VIRTUE & NAJJAR, PC

LAWYERS

RICHARD L. C. VIRTUE
DANIEL A. NAJJAR
JARED D. NAJJAR
CARLA R. NAJJAR

OF COUNSEL
STEPHEN C. ROSS

2204 BROTHERS ROAD, SUITE A
P.O. BOX 22249
SANTA FE, NEW MEXICO
87502-2249
PHONE: (505) 983-6101
FAX: (505) 983-8304

August 8, 2025

SUBMITTED VIA EMAIL to: PRC.Records@prc.nm.gov
Melanie Sandoval
Record Bureau Chief
New Mexico Public Regulation Commission
P.O. Box 1269
Santa Fe, NM 87504

25-00056-UT

Bolo Transmission LLC – Application for Right-of-Way
Width Approval for the Bolo Transmission Project

Dear Ms. Sandoval:

On behalf of our client Bolo Transmission LLC, we enclose for filing via email with the New Mexico Public Regulation Commission a copy of the ***Application for Right-of-Way Width Approval for the Bolo Transmission Project***.

Please review and contact me at your earliest convenience with any questions or comments.

Respectfully submitted,

VIRTUE & NAJJAR, PC

By: /s/ Daniel A. Najjar

Daniel A. Najjar
Jared D. Najjar
2204 Brothers Road, Suite A
P.O. Box 22249
Santa Fe, NM 87502-2249
(505) 983-6101
dnajjar@virtuelaw.com
jnajjar@virtuelaw.com
Attorneys for Bolo Transmission LLC

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	**Case No. 25-00056 -UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

APPLICATION FOR RIGHT-OF-WAY WIDTH APPROVAL FOR THE BOLO TRANSMISSION PROJECT

Bolo Transmission LLC, a limited liability company, organized and in good standing under the laws of the State of Delaware ("Applicant") moves the New Mexico Public Regulation Commission ("Commission") pursuant to NMSA 1978 §62-9- 3.2 for approval of its proposed 200-foot right-of-way width for the Bolo Transmission Project ("Bolo Project" or "Project").

In support of this Application, the Applicant states as follows:

1. The Applicant is an indirectly held subsidiary of Pattern Energy Group 2 LP, together with Pattern Energy Group LP, referred to herein as "Pattern Energy".

2. Pattern Energy has developed, constructed and operates numerous renewable energy wind projects within the State of New Mexico. Each of these generation projects have been reviewed and approved by the Commission pursuant to NMSA 1978 §62-9-3.

3. Pattern Energy now proposes to expand the transmission capacity in New Mexico by constructing the Bolo Project. The Bolo Project is an approximately 23-mile (121,440 feet) 345kV transmission line. The Project has acquired private land property rights to allow for a

double circuit 345kV connection between the Western Spirit Switchyard on the PNM transmission network and the Pete Heinrich Switchyard built in conjunction with the SunZia Transmission Project. The Project is intended to facilitate one double circuit 345kV interconnection with an initial capacity capability between 800 - 2,000 MW depending on the outcome of ongoing technical studies. A more detailed description of the Project and the proposed route is provided in the Testimony of Jeremy Turner submitted in support of this Application.

4. The Project will allow for an interconnection of two currently independent electric transmission systems, thereby providing greater interregional connectivity. The SunZia Transmission Project has been granted Subscriber Participating Transmission Owner authority by the California Independent System Operator (CAISO) and will be managed as part of that system's operations. As utilities in New Mexico become part of broader market territories, the Bolo Project will allow for New Mexico to have an additional point of electrical interconnection within these day-ahead markets. Facilitating the efficient delivery of power between western markets, the Project will allow for the lowest cost or supplemental energy to be delivered between markets as needed.

5. The Applicant intends to begin construction on the Project in 2026 and to have the transmission line operational in 2027.

6. Section 62-9-3.2A NMSA 1978 provides, in part that "[u]nless 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." This provision defines "transmission line" as "any electric transmission line and associated facilities requiring a width for right of way of greater than one hundred feet."

