's determination that the proposed ROW widths provide adequate corridor space for conductor movement, safe access, and long-term clearance management, including segments where the Project runs adjacent to an existing transmission line within a wider overall corridor needed to maintain adequate separation and safe operation and maintenance of both facilities.

My testimony therefore supports EPE's request for Commission approval of the ROW width that exceeds 100 feet.

Q23. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 1/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

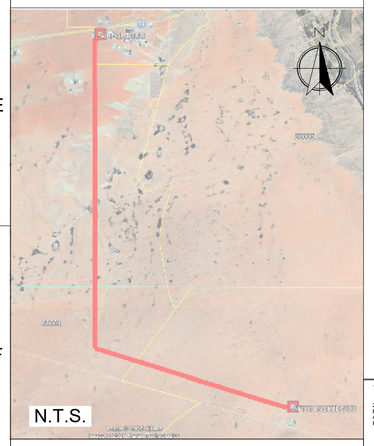
BLOWOUT LOAD CASE LEYEND:

LC 1: 0 PSF WIND, 0 IN ICE, 60°F FINAL

LC 2: 6 PSF WIND, 0 IN ICE, 60°F FINAL

LC 3: 25.58 PSF WIND, 0 IN ICE, 60°F FINAL

NESC BLOWOUT
ROW TYPICAL



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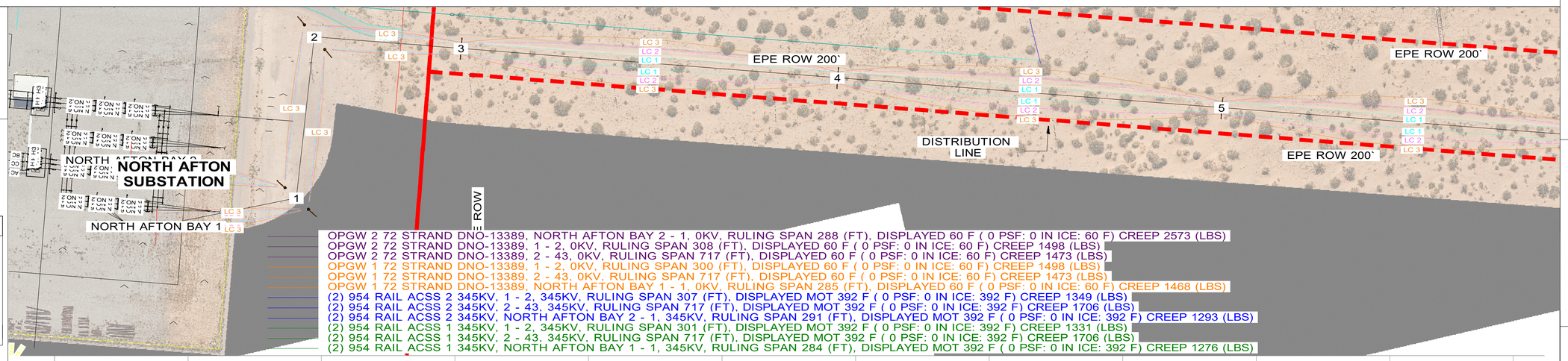

OPGW 2 72 STRAND DNO-13389, NORTH AFTON BAY 2 - 1, 0KV, RULING SPAN 288 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 2573 (LBS)
OPGW 2 72 STRAND DNO-13389, 1 - 2, 0KV, RULING SPAN 308 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 1498 (LBS)
OPGW 2 72 STRAND DNO-13389, 2 - 43, 0KV, RULING SPAN 717 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 1473 (LBS)
OPGW 1 72 STRAND DNO-13389, 1 - 2, 0KV, RULING SPAN 300 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 1498 (LBS)
OPGW 1 72 STRAND DNO-13389, 2 - 43, 0KV, RULING SPAN 717 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 1473 (LBS)
OPGW 1 72 STRAND DNO-13389, NORTH AFTON BAY 1 - 1, 0KV, RULING SPAN 285 (FT), DISPLAYED 60 F (0 PSF: 0 IN ICE: 60 F) CREEP 1468 (LBS)
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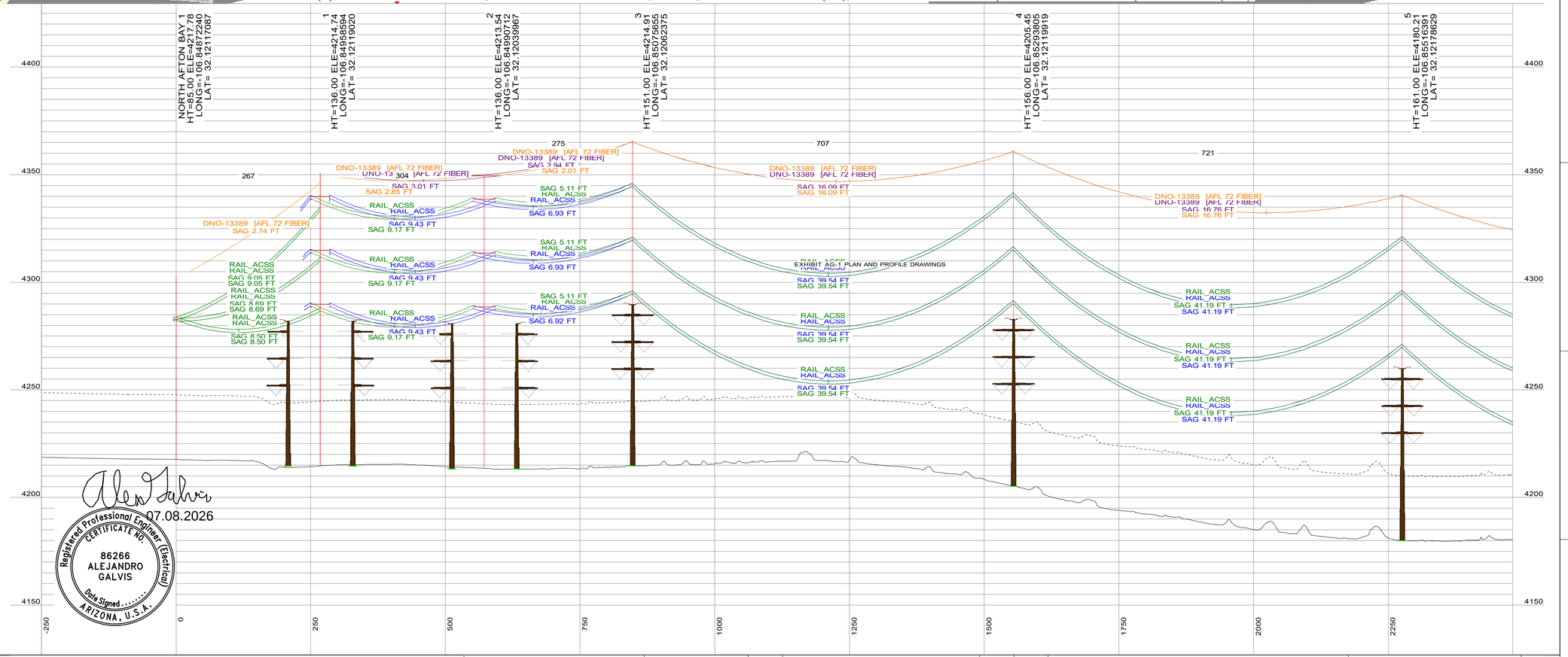

07.08.2026

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
86266
ALEJANDRO
GALVIS
Date Signed.....
ARIZONA, U.S.A.

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NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
the Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 2/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

BLOWOUT LOAD CASE LEYEND:

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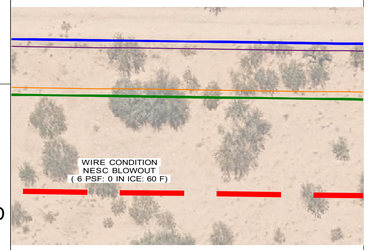
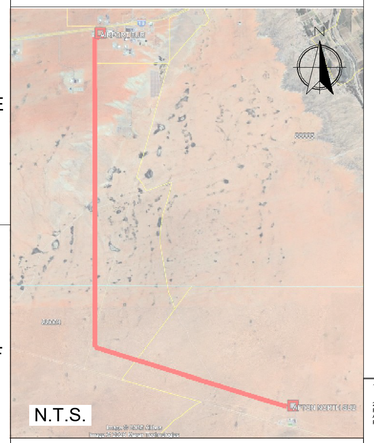


NESC BLOWOUT
ROW TYPICAL



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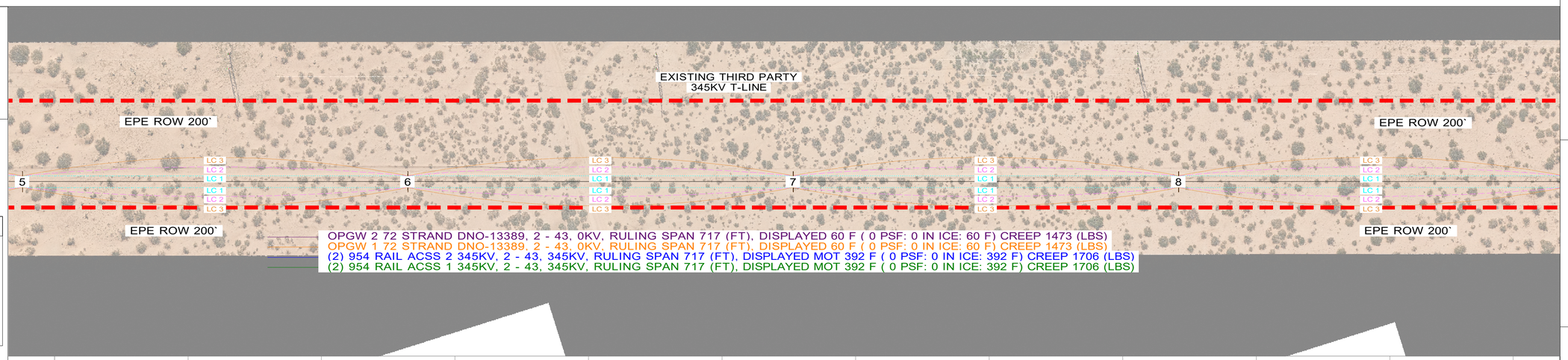

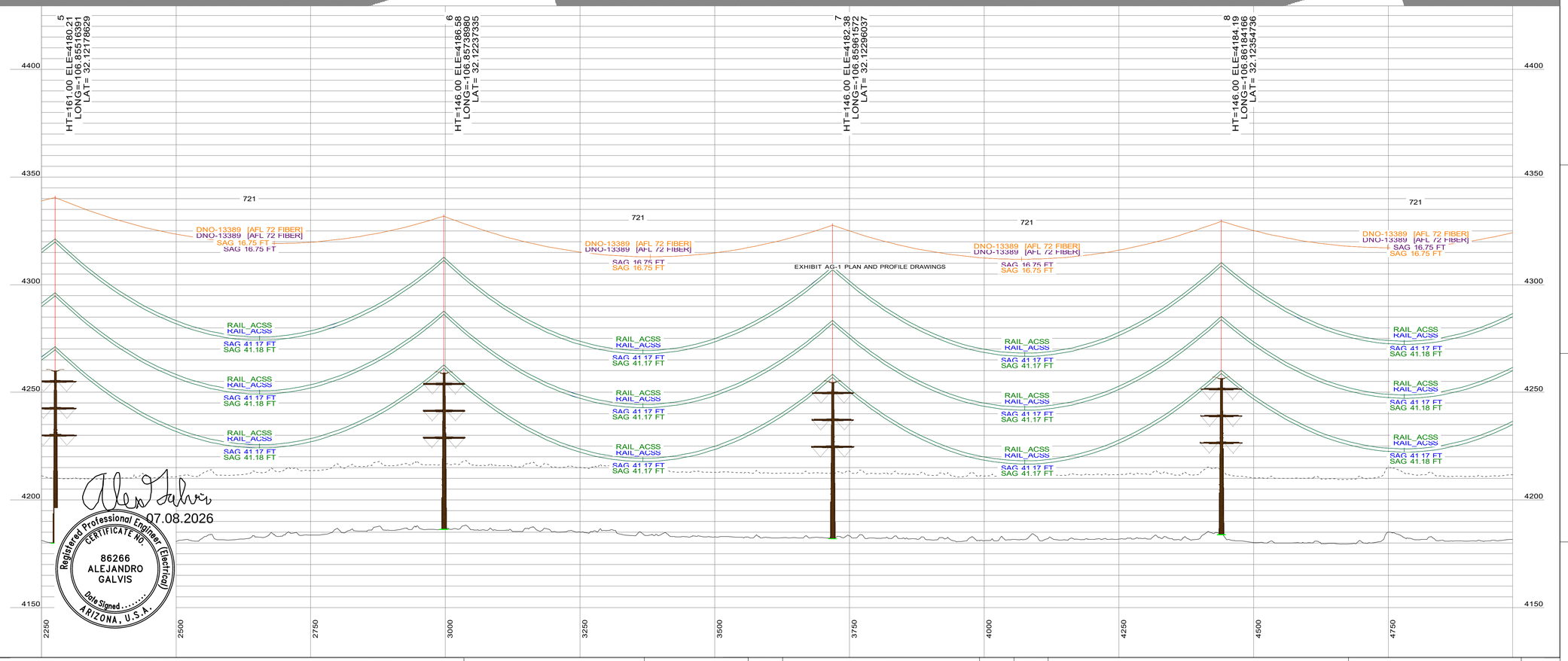

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TRANSMISSION ENGINEERING
Electric Company

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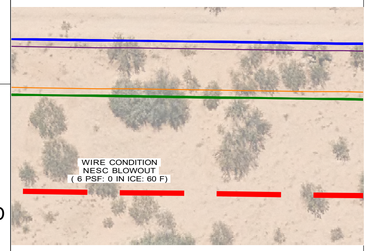

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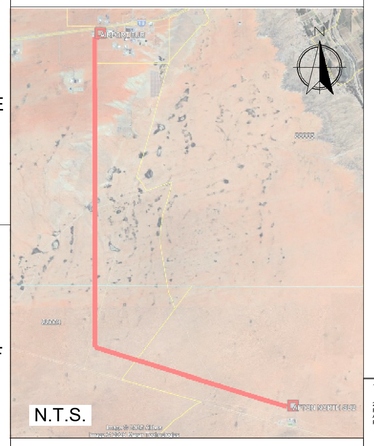

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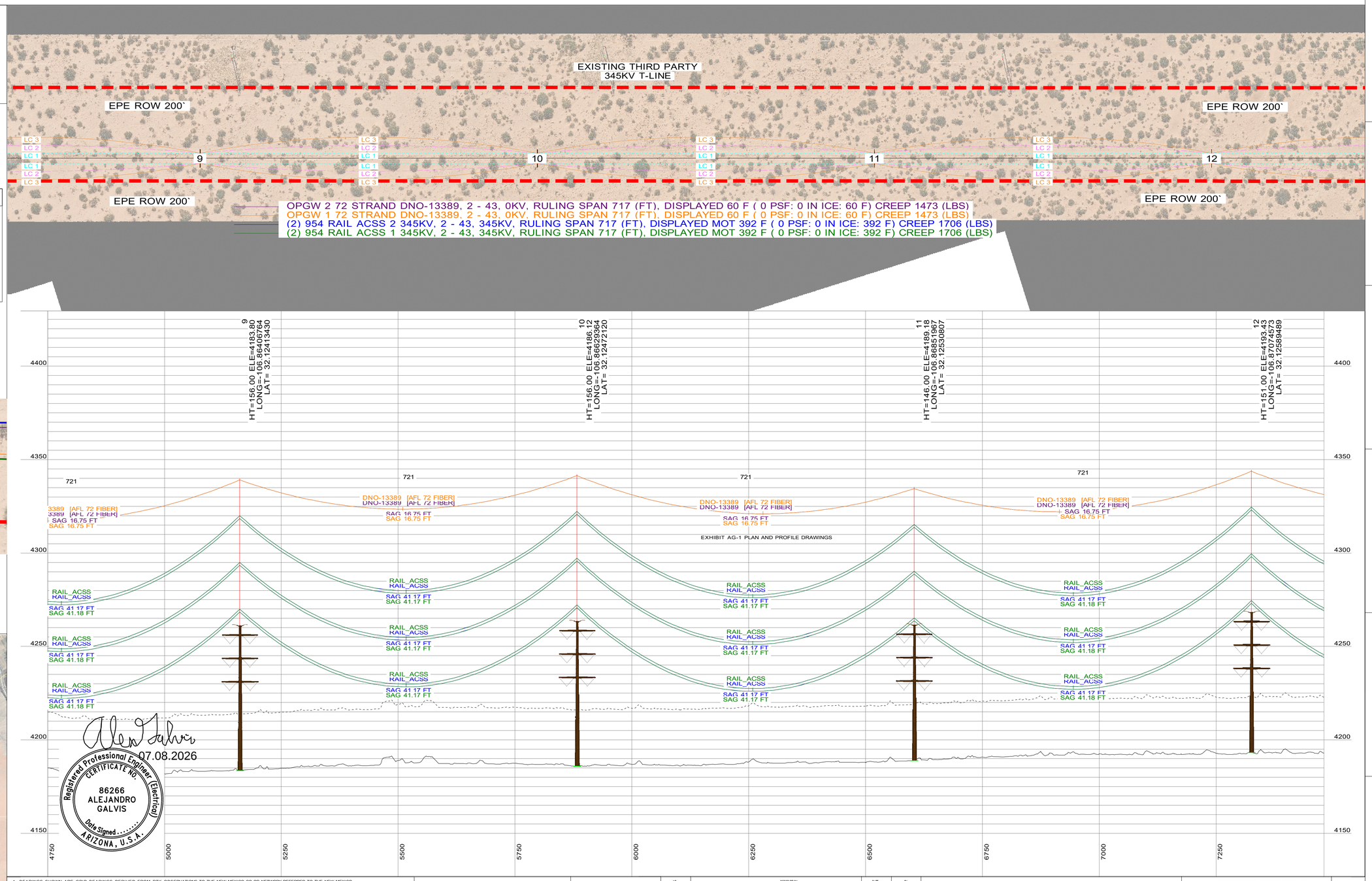

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NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 4/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

BLOWOUT LOAD CASE LEYEND:

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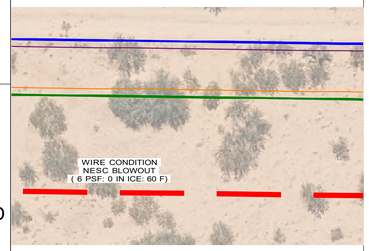
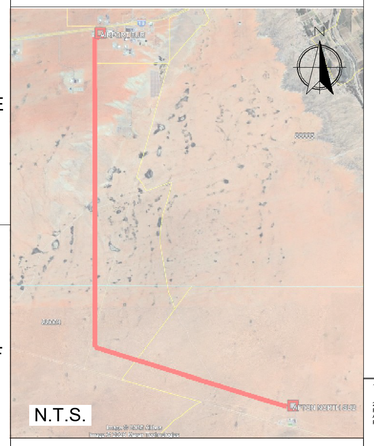
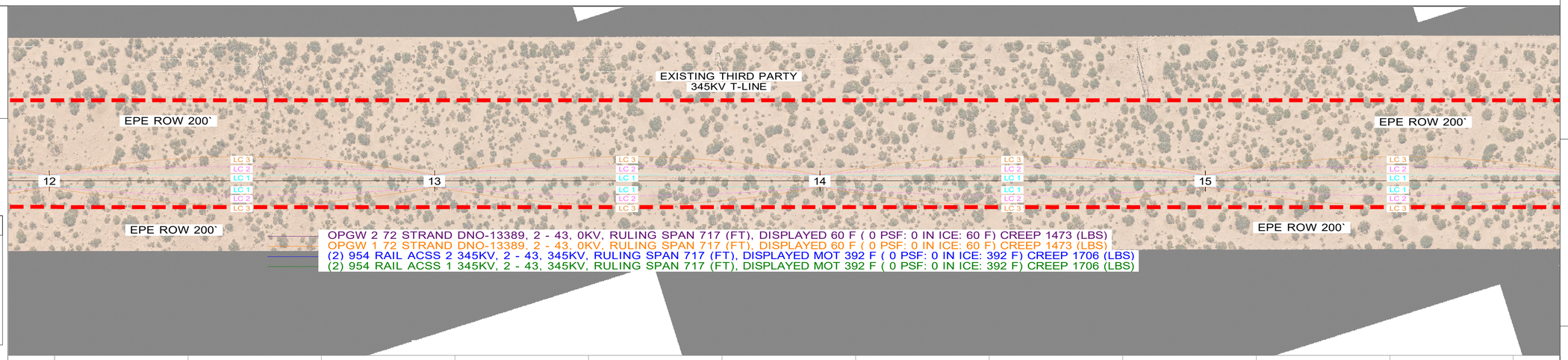
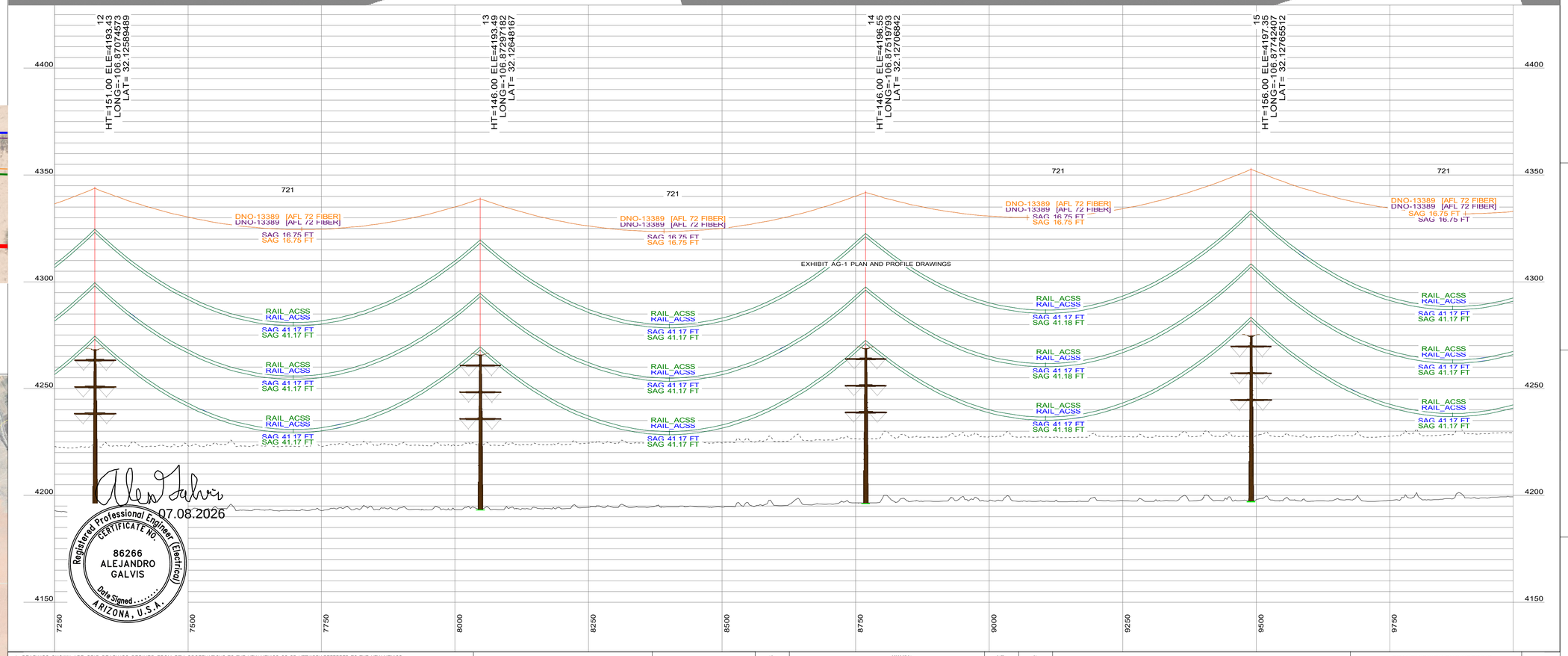


NESC BLOWOUT
ROW TYPICAL



VICINITY MAP





07.08.2026

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
86266
ALEJANDRO
GALVIS
Date Signed.....
ARIZONA, U.S.A.

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TRANSMISSION ENGINEERING
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PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 5/31

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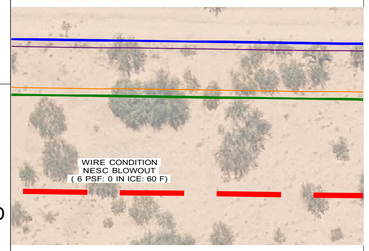

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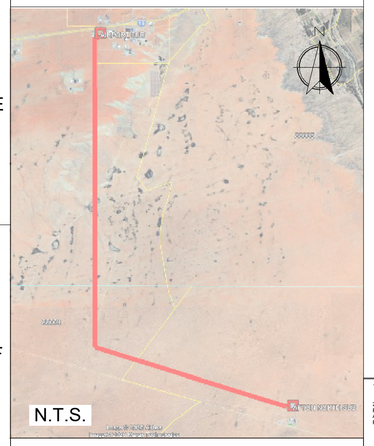

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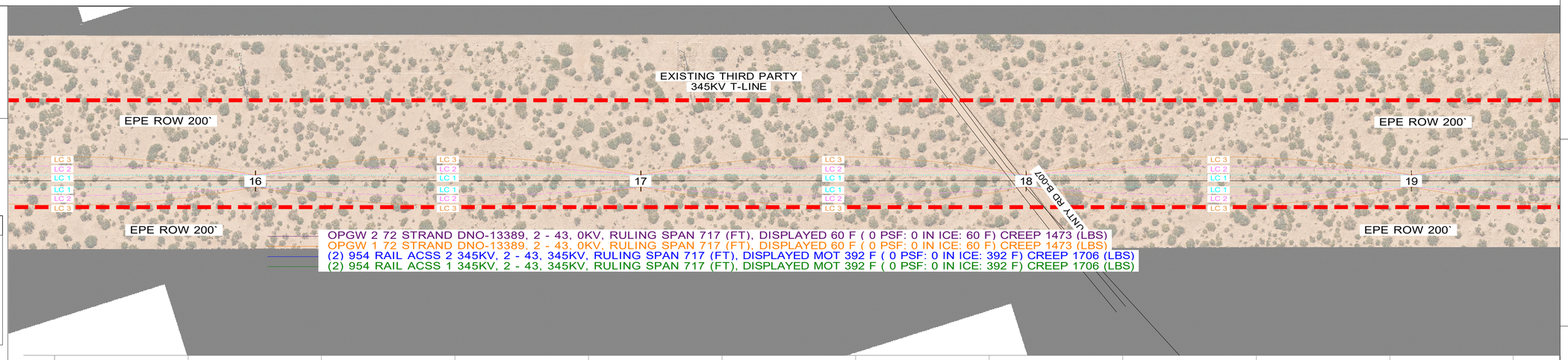

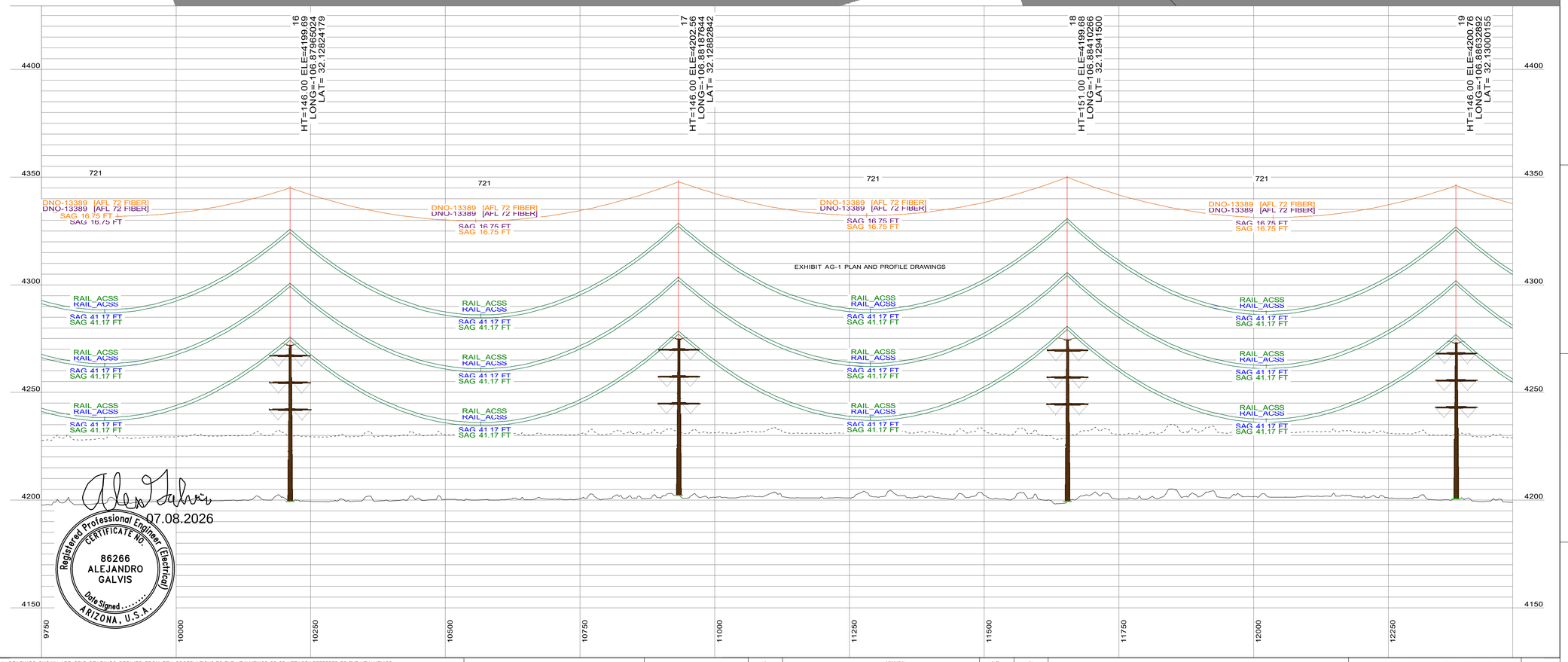

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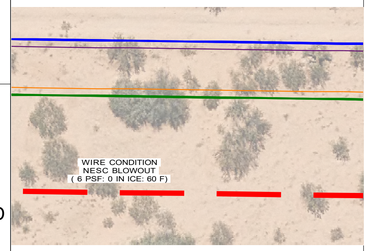

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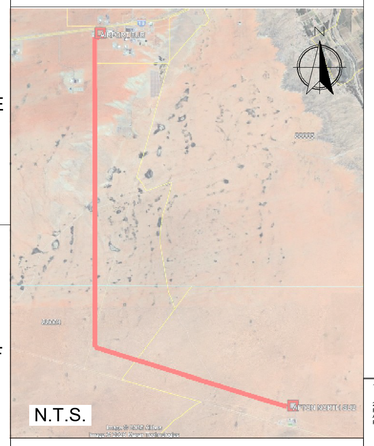

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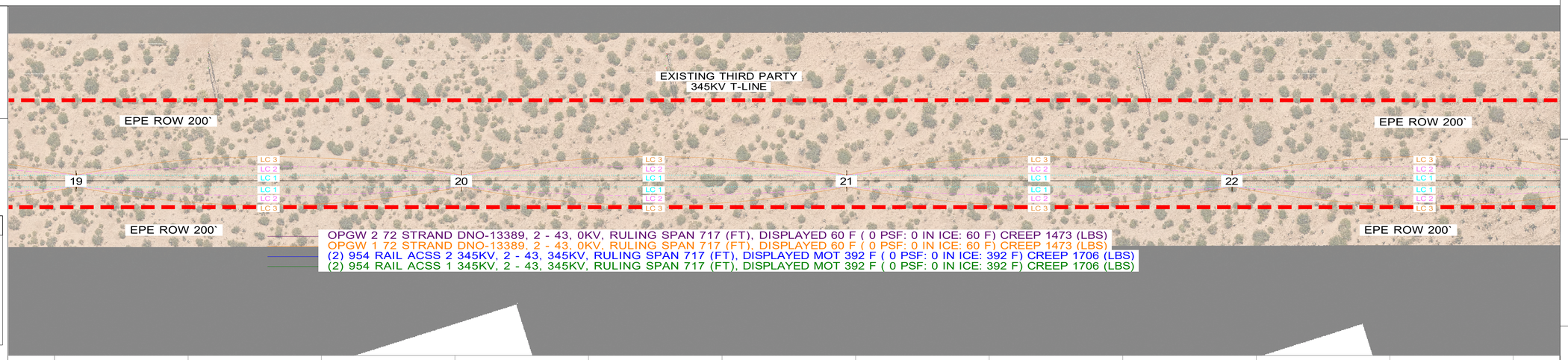

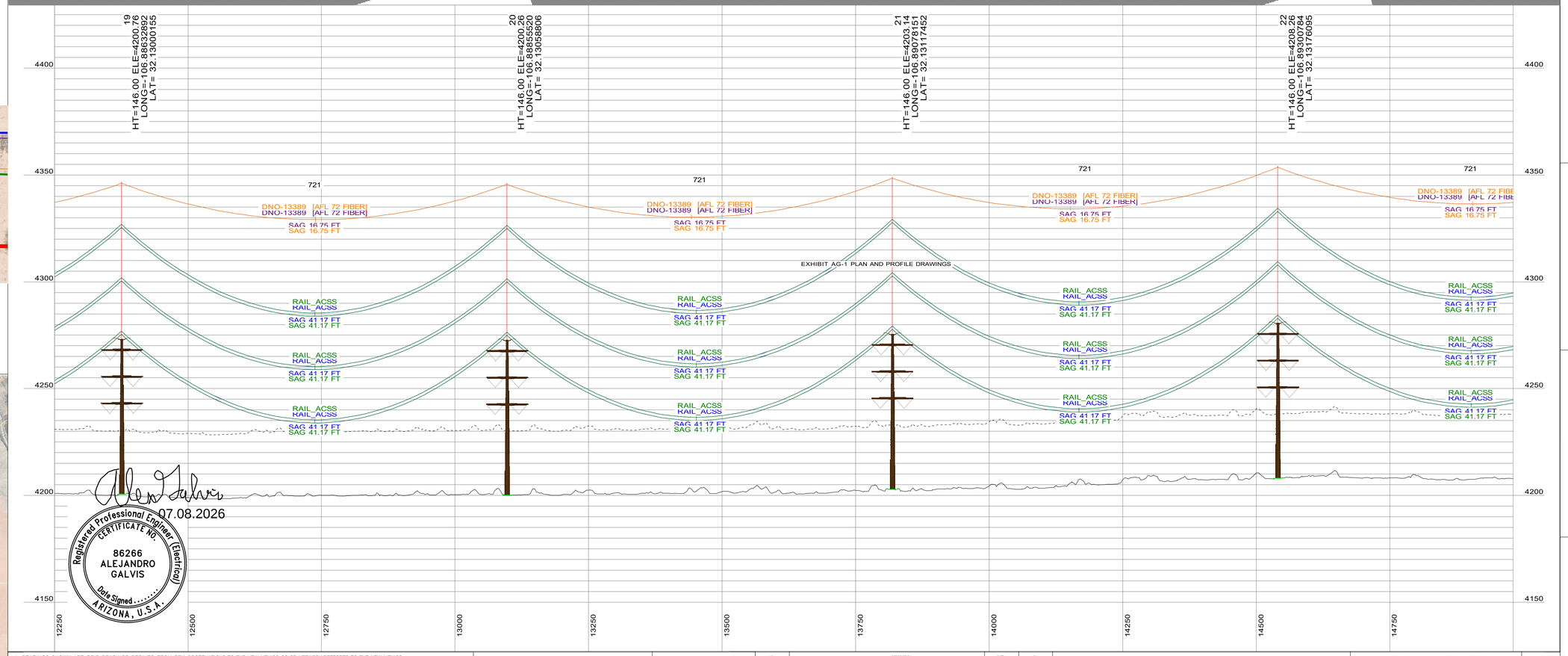

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TRANSMISSION ENGINEERING
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PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 7/31

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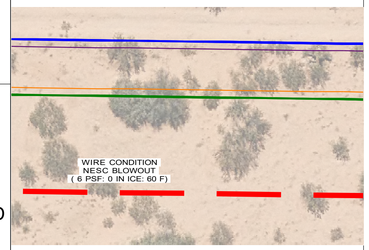

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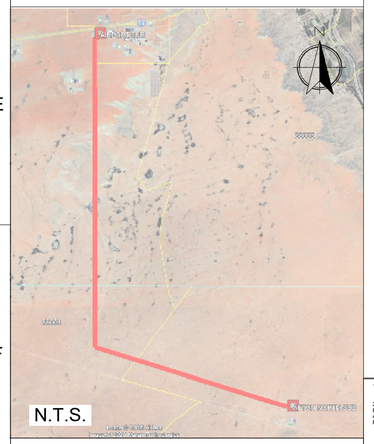

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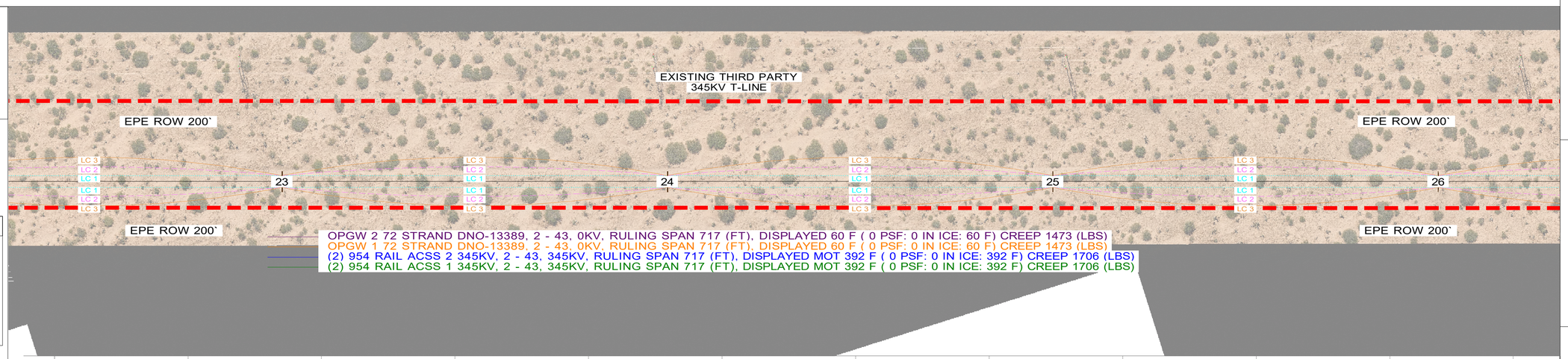

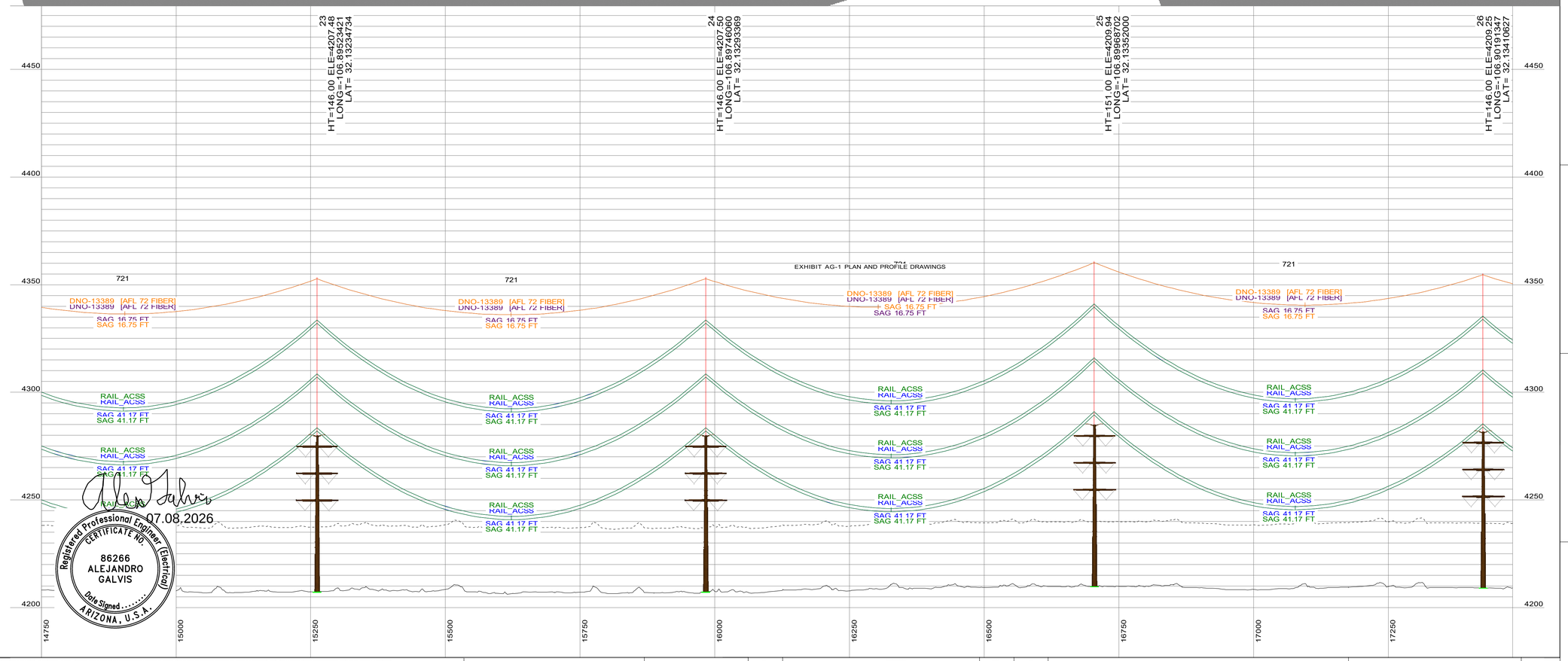

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EPE Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 8/31

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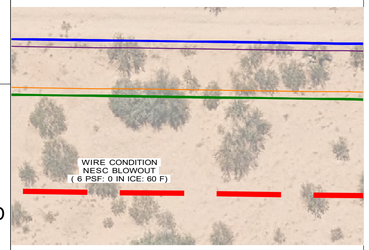

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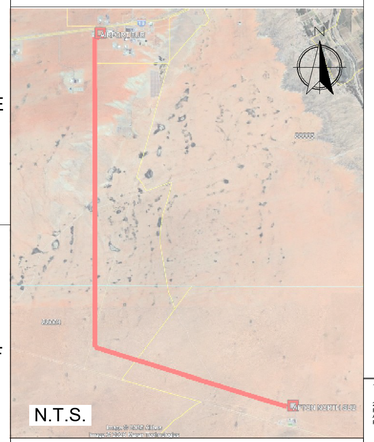

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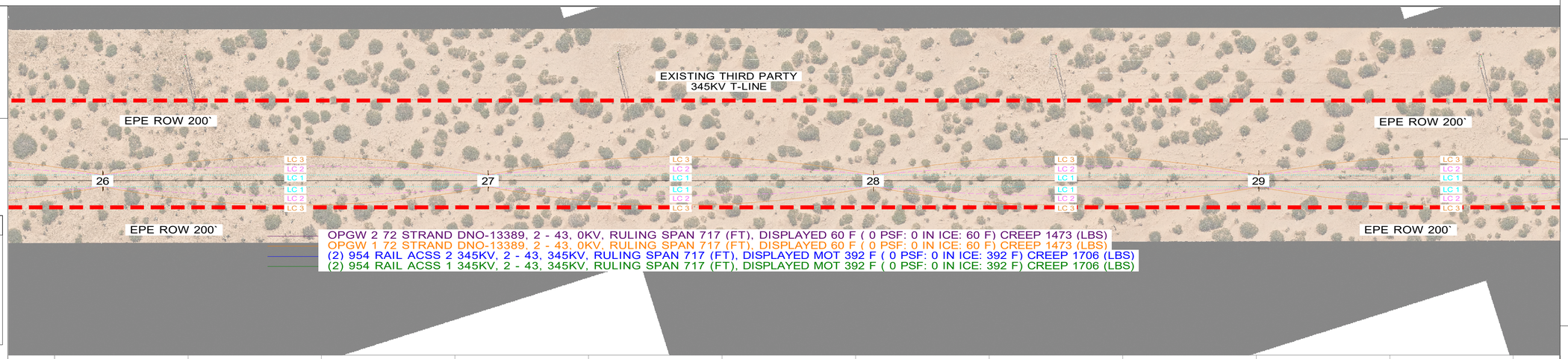

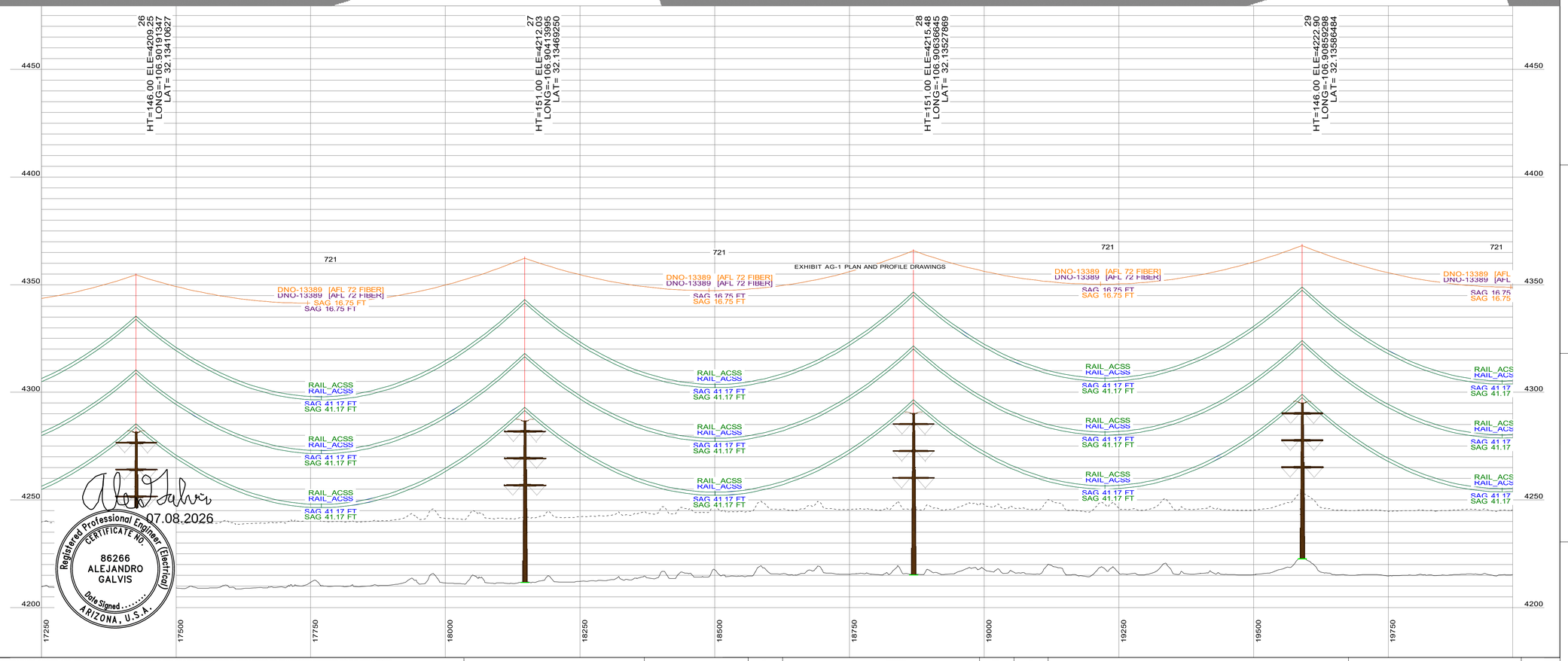

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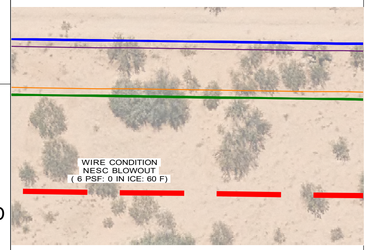

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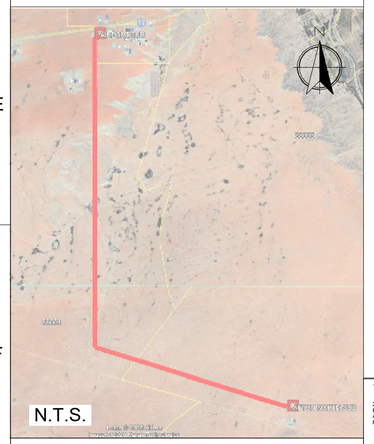

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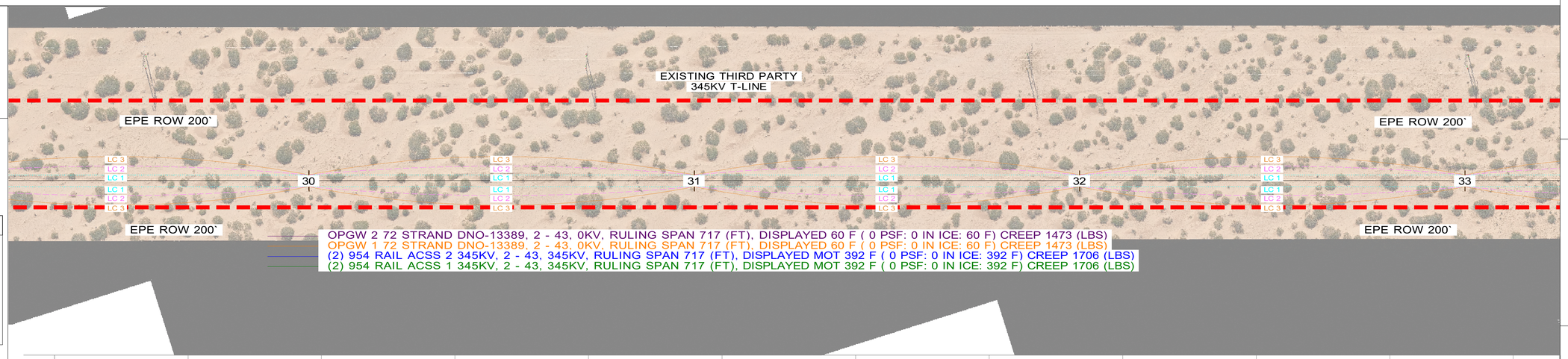

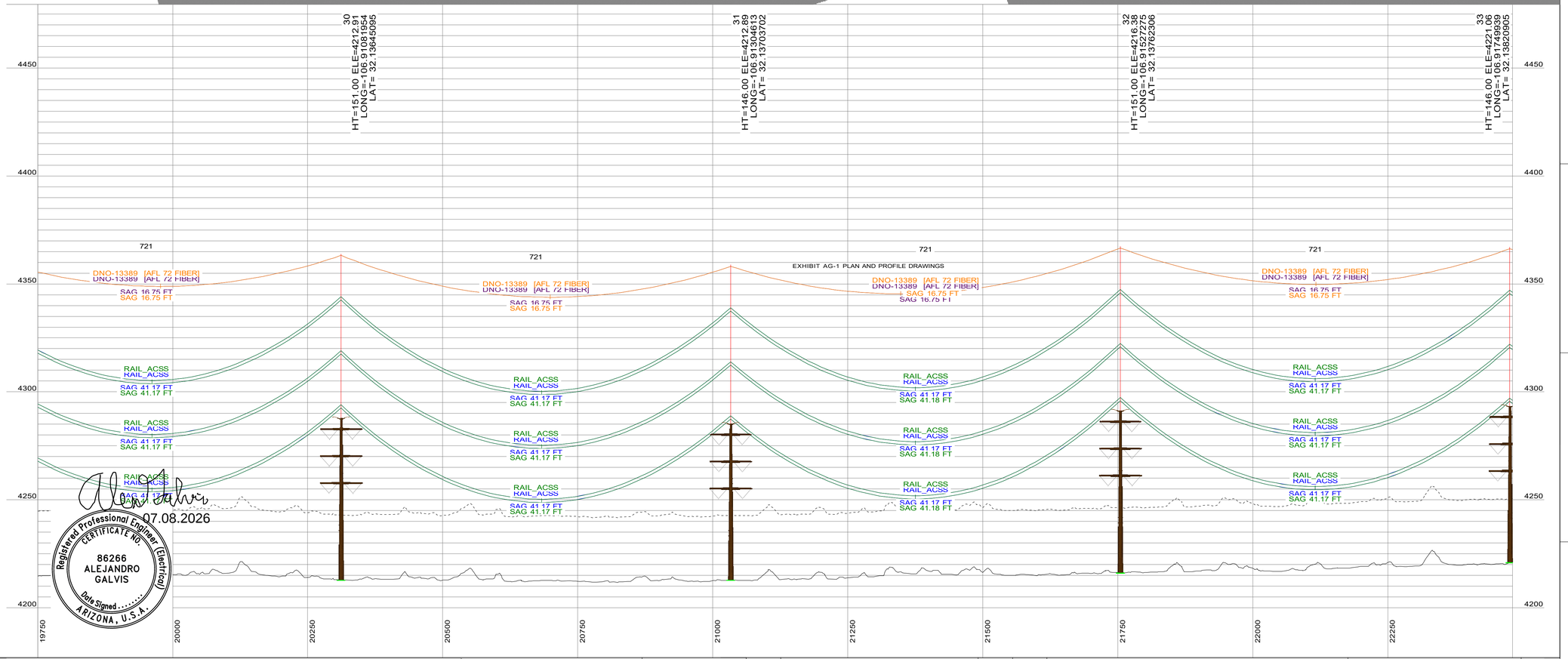

EXHIBIT AG-1 PLAN AND PROFILE DRAWINGS

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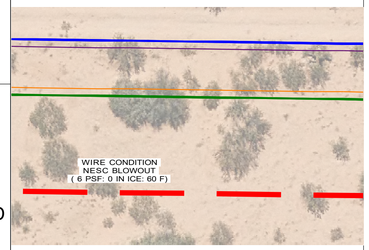

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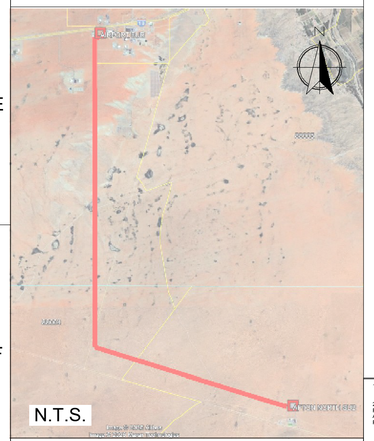

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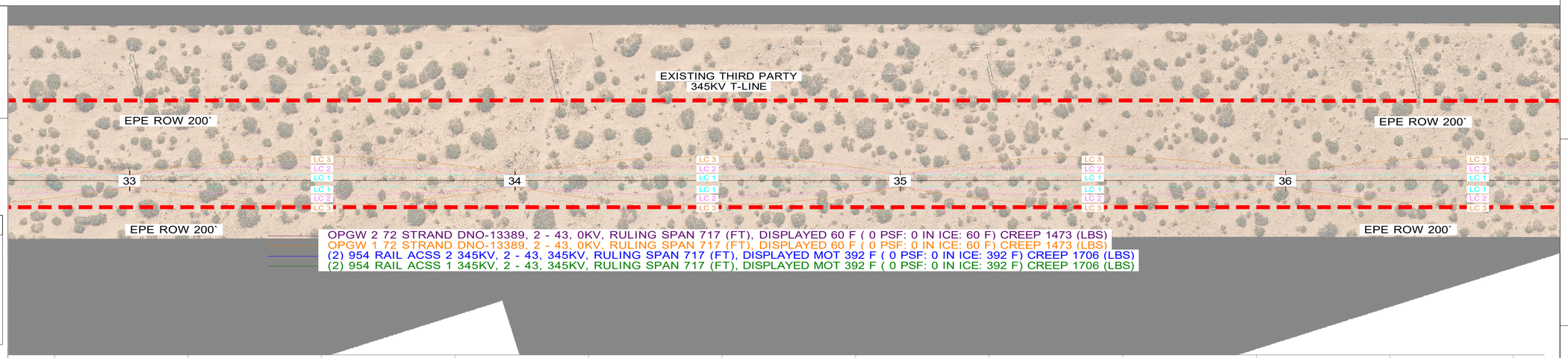

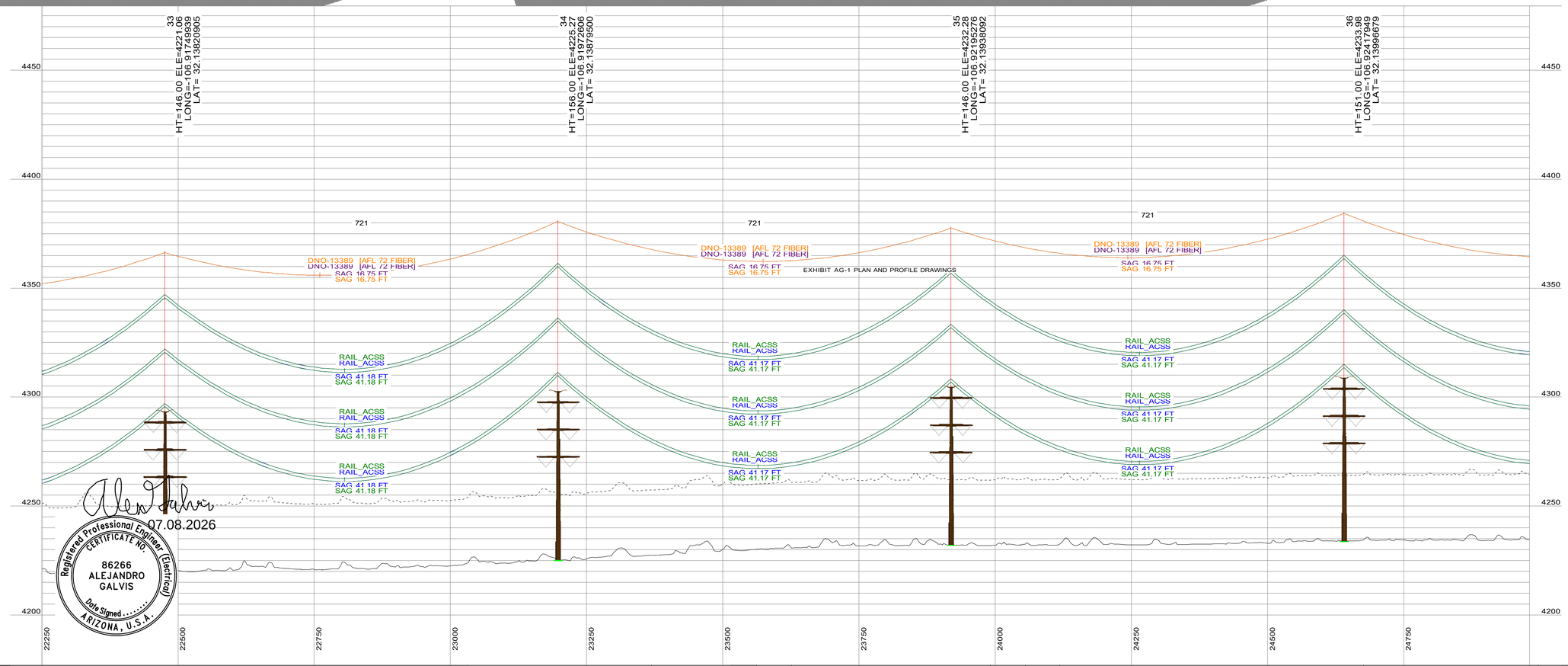

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100.0 FT. HORIZ. SCALE

25.0 FT. VERT. SCALE

NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 11/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

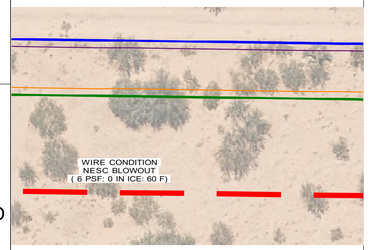
FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

BLOWOUT LOAD CASE LEYEND:

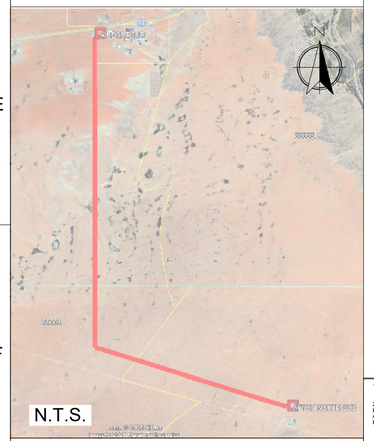
LC 1: 0 PSF WIND, 0 IN ICE, 60°F FINAL

LC 2: 6 PSF WIND, 0 IN ICE, 60°F FINAL

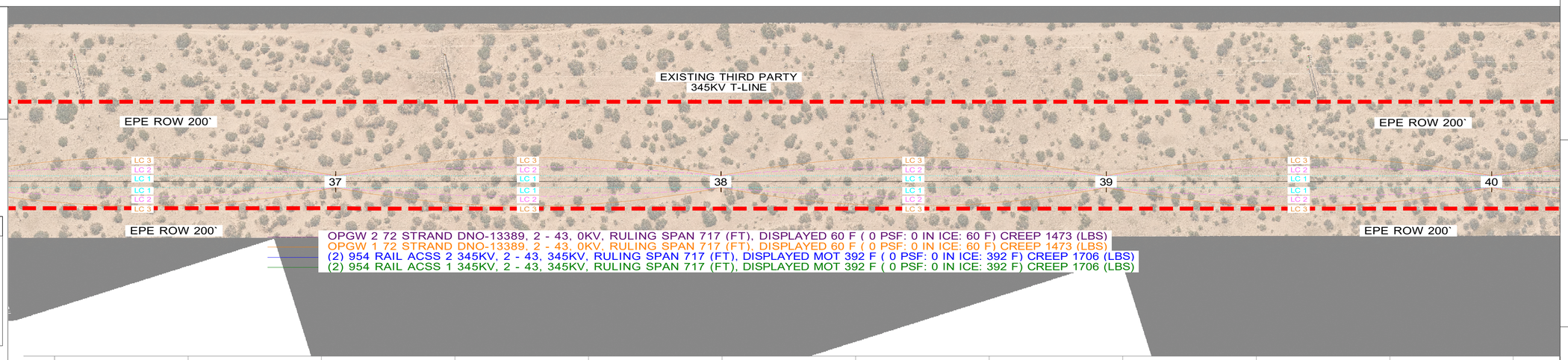
LC 3: 25.58 PSF WIND, 0 IN ICE, 60°F FINAL

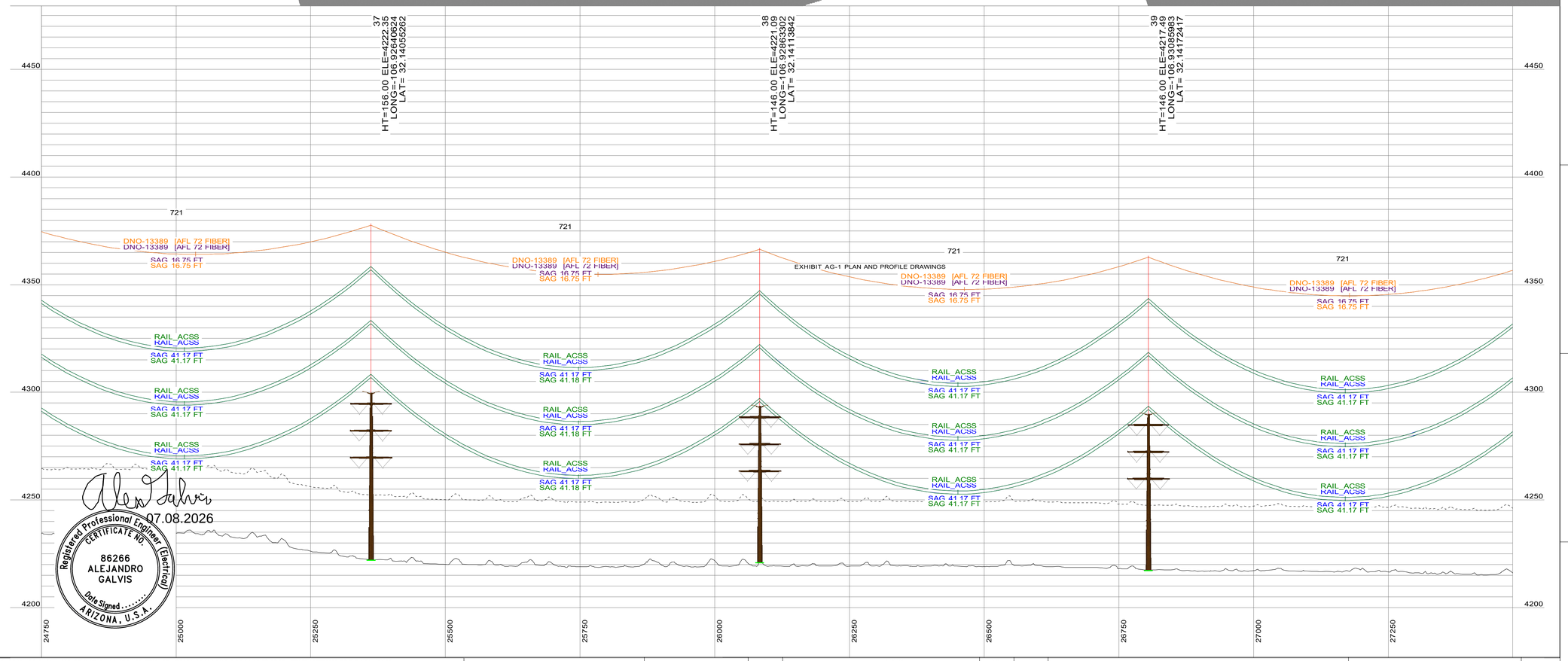


NESC BLOWOUT
ROW TYPICAL



VICINITY MAP





Registered Professional Engineer (Electrical)
CERTIFICATE NO.
86266
ALEJANDRO
GALVIS
Date Signed.....
ARIZONA, U.S.A.
07.08.2026

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PLAN AND PROFILE
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TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 12/31

PROJECT NOTES

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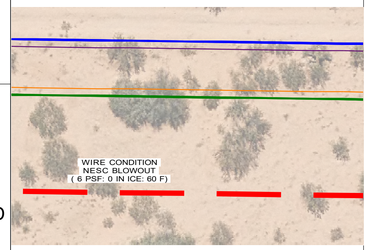

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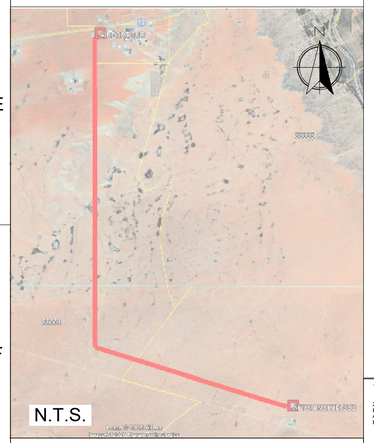
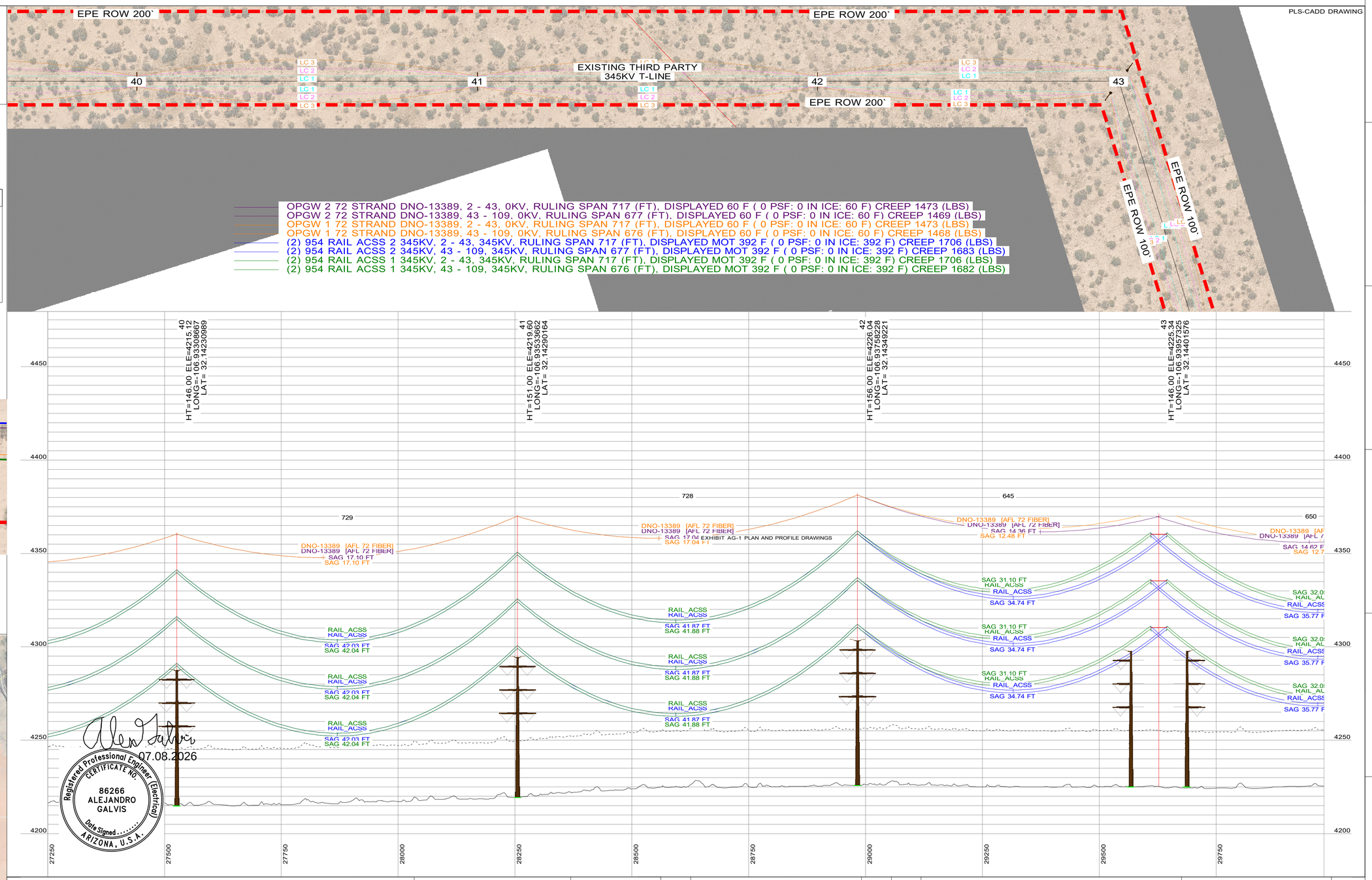


VICINITY MAP



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PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
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APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
The Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 13/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

FIBER:
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SINGLE BUNDLE

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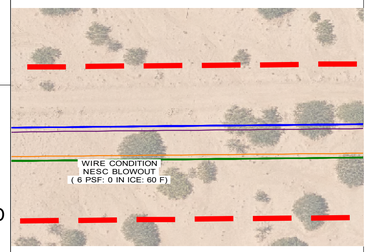
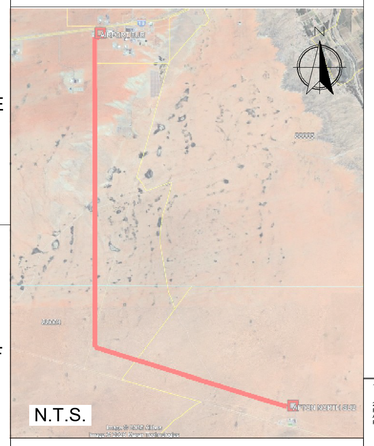
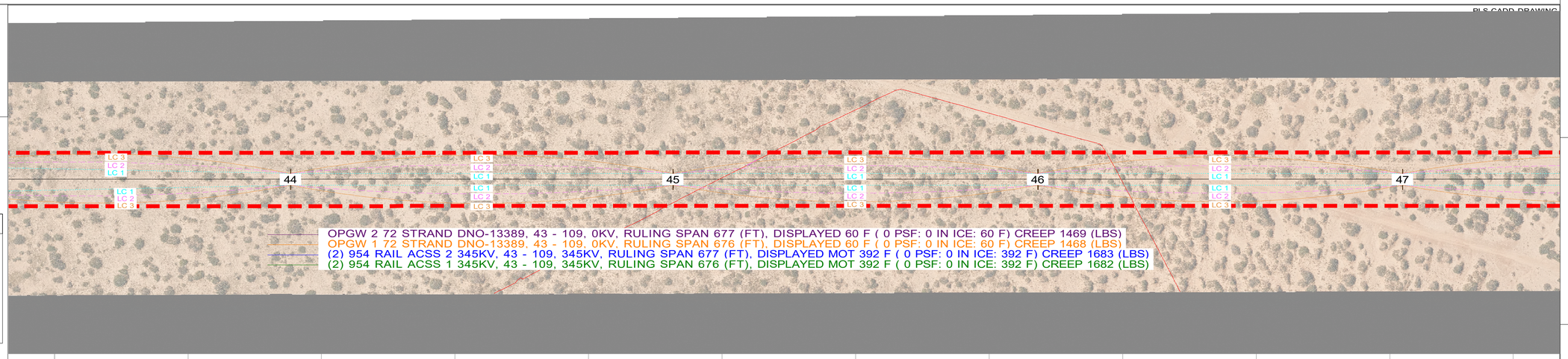
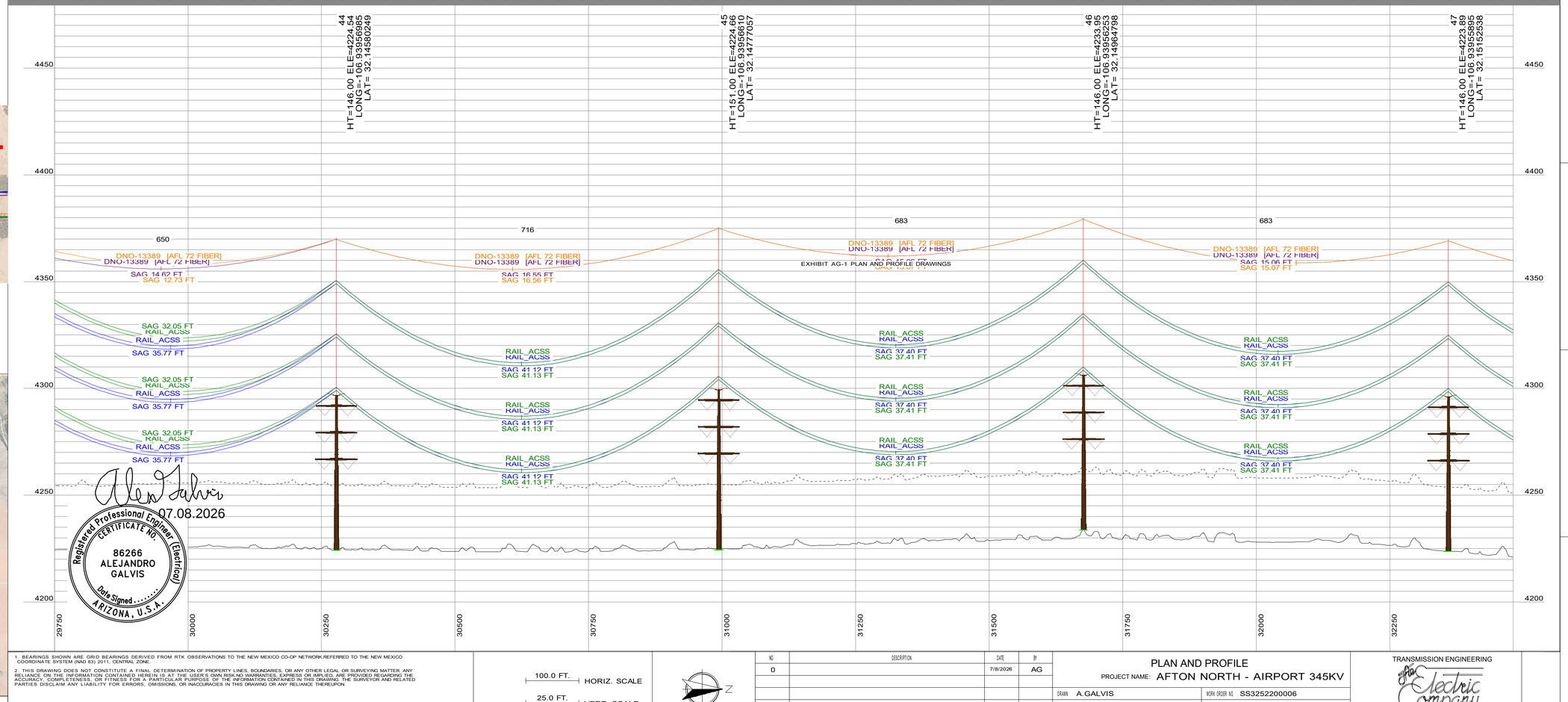


NESC BLOWOUT
ROW TYPICAL



VICINITY MAP





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TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 14/31

PROJECT NOTES

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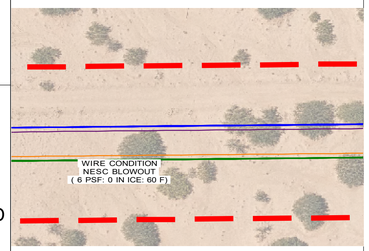

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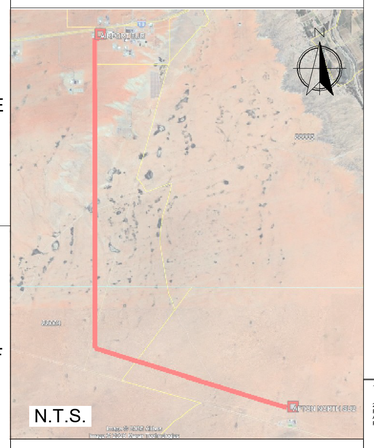

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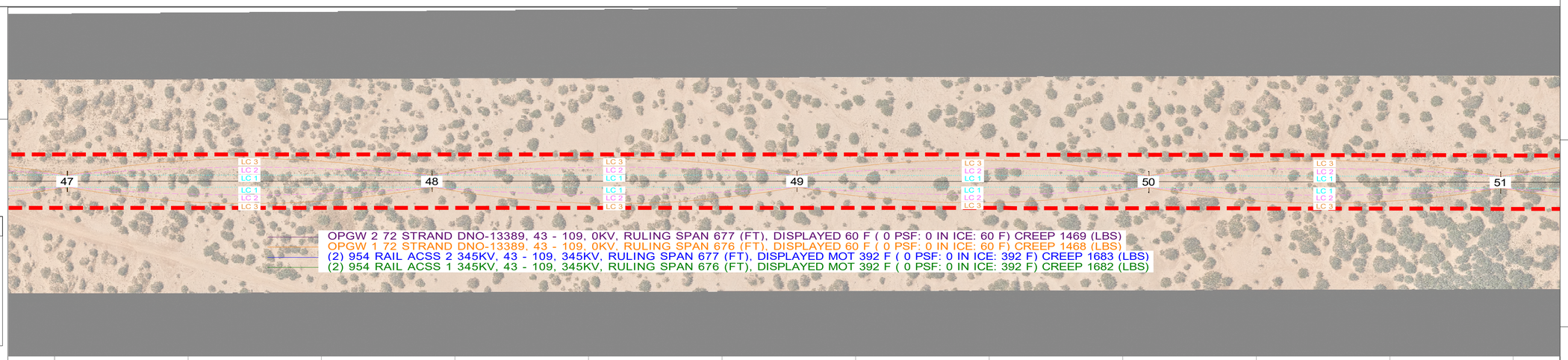

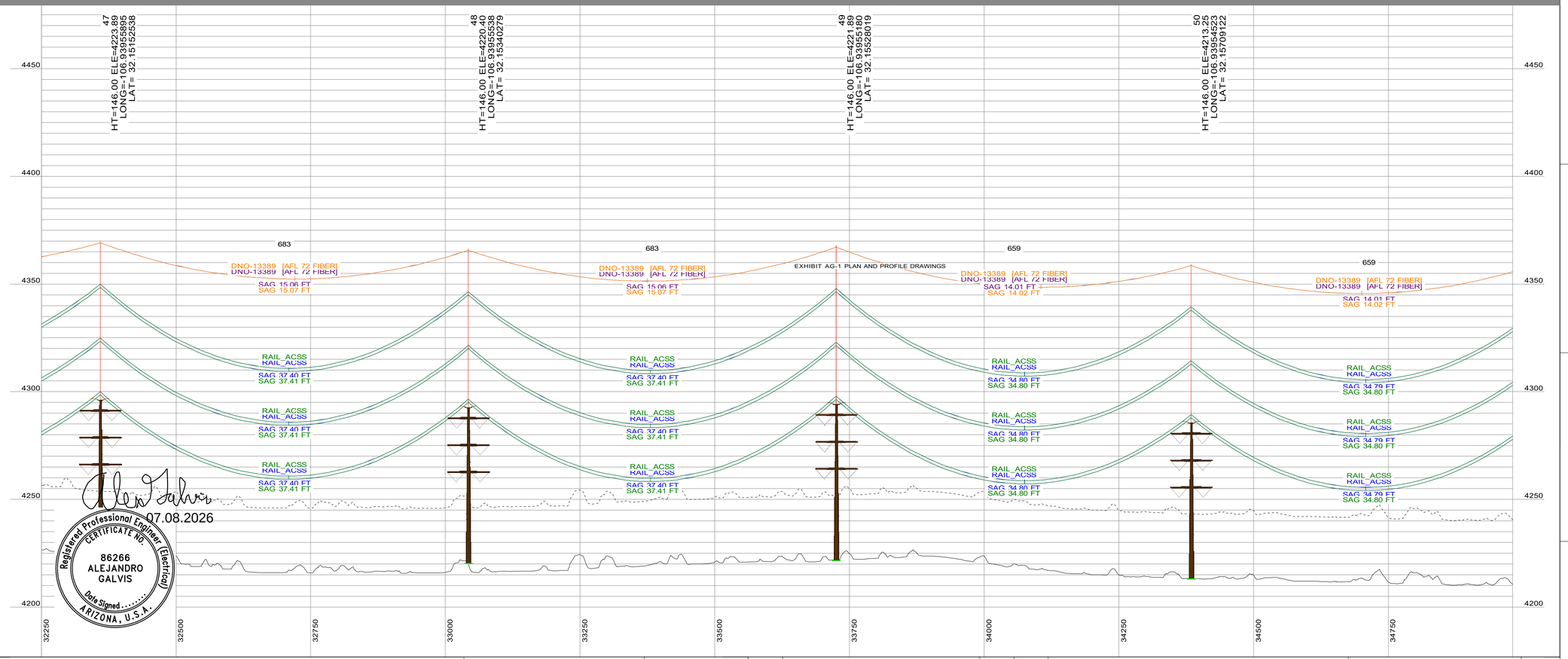

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PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 15/31

PROJECT NOTES

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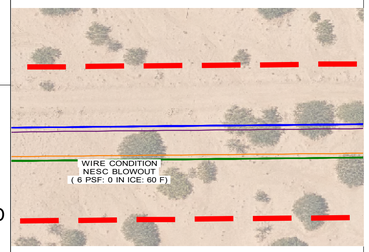

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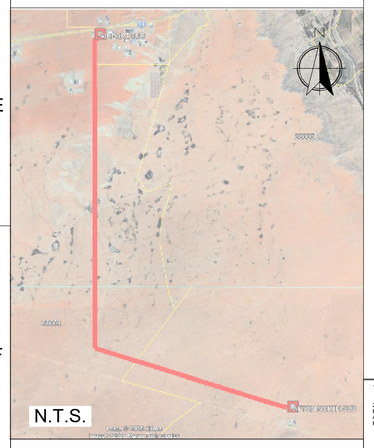

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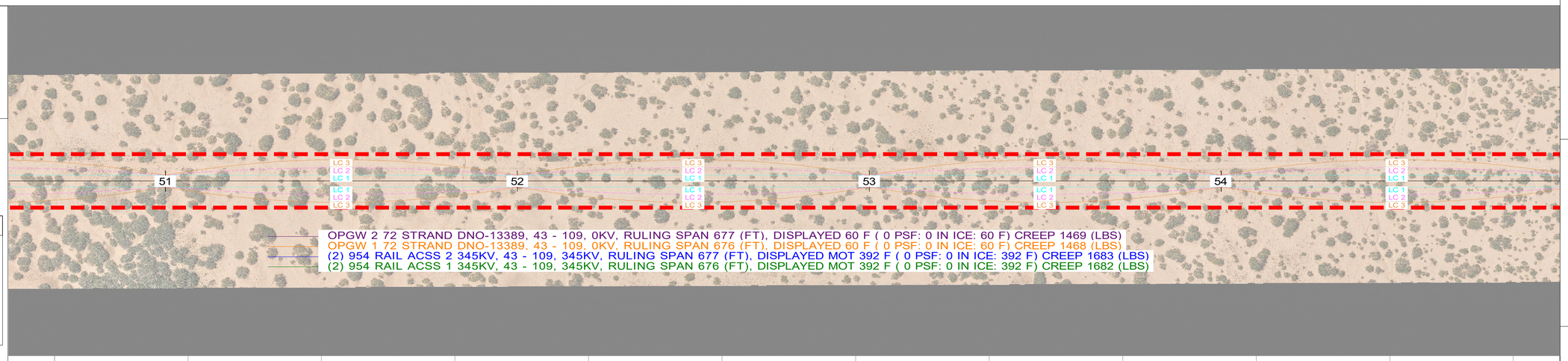

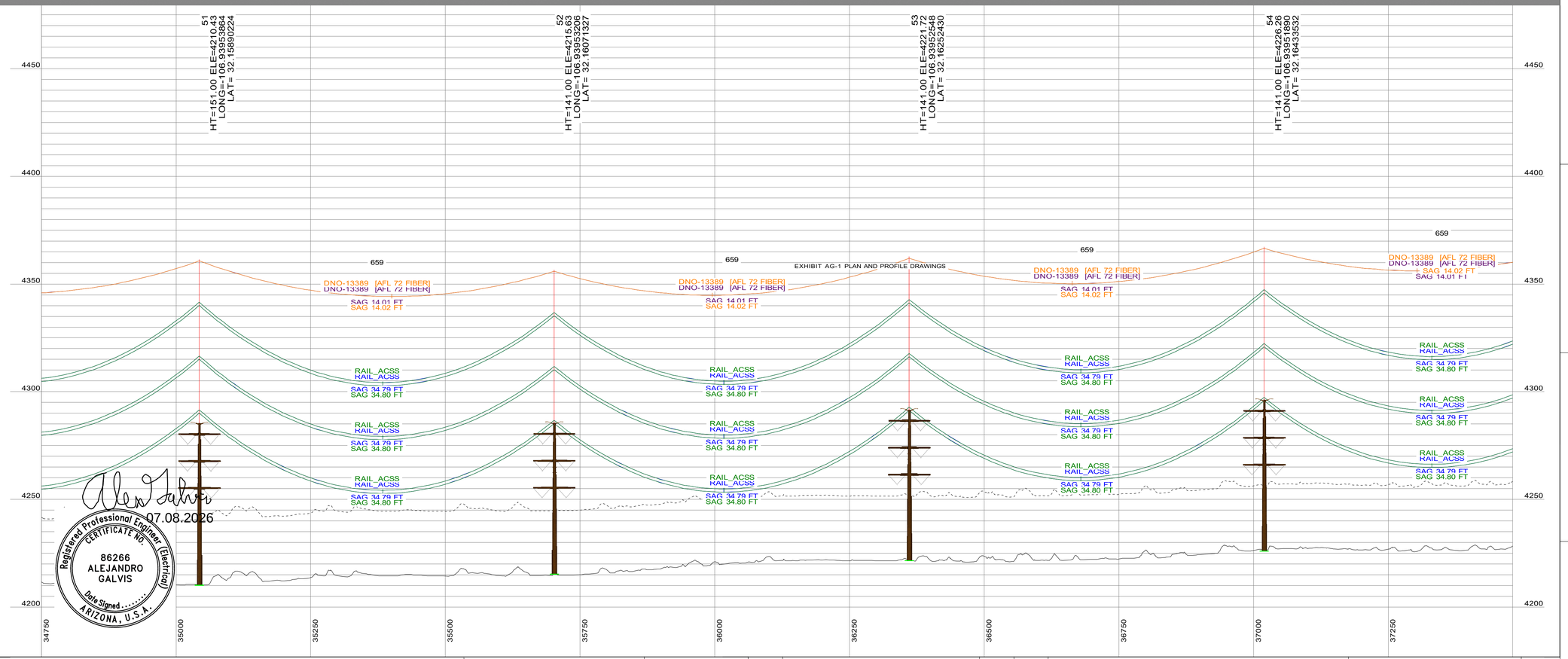

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PLAN AND PROFILE
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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 16/31

PROJECT NOTES

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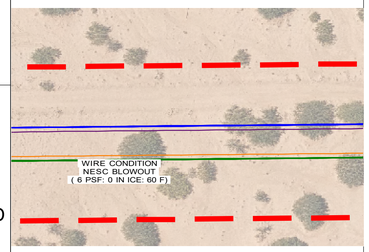

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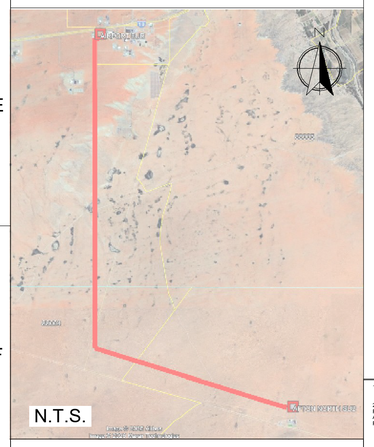

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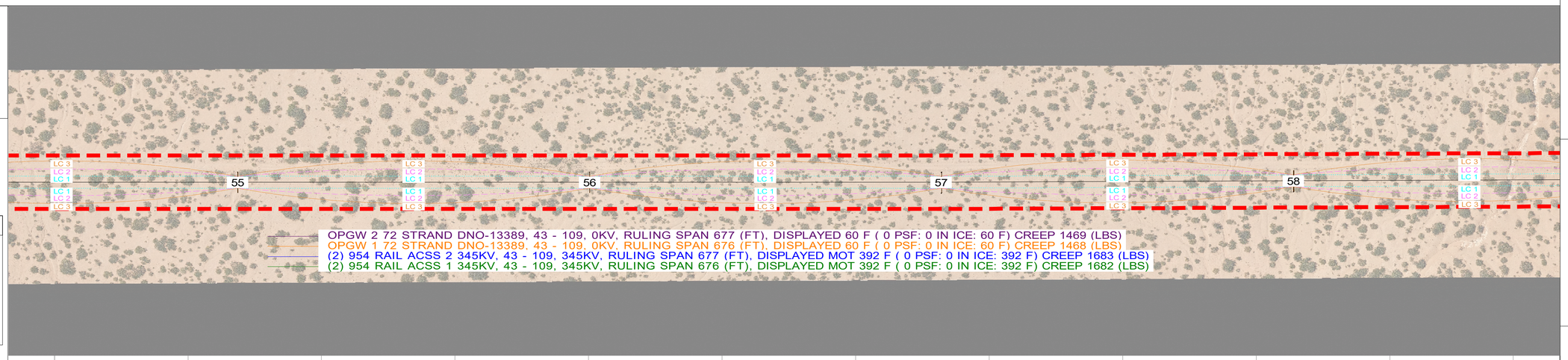

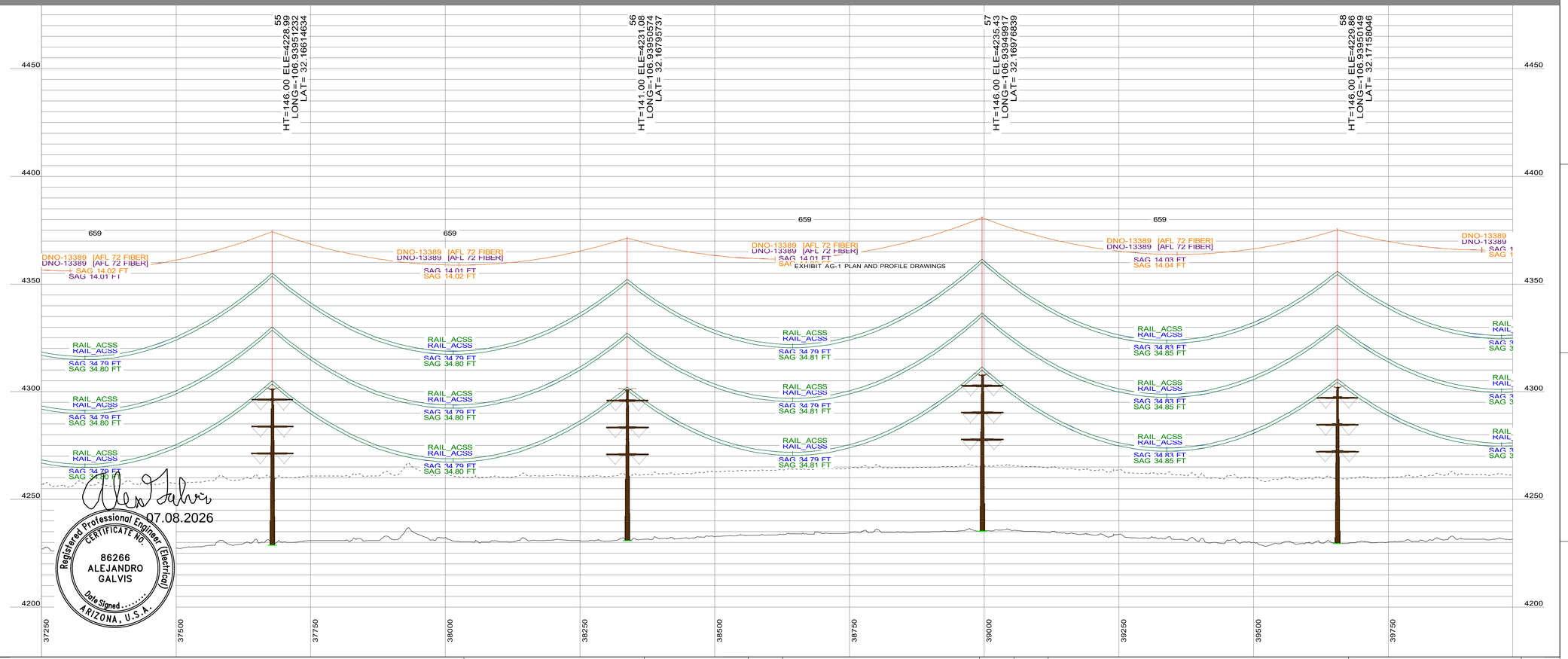

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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 17/31

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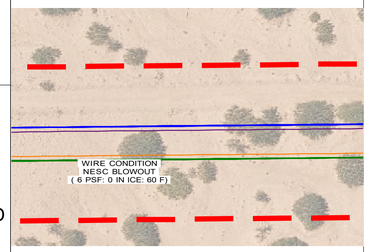

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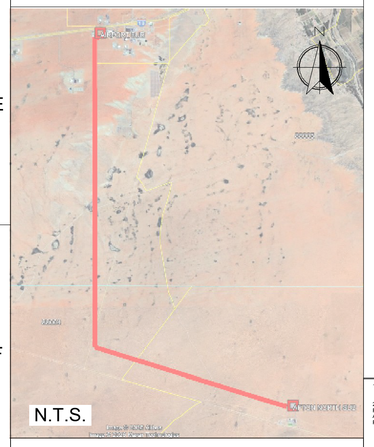

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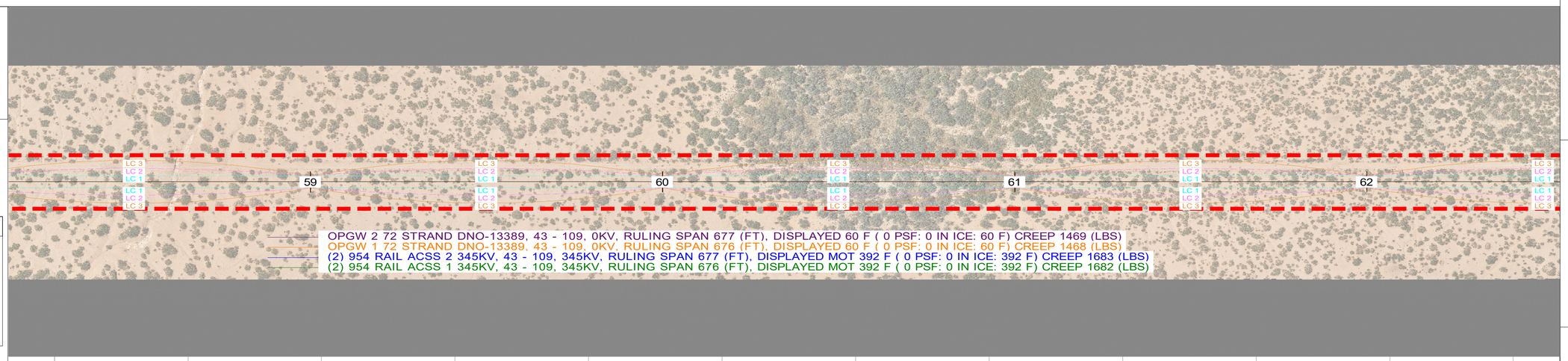

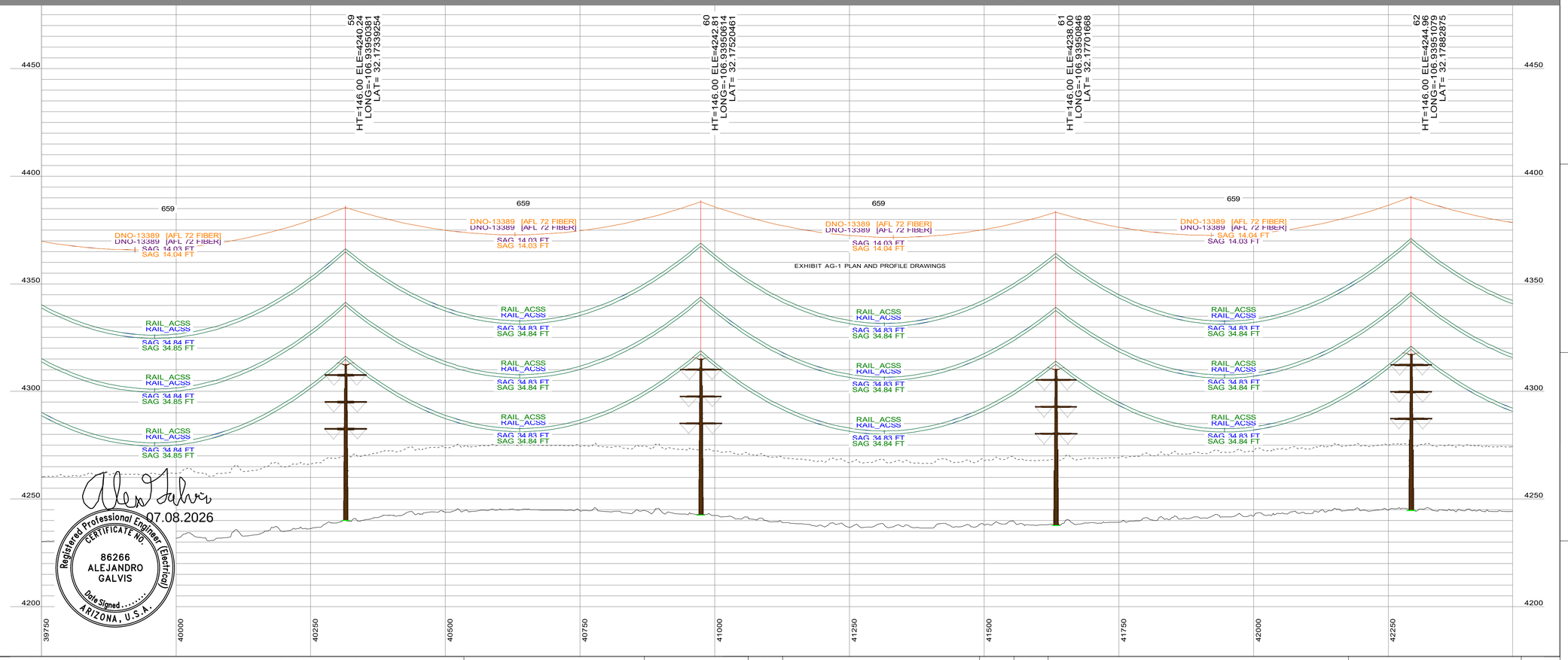

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100.0 FT. HORIZ. SCALE

25.0 FT. VERT. SCALE

NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 18/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

BLOWOUT LOAD CASE LEYEND:

LC 1: 0 PSF WIND, 0 IN ICE, 60°F FINAL

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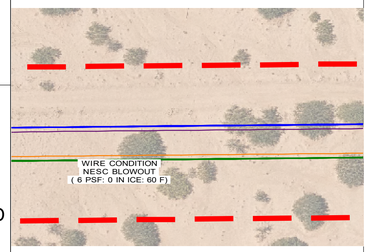
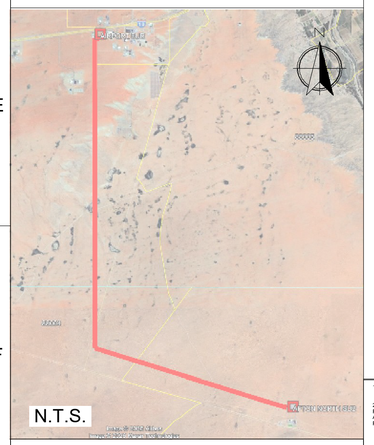
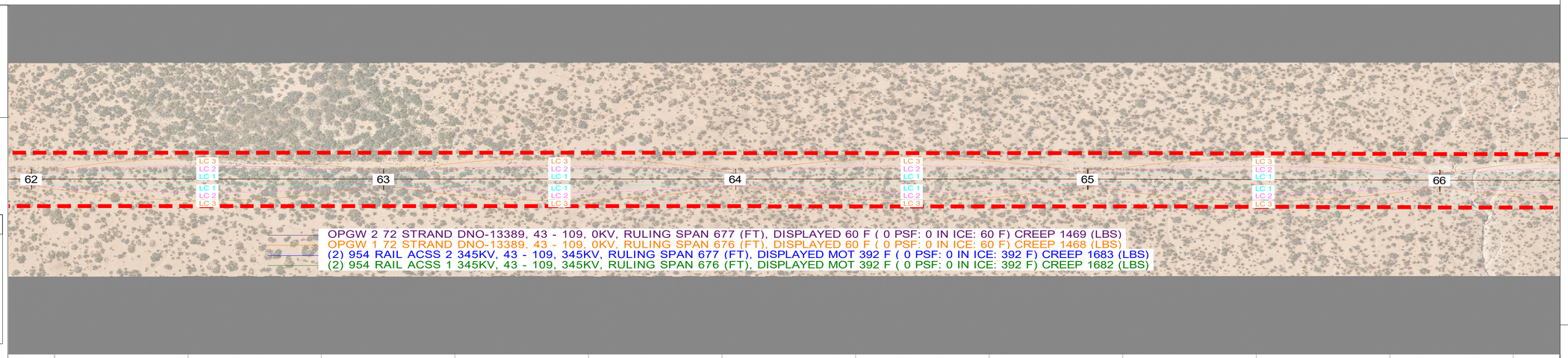
LC 3: 25.58 PSF WIND, 0 IN ICE, 60°F FINAL

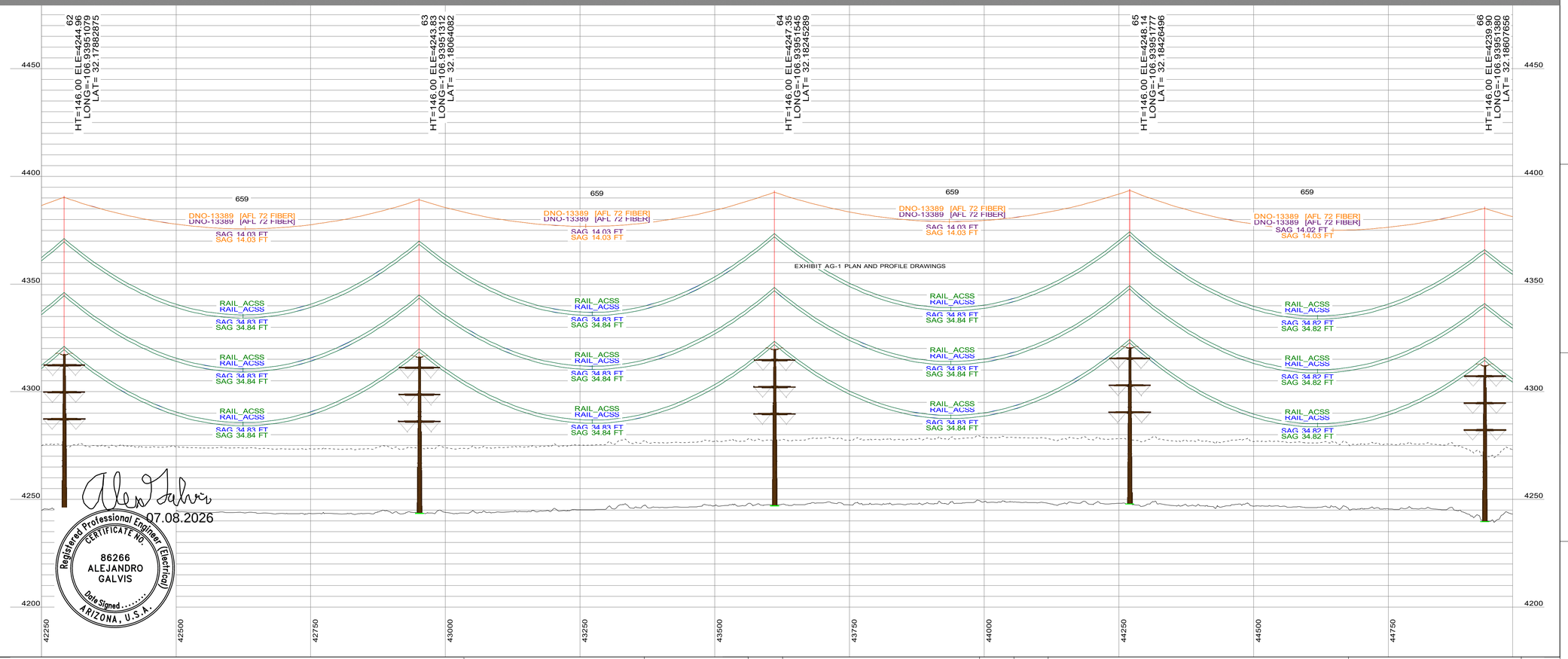


NESC BLOWOUT
ROW TYPICAL



VICINITY MAP





07.08.2026

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
86266
ALEJANDRO
GALVIS
Date Signed.....
ARIZONA, U.S.A.

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APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
by Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 19/31

PROJECT NOTES

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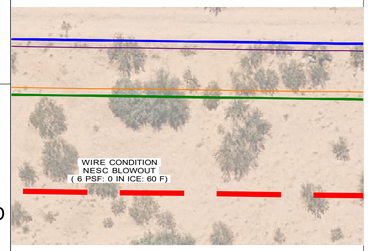

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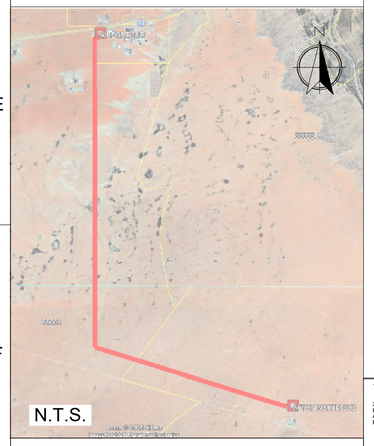

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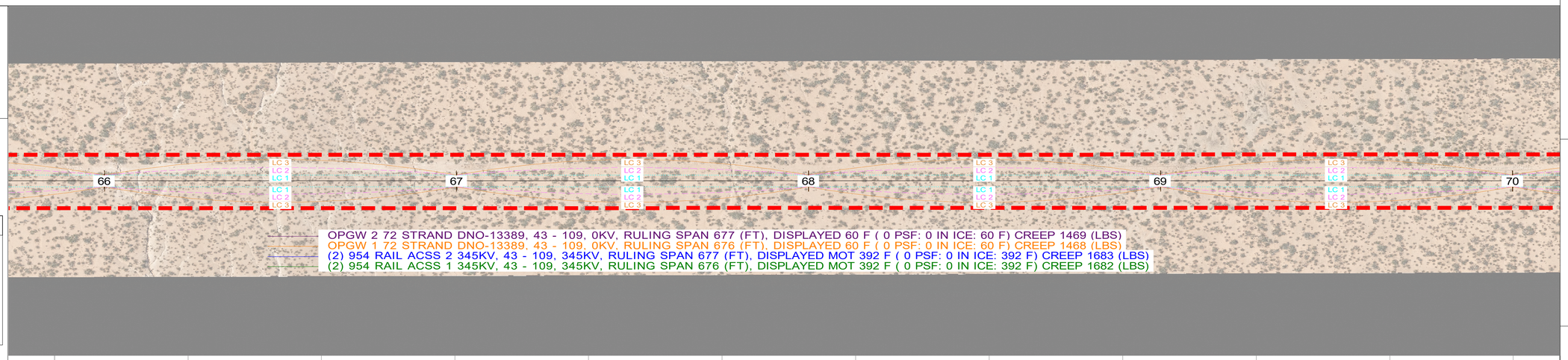

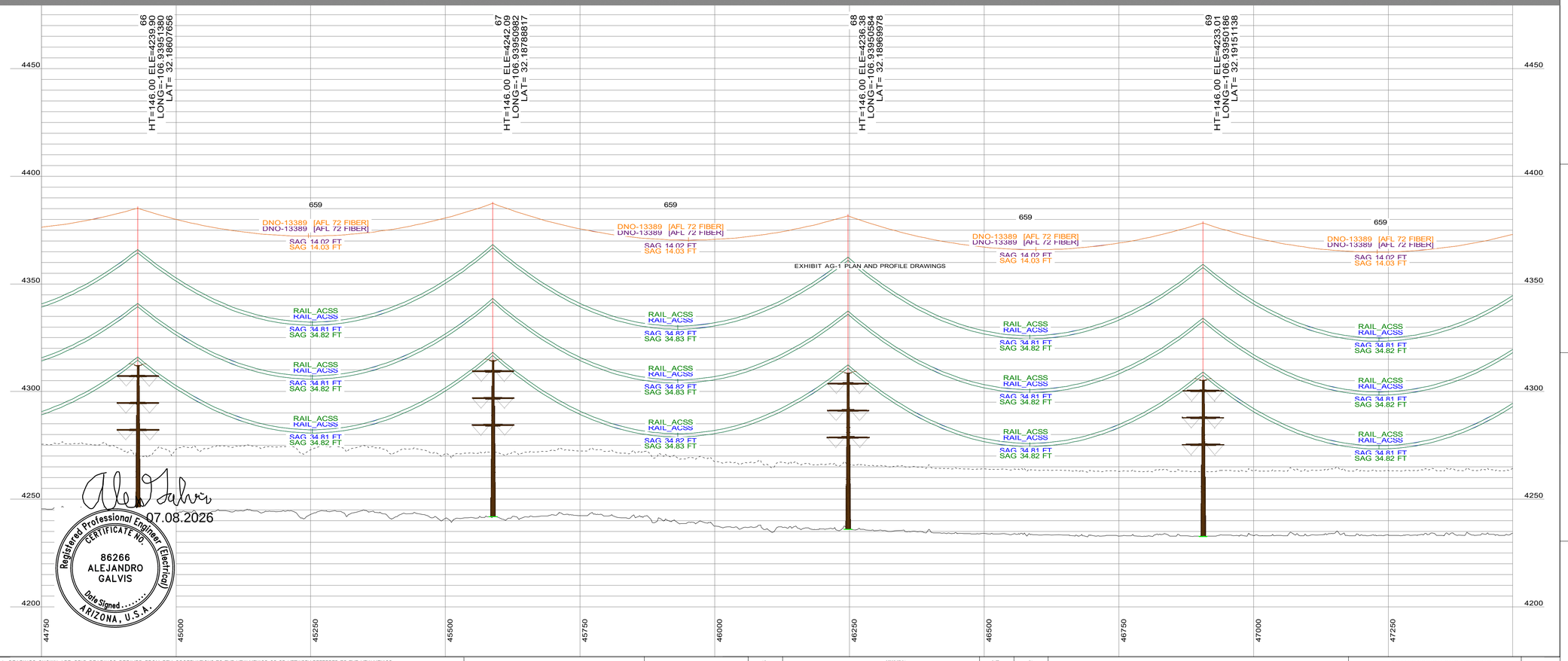

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APPROVED	M. VELOZ	DATE	7/8/2026
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TRANSMISSION ENGINEERING
by Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 20/31

PROJECT NOTES

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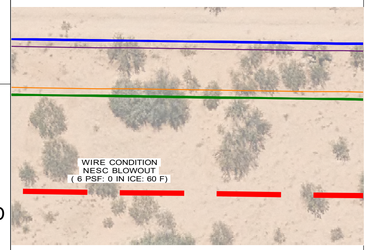

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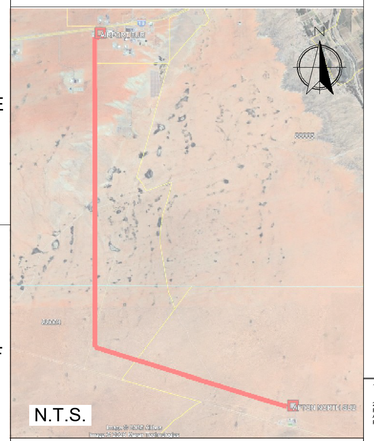

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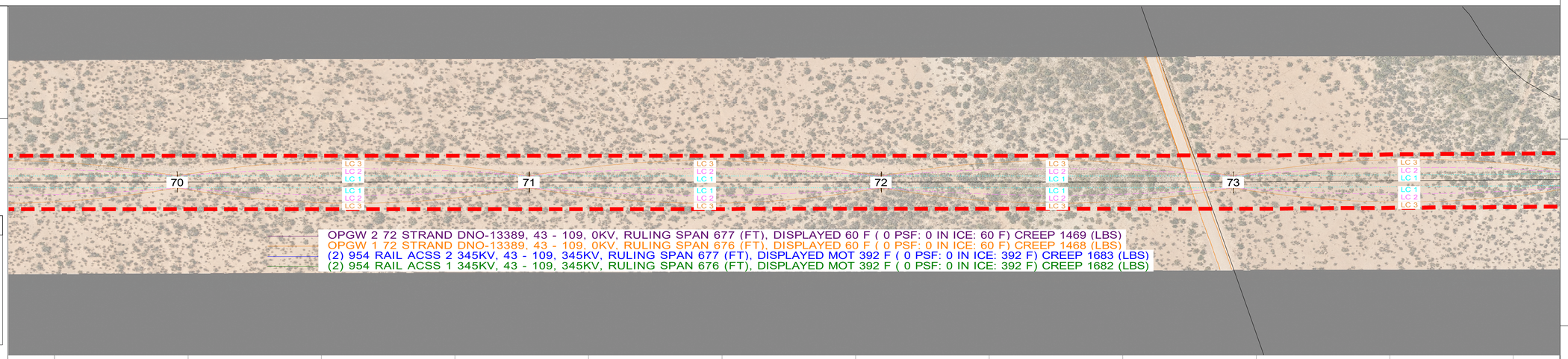

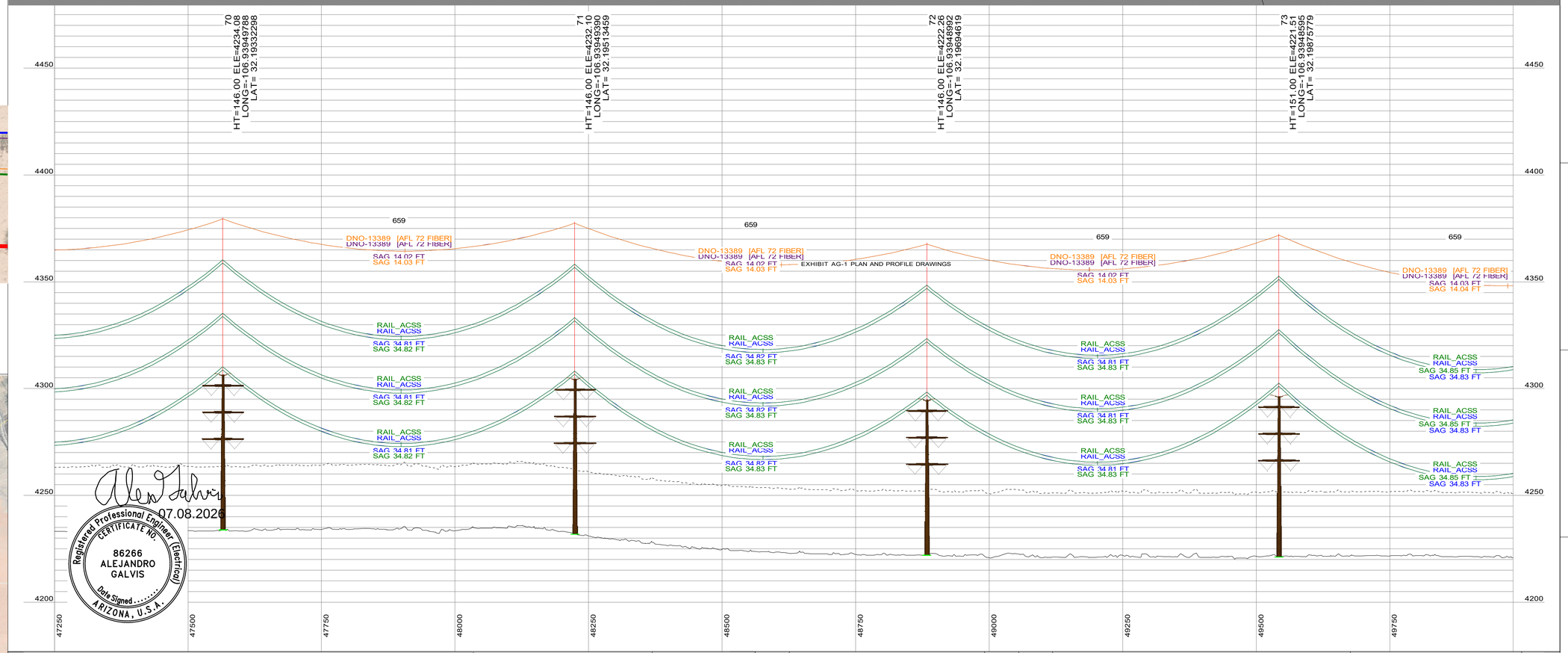

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PLAN AND PROFILE
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TRANSMISSION ENGINEERING
Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 21/31

PROJECT NOTES

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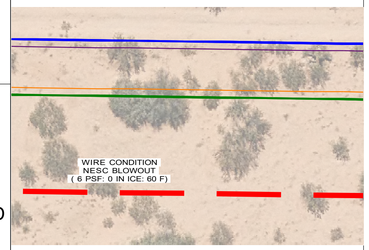

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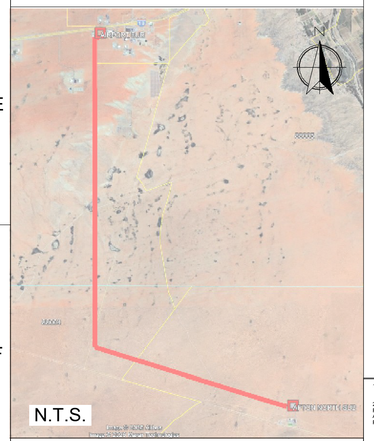

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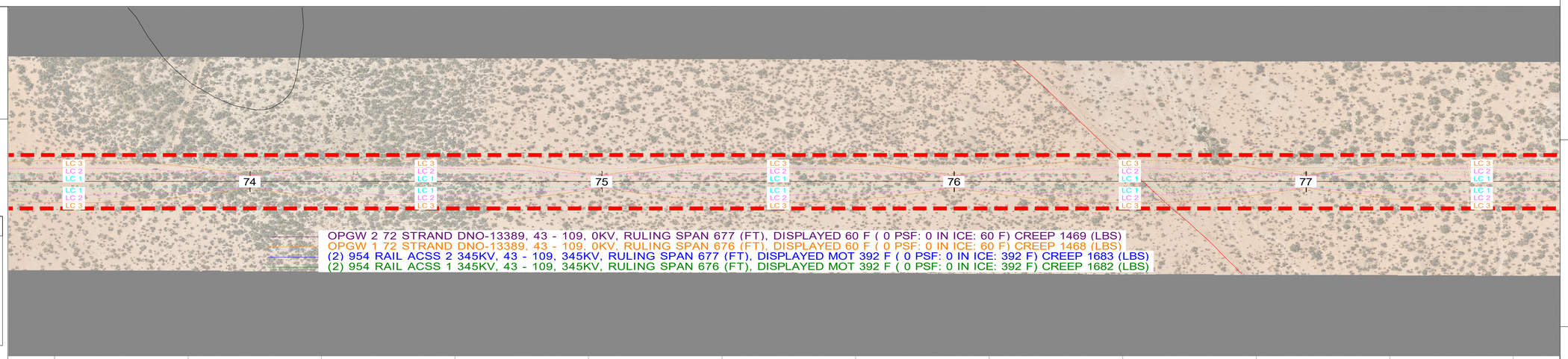

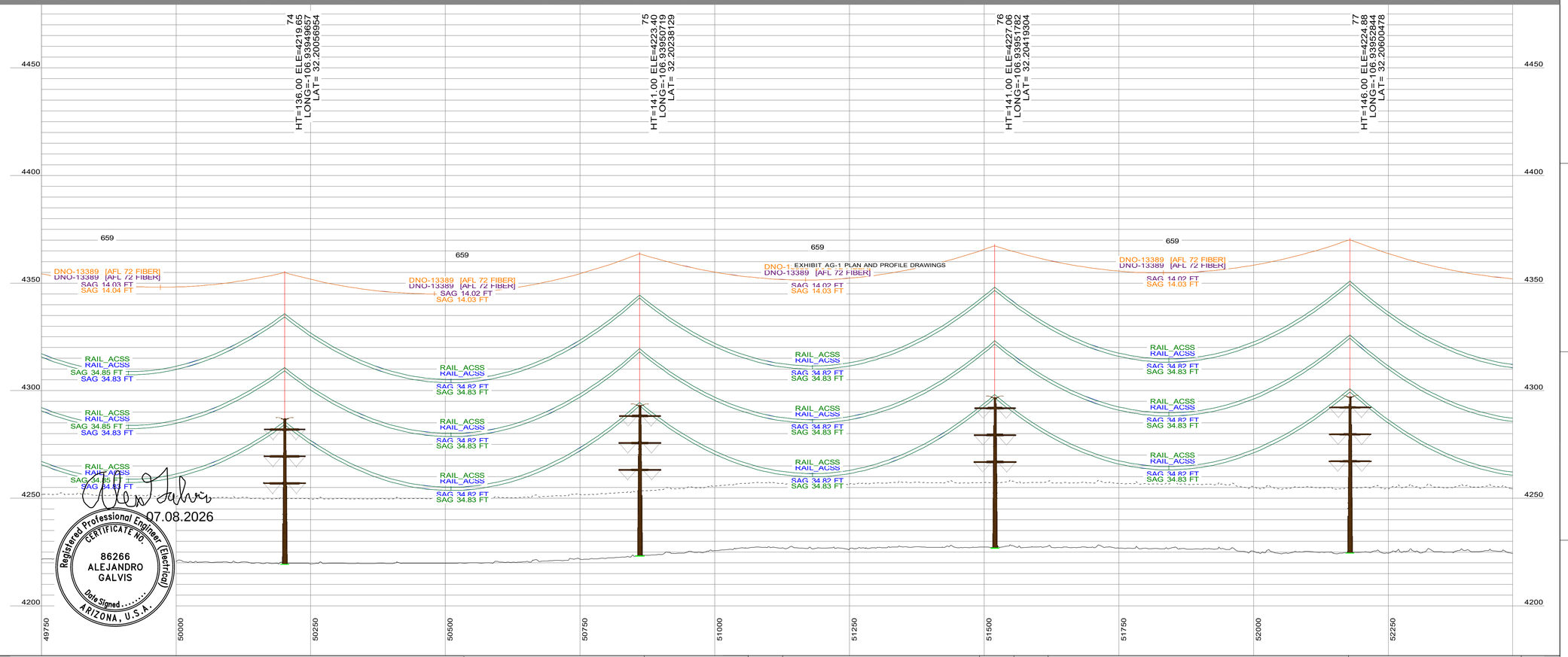

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PLAN AND PROFILE
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TRANSMISSION ENGINEERING
Pre Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 22/31

PROJECT NOTES

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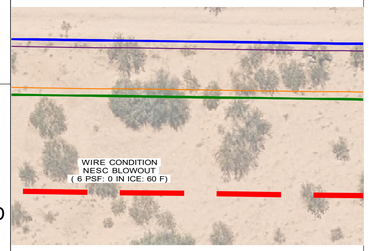

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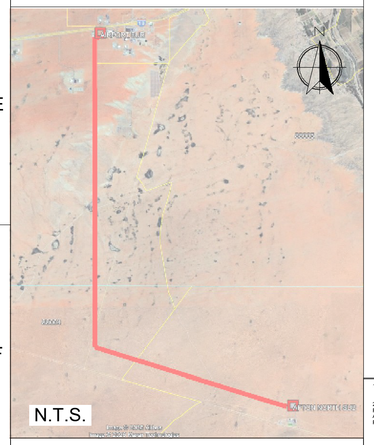
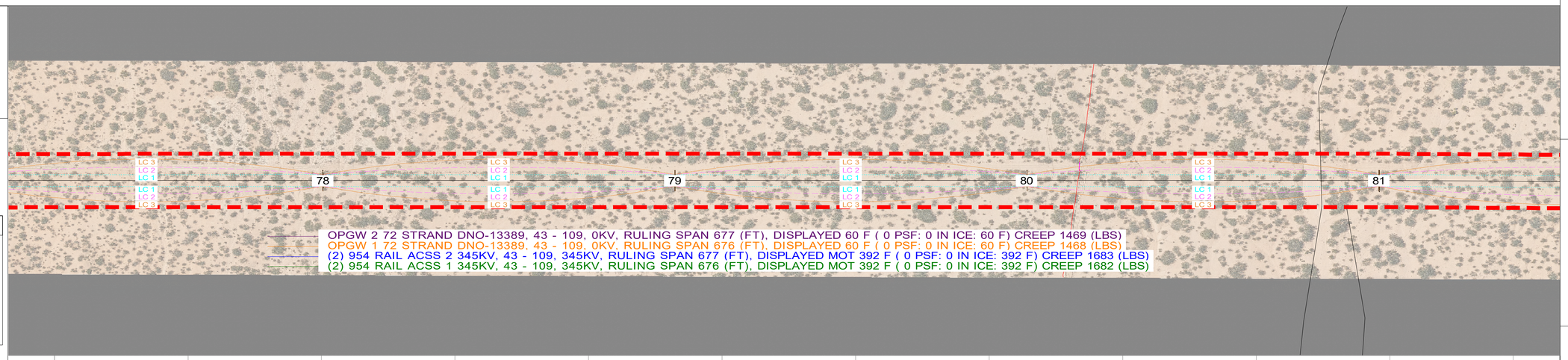
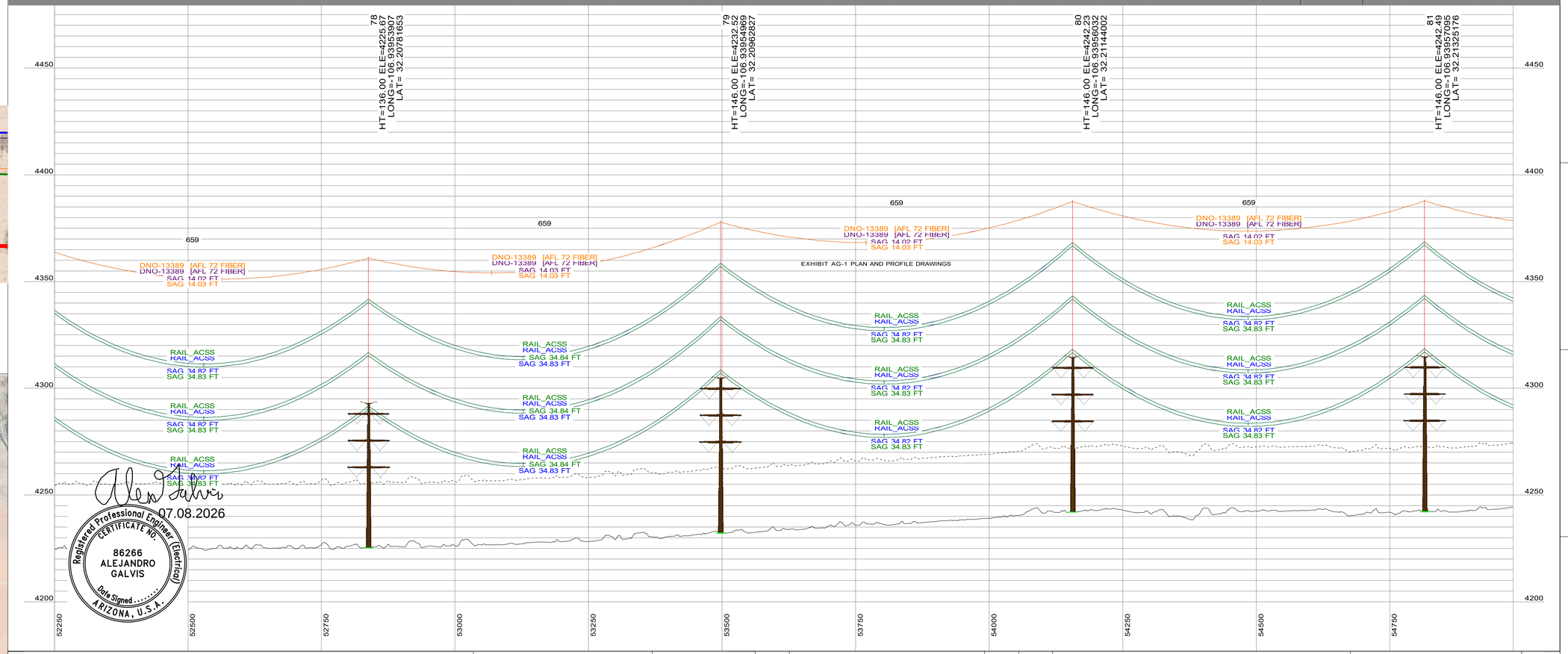


VICINITY MAP





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APPROVED	M. VELOZ	DATE	7/8/2026
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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 23/31

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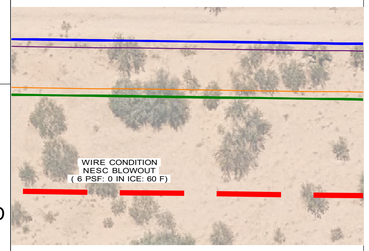

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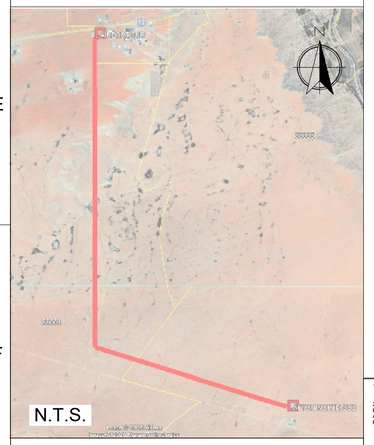

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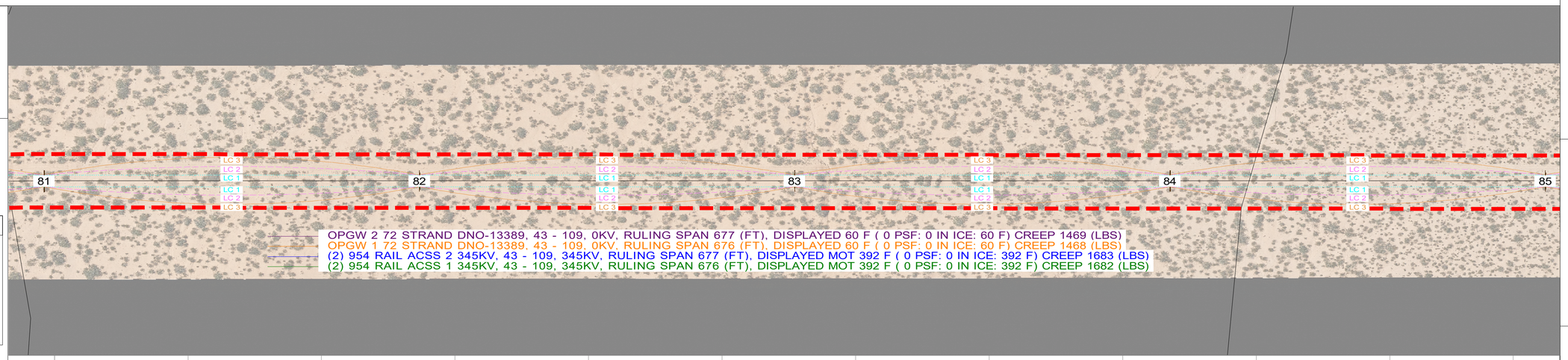

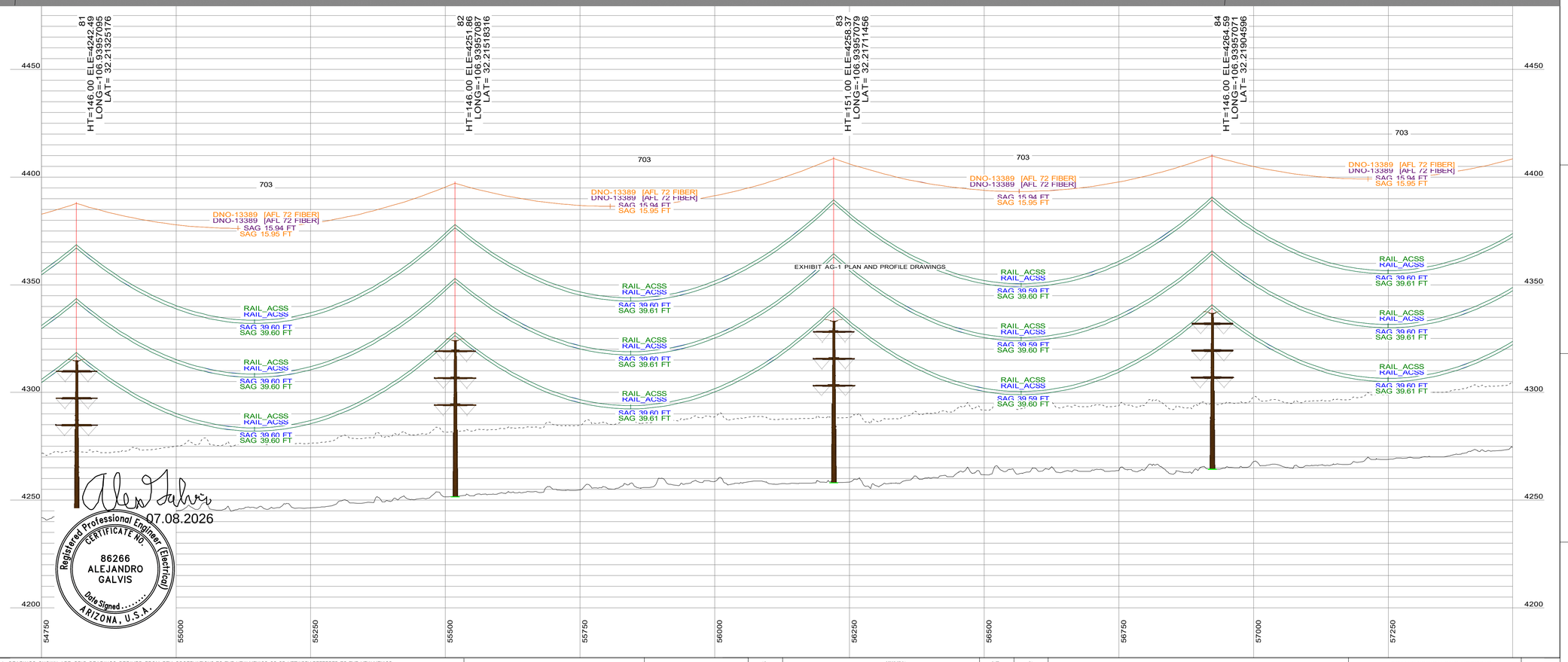

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		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
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PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 24/31

PROJECT NOTES

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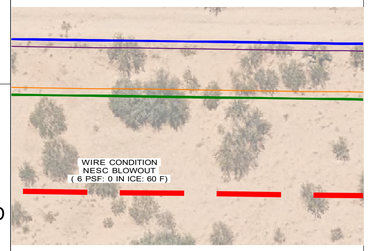

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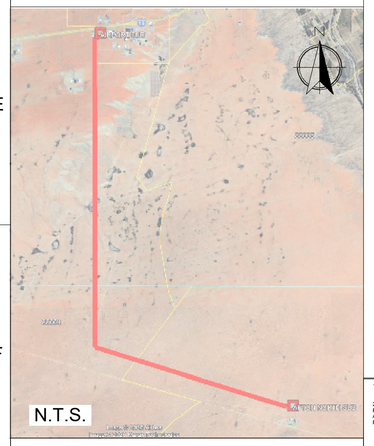

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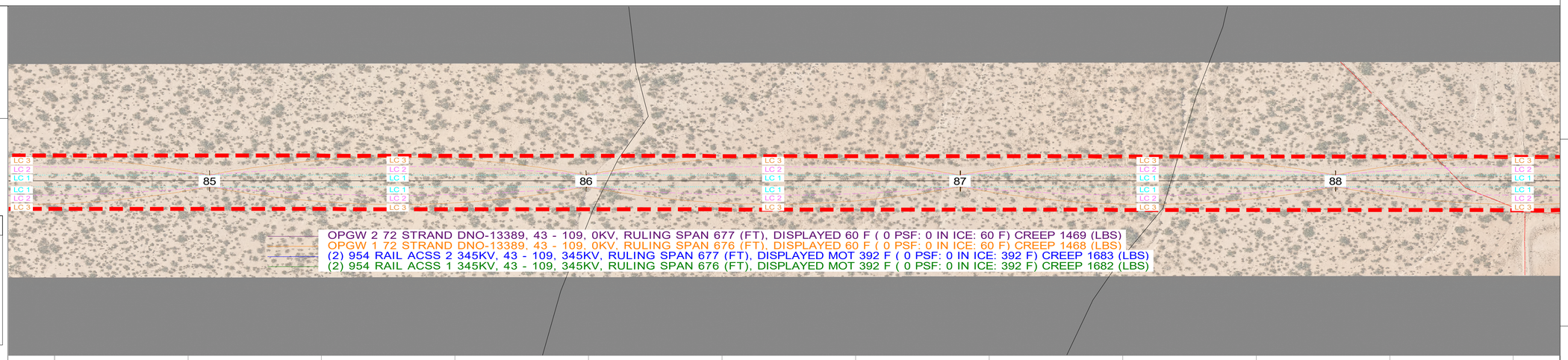

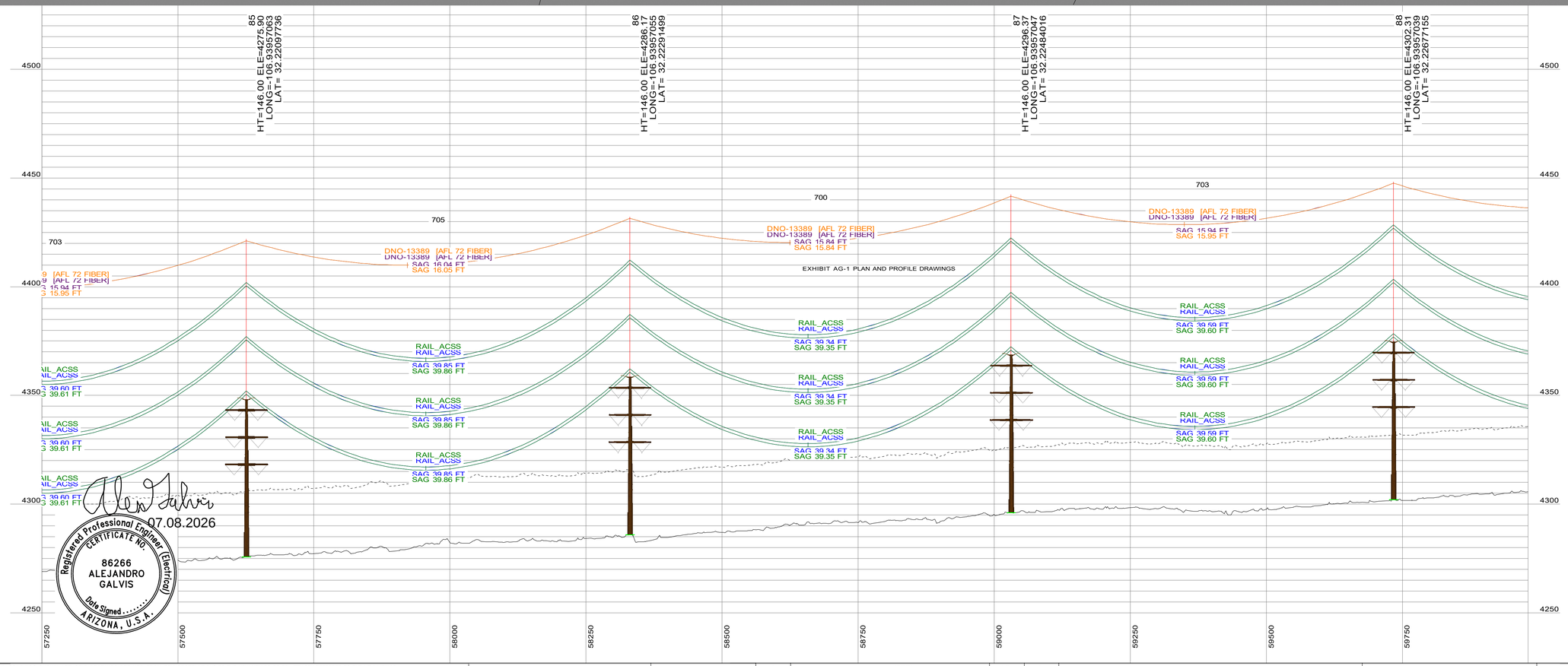

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GALVIS
Date Signed.....
ARIZONA, U.S.A.

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100.0 FT. HORIZ. SCALE
25.0 FT. VERT. SCALE

NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 25/31

PROJECT NOTES

CONDUCTOR:
954 RAIL ACSR
DOUBLE BUNDLE (18 INCH SPACING)

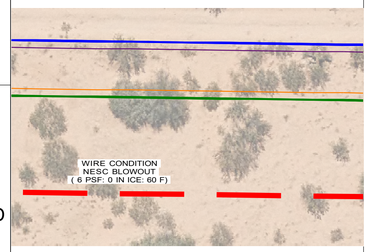
FIBER:
72 FIBER COUNT OPGW
SINGLE BUNDLE

BLOWOUT LOAD CASE LEYEND:

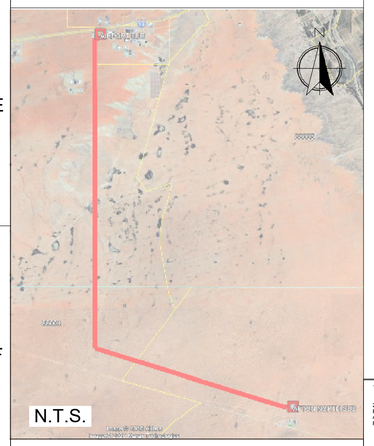
LC 1: 0 PSF WIND, 0 IN ICE, 60°F FINAL

LC 2: 6 PSF WIND, 0 IN ICE, 60°F FINAL

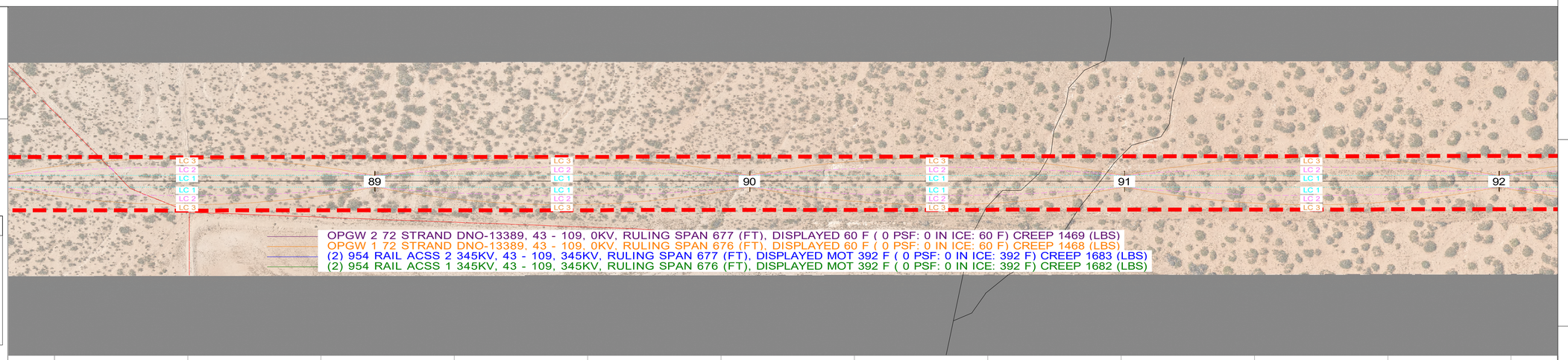
LC 3: 25.58 PSF WIND, 0 IN ICE, 60°F FINAL

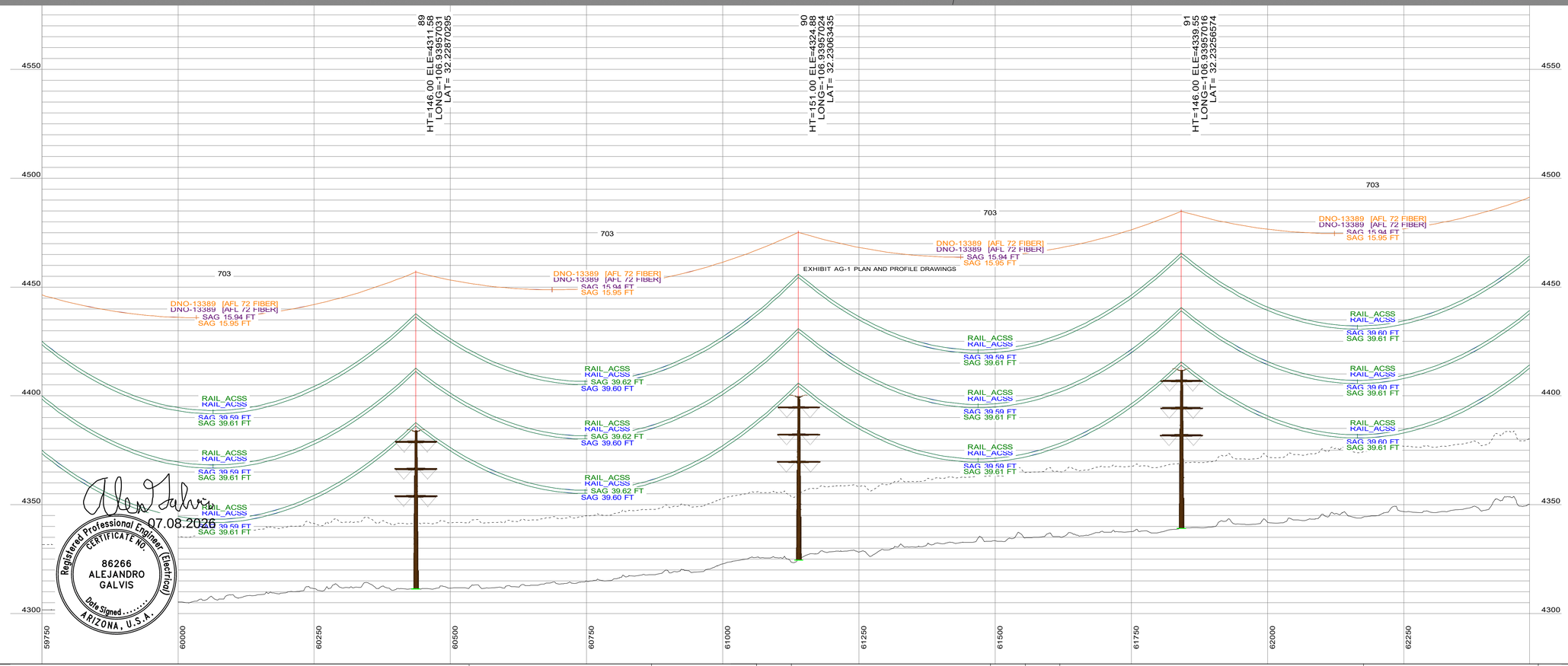


NESC BLOWOUT
ROW TYPICAL



VICINITY MAP





Registered Professional Engineer (Electrical)
CERTIFICATE NO.
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07.08.2026

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		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
The Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 26/31

PROJECT NOTES

CONDUCTOR:
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FIBER:
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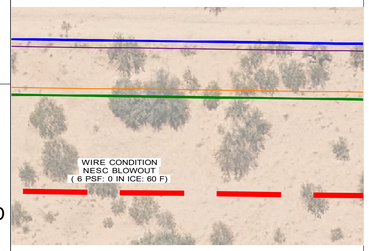

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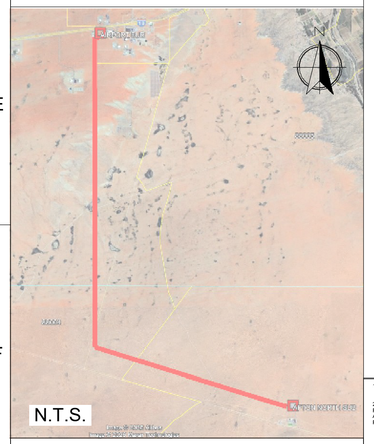
ROW TYPICAL



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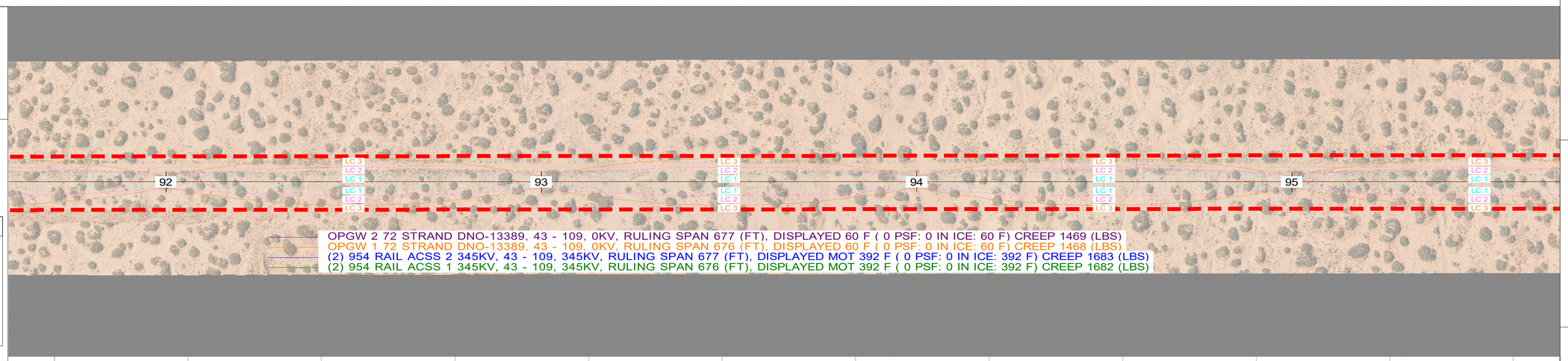

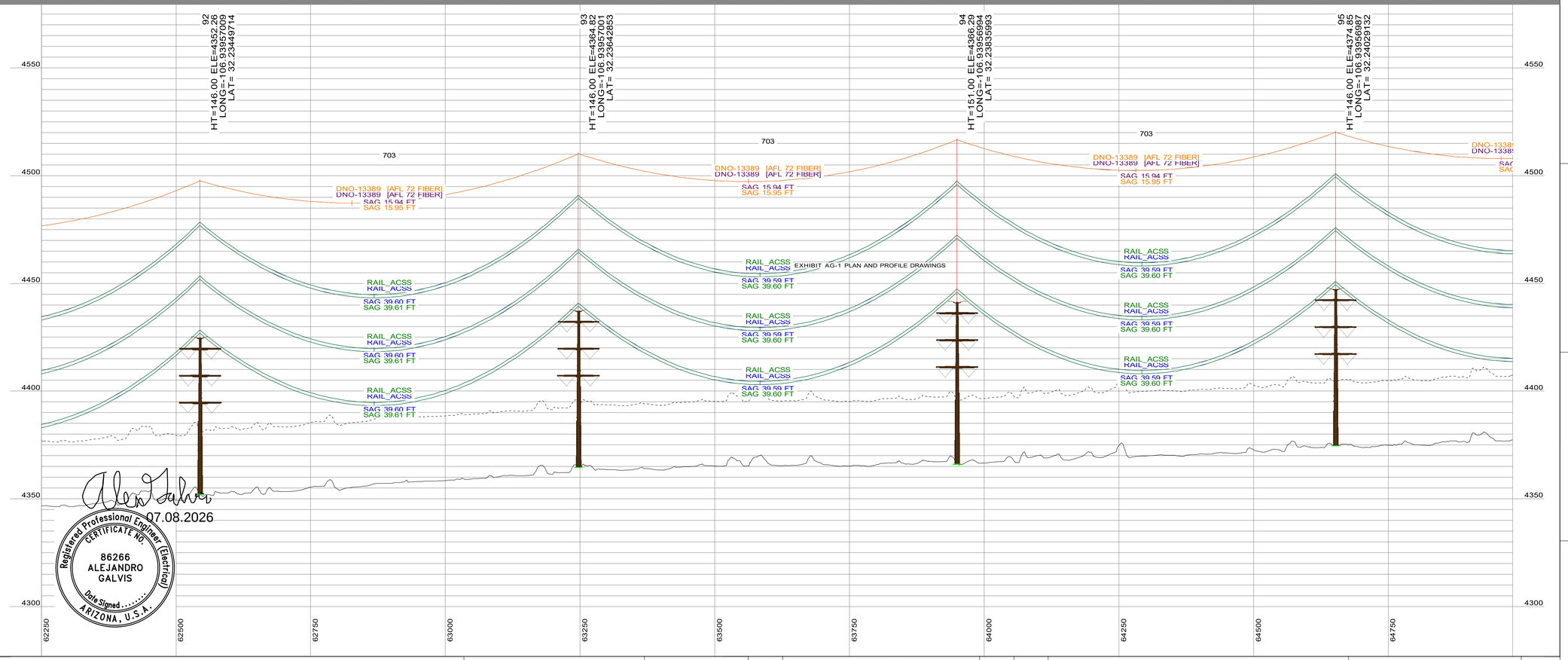

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PLAN AND PROFILE
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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 27/31

PROJECT NOTES

CONDUCTOR:
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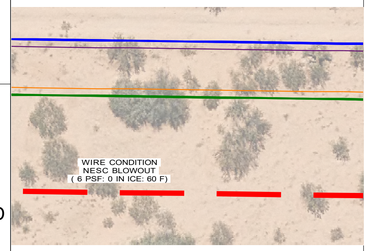

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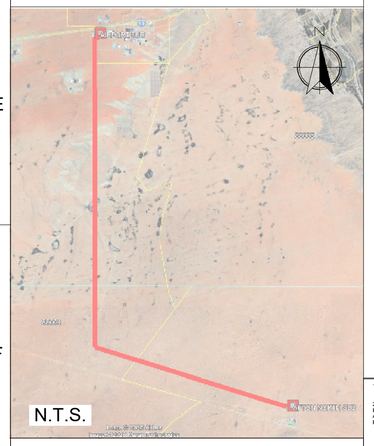

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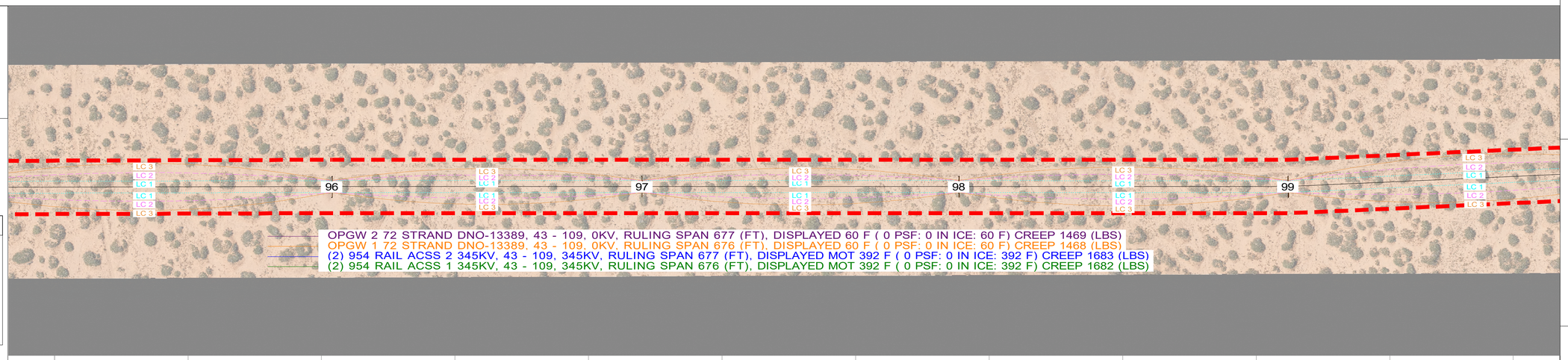

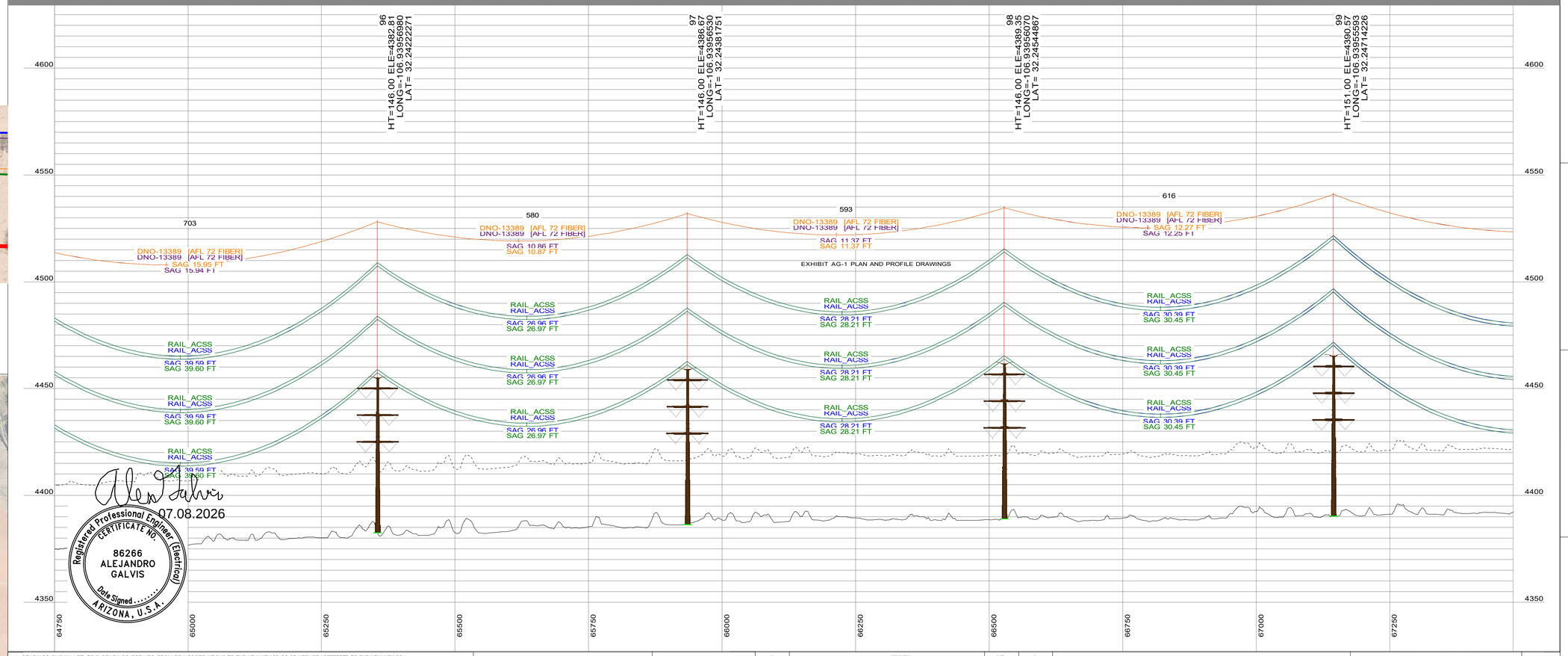

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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 28/31

PROJECT NOTES

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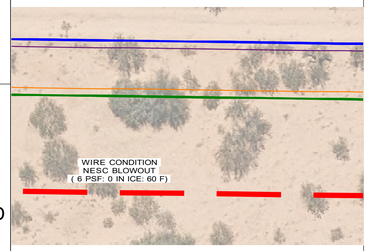

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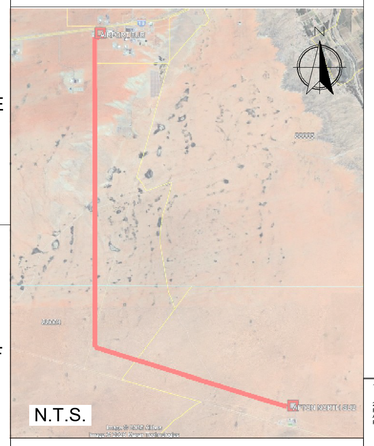

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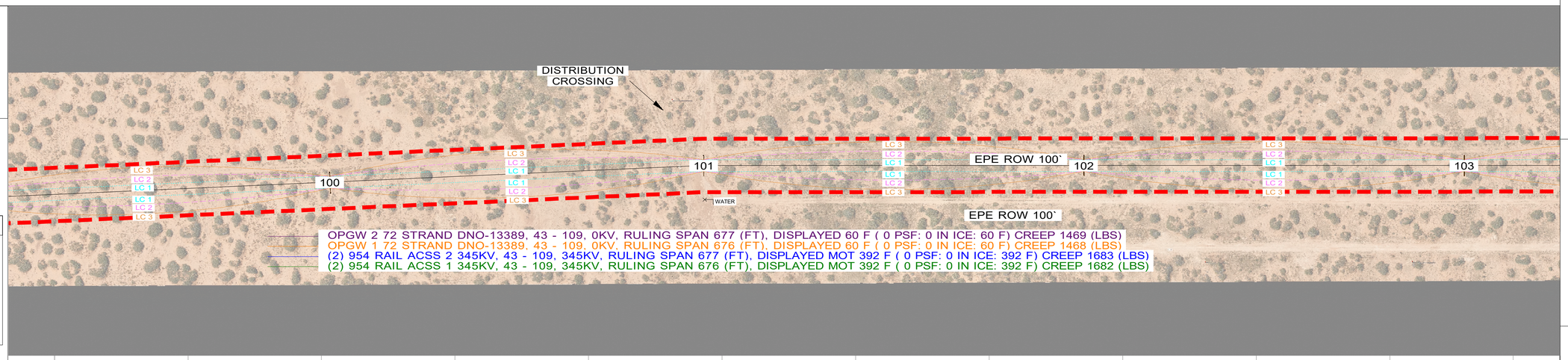

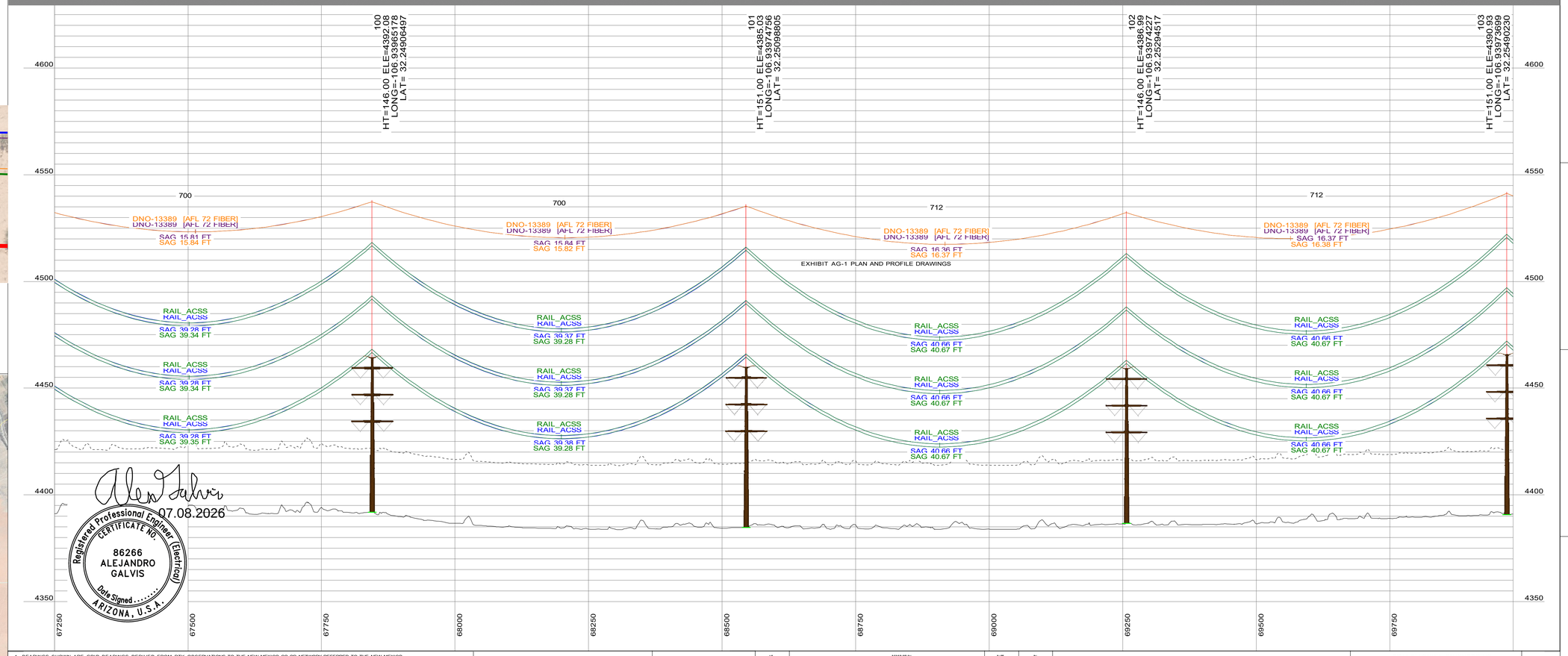

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TRANSMISSION ENGINEERING
by Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 29/31

PROJECT NOTES

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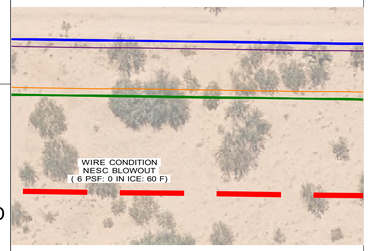

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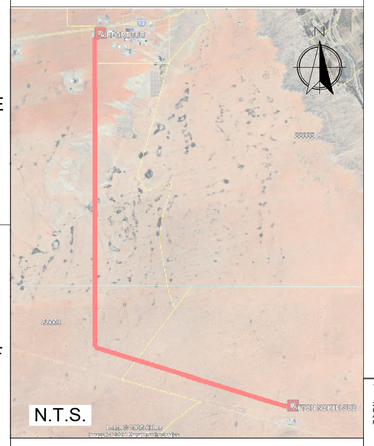
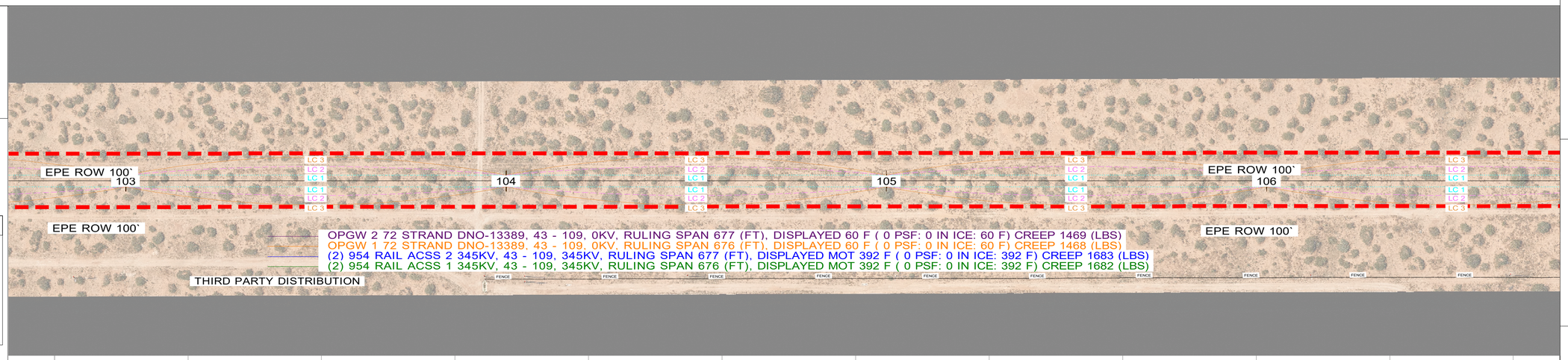
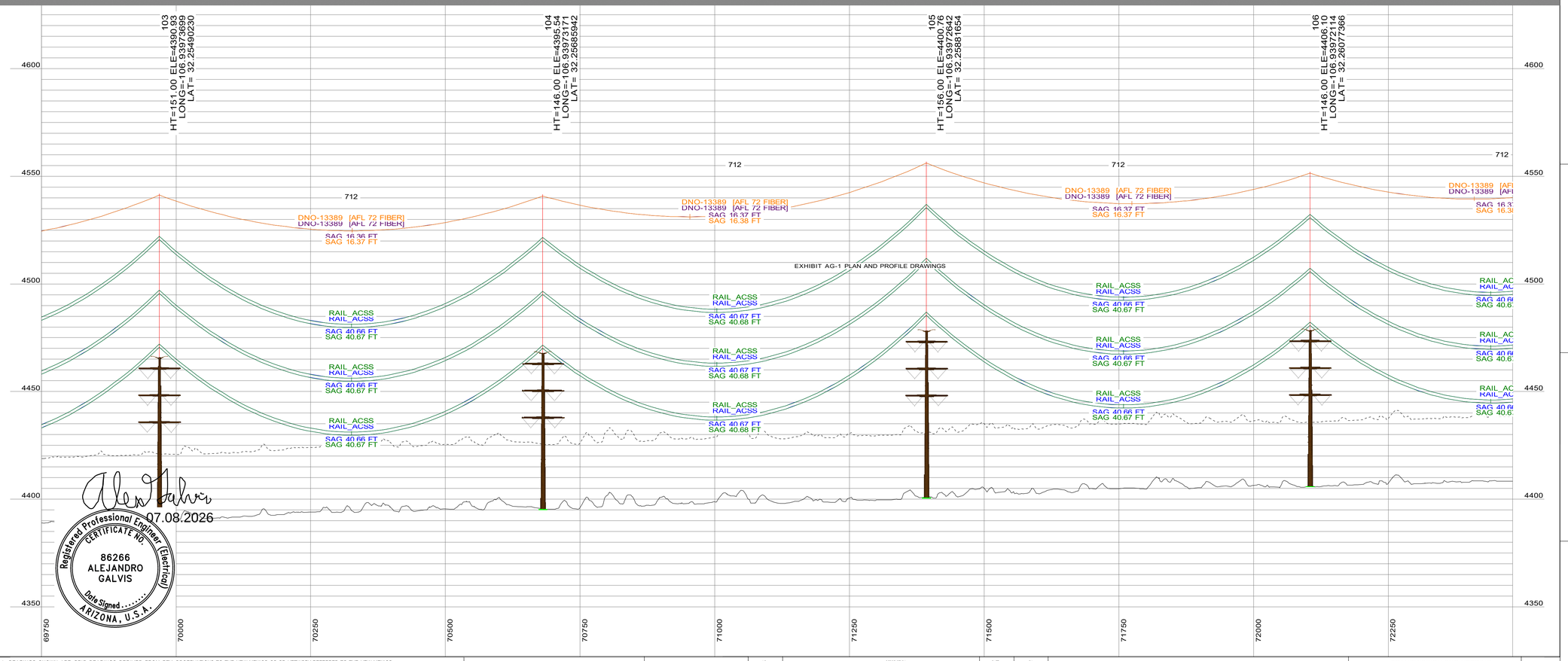


VICINITY MAP





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APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
by Electric Company

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 30/31

PROJECT NOTES

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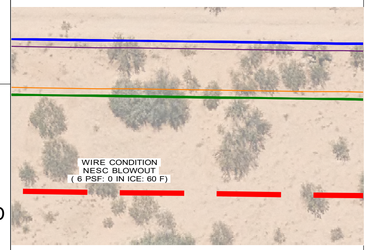

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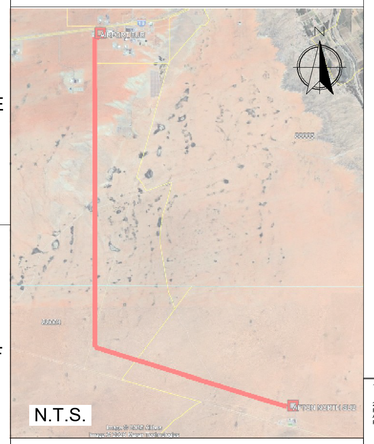

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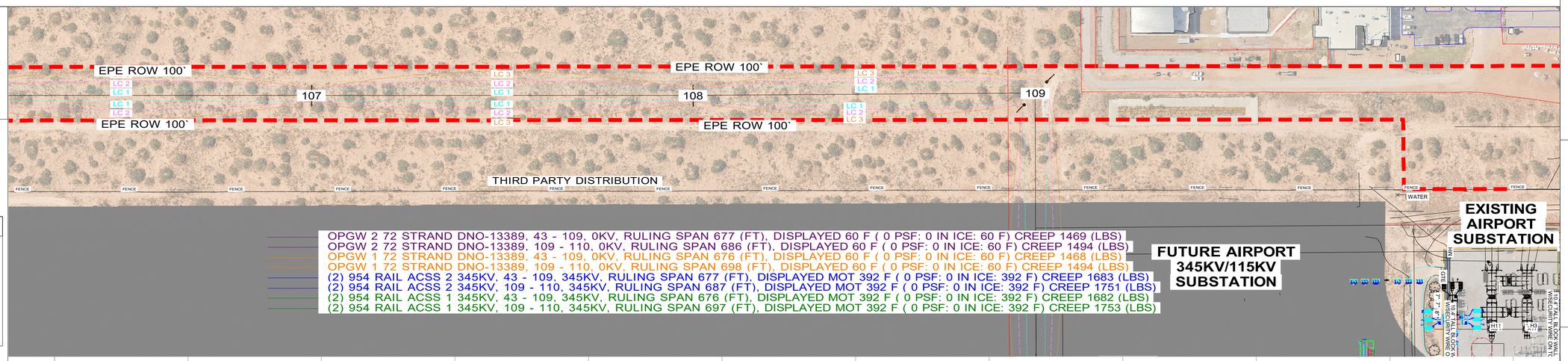

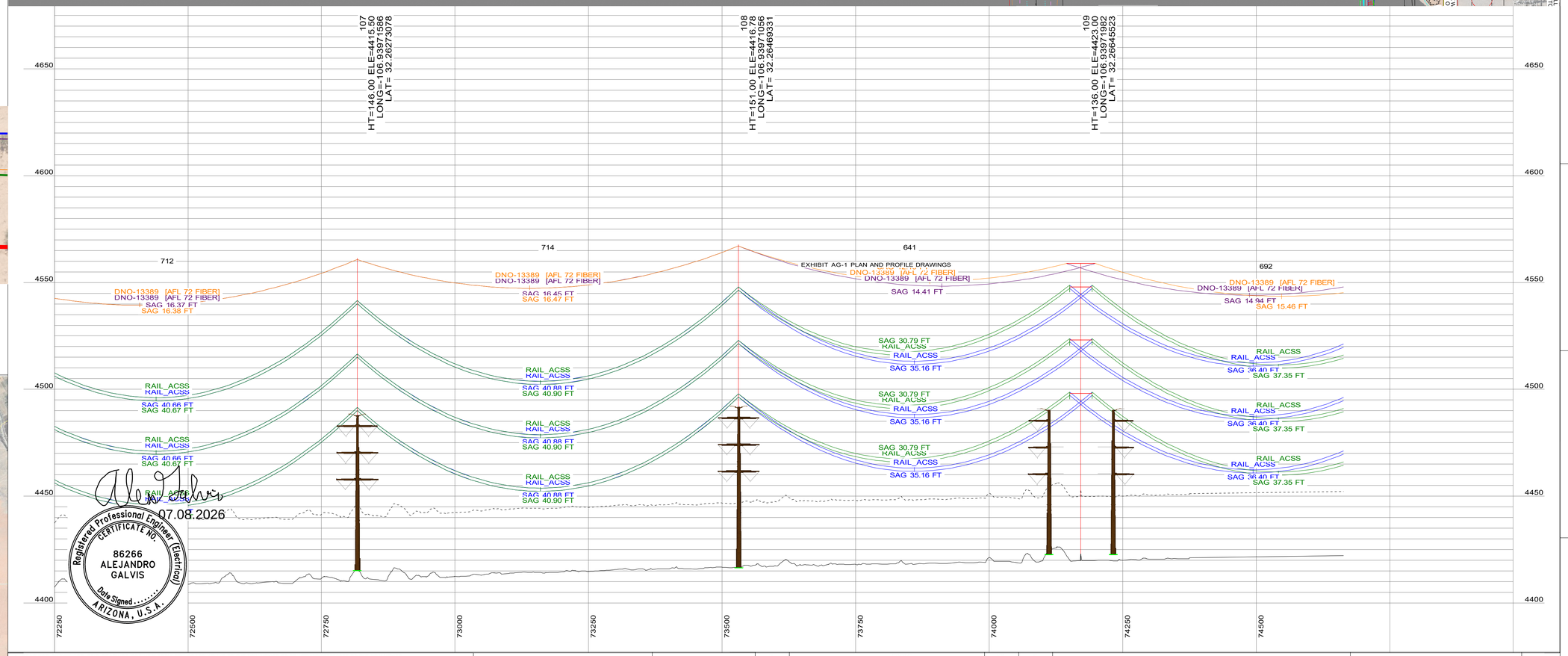

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PROJECT NAME: AFTON NORTH - AIRPORT 345KV

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APPROVED	M. VELOZ	DATE	7/8/2026
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TRANSMISSION ENGINEERING

PRELIMINARY EXHIBIT AG-1 PLAN AND PROFILE 31/31

PROJECT NOTES

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WIRE CONDITION
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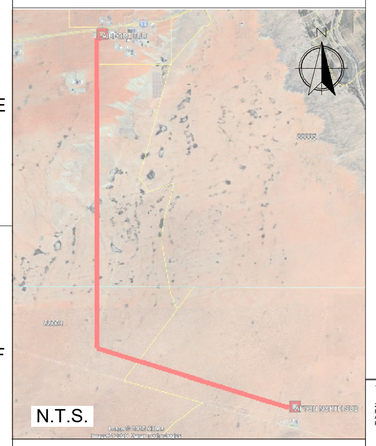
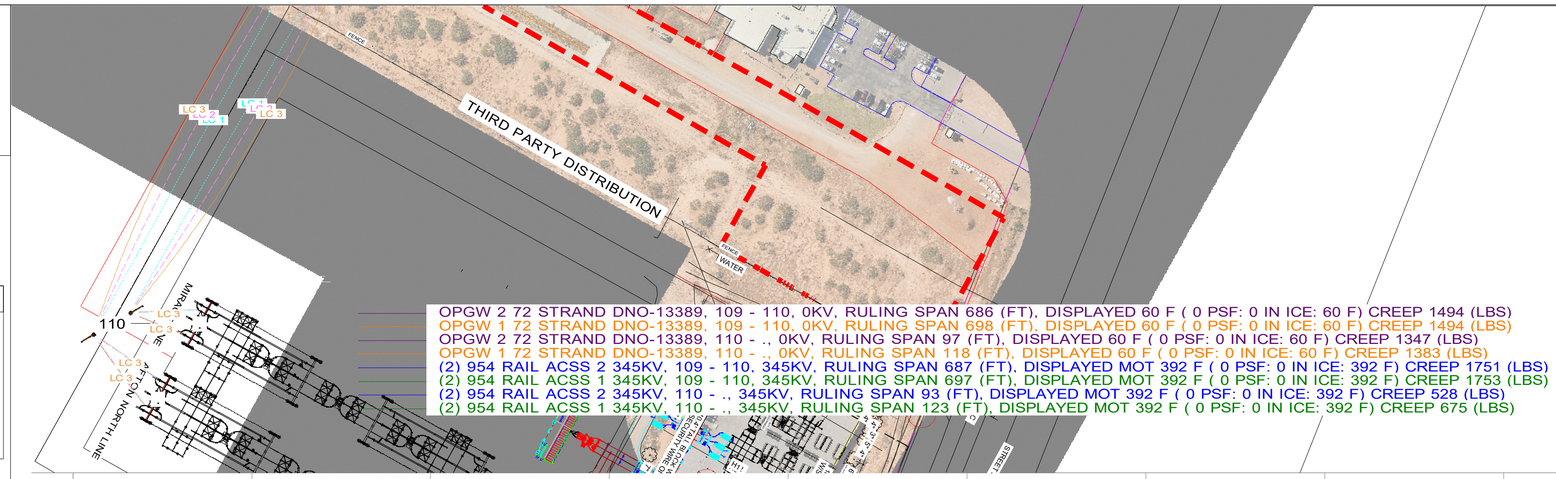
(6 PSF: 0 IN ICE: 60 F)

NESC BLOWOUT
ROW TYPICAL



VICINITY MAP

PLS-CADD DRAWING



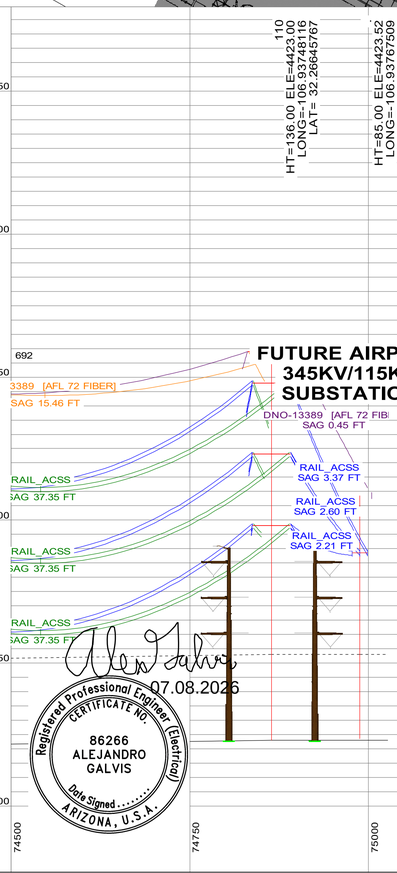


EXHIBIT AG-1 PLAN AND PROFILE DRAWINGS

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ARIZONA, U.S.A.

1. BEARINGS SHOWN ARE GRID BEARINGS DERIVED FROM RTK OBSERVATIONS TO THE NEW MEXICO CO-OP NETWORK REFERRED TO THE NEW MEXICO COORDINATE SYSTEM (NAD 83) 2011, CENTRAL ZONE.

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100.0 FT. HORIZ. SCALE
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NO	DESCRIPTION	DATE	BY
0		7/8/2026	AG

PLAN AND PROFILE
PROJECT NAME: AFTON NORTH - AIRPORT 345KV

DRAWN	A.GALVIS	WORK ORDER NO	SS3252200006
DESIGNED	A.GALVIS	SCALE	N.T.S.
APPROVED	M. VELOZ	DATE	7/8/2026
		LAST REVISED	7/8/2026

TRANSMISSION ENGINEERING
Electric Company

EXHIBIT AG-2

BLOWOUT CALCULATION REPORT

CONDUCTOR BLOWOUT ENVELOPE FOR ROW EVALUATION

A. EXECUTIVE SUMMARY

This Exhibit AG-2, Blowout Calculation Report, supports the right-of-way ("ROW") width evaluation for the Afton North to Airport 345 kV Transmission Project. It presents the project-specific conductor blowout values used to evaluate the conductor movement envelope for the proposed ROW corridor.

The detailed PLS-CADD output remains the controlling engineering result for the conductor blowout envelope. The simplified manual calculation included in this exhibit is a reasonableness check only. It is not intended to replace the PLS-CADD model or to duplicate every detail of the three-dimensional transmission line model.

For the route portion of the Project ROW corridor, the controlling PLS-CADD calculated conductor blowout values are summarized below.

Table 1. Controlling PLS-CADD Values for ROW Evaluation

Area	Case	Controlling Span	Max. Wire Offset from Centerline	Treatment
Route ROW corridor	NESC Blowout	Structure 109 to Structure 110	32.89 ft	Route-span value summarized as an additional design and clearance check.
Route ROW corridor	EPE Extreme Wind	Structure 109 to Structure 110	48.98 ft	Route-span value used for primary ROW corridor evaluation.
Substation termination area	NESC Blowout	Structure 110 to substation termination	113.04 ft	Located within EPE-controlled substation property or ROW; not included in primary route ROW-width evaluation.

Area	Case	Controlling Span	Max. Wire Offset from Centerline	Treatment
Substation termination area	EPE Extreme Wind	Structure 110 to substation termination	113.30 ft	Located within EPE-controlled substation property or ROW; not included in primary route ROW-width evaluation.

Based on the blowout analysis, and using the greater absolute offset from the left- and right-wind results, the largest route-span NESC blowout is 32.89 feet from centerline. The largest route-span EPE extreme wind blowout is 48.98 feet from centerline. Both occur in the span between Structure 109 and Structure 110. Because the EPE extreme wind value is larger, it is the controlling blowout value for the route ROW corridor evaluation.

The analysis also includes the separate span from Structure 110 to the substation termination. In that span, the largest values are 113.04 feet for the NESC blowout case and 113.30 feet for the EPE extreme wind case. Those termination-span values are treated separately because they apply to the substation termination area, not to the route ROW corridor used for the primary ROW-width evaluation.

B. PURPOSE AND RELATIONSHIP TO ROW EVALUATION

This exhibit provides the supporting calculation explanation for the conductor blowout values used in the ROW width evaluation. It identifies the controlling centerline-based conductor offsets under the applicable wind cases and explains how those offsets relate to the conductor movement envelope.

For purposes of the ROW evaluation, “blowout” refers to the lateral displacement of a suspended conductor under wind loading. The reported values are measured from the transmission line centerline. Therefore, a reported value of 32.89 feet means that the energized

phase conductor movement envelope extends 32.89 feet laterally from the transmission line centerline under the applicable wind case.

Because the ROW corridor is evaluated from the line centerline outward to the ROW boundary, these centerline-based values are the appropriate basis for evaluating whether the Project ROW provides adequate space for conductor movement, electrical clearance, safe access, inspection, maintenance, and long-term vegetation clearance management.

C. PLS-CADD MODEL OUTPUTS REPRODUCED FOR THIS REPORT

The PLS-CADD output used for this exhibit was developed for the Afton North to Airport 345 kV Transmission Project. The project-specific PLS-CADD report includes 345 kV Rail ACSS phase-conductor output under the applicable blowout and extreme wind weather cases.

The relevant phase-conductor output uses 954 kcmil Rail ACSS phase conductors. The evaluated weather cases include the following:

Table 2. Weather Cases Evaluated

Case	Wind Pressure	Ice	Temperature	Use in This Report
60°F / No Wind	0.00 psf	0.00 in	60°F	At-rest / baseline condition used to understand modeled conductor position.
NESC Blowout	6.00 psf	0.00 in	60°F	Wind-displacement case used for ROW corridor evaluation.
EPE Extreme Wind	25.58 psf	0.00 in	60°F	EPE extreme wind case, evaluated as an additional design and clearance check.

D. CONDUCTOR AND PROJECT INPUT VALUES

The Project uses double-bundle 954 kcmil Rail ACSS phase conductors. The conductor data used for the simplified hand check is summarized below.

Table 3. Conductor and Project Input Values

Input	Value	Units / Notes
Phase conductor	954 kcmil 45/7 Rail ACSS	Rail ACSS phase conductor
Outside diameter, *d*	1.165	inches
Unit weight, *w*	1.0738	lb/ft
Rated strength	16,700	lb
Primary hand-check assumption	Rigid conductor attachment points	No structure deflection included in primary simplified hand calculation.
Supplemental deflection treatment	Not used as final design value	Any deflection adjustment should be treated only as a sensitivity check unless supported by final structure-specific data.

The structure data identifies Structure 109 and Structure 110 as the controlling route-span location for the ROW corridor blowout values summarized in this exhibit. The span from Structure 109 to Structure 110 is approximately 691.975 feet. The following span from Structure 110 toward the substation termination is approximately 123.498 feet and is treated separately from the route ROW corridor evaluation.

E. SIMPLIFIED HAND-CALCULATION METHOD

The manual hand-calculation check included in this exhibit does not replace the PLS-CADD model. It is used only as a reasonableness check.

The hand check uses simplified engineering inputs, including conductor diameter, conductor weight, wind pressure, sag, and the modeled at-rest offset. It compares the simplified calculated offset to the PLS-CADD result. The two values are not expected to match exactly because PLS-CADD uses a more detailed three-dimensional model of the conductor, spans, structures, and loading conditions.

For this Project, the PLS-CADD results remain the controlling engineering results for the conductor movement envelope. The manual calculation supports the conclusion that the blowout values used for the ROW evaluation are reasonable.

Table 4. Definitions Used in Simplified Hand Calculation

Symbol	Definition
p	Wind pressure, psf
d	Conductor outside diameter, inches
w	Conductor unit weight, lb/ft
q_h	Simplified horizontal wind load per unit length, lb/ft
θ	Simplified blowout angle
S	Reproduced mid-span sag, ft
X_0	Reproduced at-rest conductor offset from transmission line centerline, ft
B	Simplified horizontal blowout displacement, ft
M_{rigid}	Manual blowout offset assuming rigid supports, ft
PLS_{abs}	Reproduced absolute PLS-CADD offset from centerline, ft
$Diff_{rigid}$	Manual rigid-support value minus PLS-CADD absolute offset, ft

Table 5. Simplified Hand-Calculation Formulas

Calculation Step	Formula
Horizontal wind load	$q_h = p \times d / 12$
Blowout angle	$= arctan(q_h / w)$
Horizontal blowout displacement	$B = S \times \sin(\theta)$
Manual rigid-support offset	$M_{rigid} = \lvert X_0 \rvert + B$
Difference from PLS-CADD	$Diff_{rigid} = M_{rigid} - PLS_{abs}$

F. HAND-CALCULATION WIND INPUTS

Using the 954 kcmil Rail ACSS conductor diameter and unit weight, the simplified wind inputs are summarized below. These values are used only for simplified hand-calculation check. The PLS-CADD results remain the controlling engineering values for the conductor movement envelope.

Table 6. Hand-Calculation Wind Inputs

Case	Wind Pressure, p	$q_h = p \times d / 12$	q_h / w	$\theta = \arctan(q_h / w)$	$\sin(\theta)$
NESC Blowout	6.00 psf	0.5825 lb/ft	0.5425	28.48°	0.477
EPE Extreme Wind	25.58 psf	2.4826 lb/ft	2.312	66.62°	0.918

These values show the relative wind loading applied to the conductor in the simplified hand check. The corresponding PLS-CADD results for the controlling span are summarized in Section G. Because PLS-CADD evaluates the conductor, span geometry, structure geometry, and loading conditions in more detail, the PLS-CADD results remain the controlling basis for the ROW evaluation.

G. ROUTE ROW CORRIDOR COMPARISON

The following table summarizes the controlling PLS-CADD Blowout Report values for the span from Structure 109 to Structure 110. The report identifies the modeled at-rest conductor offset and the corresponding wind-case offset from centerline for the controlling conductor condition. Because the PLS-CADD Blowout Report is the controlling engineering output for the conductor movement envelope, this table presents the PLS-CADD values directly for use in the ROW evaluation.

Table 7. Route ROW Corridor PLS-CADD Comparison

Span	Case	Cable Condition	At-Rest Max Offset from Centerline	Max. Wire Offset from Centerline	Notes
Structure 109 to Structure 110	60°F / No Wind	Creep RS	21.05 ft	21.05 ft	Baseline modeled at-rest condition.
Structure 109 to Structure 110	NESC Blowout	Creep RS	21.05 ft	32.89 ft	Route-controlling NESC blowout value.
Structure 109 to Structure 110	EPE Extreme Wind	Creep RS	21.05 ft	48.98 ft	Route-controlling EPE extreme wind value.

The NESC blowout maximum of 32.89 feet from centerline is the route-controlling wind-displacement value used for the primary ROW corridor evaluation. For a 100-foot ROW segment where the line is centered within the corridor, the ROW extends 50 feet from centerline to the ROW boundary. The controlling route-span EPE extreme wind blowout value is 48.98 feet from centerline, which remains within the 50-foot half-width of the 100-foot ROW. The NESC blowout value of 32.89 feet **from centerline** is also summarized as a comparison case and remains within the same corridor.

The EPE extreme wind value of 48.98 feet from centerline is also summarized because it reflects the conductor movement envelope under the more severe EPE wind case.

H. TERMINATION SPAN COMPARISON

The analysis also includes the separate span from Structure 110 to the substation termination. In that span, the largest values are 113.04 feet for the NESC blowout case and 113.30 feet for the EPE extreme wind case. Those termination-span values are not included in the primary route ROW-width evaluation because they are located within the utility-controlled substation property or ROW, rather than within the route ROW corridor for which ROW-width approval is being evaluated.

Table 8. Termination Span Values

Span	Case	Condition	PLS-CADD Absolute Offset	Treatment
Structure 110 to substation termination	NESC Blowout	Set 14, Initial RS / Left	113.04 ft	Termination-span value; summarized separately.
Structure 110 to substation termination	NESC Blowout	Set 14, Creep RS / Right	112.83 ft	Termination-span value; summarized separately.
Structure 110 to substation termination	EPE Extreme Wind	Set 14, Initial RS / Left	113.30 ft	Termination-span value; summarized separately.
Structure 110 to substation termination	EPE Extreme Wind	Set 14, Initial RS / Right	112.59 ft	Termination-span value; summarized separately.

I. CALCULATION AUDIT TABLE

Table 9. Calculation Audit Table

Input or Result	Source Value	Calculation / Treatment	Result	Notes
Rail ACSS conductor diameter	1.165 in	Used as d in $q_h = p \times d / 12$	1.165 in	954 kcmil 45/7 Rail ACSS
Rail ACSS unit weight	1073.8 lb/1000 ft	Divide by 1000	1.0738 lb/ft	Used as w
NESC wind pressure	6.00 psf	$q_h = 6.00 \times 1.165 / 12$	0.5825 lb/ft	60°F, no ice
EPE extreme wind pressure	25.58 psf	$q_h = 25.58 \times 1.165 / 12$	2.4826 lb/ft	60°F, no ice
NESC simplified angle	$q_h / w = 0.5825 / 1.0738$	$= arctan(q_h / w)$	28.48°	$sin(\theta) = 0.477$
EPE simplified angle	$q_h / w = 2.4826 / 1.0738$	$= arctan(q_h / w)$	66.62°	$sin(\theta) = 0.918$
Route NESC maximum	32.89 ft	Absolute value of centerline offset	32.89 ft	Structure 109 to Structure 110
Route EPE extreme maximum	48.98 ft	Absolute value of centerline offset	48.98 ft	Structure 109 to Structure 110
ROW half-width	50.00 ft	100-foot ROW / 2	50.00 ft	Assumes line centered in 100-foot ROW segment
NESC remaining lateral space	50.00 - 32.89	Centerline half-width minus NESC offset	17.11 ft	Used for route ROW corridor discussion

K. FINDINGS AND ENGINEERING INTERPRETATION

The PLS-CADD model output remains the controlling engineering basis for the ROW blowout envelope. The simplified hand calculation is included only as a reasonableness check using conductor diameter, conductor unit weight, wind pressure, span sag, and at-rest offset. Differences between the simplified hand check and the PLS-CADD output are expected because PLS-CADD performs a more detailed nonlinear, three-dimensional analysis of the conductor, span geometry, structure geometry, loading condition, and conductor movement.

For the route ROW corridor, the controlling NESC blowout value is 32.89 feet from centerline in the span from Structure 109 to Structure 110. The controlling EPE extreme wind value is 48.98 feet from centerline in the same span. These values define the conductor movement envelope used for the route-span ROW corridor evaluation.

For the substation termination span, the controlling values are higher, with 113.04 feet for the NESC blowout case and 113.30 feet for the EPE extreme wind case. Those values are appropriately treated separately because they reflect the substation approach and termination geometry rather than the route-span ROW corridor.

L. CONCLUSION

This Exhibit AG-2 supports the conductor movement envelope used in the ROW width evaluation for the Afton North to Airport 345 kV Transmission Project. The controlling route-span PLS-CADD blowout values are 32.89 feet from centerline for the NESC blowout case and 48.98 feet from centerline for the EPE extreme wind case, both in the span from Structure 109 to

Structure 110. These values support the conclusion that the proposed ROW corridor provides an appropriate basis for evaluating conductor movement, electrical clearance, safe access, inspection, maintenance, and long-term vegetation clearance management.

The termination-span values are summarized separately and should not be substituted for the route-span ROW corridor values. The simplified hand calculation confirms the engineering logic used to check the PLS-CADD results, while the PLS-CADD output remains the controlling design basis.

EXHIBIT AG-3 RESUME OF ALEJANDRO GALVIS, P.E.

Alejandro Galvis, P.E.
8005 Brockman Street – Austin, Texas 78757

PROFESSIONAL SUMMARY

Transmission line engineer specializing in overhead transmission line design and **engineering analysis**, including PLS-CADD line modeling, sag-tension, structure spotting, clearance verification, and evaluation of wind-driven lateral conductor movement ("blowout"). Experience supporting utility design standards and maintaining safe clearance envelopes for operation, maintenance, and vegetation management planning. Professional experience in transmission line design beginning in 2013, including work for multiple utilities across the United States.

TECHNICAL EXPERTISE

- Overhead transmission line design and engineering analysis (12.5 kV to 500 kV; primary emphasis 69 kV to 345 kV)
- PLS-CADD engineering analysis: weather cases, sag-tension, structure spotting, and clearance verification
- Conductor lateral movement / blowout envelope evaluation under transverse wind
- ROW corridor and clearance envelope considerations supporting safe operation and maintenance
- Plan and profile development support, structure schedules, and technical documentation
- Structure analysis using the PLS suite (including PLS-POLE for demand/utilization checks where applicable)
- Multidisciplinary coordination (survey, civil, geotechnical, and substation interfaces) and design comment resolution

PROFESSIONAL EXPERIENCE

El Paso Electric Company – Transmission Line Engineer
Austin, Texas | February 2026 – Present

- Performs transmission line engineering analysis and design support, including PLS-CADD modeling, structure spotting, and clearance evaluations under applicable weather cases.
- Supports evaluation of conductor movement envelopes (including blowout under transverse wind) and documentation used for ROW/corridor clearance determinations.

- Supports plan and profile preparation, design reviews, and technical responses to internal and external comments.

Coalesce Management Consulting Limited – Transmission Line Engineer
Austin, Texas | August 2024 – Present

- Performed transmission line **engineering analysis** using PLS-CADD, including sag-tension modeling, weather case evaluation, and clearance verification for overhead line segments.
- Developed and checked **conductor blowout envelopes** (centerline-based lateral offsets with wind applied from both directions) and evaluated impacts to corridor/ROW clearance margins.
- Conducted structure demand/utilization checks using the PLS suite (including **PLS-POLE** where applicable) to support structural adequacy under governing load cases.
- Supported plan and profile deliverables, structure schedules, and design documentation packages; coordinated with survey/civil/substation stakeholders to resolve design constraints.

Lower Colorado River Authority (LCRA) – Transmission Line Engineer
Austin, Texas | 2022 – 2024

- Supported overhead transmission line design and rebuild efforts, including structure spotting support, clearance checks, and design documentation.
- Coordinated with internal stakeholders to resolve design comments and support constructible deliverables.
- Supports PLS-CADD engineering analysis, deliverable development, and technical review services as needed.

Pacific Gas and Electric Company (PG&E) – Transmission Line Engineer
California | 2017 – 2022

- Supported overhead transmission line engineering, including PLS-CADD modeling, clearance evaluations, and design documentation for line upgrades and reliability-driven projects.
- Coordinated multidisciplinary inputs and supported design review resolution.

Westar Energy / Evergy – Transmission Line Engineer
Kansas | 2013 – 2017

- Supported overhead transmission line design and engineering analysis, including structure loading/clearance considerations and design documentation.

EDUCATION

- **M.S., Electrical and Computer Engineering** – Indiana University–Purdue University Indianapolis (2012)
- **B.S., Electrical Engineering** – University of Memphis (2010)

LICENSURE AND CERTIFICATIONS

Professional Engineer (PE) Licensure

State	Board Name	License No.	Issue Date	Expiration Date
CA	California Board for Professional Engineers, Land Surveyors, and Geologists	24031	01/27/2022	06/30/2026
VT	Vermont Board of Professional Engineering	18.0136751	03/16/2026	07/31/2026
TX	Texas Board of Professional Engineers and Land Surveyors	146363	10/06/2022	09/30/2026
GA	Georgia Professional Engineers and Land Surveyors Board	55821	02/23/2026	12/31/2026
NM	New Mexico State Board of Licensure for Professional Engineers and Professional Surveyors	31694	03/13/2026	12/31/2026
NV	Nevada State Board of Professional Engineers and Land Surveyors	35426	03/13/2026	06/30/2027
ME	Maine Board of Licensure for Professional Engineers	19928	03/09/2026	12/31/2027
KS	Kansas State Board of Technical Professions	25379	12/11/2016	04/30/2028
ID	Idaho Board of Licensure of Professional Engineers and Professional Land Surveyors	1081909	03/09/2026	10/31/2028

Selected Technical Training / Certifications

Computerized Transmission Line Design: PLS-CADD (University of Wisconsin); Structural Analysis and Design of Transmission Structures: PLS-POLE; Analysis and Design of Transmission Towers using TOWER

EXHIBIT AG-4

ROW WIDTH DETERMINATION USING CONDUCTOR BLOWOUT

ROW width is determined by (1) the full lateral conductor movement under wind ("blowout"), including insulator swing and structure deflection, and (2) additional width on each side for vegetation management, so that safe clearances can be maintained over the life of the line.

Variables (units: feet)

- w_s: effective structure width (outboard conductor spacing).
- $w_{CD,L}$, $w_{CD,R}$: conductor displacement from centerline under the controlling transverse wind case applied from left/right (includes swing/deflection).
- W_{CME} conductor movement envelope width (range of conductor positions under wind from both directions).
- W_{VM}: vegetation management width added outside the CME on each side; W_{ROW}: minimum ROW width for purchase.

All lateral offsets are measured horizontally from the transmission line centerline; left/right results are evaluated using absolute values.

Calculation steps

1. From the project line model (e.g., PLS-CADD), obtain $|w_{CD,L}|$ and $|w_{CD,R}|$ under the governing wind case(s), with wind applied from both directions.
2. Compute CME width (vertical single-post):

$$W_{\text{CME}} = w_s + |w_{CD,L}| + |w_{CD,R}|$$

3. Compute ROW width and apply rounding to whole 5-ft increments (see Figure 1):

$$W_{\text{ROW}} = W_{\text{CME}} + 2W_{\text{VM}}$$

$$W_{\text{ROW,rounded}} = 5 \cdot \left\lceil \frac{W_{\text{ROW}}}{5} \right\rceil$$

For 345 kV: $W_{\text{VM}} = 15$ ft (each side).

ROW edge clearance checks (EPE 345 kV criteria)

Verify the blown-out conductor remains within the ROW boundary and maintains the minimum separation to the ROW edge, as applicable to the check cases below:

- Load Case 1 (0 psf wind, 60°F, final): $X_{\text{ROW}} = 16$ ft
- Load Case 2 (6 psf wind, 60°F, final): $X_{\text{ROW}} = 13$ ft
- Load Case 3 (EPE extreme wind, 100 mph): keep conductor on the ROW with $X_{\text{ROW}} =$ 1 ft margin

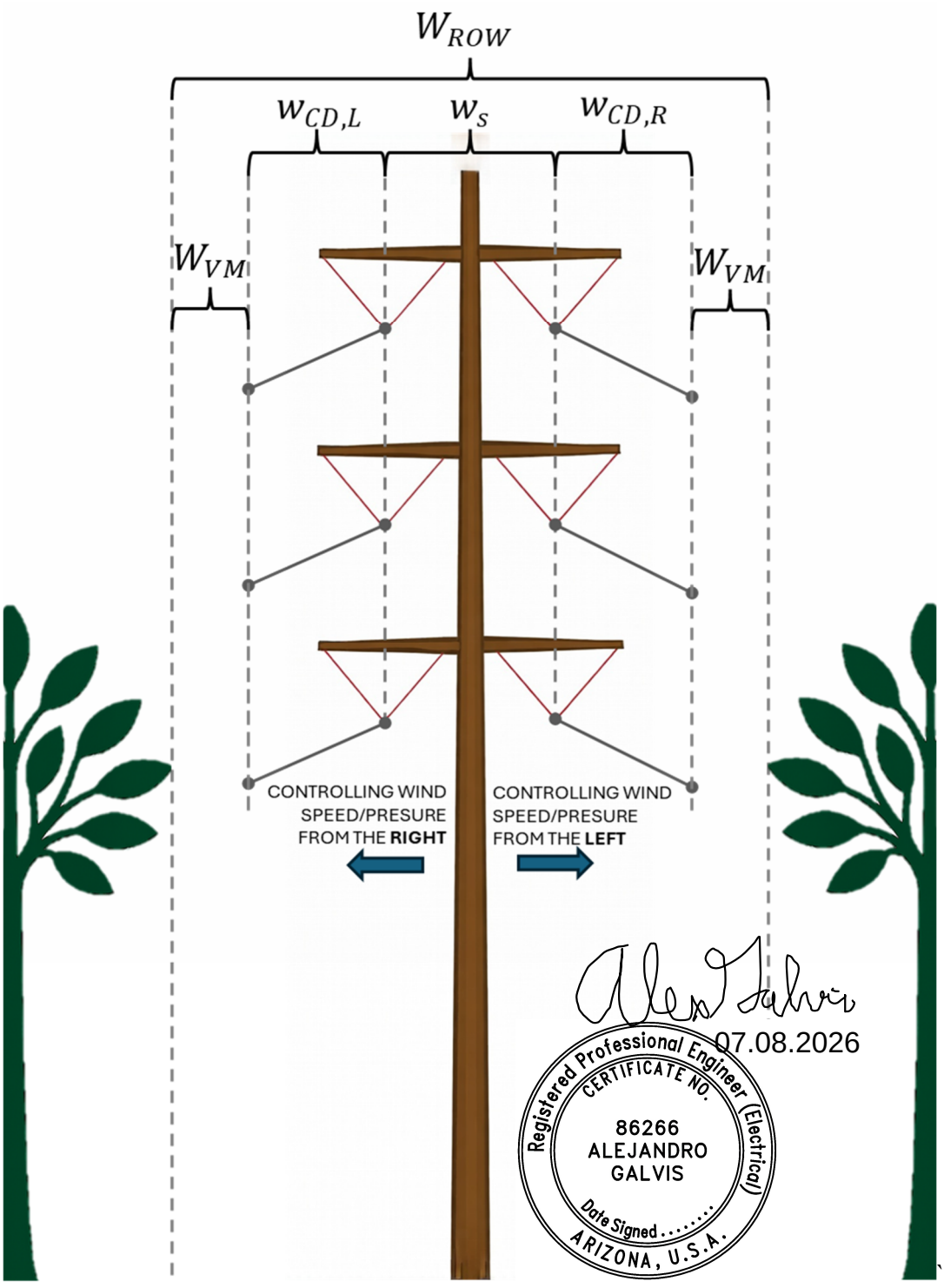

Figure 1. *Conceptual right-of-way (ROW) width determination showing the transmission line centerline, the maximum lateral conductor movement under wind ("blowout") to either side, and the applicable clearance/safety margin offsets used to define the required ROW boundary and resulting ROW width.*

EL PASO ELECTRIC COMPANY

345kV STANDARD DESIGN CRITERIA

Revision History	
Rev Number	**Date**
0	12/4/2018

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ABBREVIATIONS

AAMT:	Average Annual Minimum Temperature
AAT:	Annual Average Temperature
ACI:	American Concrete Institute
ACSR:	Aluminum Conductor, Steel Reinforced
ACSS:	Aluminum Conductor, Steel Supported
ADSS:	All Dielectric Self-Supporting Fiber Optic Cable
AGS:	Armor Grip Support
ANSI:	American National Standards Institute
ASCE:	American Society of Civil Engineers
ASTM:	American Society for Testing and Materials
ATCM:	Average Mean Temperature in the Coldest Month
CIGRE:	International Council on Large Electric Systems
DCD:	Design Code Document
EPE:	El Paso Electric Company
EPRI:	Electric Power Research Institute
FC:	Sag Tension Limit, Final After Creep Condition
FL:	Sag Tension Limit, Final After Load Condition
ft:	Feet
GFD:	Ground Flash Density
Hz:	Hertz
I:	Sag Tension Limit, Initial Condition
in:	Inches
IEEE:	Institute of Electrical and Electronics Engineers
kcmil:	1000 Circular Mills
kips:	1000 pounds
kV:	kilovolts
MAD:	Minimum Approach Distance
MAID:	Minimum Air Insulation Distance
Manual No. 74:	ASCE Manual and Report on Engineering Practice No. 74 “Guidelines for Electrical Transmission Line Structural Loading
MOT:	Maximum continuous operating temperature
MOTemerg:	Conductor operating temperature under 30-minute emergency rating conditions
MVCD:	Minimum Vegetation Clearance Distances
N/A:	Not Applicable
NESC:	National Electrical Safety Code, 2017
OHSW:	Overhead Shield Wire
OPGW:	Fiber Optic Ground Wire
OSHA:	Occupational Safety & Health Administration
PCI:	Prestressed Concrete Institute
ROW:	Right-of-Way
RUS:	Rural Utilities Service
SEI:	Structural Engineering Institute
TBD:	To Be Determined
TW:	Round Conductor, Trapezoidal-Shaped Stranding

1. GENERAL INFORMATION

1.1 Purpose

The scope and content of this Design Criteria Document (DCD) will serve as the basis for the detailed design and engineering of El Paso Electric Company (EPE) 345kV AC transmission lines located in EPE service territory. This document will provide consistency across the EPE system with new 345kV transmission lines. The application of this criteria will meet or exceed the requirements of the most recent version of the National Electric Safety Code (NESC). The 2017 edition of the NESC was used to develop the criteria set forth in this DCD. The engineer responsible for the design of the project is to verify the codes referenced in this document are current.

1.2 Scope

This document applies to the design of all new transmission lines owned by EPE. The engineer responsible for the design of the project is to verify that all national and safety codes are adhered to. The requirements of this document should be met unless approved by the appropriate EPE transmission engineering representative.

2. ENVIRONMENTAL

2.1 Location

The location of the project should be evaluated to determine the elevation, terrain, applicable permits, loading requirements, AAT, AAMT, and ATCM temperatures.

2.2 Right-of-Way

Wires are to be centered on the ROW. The right of way width is to be evaluated for any new projects and for any projects being rebuilt on an existing Right-of-Way.

2.3 Weather

The Project design is guided by numerous sources of weather information. The NESC is the governing code for the Project. The weather loading conditions described within the NESC must be considered in the design for compliance with the governing code.

The approach taken when applying these sources of weather information includes the following considerations:

- Compliance with minimum NESC conditions to confirm compliance with the code.
- Application of the EPE specific weather conditions.

2.3.1 Ambient Temperature Range

The historical ambient temperatures are to be analyzed for each project location. Refer to Table 2:1 for the temperature definitions.

Table 2.1 - Ambient Temperatures		
Design Designation	**Temp (ºF)**	**Description**
AAT	Refer to Map in Appendix B	Annual, mean average temperature
AAMT	Refer to Map in Appendix B	Annual, mean extreme minimum temperature
ATCM	Refer to Map in Appendix B	Average mean temperature in the coldest month

Note:
1. AAT, AAMT, and ATCM temperatures may vary depending on project location and elevation

2.3.2 Extreme Wind

In the United States, the climatic loads for transmission line design are defined in ASCE Manual No. 74 and the NESC. Per ASCE Manual No. 74, the basic 3-second gust wind speed at 33 ft above ground for Exposure C category corresponds to a 50-year MRI (mean recurrence interval, or return period).

NESC Rule 250C, Extreme Wind Loading requires all structures 60 ft above ground or water to withstand the Basic Wind Speed (i.e. 50-year return period wind) as specified by Figure 2.1. Projects in EPE territory are predominately in the NESC 90 mph region. Projects within EPE territory could fall within a special wind region as depicted by the shaded areas in Figure 2.1. If applicable, the engineer should design for the special wind considerations as noted in the NESC.

A 1.15 relative reliability or importance factor for the transmission line design is to be utilized, resulting in a maximum 100 mph equivalent design wind speed.

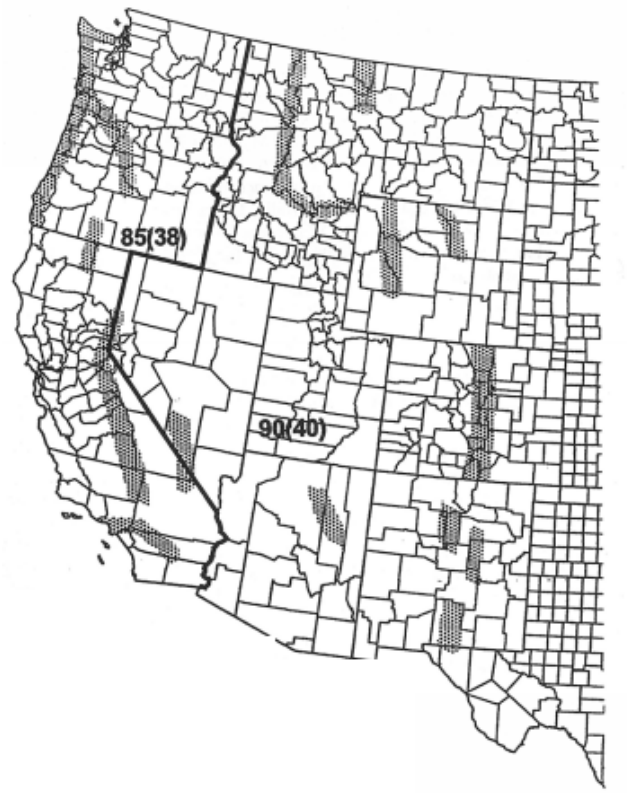


Figure 2.1: NESC Figure 250-2(a) – Basic Wind Speeds

2.3.3 Concurrent Wind and Ice

NESC Rule 250D, Extreme Ice with Concurrent Wind Loading requires all structures 60 ft above ground or water to withstand the uniform ice thickness with concurrent wind as specified by Figure 2.2. This rule implements an extreme ice and wind speed loading approach by incorporating the 50-year return period ice plus wind map from ASCE Manual No. 74, into the NESC.

Using "Figure 250-3(a) – Uniform ice thickness with concurrent wind from the current edition of the NESC, projects in EPE territory range from 0" ice to .25" ice with wind at 30 mph. An ice thickness of 0.25" will be applied to all projects in EPE territory.

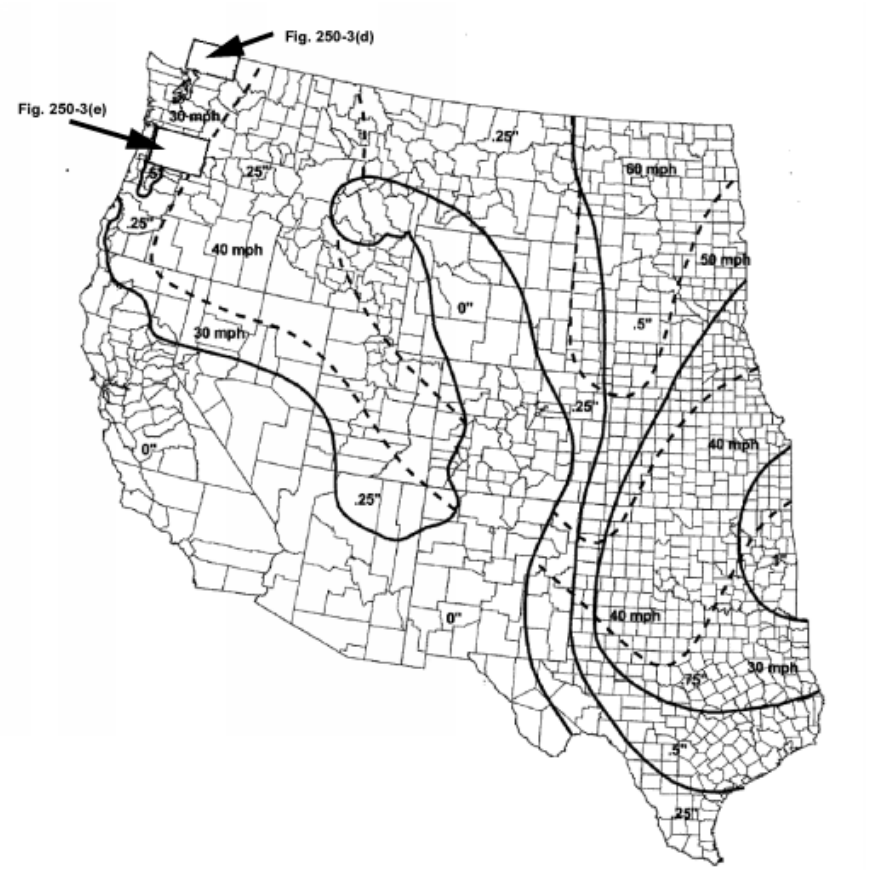


Figure 2.2: NESC Figure 250-3(a) – Uniform ice thickness with concurrent wind

2.3.4 Contamination

An analysis to determine the insulation contamination level is to be considered for each project location. IEEE 1313 identifies two types of contamination; industrial and sea. Industrial contamination is caused by particles displaced by wind that are deposited on the surface of the insulator. The contamination may be dust from roads, cement, fly ash, etc. These materials contain salt and form a conducting layer when wetted.

Using current publicly available aerial imagery, locations of possible major industrial/chemical facilities in close proximity to the transmission line should be evaluated. There are currently no established guidelines for determining insulator contamination without the removal and testing of existing insulators. Engineering judgement should be used to evaluate the potential for contamination at the project location.

2.3.5 Weather Summary

The following weather cases shown in Table 2.2 will be considered in the design, considering the criteria described within this DCD.

Table 2.2 - Weather Case Summary

Case Designation	Weather Case	Wind	Wire Ice Thickness (in)	Wire Temp (Deg F)	Comments
WC 1a	NESC 250B Heavy	4 psf	0.50	0	NESC Rule 250B Assumed wire ice density 57 lbs/ft^3
WC 1b	NESC 250B Medium	4 psf	0.25	15	NESC Rule 250B Assumed wire ice density 57 lbs/ft^3
WC 1c	NESC 250B Light	9 psf	-	30	NESC Rule 250B
WC 2	NESC 250C Extreme Wind	90 mph	-	60	NESC Rule 250C
WC 3	NESC 250D	2.31 psf	0.25	15	NESC Rule 250D Assumed wire ice density 57 lbs/ft^3
WC 4	EPE Extreme Wind	100 mph	-	60	Wind speed per NESC 250C and ASCE 74. Basic wind pressure to be adjusted for wind on wires and structures using a 1.15 wind factor/importance factor while also considering the wire and structure height, terrain type, and gust response factor per ASCE 74 and NESC 2017.
WC 5	EPE Extreme Ice	-	1.00	30	Assumed wire ice density 57 lbs/ft^3
WC 6	NESC Blowout	6 psf	-	60	NESC 233.A.1, 234.A.2, 235.B.2, and 235.E.2
WC 7	120 Deg	-	-	120	NESC 232.A.1, 233.A.1, and 234.A.1
WC 8[1,2]	Max Operating Temp.	-	-	212	Determined from line Ampacity Rating and Conductor Size
WC 9	60 Deg	-	-	60	NESC 233.A.1 and 235.B.1.b
WC 10	32 Deg, NESC District Ice	-	0.50 or 0.25	32	NESC 233.A.1.a(3)(c), and 234.A.1(c). Ice Thickness depends on location of project.
WC 11	30 Deg	-	-	30	Conductor Tension Case
WC 12	Uplift	-	-	0	Wire temperature assumed to be 0°F
WC 13	Construction & Maintenance	2 psf	-	60	ASCE 74, Section 3.1.2.3.1 Wire temperature assumed to be 60°F
WC 14	Galloping (swing)	2 psf	0.5	32	Galloping Case: RUS 1724E-200
WC 15	Galloping (sag)	-	0.5	32	Galloping Case: Per RUS 1724E-200
WC 16[3]	AAT	-	-	TBD	Average annual temperature near project location Per NOAA Weather Data
WC 17[3]	AAMT	-	-	TBD	Average annual extreme minimum temperature near project location Per UDSA Plant Hardiness Zone Map
WC 18[3]	ATCM	-	-	TBD	Average temperature of the coldest month near project location Per NOAA Weather Data

Notes:
1. Ambient temperature at AAT. If ACSS is utilized, Maximum Operating Temperature is to be re-evaluated
2. Ambient temperature for all other weather cases assumed to be the same as the wire temperature
3. Refer to map in Appendix B

2.4 FAA

The FAA notice criteria tool should be evaluated for all new structures. If required by the FAA, a permit is to be filed. The following information is required to fill out the FAA notice Criteria Tool.

1. Structure locations in latitude and longitude coordinates
2. Structure elevation
3. Structure above ground height

2.5 Access Restrictions

Access restrictions should be identified during the design process and accounted for in the design of the transmission line. Land Management should be contacted to identify if there are any restrictions.

3. ELECTRICAL DESIGN CRITERIA

3.1 Line Information

Table 3.1 below summarizes the basic design of the project:

Table 3.1 - 345kV Transmission Line	
Voltage	345kV
Maximum Operating Temperature (Emergency)	212°F
Maximum Operating Temperature (Normal)	167°F
Maximum Design Temperature	212°F
Bundle Configuration[1]	Vertical
Bundle Spacing	18 inches
Shielding Angle[2]	<15°
Underbuild	Project Specific

Notes:
1. Vertical bundle configuration is preferred but horizontal may be needed in special situations.
2. Allowable Shielding Angle can be increased if negative reverse shielding is utilized in the structure configuration, an existing EPE structure type is utilized, or a lightning study is performed.

3.2 Applicable Codes and Standards

Structural and electrical design criteria for the transmission lines shall be determined in accordance with existing design standards and the 2017 National Electric Safety Code and ASCE Manual No. 74.

Table 3.2 - Controlling Code(s)	
NESC District (250B)[1]	Project Specific
Extreme Wind (250C)	60°F, 0”, 90mph
Concurrent Wind & Ice (250D)	15°F, 0.25”, 30mph (2.31 psf)

Notes:
1. NESC District (250B) should be evaluated per project location. The project is to be designed up to the next level of NESC loading zones.

3.3 Wire Information

3.3.1 Conductor Selection

A conductor study should be performed to determine the optimum conductor type to be utilized for the project.

The conductor size should be selected by analyzing ampacity ratings based on the maximum operating temperature.

The conductor steel core should be selected while considering any potentially corrosive areas near the project. For areas located near any highly contaminated areas, the steel core wires should consist of aluminum-clad steel designated as ACSR/AW or ACSS/AW.

3.3.2 Conductor

The conductor selected for structure loads development has the following characteristics:

Table 3.3 - Typical Conductor Characteristics

Ruling Span Application	<1,000 ft	>1,000 ft
Size (kcmil/AWG)	954	954
Composition (ACSR, ACSS, etc.)	ACSR	ACSR
Code Word	Rail	Cardinal
Diameter	1.165”	1.196”
Weight	1.074 lb/ft	1.227 lb/ft
Rated Breaking Strength (Standard)	25,900 lbs	33,800 lbs
Design Voltage	345kV	
Typical Operating Voltage	345kV	
Maximum Operating Voltage	362.25kV (assume 5% overvoltage)	

Notes:
1. Rail conductor is typically utilized for standard span lengths. Cardinal conductor is to be considered for spans longer than 1,000 ft.

3.3.3 Shieldwire Selection

A short circuit rating should be considered when specifying the shieldwire(s) for a project. If the ground fault current exceeds the values for the shieldwire(s), then additional grounding requirements may be needed.

3.3.4 OPGW

The OPGW selected for structure loads development has the following characteristics:

Table 3.4 - OPGW Characteristics	
Size (Type / Fiber Count)	36 Fibers
Composition (EHS, OPGW, etc.)	OPGW
Diameter	0.528”
Weight	0.35 lb/ft
Rated Breaking Strength	18,432 lbs

3.3.5 Shield Wire

The shield wire selected for structure loads development has the following characteristics:

Table 3.5 - Shieldwire Characteristics	
Size (kcmil/AWG)	3/8
Composition (EHS, AW, etc.)	EHS
Diameter	0.360”
Weight	0.273 lb/ft
Rated Breaking Strength	15,400 lbs

3.4 Fault Current Rating

A short circuit thermal analysis based on short circuit levels and estimated protection clearing times should be performed to determine the minimum short circuit rating (I^2t) necessary to reduce risk of damaging fiber optic cables during short circuit events. Single line-to-ground (SLG) faults close to the substation result in the highest fault currents for the shield wires. Most of the current returns to the substation through the shield wires, causing resistive heating. This heat can damage the fiber optic cables. The short circuit rating is an important parameter when selecting an OPGW as it directly impacts the amount of aluminum in the cable.

3.5 Ampacity Requirements

The conductor ampacity calculations should be considered per IEEE Standard 738, “Standard for Calculating the Current Temperature of Bare Overhead Conductors” and SWRate. This calculation is based on steady-state relationships between the conductor temperature and the electrical current at ambient conditions.

The parameters shown below in Table 3.6 and IEEE Standard 738 is to be considered when calculating conductor ampacity.

Table 3.6 – Conductor Ampacity Calculation Parameters	
Ambient temperature	40ºC (104ºF)
Emissivity	0.5 (Average Oxidized Conductor)
Absorptivity	0.5 (Average Oxidized Conductor)
Wind Speed	3.7 feet/second (2.5 miles/hour)
Wind Direction	60º
Elevation	Highest Elevation on Project
Line Azimuth	Project Specific
Latitude	31.8º
Atmospheric Condition	Clear (Sunny Day)
Time of Day	4 p.m.
Date	June 10
Conductor Normal Temp	75ºC
Conductor Emergency Temp	100ºC

3.6 Corona and Field Effects

3.6.1 Corona

3.6.1.1 Audible Noise

Noise is defined as unwanted sound. It may be continuous (constant noise and decibel level), steady (constant noise with a fluctuating decibel level), impulsive (having a peak of short duration), stationary (occurring from a fixed source), intermittent (occurring at the same rate), or transient (occurring at a different rate). Noise levels are quantified using units of decibels. The A-weighted scale, reported in A-weighted decibels (dBA), most effectively approximates the human ear's response to sounds.

Audible noise from transmission lines is primarily due to point source corona (crackling and hissing with small amounts of light). It routinely occurs when air is ionized around a gap, burr, irregularity, or some non-insulated component on an energized transmission line. Periods of rain, fog, or heavy humidity amplify these corona effects due to the bridging capabilities of electricity and water. Audible noise calculations, measurements and limits are commonly referred to as either fair weather or foul weather audible noise. IEEE 539 defines fair weather as the weather condition when the precipitation intensity is zero and the transmission line conductors are dry. Foul weather is defined as the weather condition when there is precipitation or that can cause the transmission line conductors to be wet.

Concern about noise is related to negative impacts on humans and animals. Human response to noise is most commonly expressed as an annoyance and the level of annoyance may be affected by the intensity of the noise, its frequency (pitch), its duration of exposure and/or its recurrence. Ambient noise is the total noise in an environment and usually comprises sounds from many sources.

The following parameters should be considered as part of the audible noise study:

1. The controlling weather condition shall be wet conductor, fog, or light rain.
2. Nominal operating voltage shall be used for noise calculations.
3. Conductor elevation shall be determined based on final sag at MOT.
4. Average conductor height should be used to calculate audible noise.

5. Audible noise is calculated at 5 ft above ground corresponding to the typical height of the human ear and in accordance with standard audible noise measurements recommended by IEEE 656.

Audible noise, radio, and TV interference due to corona effects shall be considered in the selection of conductors. The conductor size should be selected so the audible noise and radio interference thresholds are not exceeded. Calculations shall be made using the BPA Corona and Field Effects program or equivalent. Elevation effects should be considered.

3.6.1.2 Radio Interference

Corona and gap discharges are two potential sources of radio interference. Corona discharges induce trains of short-duration current pulses that propagate along the line conductors, away from the point of generation. Gap discharges result from electrical discharges between broken or poorly fitting hardware, such as insulators, clamps and brackets. Gap discharges are typically relevant to distribution lines and not transmission lines. Radio interference is measured in decibels and is referenced to a signal input of 1 microvolt tuned to a certain measurement frequency (the unit is decibel microvolt per meter or dBμV/m). The radio interference level and measurement frequency of the line varies based on many factors. The primary factors are weather conditions, time, and altitude.

There are no established standards for allowable radio interference signal strength in the United States. It is recommended to use a criteria of 45 dBμV/m based in fair weather and measured at 100 horizontal feet from the centerline of the transmission circuit measured at six feet above the ground as a reasonable guideline based on data presented in IEEE Standard 430.

3.6.1.3 Electromagnetic Field (EMF)

Electric and magnetic fields are present wherever electricity flows: around appliances and power lines, in offices, schools, and homes. These fields are low energy, extremely low frequency fields, and should not be confused with high energy or ionizing radiation such as X-rays and gamma rays. The current (a flow of electric charge, measured in amperes), creates a magnetic field. The magnetic field is expressed in units of milliGauss (mG). The voltage (the force or pressure that causes the current to flow), measured in units of thousands of volts (kV), creates an electric field expressed in units of kV per meter (kV/m).

Current and voltage are required to transmit electrical energy over a transmission line. A 60-Hertz (Hz; cycles per second) magnetic field is created in the space around transmission line conductors by the electric current flowing in the conductors. This is the frequency of ordinary household current, usually referred to as 60 cycles. The strength of the magnetic field produced by an electric transmission line depends on the amount of current flowing through the conductor (the higher the electrical load, the higher the current), the configuration of the conductors (spacing and orientation), the height of the conductors, the distance from the line, and the proximity of other electrical lines. As the electric load (and the resulting current) on the transmission line varies continually on a daily and seasonal basis, the magnetic fields likewise vary throughout the day and year. Magnetic fields are highest closer to the line and diminish with distance. Physical structures, such as buildings, are transparent to magnetic fields in that they do not provide any shielding. Electric field considerations in the immediate vicinity of electric power lines include the potential for electric shock. The clearance of the power lines above ground, measures to prevent unauthorized climbing of the structures, and the proximity of the transmission lines to other utilities such as oil wells and pipelines will be considered.

Electric and magnetic field levels produced by the transmission line should be calculated at the edge of Right-of-Way (ROW). EMF levels should be calculated at a height of one meter above ground with phase conductors located at minimum conductor heights. The maximum operating voltage with a peak line loading should be used for the analysis of the transmission line and its different structures.

There are currently no established state regulations or standards for EMF. A reasonable guideline is presented in IEEE Std C95.6-2002 . The IEE STd C95.6-2002 recommends maximum permissible exposure of 10kV/m for the general public in the right-of-way and a limit of 5kV/m outside the right-of-way.

In addition to this limit, NESC Rule 232C.1.c requires clearances be increased to limit the steady-state current due to electrostatic effects to 5 mA rms if the largest anticipated truck, vehicle, or equipment under the line were short-circuited to ground at 120°F, final.

3.6.1.4 Lightning Protection

The shield angle should be evaluated by an analysis of lightning performance if a standard structure type is not utilized.

Lightning outage rate should comply with IEEE 1243, 1313.2. Lightning performance shall be analyzed, and a reasonable structure design should be established that limits shielding failures and back flashovers. This should be based on data from the National Lightning Detection Network to establish the ground flash density (GFD) and flash current distribution. GFD shall be based on a minimum of 5 years data in the Project area.

3.6.1.5 Grounding

The target ground rod reading is 15-25 ohms or less. During construction, a review of actual ground rod readings should be conducted to see how many structures have ground rod readings that are above the target. If a significant number of readings are above 25 ohms, a determination will be made of the impact on lightning performance to decide if mitigation is required. The following grounding procedures may be considered:

1. Place a single ground rod on the outside of the foundation.
2. After seven days from installation, measure the impedance
3. If the impedance is the target ground rod reading or less, no further action is required.
4. If any combination of five consecutive structure average is the target ground reading or less, no further action is required.
5. If the impedance is greater than the target ground rod reading, additional ground rods and counter point grounding are to be considered.

All pole line hardware and shield wires shall be effectively bonded.

Bond wire should be sized accordingly to address fault current capacity. Wire size and type shall be based on the maximum symmetrical phase to ground fault current for duration of 8 cycles without fusing. The duration used for OPGW sizing and bond wire sizing is independent of the substation design criteria related to fault duration. The duration of 8 cycles is based on high speed relaying and breaker operation, and assumes that the breaker closes back in on a fault after the initial outage, before the cable has completely cooled. It is also close to the clearing time for most backup relays to clear the fault. The initial temperature assumed for the calculation shall be equal to the ambient temperature assumed for conductor summer ratings.

To prevent bending forces on bonding tabs, all bond wires connecting the structure to articulating shield wire suspension hardware shall use the “S-strap” configuration. The S-shape should be perpendicular to the shield wire, and the bonding lug shall be oriented in a manner to avoid any substantial bending forces on the tab.

Fence and gate grounding should be considered in a manner consistent with NESC 092E and good engineering practice.

1. Fences perpendicular to the proposed transmission line shall be effectively grounded and bonded.
2. Fences parallel to the proposed transmission line shall be effectively grounded and bonded.

All grounding and bonding connectors utilized above and below ground should comply with Section 11.4 of IEEE Std. 80-2000. This requirement relates to a specific qualification for connectors that are expected to withstand fault current.

If required to analyze AC interference in pipelines or other parallel utilities, the maximum touch potential should be determined for above ground objects accessible to the public, as well as buried facilities accessible only by utility crews. Voltage and current density limits must comply with IEEE Std 80, NACE RP0177-2000, OSHA Std 2207, Part 1926 and the requirements of the facility owner.

If asymmetrical structure configuration is used, transposition structures may be required.

3.6.1.6 Electrical Reliability

IEEE 1313-2 recommends a back flash rate of 0.5 flashovers per 100 km per year (0.80 flashovers per 100 miles per year). Shield wire placement, structure grounding, and insulation should be considered to achieve this level of expected reliability.

Maximum transient overvoltage results are used in statistical distribution analysis to calculate the expected number of switching surge flashovers. Typical practice for EHV circuits is to select the insulation in order to limit this number to one or less flashover events per 100 operations.

3.6.1.7 Insulation

Insulation rating requirements, including the dry arc and leakage distance, contamination levels, 60 Hz Flashover, Impulse Flashover, and M&E strength, should be evaluated. The use of corona rings will be required to protect the insulators.

A contamination analysis should be performed for the project specific area. Contamination levels as defined in IEEE 1313.2 are to be used to determine the insulation requirements for this project and can be found in Table 3.7 below.

Table 3.7 – Contamination Site Severity

Site Severity	ESDD, mg/cm2
	IEEE
Very Light	0-0.03
Light	0.03-0.06
Average/Moderate	0.06-0.10
Heavy	>0.10

The equations used to calculate the leakage distance for the four contamination levels are shown below.

$$D_{lkg} = V_{lnMax} * D_{l-kV} * CF_{Alt}$$

$$CF_{Alt} = e^{\frac{El_{km}}{14}}$$

where:
V_{lnMax} = Maximum Line-to-Neutral Voltage, in kV
$D_{l\text{-}kV}$ = Leakage Distance per kV_{ln}
CF_{Alt} = Altitude Correction Factor
El_{km} = Elevation, in Kilometers

EPE typically utilizes Medium Contamination but should be determined on a case by case basis.

4. WIRE CRITERIA

4.1 Conductor Sag-Tension Limits

Table 4.1 below summarizes conductor sag-tension limits considered. The most stringent limit will be utilized to control the sag-tension in each span. The tension limits shown in the table below are minimum design limits per client standards. The Engineer is to verify compliance of all NESC tension limits. The ultimate controlling tension limit should be evaluated and implemented based on the project location and the final conductor selection.

Table 4.1 – Conductor Sag-Tension Limits

Case Designation	Weather Case	Temp (°F)	Ice (in)	Wind (psf)	Wire Condition	Ultimate Tension % of RBS
WC 1c	NESC 250B (Light)	30	0.00	9	I	25
WC 1b	NESC 250B (Medium)	15	0.25	4	I	25
WC 5[1]	EPE Extreme Ice	30	1.00	0	I	40
WC 9	60 Degrees	60	0.00	0	I	20
WC 9	60 Degrees	60	0.00	0	F	17

Notes:
1. Tension limit is to be applied at the discretion of the Engineer.

4.2 OPGW Sag-Tension Limits

Table 4.2 below summarizes all OPGW sag-tension limits considered. The Engineer is to verify compliance of all NESC tension limits. The most stringent limit will be utilized to control the sag-tension in each span.

Table 4.2 – OPGW Sag-Tension Limits

Case Designation	Weather Case	Temp (°F)	Ice (in)	Wind (psf)	Wire Condition	Ultimate Tension % of RBS
WC 1c	NESC 250B (Light)	30	0.00	9	I	25
WC 1b	NESC 250B (Medium)	15	0.25	4	I	25
WC 5[2]	EPE Extreme Ice	30	1.00	0	I	40
WC 9	60 Degrees	60	0.00	0	I	20
WC 9	60 Degrees	60	0.00	0	F	17

Notes:
1. OPGW to be sagged at 60°F Final at 80% of the 345kV conductor sagged at 60°F Final
2. Tension limit is to be applied at the discretion of the Engineer.

4.3 Shield Wire Sag-Tension Limits

Table 4.3 below summarizes all shield wire sag-tension limits considered. The Engineer is to verify compliance of all NESC tension limits. The most stringent limit will be utilized to control the sag-tension in each span.

Table 4.3 – Shield Wire Sag-Tension Limits

Case Designation	Weather Case	Temp (°F)	Ice (in)	Wind (psf)	Wire Condition	Ultimate Tension % of RBS
WC 1c	NESC 250B (Light)	30	0.00	9	I	25
WC 1b	NESC 250B (Medium)	15	0.25	4	I	25
WC 5[2]	EPE Extreme Ice	30	1.00	0	I	40
WC 9	60 Degrees	60	0.00	0	I	20
WC 9	60 Degrees	60	0.00	0	F	17

Notes:
1. Shield Wire to be sagged at 60°F Final at 80% of the 345kV conductor sagged at 60°F Final
2. Tension limit is to be applied at the discretion of the Engineer.

4.4 Final after Load and Creep

Final after load is defined as NESC 250B and final after creep is defined as Everyday Condition (60°F, 0", 0#).

4.5 Bimetallic Conductor Option

It is assumed that aluminum strands of ACSR conductor will support compression at high temperatures. The maximum virtual compressive stress these strands can support is assumed to be 1.5 ksi.

4.6 Aeolian Vibration Analysis

A vibration analysis should be performed by the damper supplier or using the damper suppliers software. Location and weight of vibration dampers shall be in accordance with the recommendation of the manufacturers of the conductor and the vibration damper. Spiral dampers may be utilized for conductors and shieldwires less than 0.75" in diameter.

4.7 Spacer Requirements

When required, spacers will be utilized and will be installed such that:

- The maximum distance from the conductor clamp to the first spacer and between spacers will be coordinated with the spacer vendor or using the spacer damper suppliers software.
- Two or more spacers will be installed in jumper strings. They will be equally spaced between the deadends.
- Spacers are not anticipated in vertical bundle spans, but may be used on vertical bundle jumpers.

5. STRUCTURE CRITERIA

5.1 Codes and Standards

The structural design for the transmission line will be in accordance with the latest accepted revision of the following list of codes and standards. The line will be designed to Grade B Standards, as defined by the National Electrical Safety Code. A summary of the codes, industry standards, and guides to be used are as follows:

- National Electrical Safety Code (NESC), ANSI C2
- ANSI/ASCE-10, Design of Latticed Steel Transmission Structures
- ASCE-72, Design of Steel Transmission Pole Structures
- PCI, Design Handbook-Precast and Pre-stressed Concrete
- ACI-318, Building Code Requirements for Structural Concrete

Specific standards for structural design are referenced below:

- IEEE Std. 524-2003, IEEE Guide to the Installation of Overhead Transmission Line Conductors
- IEEE Std. 524a-1993, IEEE Guide to Grounding During the Installation of Overhead Transmission Line Conductor: Supplement to IEEE Std. 524-1992
- IEEE Std. 691-2001, IEEE Guide for Transmission Structure Foundation and Testing
- IEEE Std. 951-1996, IEEE Guide to the Assembly and Erection of Metal Transmission Structures
- IEEE Std. 977-1991, IEEE Guide to Installation of Foundations for Transmission Line Structures

Other recognized standards shall be used where required to serve as guidelines for the design, when not in conflict with the above listed standards.

5.2 Structure Types

The structures listed in Table 5.1 below will be utilized

Table 5.1 – Structure Types

Structure Type	Structure Designation	Line Angle	Wind Span	Weight Span
Tangent	Refer to Appendix C	0°-2°	Project Specific	Project Specific
Small Running Angle	Refer to Appendix C	2°-6°	Project Specific	Project Specific
Medium Running Angle	Refer to Appendix C	6°-15°	Project Specific	Project Specific
Large Running Angle	Refer to Appendix C	15°-25°	Project Specific	Project Specific
Small Deadend	Refer to Appendix C	0°-60°	Project Specific	Project Specific
Large Deadend	Refer to Appendix C	60°-100°	Project Specific	Project Specific

5.3 Structural Loading Conditions

All transmission structures will be designed for the load cases outlined in Table 5.2 with the load factors in Table 5.3 applied. Shape factors for structural components are shown in Table 5.4.

Table 5.2 – Loading Conditions

Load Case	Weather Case	Case Description	Wind on Wire	Wind on Structure	Radial Ice Thickness	Temp.	Condition of Wires
			(lb./ft^2)	(lb./ft^2)	(in.)	(°F)	
LC 1	See Note 11	NESC 250B	See Note 11	See Note 11	See Note 11	See Note 11	Intact
LC 2	WC 2	Extreme Wind[2]	See Section 5.3.1	See Section 5.3.2	0	60	Intact
LC 3	WC 4	EPE Extreme Wind	100 mph	100 mph	0	60	Intact
LC 4	WC 3	Concurrent Wind and Ice[3]	2.31	2.31	0.25	15	Intact
LC 5	WC 5	EPE Extreme Ice[13]	0	0	1.00	30	Intact
LC 6	WC 9	Everyday[4]	0	0	0	60	Intact
LC 7	WC 13	Construction Snub[5]	2.00	2.00	0	60	Intact
LC 8	WC 13	Maintenance[6]	2.00	2.00	0	60	Intact
LC 9	WC 9	Broken Shield Wire[10]	0	0	0	60	1/2 of wires broken
LC 10	WC 9	Broken Conductor[10]	0	0	0	60	1/2 of wires broken
LC 11	WC 10	Unbalanced Ice[12, 13]	0	0	See Note 12	32	Intact
LC 12	See Note 11	NESC 250B (Deadend)[7]	See Note 11	See Note 11	See Note 11	See Note 11	Wires installed one side
LC 13	WC 2	Extreme Wind (Deadend)[2,7]	See Section 5.3.1	See Section 5.3.2	0	60	Wires installed one side
LC 14	WC 4	EPE Extreme Wind (Deadend)[7]	100 mph	100 mph	0	60	Wires installed one side
LC 15	WC 3	Concurrent Wind and Ice (Deadend)[3,7]	2.31	2.31	0.25	15	Wires installed one side
LC 16	WC 5	EPE Extreme Ice (Deadend)[7,13]	0	0	1.00	30	Wires installed one side
LC 17	WC 4	Oblique Wind[9]	100 mph	100 mph	0	60	No Wires

Notes:
1. All loading cases include the weight of a person and hardware of 500 lbs.
2. In compliance with NESC Rule 250C and ASCE 74
3. In compliance with NESC Rule 250D and ASCE 74
4. Pole tip deflection for structures is not to exceed 1.5% of the above ground height
5. Load case includes a 3:1 vertical load
6. Point load applied to structure arms or bridge
7. Applies to deadend Structures only
8. With the exception of cases noted in Note 4, the maximum pole tip deflection is not to exceed 10% of the above ground height
9. Wind in most impactful direction, no conductor, no shield wires attached. Applies to Lattice Towers Only
10. Applies to tangent structures only. Wire loads applied individually, not simultaneously
11. NESC 250B loading depends on the location of the project (WC_1a, WC_1b, or WC_1c)
12. Apply ice to ahead and back span wires with the opposite side bare. Ice thickness per NESC District Ice
13. EPE Extreme Ice and Unbalanced Ice is to only apply to structures located above 6,000 ft in elevation

5.3.1 Extreme Wind on Wire Loads Calculations

The equations below show the calculations used for the Extreme Wind adjustments on the conductor and shieldwires using the wind pressure parameters and coefficients per the NESC and ASCE Manual No. 74. The calculation producing the greatest wind pressure for conductors attached at the design maximum height should be utilized for design. The EPE Extreme wind weather case (WC 4) satisfies the NESC wind on wire and structure calculation for typical structure/height configurations. The engineer is to verify all extreme wind code requirements.

5.3.1.1 Extreme Wind on Wire – NESC Calculation

Calculation of the extreme wind force per the NESC can be found in the equations below.

$$\frac{F}{A} = 0.00256(V_{RP})^2 k_z G_{RF} I C_f$$

where:
F = Wind Force
A = Surface Area
V_{RP} = Basic Wind Speed, 3-sec Gust Design Wind Speed for 50-year Return Period
k_z = Velocity Pressure Exposure Coefficient (NESC Rule 250C1, Table 250-2)
G_{RF} = Gust Response Factor (Wire) (NESC 250C2)
I = Importance Factor (1.0 for Utility Structures and their Supported Facilities per NESC 2017: Utilize 1.15 for design)
C_f = Force Coefficient (Shape Factor) (NESC 251A2 and 252B)

5.3.1.2 Extreme Wind on Wire – ASCE 74 Calculation

Calculation of the extreme wind force per ASCE Manual No. 74 can be found in the equations below.

$$\frac{F}{A} = Q K_z K_{zt} (V_{RP})^2 \gamma_w G C_f$$

$$G = \frac{1 + 2.7E\sqrt{B_w}}{K_v^{\,2}}$$

$$E = 4.9\sqrt{\kappa} * \left(\frac{33}{z_h}\right)^{\frac{1}{\alpha_{PM}}}$$

$$B_w = \frac{1}{1 + \frac{0.8S}{L_s}}$$

where:
F = Wind Force
A = Surface Area
Q = 0.00256 (ASCE 74, Section 2.1.2)
K_z = Velocity Pressure Coefficient (Values from ASCE 74, Table 2-2, Exposure C)
K_{zt} = Topographic Factor (Values from ASCE 74, Section 2.1.7.3)
V_{RP} = 3-sec Gust Design Wind Speed for 50-year Return Period
γ_w = Wind Load Factor for 100-year Return Period (ASCE 74 Table 1-1)
G = Gust Response Factor (Wire) (ASCE 74, Section 2.1.5.1, Equation 2-4)
K_v = 1.43, (ASCE 74, Section 2.1.5.1)
κ = Surface Drag Coefficient (ASCE Table 2-3)
z_h = Effective Height of Wire, in ft (ASCE 74, Section 2.1.5.1)
α_{PM} = Power Law Exponent, Sustained Wind (ASCE 74, Table 2-3)
S = Design Wind Span, in feet, of the wires (ASCE 74, Section 2.1.5.1)
L_s=Turbulence Scale (ASCE 74, Table 2-3)
C_f = Force Coefficient (ASCE 74, Section 2.1.6.2.1, Conductors and Ground Wires)

5.3.2 Extreme Wind on Structure Load Calculations

The vendor selected to design structures for this project will be required to apply extreme wind forces to the structures in compliance with the NESC and ASCE Manual No. 74.

5.3.3 Structure Load, Strength, and Shape Factors

Table 5.3 – Load Factors

Load Case	Weather Case	Case Description	Wind on Wire	Wind on Structure	Radial Ice Thickness	Temp.	Load Factor			
			(lb./ft^2)	(lb./ft^2)	(in.)	(°F)	Vert.	Trans.	Long.	Wind on Structure
LC 1	See Note 3	NESC 250B	See Note 4	See Note 4	See Note 4	See Note 4	1.50[1]	2.50[1]	1.65[1]	2.50[1]
LC 2	WC 2	Extreme Wind	See Section 5.3.1	See Section 5.3.2	0	60	1.00[1]	1.00[1]	1.00[1]	See Note 2
LC 3	WC 4	EPE Extreme Wind	100 mph	100 mph	0	60	1.00	1.00	1.00	1.00
LC 4	WC 3	Concurrent Wind and Ice	2.31	2.31	0.25	15	1.00[1]	1.00[1]	1.00[1]	1.00[1]
LC 5	WC 5	EPE Extreme Ice	0	0	1.00	30	1.00	1.00	1.00	1.00
LC 6	WC_9	Everyday	0	0	0	60	1.00	1.00	1.00	1.00
LC 7	WC 13	Construction Snub	2.00	2.00	0	60	1.50	1.50	1.50	1.50
LC 8	WC_13	Maintenance	2.00	2.00	0	60	1.50	1.50	1.50	1.50
LC 9	WC 9	Broken Shield Wire	0	0	0	60	1.00	1.00	1.00	1.00
LC 10	WC 9	Broken Conductor	0	0	0	60	1.00	1.00	1.00	1.00
LC 11	WC 10	Unbalanced Ice	0	0	See Note 5	32	1.00	1.00	1.00	1.00
LC 12	See Note 3	NESC 250B(Deadend)	See Note 4	See Note 4	See Note 4	See Note 4	1.50[1]	2.50[1]	1.65[1]	2.50[1]
LC 13	WC 2	Extreme Wind (Deadend)	See Section 5.3.1	See Section 5.3.2	0	60	1.00[1]	1.00[1]	1.00[1]	See Note 2
LC 14	WC 4	EPE Extreme Wind (Deadend)	100 mph	100 mph	0	60	1.00	1.00	1.00	1.00
LC 15	WC 3	Concurrent Wind and Ice (Deadend)	2.31	2.31	0.25	15	1.00[1]	1.00[1]	1.00[1]	1.00[1]
LC 16	WC 5	EPE Extreme Ice (Deadend)	0	0	1.00	30	1.00	1.00	1.00	1.00
LC 17	WC 4	Oblique Wind	100 mph	100 mph	0	60	1.00	1.00	1.00	See Note 2

Notes:
1. Per NESC Table 253-1
2. Wind load on pole to be in compliance with NESC Rule 250C and ASCE 74
3. NESC 250B loading depends on the location of the project (WC_1, WC_2, or WC_3)
4. NESC 250B loading depends on the location of the project (WC_1a, WC_1b, or WC_1c)
5. Apply ice to ahead and back span wires with the opposite side bare. Ice thickness per NESC District Ice

Table 5.4 - Shape Factors for Wires, Cylindrical, and Flat Surfaces	
Surface Types	**Shape Factor**
Wires[1]	1.0
Cylindrical Surfaces (wood and 12-sided steel poles)[2]	1.0
Flat Surfaces[2]	1.6
Latticed Structures (considers both sides of a tower)	See Note 3

Notes:
1. Per NESC 251A2 and ASCE 74, Section 2.1.6.2.1
2. Per NESC 251B2 and ASCE 74, Section 2.1.6.2.4, Table 2-6
3. Shape Factor for Latticed Structures to be in compliance with NESC Rule 250C and ASCE 74

5.3.4 Broken Wire Loads

Angle suspension and deadend structures will be designed to resist the residual static load (RSL) resulting from the release of the tension of one ground wire or conductor phase, non-coincidentally. The RSL is calculated for average spans and at average ambient conditions, final tensions.

5.3.5 Unbalanced Ice Loads

Unequal ice accumulations or shedding adjacent spans will induce critical out-of-balance longitudinal loads on structures. Loads will be developed assuming ice accumulation in the ahead or back span with no ice on the opposite side.

5.3.6 Construction and Maintenance Loads

Construction and maintenance loads, unlike weather-related loads, are controllable to a large extent and are directly related to work methods. These load cases consider relatively common ambient conditions combined with typical construction and maintenance activities. The construction load case is to include a 3:1 vertical load.

5.4 Additional Structure Information

5.4.1 Failure Containment

The application of failure containment measures is to minimize cascade failures that might otherwise extend well beyond the failed section of the line. The project approach to failure containment is to place a deadend structure approximately every 10 miles and designing all structures for longitudinal loads.

5.4.2 Other Information

Table 5.5 below contains additional project specific structure information.

Table 5.5 – Additional Structure Information	
Raptor Protection	As Required
Pole Height Restrictions[1]	200 ft AGH (Max)
Anodes Required	As Required

Notes:
1. Maximum pole height is to be lower than 200ft, if possible, to avoid needing FAA lights to be installed on the structure. The height limit of EPE bucket trucks should also be considered when structure heights exceed 105 ft AGH. Additional climbing devices are to be considered for structures taller than 105 ft AGH

6. HARDWARE

6.1 Assembly Types

The assemblies outlined in Table 6.1 shall be utilized. Corona free hardware will be used for the 345kV line to minimize the effects of corona.

Table 6.1 – Assembly Types

Wire Description	Suspension			Deadend		
	Suspension Clamp	Armor Rods	AGS	Bolted	Compression	Hardware Considerations
Conductor	Project Specific	Project Specific	Project Specific	Project Specific	Project Specific	☒ Normal[1] ☐ High Temp ☒ Corona Free
OPGW	Project Specific	Project Specific	Project Specific	Project Specific	Project Specific	☒ Normal ☐ High Temp ☐ Corona Free
OHSW	Yes	N/A	N/A	Yes	N/A	☒ Normal ☐ High Temp ☐ Corona Free

Notes:
1. High temperature hardware is to be utilized for ACSS conductors
2. Material fittings should be evaluated on a case by case basis

6.2 Grading Requirements

Grading rings are required for non-ceramic insulators and should be installed per the insulator manufacturer's requirements. Grading ring are recommended but not required for porcelain or glass insulators and should be considered on a case by case basis.

6.3 OPGW

Splice enclosures shall be installed on the pole such that the bottom of the cable coil and enclosure is at a minimum height of 15 ft above grade.

The Supplier shall account for the OPGW cable length during the design so that there is sufficient cable at each splice location to allow future splice repairs, and specify this in the construction specifications, for the pre-splice and post splice conditions. At a minimum, the OPGW length is to include 100 ft pre-splice, coiled at the ground, and 60 ft of cable coiled in post splice condition. OPGW cable ends shall be sealed with an end cap adequate to prevent moisture intrusion, immediately after stringing. The OPGW pull length should be evaluated per the manufacturer's recommendation in regard to the cumulative and maximum line angles of a section.

6.4 Strength Requirements

Table 6.2 outlines the strength factors that apply to the insulators and hardware

Table 6.2 – Insulators and Hardware Strength Factors

Material	Load Case Description	Load Factor	Strength Factor		
			NESC	Client	Design
Non-Ceramic Insulator	NESC 250B	No	0.50[1]	0.50	0.50
	NESC 250C & NESC 250D	No	0.65[1]	0.50	0.50
	All Non-NESC Cases	No	-	0.50	0.50
Ceramic Insulator	NESC 250B	No	0.50[1]	0.50	0.50
	NESC 250C & NESC 250D	No	0.50[1]	0.50	0.50
	All Non-NESC Cases	No	-	0.50	0.50
Support and Attachment Hardware	NESC 250B	Yes	1.00[2]	1.00	1.00
	NESC 250C & NESC 250D	Yes	0.80[2]	0.50	0.50
	All Non-NESC Cases	Yes	-	0.50	0.50
Deadend Fittings & Hardware	NESC 250B	Yes	1.00[3]	1.00	1.00
	NESC 250C & NESC 250D	No	0.80[3]	0.50	0.50
	All Non-NESC Cases	No	-	0.50	0.50
Guys and Guy Grips	NESC 250B	Yes	0.90[2]	0.90	0.90
	NESC 250C & NESC 250D	Yes	0.90[2]	0.65	0.65
	All Non-NESC Cases	Yes	-	0.65	0.65

Notes:
1. NESC Table 277-1
2. NESC Rule 261.M and Table 261-1
3. NESC Rule 261.H.2.c

6.5 Insulator Swing Angle

Refer to Table 8.4 for the required clearances to be maintained to the structure.

If V-String suspension insulators are being utilized, a detailed analysis is to be performed to determine the weather conditions that potentially cause the insulators to experience compression loading.

6.6 Uplift

Suspension assemblies should be designed to not experience uplift at the AAMT weather case. If applicable, conductor will be counterbalanced by placing weight on the conductor or adjacent structures will be increased in height to mitigate uplift concerns.

If uplift occurs on the shield wire at the AAMT weather case, the shield wire will be dead-ended only if reasonable solutions cannot be found by adding structure height or counter weights. If uplift occurs on an engineered dead-end structure, steel pole vendor to verify the pole's slip joint connection can withstand the vertical loads and mitigate as necessary.

7. FOUNDATION DESIGN

7.1 Foundation Criteria

Transmission line structure foundation types may include, but are not limited to, direct embed, drilled pier with reinforced concrete, helical anchor, and vibratory caisson foundations. Foundation types should be evaluated utilizing the Geotechnical Report for the project.

For foundations in compression, eccentric loaded foundations with a high L/r are more susceptible to buckling. For a foundation with a slenderness ratio greater than ten, the substructure shall be designed as a flexible member instead of a rigid member. The slenderness ratio is noted below that allows the deflection criteria to be utilized and to design the foundation as a rigid member.

Drilled pier and direct embedded foundations should be designed in accordance with the requirements as shown below in Table 7.1. The parameters shown in the table are to be used with EPRI's Foundation Analysis and Design (FAD) program. Alternative foundation types should be designed on an as-needed basis.

Table 7.1 – Foundation Design Criteria

Description	Acceptance Criteria
Design Concrete Strength	3,000 psi
Actual Concrete Strength	4,000 psi
Reinforcing Steel	ASTM A615 Grade 60, 60ksi
FAD Springs	-Base Shear and Base Moment Springs will not be utilized - Side Shear Springs will be utilized unless engineer expects permanent casing will be used during installation.
Drilled Pier Reveal	1'-0" Minimum
Design Loads	Factored Loads will be utilized
Direct Embed Backfill Material	Concrete
Total Ground Line Deflection[2]	3.0 in.
Total Foundation Rotation[2]	2.0 deg.
Non-Recoverable Deflection[2]	2.0 in.
Non-Recoverable Rotation[2]	1.0 deg.
Factor of Safety	1.2
Foundation Slenderness Ratio	3/1 < Depth/Diameter < 10/1
Anchor Bolt Length[1]	Full Length

Notes:
1. Standard Length Anchor Bolts can be utilized if considered advantageous for the project
2. Parameters are not applicable for compression/uplift foundation designs

8. CLEARANCES

The basis for calculating proper transmission line clearances is the NESC and EPE design practices. For new line designs, clearance buffers have been identified for vertical clearances, which are summarized in the following sections. For special cases not listed in this document the NESC document will govern and a reasonable buffer shall be utilized.

8.1 Clearance Due to Voltage

Clearances shall be determined from maximum phase-to-ground voltages. Phase-to-ground voltages shall include a 5% over-voltage for the 345kV line. Typical voltages are shown in Table 8.0

Table 8.0 - Clearance Voltage Criteria		
Nominal Phase-to-Phase Voltage (kV)	**Maximum Phase-to-Ground Voltage (kV)**	**Comments**
345	209	Includes 5% over-voltage

8.2 Right-of-Way Blowout

Minimum clearances to be maintained from the blown-out conductor to the edge of right-of way shall be as follows.

- Load cases 1 and 2 are based on maintaining NESC clearance to buildings. See NESC 234 C.1.
- Clearances for Load Case 3 are not governed by NESC. This case is a EPE criteria designed to keep the conductors on the right-of-way under an extreme wind.
- If the project is located in an urban environment, the wire blowout will need to be evaluated on a case by case basis.

Blowout of the conductors and ground wires outside the right-of-way will be checked using the clearance criteria outlined in Table 8.1.

Table 8.1 – Right-of-Way Blowout					
Load Case	**Weather Case**	**Description**	**345kV Line**		
			Required Clearance (ft)	**Adder (ft)**	**Design Clearance (ft)**
Load Case 1	WC 9	0 PSF, No Ice, 60°F, Final	14	2	16
Load Case 2	WC 6	6 PSF, No Ice, 60°F, Final	11	2	13
Load Case 3	WC 4	EPE Extreme Wind (100 mph Wind)	-	1	1

Notes:
1. Right-of-Way Required Clearances are based off of an Elevation of 4,300 ft. The clearance adder encompasses all elevations up to 8,300 ft

8.3 Vertical Clearance Requirements

Vertical clearance shall be provided for the maximum operating temperature considering aluminum compression and no wind at final sag.

Vertical clearance requirements shall be determined in accordance with the NESC requirements. Specific NESC rules are referenced below. The vertical clearances include a 5% over-voltage for the 345kV line.

8.3.1 Design Buffers

In addition to the standard minimum clearance requirements, a design clearance buffer will be included and added to the required minimum clearance. The intent of the buffer is to account for expected survey, design and construction imprecision as well as construction tolerances. The magnitude of the buffer is dependent on the type of survey, design task, construction variables and construction method, each of them with an

intrinsic inaccuracy. The calculated clearance buffer is the sum of the inaccuracies that can happen simultaneously. A clearance buffer of 3.5 ft will be applied to clearance to features below or adjacent to the line. This clearance buffer includes assumed inaccuracies in the LiDAR survey, ground survey, structure setting and construction, and wire sagging.

8.3.2 Clearance Adjustments due to Altitude

EPE's territory consists of varying terrain with elevations higher than 3300 ft above sea level. Appropriate atmospheric correction factors are to be applied for clearances to account for the decrease in atmospheric pressure per the NESC. The Clearance Tables located in Appendix A of this document has the clearance values divided into three categories: Project elevation less than 4,300 ft, between 4,300 ft - 6,300 ft, and between 6,300 ft - 8,300 ft. The Engineer is to evaluate the elevation that the project traverses and apply the appropriate clearance values.

8.3.3 Adjustments to Clearance for Oversize Vehicles and Farm Equipment

If it is expected that vehicles taller than 14 ft will be crossing underneath the line, the vertical clearances to ground/road in Appendix A are to be increased by an incremental distance determined by subtracting the oversize vehicle height from 14 ft.

8.3.4 Clearance to Ground, Roadways, Rail or Water Surfaces

The vertical clearance values are located in Appendix A, Section A.

8.3.5 At Line Crossings, Conductors of Different Circuits on Different Supporting Structures

Mid-span crossing of wires should be avoided where practical. The vertical clearance at points along the span shall be measured using the weather conditions detailed in Table 8.2 below.

Table 8.2 – Line Crossing Weather Conditions (NESC Rule 233A)

Upper Conductor Condition	Lower Conductor Position
32°F, 0#, 0" – Final	32°F, 0#, 0" – Initial
MOT – Final	Everyday (60°F, 0#, 0") – Initial

In addition, in determining clearances, conductors shall be observed when subject to the same ambient air temperature and wind loading conditions, as well as its full range of icing conditions and applicable design electrical loading.

The design and structure spotting will provide additional clearance over adjacent distribution lines assuming lines may be upgraded to higher voltages in the future. For road crossings that do not currently have adjacent distribution lines, additional clearance will be provided assuming that a future distribution line may be constructed. The distribution pole height is to be assumed to be a 40 ft pole.

Appendix A, Section B lists the Code clearance, buffer and the design vertical clearance for wire crossings.

8.3.6 Conductors of Different Circuits on the Same Supporting Structure

Appendix A, Section C and Section D lists the vertical clearance requirements at the support for wires of different circuits carried on the same structure and in the span. Note, clearance between conductors of the same circuit is not considered in this section.

8.3.7 Clearance over Buildings, Bridges or Other Structures

Appendix A, Section E lists the vertical clearance requirements over building, bridges, or other structure.

8.3.8 Clearance to Self-Supporting Structures (NESC Rule 235E)

Table 8.3 identifies the required clearance from the conductor (as displaced by wind) to the supporting structure. Note that an adder is not included for the clearances in Table 8.3.

Table 8.4 identifies the load cases and associated clearances to be utilized when calculating allowable insulator swing angles.

Table 8.3 – Clearance to Self-Supporting Structure (NESC Rule 235)

Conductor rigidly supported or transversely displaced due to 6-psf wind, at 60°F, final		345kV		
		4,300 ft Elevation	6,300 ft Elevation	8,300 ft Elevation
Span or Guy Wires, or messengers attached to the same structure, at or near the support	Parallel to Line	13.1’	13.8’	14.4’
	Anchor Guys	8.0’	8.4’	8.8’
	All Other	12.6’	13.3’	13.9’
Surface of support arms, at the support		6.3’	6.6’	6.9’
Surface of structure, at the support	On Jointly used structures	6.4’	6.8’	7.1’
	All Other	6.3’	6.6’	6.9’

Table 8.4 - Insulator Swing Criteria (NESC Rule 235)

Case Number	Weather Case	Cable Condition	345kV Required Clearance (ft)
Case 1[1]	60°F, no wind, no ice	Initial	8.2
Case 2[2]	60°F, 6psf wind, no ice	Initial	6.9
Case 3[2]	60°F, 6psf wind, no ice	Final	6.9
Case 4	EPE Extreme Wind (100 mph Wind)	Initial	3.5

Notes:
1. Load Case 1 includes a buffer for dry arc distance of the insulator
2. Load Case 2 and 3 Clearance based on NESC Table 235-6
3. Load Case 4 includes a buffer for an extreme wind weather event

8.4 Horizontal Clearances Requirements

In determining clearances, conductors shall be observed when subject to the same ambient air temperature and wind loading conditions, as well as its full range of icing conditions and applicable design electrical loading.

8.4.1 Adjacent Conductors of a Different Circuit on a Different Supporting Structure

Horizontal clearances between conductors of different circuits on different supporting structures are outlined in Appendix A, Section F.

8.4.2 Clearance to Buildings, Bridges or Other Structures (NESC Rule 234)

Horizontal clearance from conductors to buildings, bridges or other structures is specified with the conductor at rest and under wind displacement as outlined in Appendix A, Section G.

8.4.3 Rolling Clearances

Clearances between phase conductors or between ground wires and phases of the same circuit when "rolling" from a vertical to a horizontal configuration should not be less than the following:

Table 8.5 – Rolling Clearances		
Nominal Phase to Phase Voltage (kV)	**Phase-to-Phase Clearance (ft)**	**Phase-to-OHGW (ft)**
345kV	14	13

Where practical, rolling clearances should be increased to lessen the probability of contact between phase conductors during galloping in flat areas and de-icing everywhere.

It is not anticipated that the 345 kV line will be required to "roll" from horizontal to vertical; however, there may be instances to "roll" from a horizontal configuration on substation or H-Frame structures to a delta configuration on single pole or lattice tower structures.

8.5 Galloping

Galloping ellipse spacing requirements will be considered. The A.E. Davison method shall be used for modeling single loop galloping for spans less than 600 ft. The L.W. Toye method shall be used for modeling double loop galloping for spans greater than 600 ft. The Cigre method is to be evaluaed in a case by case basis. Overlap between galloping ellipsis are not allowed unless approved by the appropriate EPE transmission engineering representative. The weather conditions shown in Table 8.6 will be used to evaluate galloping.

Table 8.6 – Galloping Weather Cases			
Weather Case	**Temp (°F)**	**Ice (in)**	**Wind (psf)**
WC 14	32	0.5	2
WC 15	32	0.5	0

8.6 Additional Clearance to Consider

8.6.1 Minimum Approach Distances

Minimum Approach Distances should be considered when determining structure geometries. Refer to GE Energy Consulting Group's "Minimum Approach Distance Study for El Paso Electric 345kV Transmission Lines" and the Occupational Safety and Health Administration document 39 CFR, 1910.269 (OSHA 269) for more information.

9. Appendix A – Clearance Values

9.1 Clearance Values – 4300 ft Elevation

Vertical Clearances to Ground (Section 9.1A) (NESC Rule 232)			
Nature of Surface underneath wires, conductors or cables	**Voltage – 345kV**		
	Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Track rails of railroads	32.9	3.5	36.4
Roads, streets, and other areas subject to truck traffic	24.9	3.5	28.4
Driveways, parking lots, and alleys	24.9	3.5	28.4
Other land traversed by vehicles, such as cultivated, grazing, forest, orchard, etc.	24.9	3.5	28.4
Spaces and ways subject to pedestrians or restricted traffic only.	20.9	3.5	24.4
Water areas not suitable for sail boating or where sail boating is prohibited	23.4	3.5	26.9
Water areas suitable for sail boating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with un unobstructed surface area of:			
Less than 20 acres	26.9	3.5	30.4
Over 20 to 200 acres	34.9	3.5	38.4
Over 200 to 2000 acres	40.9	3.5	44.4
Over 2000 acres	46.9	3.5	50.4
Established boat ramps and associated rigging areas: areas posted with sign (s) for rigging or launching sail boats			
Less than 20 acres	31.9	3.5	35.4
Over 20 to 200 acres	39.9	3.5	43.4
Over 200 to 2000 acres	45.9	3.5	49.4
Over 2000 acres	51.9	3.5	55.4

Vertical Clearances at Wire Crossings (Section 9.1B) (NESC Rule 233)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	8.4	3.5	11.9
Effectively grounded communication guys, span wires and messengers	11.4	3.5	14.9
Open supply conductors, 22 kV	8.4	3.5	11.9
Open supply conductors, 34.5 kV	8.4	3.5	11.9
Open Supply conductors, 69kV	9.1	3.5	12.6
Open supply conductors, 115kV	10.1	3.5	13.6
Open supply conductors, 161kV	11.0	3.5	14.5
Open supply conductors, 230kV	12.5	3.5	16.0
Open supply conductors, 345kV	14.9	3.5	18.4

Vertical Clearances *at the Support (Section 9.1C)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	10.2	3.5	13.7
Open supply conductors, 22 kV	10.6	3.5	14.1
Open supply conductors, 34.5 kV	10.9	3.5	14.4
Open Supply conductors, 69kV	11.6	3.5	15.1
Open supply conductors, 115kV	12.6	3.5	16.1
Open supply conductors, 161kV	13.5	3.5	17.0
Open supply conductors, 230kV	15.0	3.5	18.5
Open supply conductors, 345kV	17.4	3.5	20.9

Vertical Clearances *in the Span (Section 9.1D)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded communication guys, span wires and messengers	9.0	3.5	12.5
Open supply conductors, 22 kV	9.5	3.5	13.0
Open supply conductors, 34.5 kV	9.7	3.5	13.2
Open Supply conductors, 69kV	10.4	3.5	13.9
Open supply conductors, 115kV	11.4	3.5	14.9
Open supply conductors, 161kV	12.3	3.5	15.8
Open supply conductors, 230kV	13.8	3.5	17.3
Open supply conductors, 345kV	16.2	3.5	19.7

Vertical Clearances over Buildings, Bridges or Other Structures (Section 9.1E) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit		11.0	3.5	14.5
Over Bridges	Attached	12.0	3.5	15.5
	Not Attached	19.0	3.5	22.5
Buildings	Over/under roofs or projections not accessible to pedestrians	19.0	3.5	22.5
	Over/under roofs, balconies, decks or projections accessible to pedestrians	20.0	3.5	23.5
	Over roofs, ramps, decks and loading docks accessible to vehicles but not subject to truck traffic	20.0	3.5	23.5
	Over roofs, ramps, decks, and loading docks accessible to truck traffic	25.0	3.5	28.5
Other Structures not Classified as Buildings or Bridges	Over or under catwalks and other surfaces upon which personnel walk	20.0	3.5	23.5
	Over or under other portions of such installations	14.5	3.5	18.0

Horizontal Clearances to Adjacent Circuits (Section 9.1F) Conductors of Different Circuits on Different Supporting Structure (NESC Rule 233)			
Adjacent Line	**Main Line Voltage – 345 kV**		
	Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	11.2	3.5	14.7
Effectively grounded communication guys, span wires and messengers	11.2	3.5	14.7
Open supply conductors, 22 kV	11.2	3.5	14.7
Open supply conductors, 34.5 kV	11.2	3.5	14.7
Open Supply conductors, 69kV	11.9	3.5	15.4
Open supply conductors, 115kV	12.8	3.5	16.3
Open supply conductors, 161kV	13.8	3.5	17.3
Open supply conductors, 230kV	15.2	3.5	18.7
Open supply conductors, 345kV	17.5	3.5	21.0

Horizontal Clearance to Buildings, Bridges or Other Structures (Section 9.1G) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 4300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit	No Displacement	11.5	3.5	15.0
	Displaced by Wind	11.0	3.5	14.5
Beside, Under, or Within a Bridge Structure	Attached – Readily accessible portions of any bridge, including wings, walls and abutments	12.0	3.5	15.5
	Not Attached – Readily accessible portions of any bridge, including wings, walls and abutments	14.0	3.5	17.5
	Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	12.0	3.5	15.5
	Not Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	13.0	3.5	16.5
Buildings	To walls, projections, and guarded windows	14.0	3.5	17.5
	To unguarded windows	14.0	3.5	17.5
	To balconies and areas readily accessible to pedestrians	14.0	3.5	17.5
Other Structures not Classified as Buildings or Bridges	To portions that are readily accessible to pedestrians	14.0	3.5	17.5
	To portions that are not readily accessible to pedestrians	14.0	3.5	17.5

9.2 Clearance Values – 6300 ft Elevation

Vertical Clearances to Ground (Section 9.2A) (NESC Rule 232)			
Nature of Surface underneath wires, conductors or cables	**Voltage – 345kV**		
	Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Track rails of railroads	33.3	3.5	36.8
Roads, streets, and other areas subject to truck traffic	25.3	3.5	28.8
Driveways, parking lots, and alleys	25.3	3.5	28.8
Other land traversed by vehicles, such as cultivated, grazing, forest, orchard, etc.	25.3	3.5	28.8
Spaces and ways subject to pedestrians or restricted traffic only.	21.3	3.5	24.8
Water areas not suitable for sail boating or where sail boating is prohibited	23.8	3.5	27.3
Water areas suitable for sail boating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with un unobstructed surface area of:			
Less than 20 acres	27.3	3.5	30.8
Over 20 to 200 acres	35.3	3.5	38.8
Over 200 to 2000 acres	41.3	3.5	44.8
Over 2000 acres	47.3	3.5	50.8
Established boat ramps and associated rigging areas: areas posted with sign (s) for rigging or launching sail boats			
Less than 20 acres	32.3	3.5	35.8
Over 20 to 200 acres	40.3	3.5	43.8
Over 200 to 2000 acres	46.3	3.5	49.8
Over 2000 acres	52.3	3.5	55.8

Vertical Clearances at Wire Crossings (Section 9.2B) (NESC Rule 233)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	8.8	3.5	12.3
Effectively grounded communication guys, span wires and messengers	11.8	3.5	15.3
Open supply conductors, 22 kV	8.8	3.5	12.3
Open supply conductors, 34.5 kV	8.8	3.5	12.3
Open Supply conductors, 69kV	9.5	3.5	13.0
Open supply conductors, 115kV	10.5	3.5	14.0
Open supply conductors, 161kV	11.5	3.5	15.0
Open supply conductors, 230kV	13.1	3.5	16.6
Open supply conductors, 345kV	15.6	3.5	19.1

Vertical Clearances *at the Support (Section 9.2C)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	10.5	3.5	14.0
Open supply conductors, 22 kV	11.0	3.5	14.5
Open supply conductors, 34.5 kV	11.3	3.5	14.8
Open Supply conductors, 69kV	12.0	3.5	15.5
Open supply conductors, 115kV	13.0	3.5	16.5
Open supply conductors, 161kV	14.0	3.5	17.5
Open supply conductors, 230kV	15.6	3.5	19.1
Open supply conductors, 345kV	18.1	3.5	21.6

Vertical Clearances *in the Span (Section 9.2D)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded communication guys, span wires and messengers	9.3	3.5	12.8
Open supply conductors, 22 kV	9.8	3.5	13.3
Open supply conductors, 34.5 kV	10.1	3.5	13.6
Open Supply conductors, 69kV	10.8	3.5	14.3
Open supply conductors, 115kV	11.8	3.5	15.3
Open supply conductors, 161kV	12.9	3.5	16.4
Open supply conductors, 230kV	14.4	3.5	17.9
Open supply conductors, 345kV	16.9	3.5	20.4

Vertical Clearances over Buildings, Bridges or Other Structures (Section 9.2E) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit		11.4	3.5	14.9
Over Bridges	Attached	12.4	3.5	15.9
	Not Attached	19.4	3.5	22.9
Buildings	Over/under roofs or projections <u>not</u> accessible to pedestrians	19.4	3.5	22.9
	Over/under roofs, balconies, decks or projections accessible to pedestrians	20.4	3.5	23.9
	Over roofs, ramps, decks and loading docks accessible to vehicles but <u>not</u> subject to truck traffic	20.4	3.5	23.9
	Over roofs, ramps, decks, and loading docks accessible to truck traffic	25.4	3.5	28.9
Other Structures not Classified as Buildings or Bridges	Over or under catwalks and other surfaces upon which personnel walk	20.4	3.5	23.9
	Over or under other portions of such installations	14.9	3.5	18.4

Horizontal Clearances to Adjacent Circuits (Section 9.2F) Conductors of Different Circuits on Different Supporting Structure (NESC Rule 233)			
Adjacent Line	**Main Line Voltage – 345 kV**		
	Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	11.2	3.5	14.7
Effectively grounded communication guys, span wires and messengers	11.2	3.5	14.7
Open supply conductors, 22 kV	11.2	3.5	14.7
Open supply conductors, 34.5 kV	11.2	3.5	14.7
Open Supply conductors, 69kV	11.9	3.5	15.4
Open supply conductors, 115kV	12.8	3.5	16.3
Open supply conductors, 161kV	13.8	3.5	17.3
Open supply conductors, 230kV	15.2	3.5	18.7
Open supply conductors, 345kV	17.5	3.5	21.0

Horizontal Clearance to Buildings, Bridges or Other Structures (Section 9.2G) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 6300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit	No Displacement	11.9	3.5	15.4
	Displaced by Wind	11.4	3.5	14.9
Beside, Under, or Within a Bridge Structure	Attached – Readily accessible portions of any bridge, including wings, walls and abutments	12.4	3.5	15.9
	Not Attached – Readily accessible portions of any bridge, including wings, walls and abutments	14.4	3.5	17.9
	Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	12.4	3.5	15.9
	Not Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	13.4	3.5	16.9
Buildings	To walls, projections, and guarded windows	14.4	3.5	17.9
	To unguarded windows	14.4	3.5	17.9
	To balconies and areas readily accessible to pedestrians	14.4	3.5	17.9
Other Structures not Classified as Buildings or Bridges	To portions that are readily accessible to pedestrians	14.4	3.5	17.9
	To portions that are not readily accessible to pedestrians	14.4	3.5	17.9

9.3 Clearance Values – 8300 ft Elevation

Vertical Clearances to Ground (Section 9.3A) (NESC Rule 232)			
Nature of Surface underneath wires, conductors or cables	**Voltage – 345kV**		
	Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Track rails of railroads	33.7	3.5	37.2
Roads, streets, and other areas subject to truck traffic	25.7	3.5	29.2
Driveways, parking lots, and alleys	25.7	3.5	29.2
Other land traversed by vehicles, such as cultivated, grazing, forest, orchard, etc.	25.7	3.5	29.2
Spaces and ways subject to pedestrians or restricted traffic only.	21.7	3.5	25.2
Water areas not suitable for sail boating or where sail boating is prohibited	24.2	3.5	27.7
Water areas suitable for sail boating including lakes, ponds, reservoirs, tidal waters, rivers, streams, and canals with un unobstructed surface area of:			
Less than 20 acres	27.7	3.5	31.2
Over 20 to 200 acres	35.7	3.5	39.2
Over 200 to 2000 acres	41.7	3.5	45.2
Over 2000 acres	47.7	3.5	51.2
Established boat ramps and associated rigging areas: areas posted with sign (s) for rigging or launching sail boats			
Less than 20 acres	32.7	3.5	36.2
Over 20 to 200 acres	40.7	3.5	44.2
Over 200 to 2000 acres	46.7	3.5	50.2
Over 2000 acres	52.7	3.5	56.2

Vertical Clearances at Wire Crossings (Section 9.3B) (NESC Rule 233)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	9.2	3.5	12.7
Effectively grounded communication guys, span wires and messengers	12.2	3.5	15.7
Open supply conductors, 22 kV	9.2	3.5	12.7
Open supply conductors, 34.5 kV	9.2	3.5	12.7
Open Supply conductors, 69kV	9.9	3.5	13.4
Open supply conductors, 115kV	11.0	3.5	14.5
Open supply conductors, 161kV	12.1	3.5	15.6
Open supply conductors, 230kV	13.7	3.5	17.2
Open supply conductors, 345kV	16.3	3.5	19.8

Vertical Clearances *at the Support (Section 9.3C)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	10.8	3.5	14.3
Open supply conductors, 22 kV	11.3	3.5	14.8
Open supply conductors, 34.5 kV	11.6	3.5	15.1
Open Supply conductors, 69kV	12.4	3.5	15.9
Open supply conductors, 115kV	13.5	3.5	17.0
Open supply conductors, 161kV	14.6	3.5	18.1
Open supply conductors, 230kV	16.2	3.5	19.7
Open supply conductors, 345kV	18.8	3.5	22.3

Vertical Clearances *in the Span (Section 9.3D)* Conductors of Different Circuits on the Same Supporting Structure (NESC Rule 235)			
Lower Level	**Upper Level Voltage – 345 kV**		
	Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded communication guys, span wires and messengers	9.6	3.5	13.1
Open supply conductors, 22 kV	10.1	3.5	13.6
Open supply conductors, 34.5 kV	10.4	3.5	13.9
Open Supply conductors, 69kV	11.2	3.5	14.7
Open supply conductors, 115kV	12.3	3.5	15.8
Open supply conductors, 161kV	13.4	3.5	16.9
Open supply conductors, 230kV	15.0	3.5	18.5
Open supply conductors, 345kV	17.7	3.5	21.2

Vertical Clearances over Buildings, Bridges or Other Structures (Section 9.3E) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit		11.7	3.5	15.2
Over Bridges	Attached	12.7	3.5	16.2
	Not Attached	19.7	3.5	23.2
Buildings	Over/under roofs or projections not accessible to pedestrians	19.7	3.5	23.2
	Over/under roofs, balconies, decks or projections accessible to pedestrians	20.7	3.5	24.2
	Over roofs, ramps, decks and loading docks accessible to vehicles but not subject to truck traffic	20.7	3.5	24.2
	Over roofs, ramps, decks, and loading docks accessible to truck traffic	25.7	3.5	29.2
Other Structures not Classified as Buildings or Bridges	Over or under catwalks and other surfaces upon which personnel walk	20.7	3.5	24.2
	Over or under other portions of such installations	15.2	3.5	18.7

Horizontal Clearances to Adjacent Circuits (Section 9.3F) Conductors of Different Circuits on Different Supporting Structure (NESC Rule 233)			
Adjacent Line	**Main Line Voltage – 345 kV**		
	Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Effectively grounded guys, span wires and messengers	11.2	3.5	14.7
Effectively grounded communication guys, span wires and messengers	11.2	3.5	14.7
Open supply conductors, 22 kV	11.2	3.5	14.7
Open supply conductors, 34.5 kV	11.2	3.5	14.7
Open Supply conductors, 69kV	11.9	3.5	15.4
Open supply conductors, 115kV	12.8	3.5	16.3
Open supply conductors, 161kV	13.8	3.5	17.3
Open supply conductors, 230kV	15.2	3.5	18.7
Open supply conductors, 345kV	17.5	3.5	21.0

Horizontal Clearance to Buildings, Bridges or Other Structures (Section 9.3G) (NESC Rule 234)				
Clearance Of		**Upper Level Voltage – 345 kV**		
		Total NESC Clearance (ft) – 8300 ft Elevation	**Buffer (ft)**	**Design Clearance (ft)**
Structures of a Different Circuit	No Displacement	12.2	3.5	15.7
	Displaced by Wind	11.7	3.5	15.2
Beside, Under, or Within a Bridge Structure	Attached – Readily accessible portions of any bridge, including wings, walls and abutments	12.7	3.5	16.2
	Not Attached – Readily accessible portions of any bridge, including wings, walls and abutments	14.7	3.5	18.2
	Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	12.7	3.5	16.2
	Not Attached – Ordinarily inaccessible portions of any bridge, including wings, walls and abutments	13.7	3.5	17.2
Buildings	To walls, projections, and guarded windows	14.7	3.5	18.2
	To unguarded windows	14.7	3.5	18.2
	To balconies and areas readily accessible to pedestrians	14.7	3.5	18.2
Other Structures not Classified as Buildings or Bridges	To portions that are readily accessible to pedestrians	14.7	3.5	18.2
	To portions that are not readily accessible to pedestrians	14.7	3.5	18.2

10. Appendix B – Weather Maps

10.1 AAT

See Figure 10.1 for the Average Annual Temperature for EPE territory.

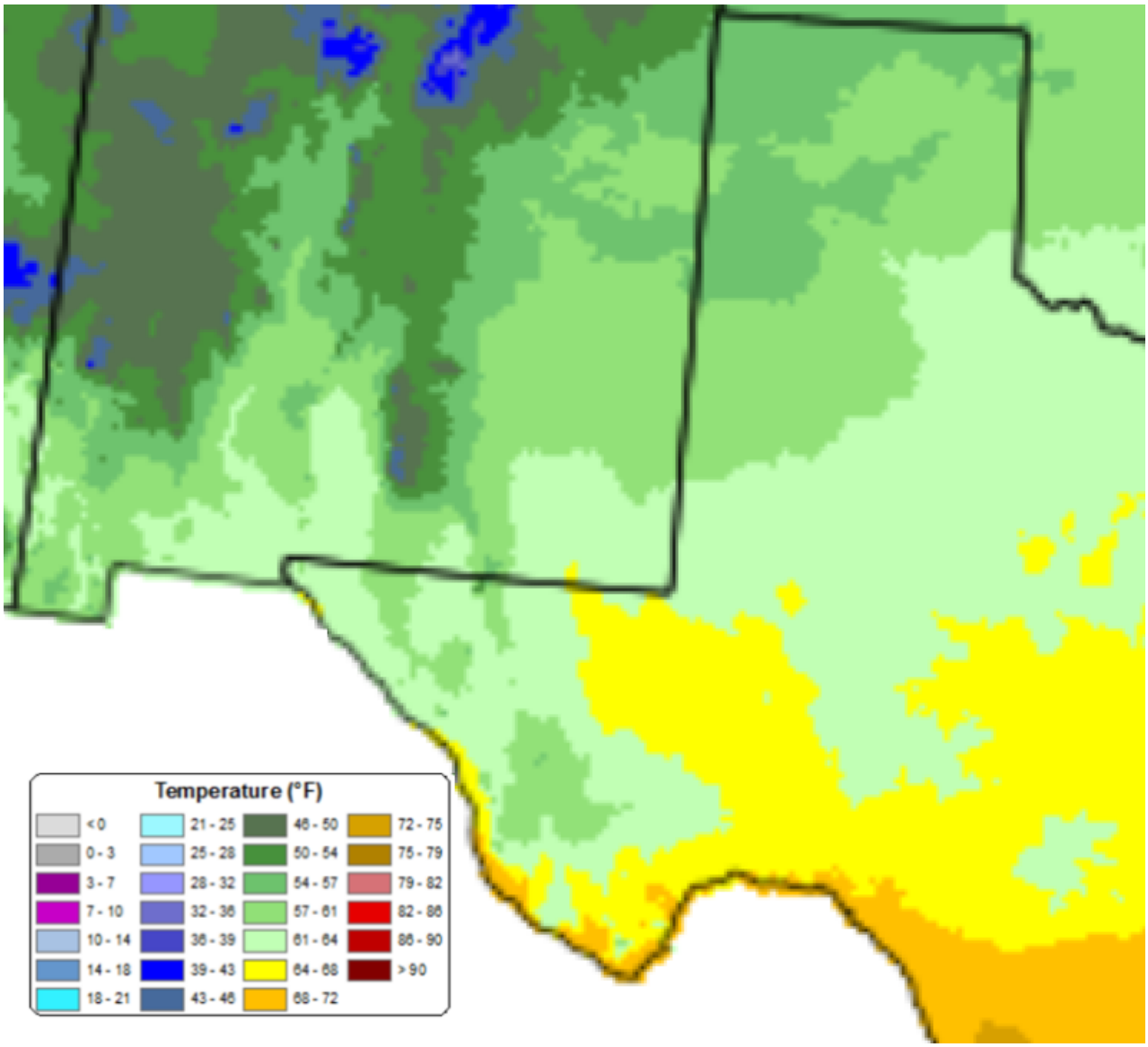


Figure 10.1 (http://prism.oregonstate.edu/normals/)

10.2 AAMT

See Figure 10.2A for the Average Annual Minimum Temperature of West Texas and Figure 10.2B for the Average Annual Minimum Temperature of New Mexico.

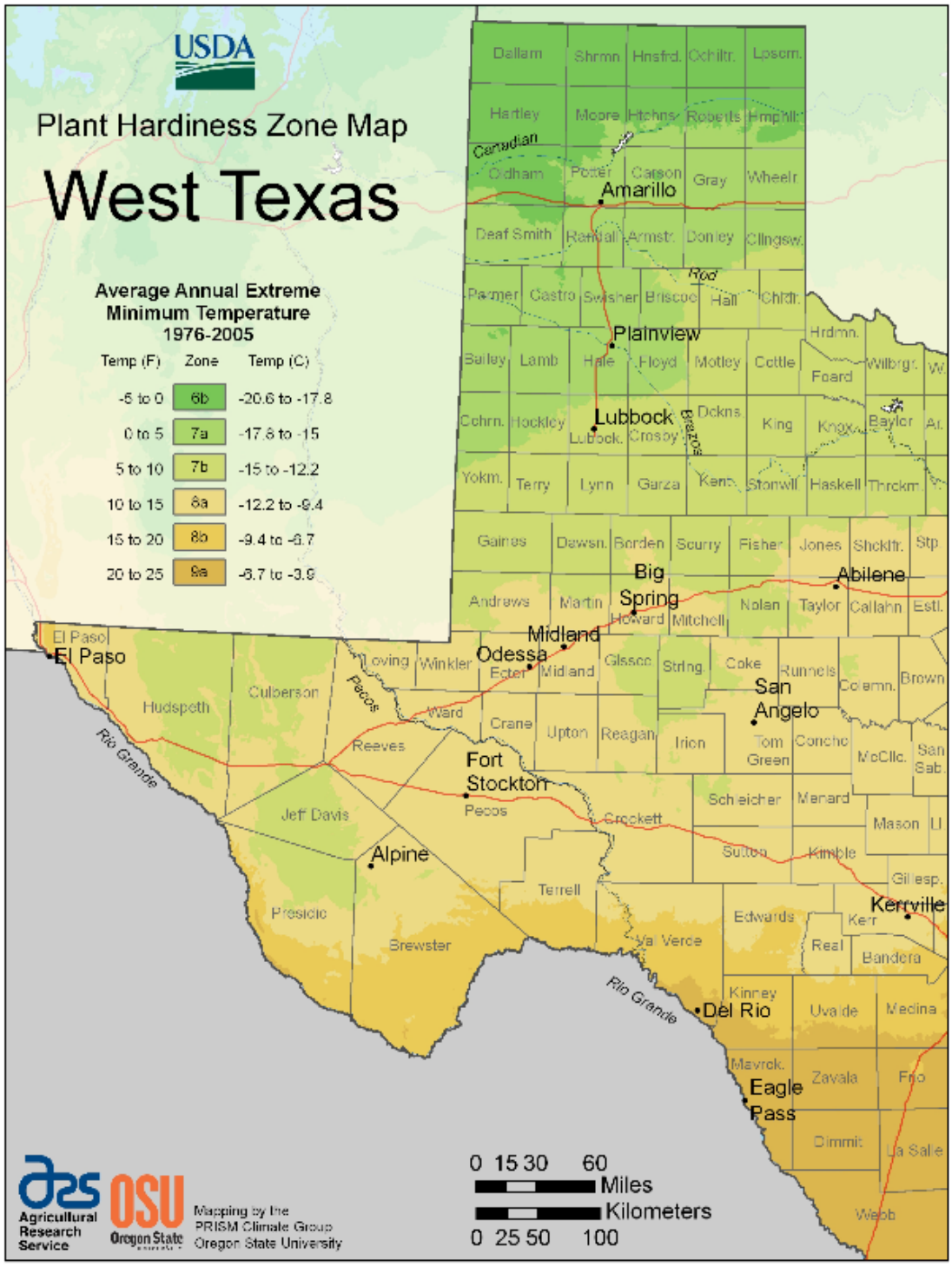


Figure 10.2A (https://planthardiness.ars.usda.gov/PHZMWeb/Maps.aspx)

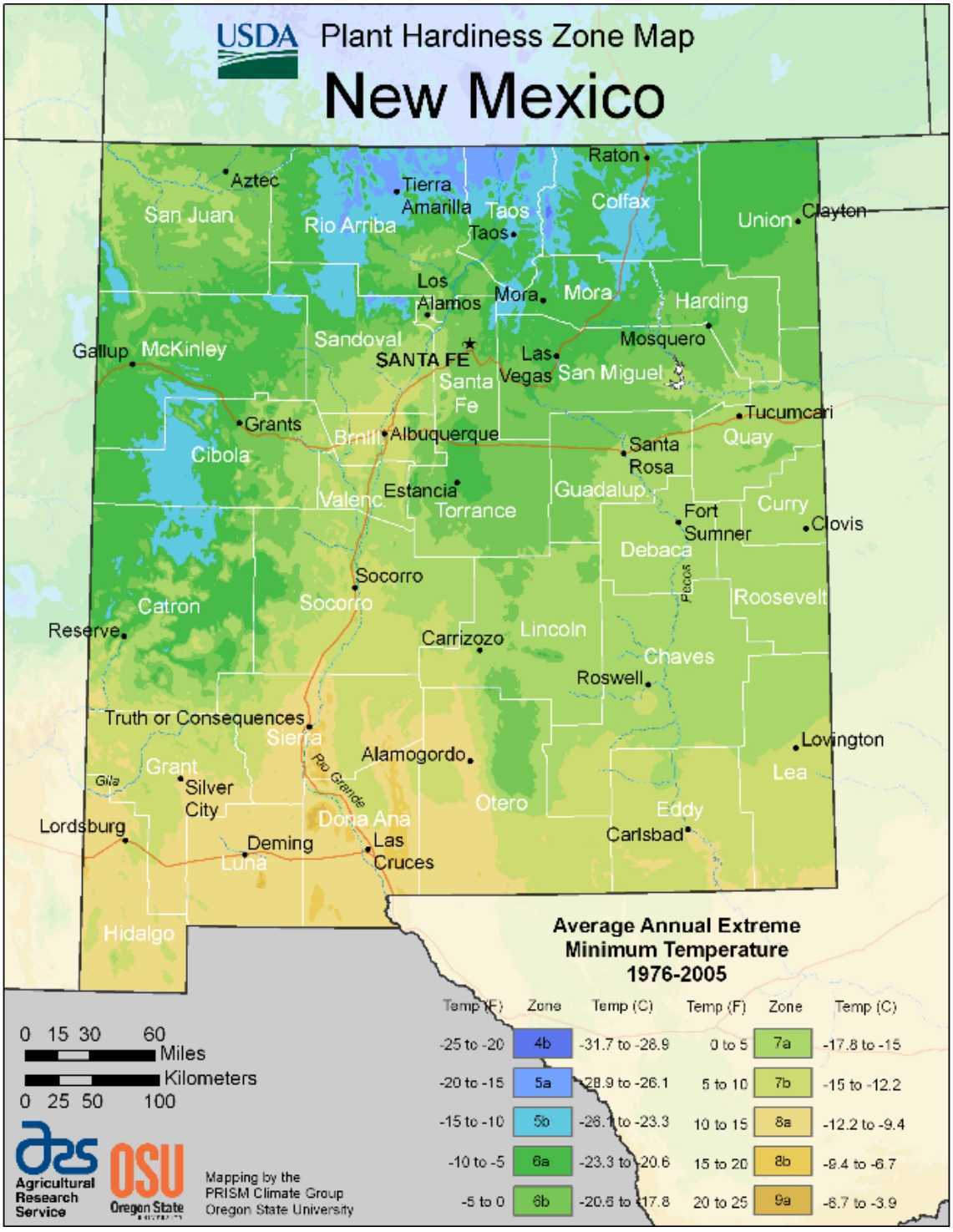


Figure 10.2B (https://planthardiness.ars.usda.gov/PHZMWeb/Maps.aspx)

10.3 ATCM

See Figures 10.3A for the Average Temperature of the Coldest Month for EPE territory.

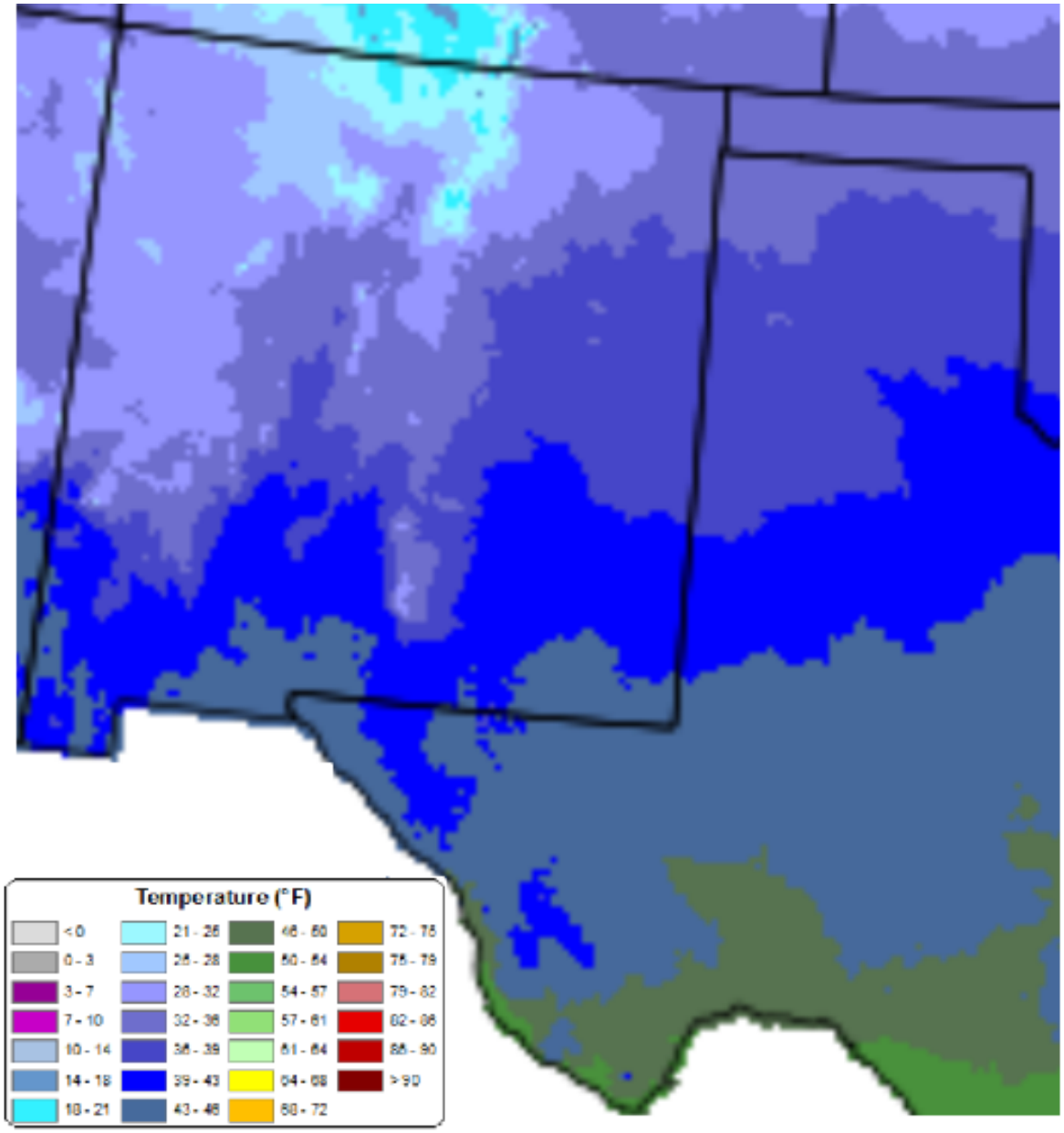
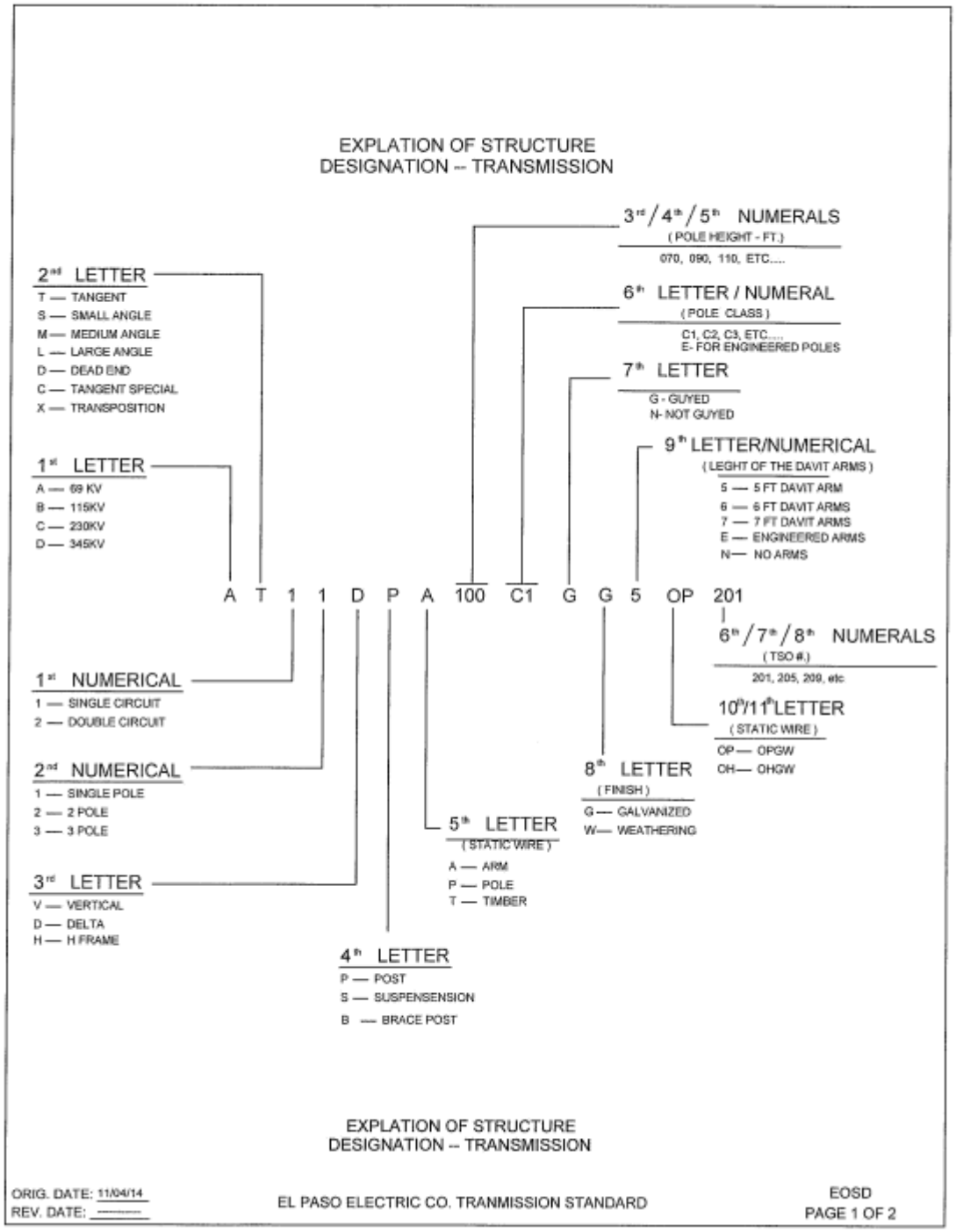


Figure 10.3A (http://prism.oregonstate.edu/normals/) – Month of January from 1981 - 2010

11. Appendix C – Structure Naming Criteria



BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION OF EL PASO ELECTRIC COMPANY FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL	)	**Docket No. 26-00___**
EL PASO ELECTRIC COMPANY, Applicant	)	

DECLARATION OF ALEJANDRO GALVIS IN SUPPORT OF THE FOREGOING DIRECT TESTIMONY OF EL PASO ELECTRIC COMPANY'S APPLICATION FOR A CERTIFICATE OF CONVENIENCE AND NECESSITY TO CONSTRUCT, OWN, AND OPERATE A NEW 345KV TRANSMISSION LINE BETWEEN THE AFTON NORTH AND AIRPORT SUBSTATIONS AND FOR RIGHT OF WAY WIDTH APPROVAL

I ***Alejandro Galvis***, pursuant to Rule 1-011 NMRA, state as follows:

1. I affirm in writing under penalty of perjury under the laws of the State of New Mexico that the following statements are true and correct.

2. I am over 18 years of age and have personal knowledge of the facts stated herein. I am a consultant for El Paso Electric Company ("EPE or Company") and employed by Coalesce Management Consulting as *Transmission Line Engineer.*

3. The foregoing Direct Testimony of Alejandro Galvis, together with all exhibits sponsored therein and attached thereto, is true and accurate based on my knowledge and belief.

4. I submit this Declaration, based upon my personal knowledge and upon information and belief, in support of EPE's ***Application for a Certificate of Convenience and***

Necessity to Construct, Own, and Operate a New 345kV Transmission Line Between the Afton North and Airport Substations and for Right-of-Way Width Approval.

FURTHER, DECLARANT SAYETH NAUGHT.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on July 10, 2026.

/s/ *Alejandro Galvis*

ALEJANDRO GALVIS