7. The Applicant, in consultation with its expert consulting engineers, has determined that the Project requires a right-of-way width of 200 feet to safely operate. The conclusions of the Applicant's consultant and the justification for the 200-foot right of way width for the Project are provided in the Testimony of Gregory Parent, submitted in support of this Application.

8. The Project does not require any additional approval from the Commission because it does not propose to transmit electricity from a new plant for which approval is required. On the contrary, the Project will directly connect two existing points on the transmission grid. The power to be transmitted on the Bolo Project would be generated by existing generation facilities for which location approval has already been granted by the Commission in numerous prior proceedings.

9. Section 62-9-3B NMSA 1978 defines "transmission line" as "any electric transmission line and associated facilities designed for or capable of operations at a nominal voltage of two hundred thirty kilovolts or more, to be constructed in connection with and to **transmit electricity from a new plant for which approval is required."** Emphasis added.

10. Although not required by Section 62-9-3.2 NMSA 1978, the Applicant and Pattern Energy will incorporate and apply in the construction and operation of the Project the same "best management practices" and environmental mitigation measures that have been utilized and previously approved by the Commission for other Pattern Energy transmission projects in New Mexico. A more detailed explanation of the Applicant's intent to incorporate these best management practices is included in the Testimony of Adam Cernea Clark submitted in support of this Application.

11. Pursuant to NMSA 1978 §62-9- 3.2D the Applicant will cause notice of the time and place of a hearing on the Application for the right-of-way determination to be given to any owner of property proposed to be taken and, if applicable, to the person in actual occupancy of the

property. Notice shall be given by mailing a copy by ordinary first-class mail at least twenty days before the time set for hearing.

WHEREFORE, the Applicant respectfully requests that the Commission issue an order providing as follows:

a. Granting the Applicant approval to construct the Bolo Project utilizing a two-hundred-foot right-of-way; and,

b. For such further and other relief as the Commission deems necessary and appropriate.

Respectfully submitted,

/s/ Daniel A. Najjar
Daniel A. Najjar
Jared D. Najjar
2204 Brothers Road, Suite A
P.O. Box 22249
Santa Fe, NM 87502-2249
(505) 983-6101
dnajjar@virtuelaw.com
jnajjar@virtuelaw.com
Attorneys for Bolo Transmission LLC

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	**Case No. 25-00056-UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

AFFIDAVIT OF JEREMY TURNER

THE STATE OF NEW MEXICO)
)
COUNTY OF SANTA FE)

Jeremy Turner hereby deposes and states under oath that the foregoing Application for Right-Of-Way Width Approval for the Bolo Transmission Project was prepared under my direct supervision and the statements therein are true and accurate based on my personal knowledge and belief.

Jeremy Turner

SUBSCRIBED AND SWORN TO BEFORE ME, notary public, on this the 6 day of August 2025.

My Commission expires: 12.6.2026 Notary Public, State of: New Mexico

Angela Gonzales

ANGELA GONZALES
Notary Public - State of New Mexico
Commission # 1123657
My Comm. Expires Dec 6, 2026

BEFORE THE NEW MEXICO PUBLIC REGULATON COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	Case No. 25-00056-UT
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

DIRECT TESTIMONY

OF

JEREMY TURNER

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Jeremy Turner. My business address is 322 Montezuma Avenue, Santa Fe, NM 87501.

Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?

A. I am employed by Pattern Energy Group LP (together, with Pattern Energy Group 2 LP, ("Pattern Energy") as the Senior Director, New Mexico Development & Strategy.

Q. PLEASE DESCRIBE YOUR EDUCATION BACKGROUND AND EXPERIENCE.

A. I have a Bachelor of Science in Agricultural Economics/Agricultural Business and a Master of Business Administration from New Mexico State University. Prior to joining Pattern Energy, I served as the Chief Financial Advisor for the New Mexico Finance Authority, the Executive Director for the New Mexico Renewable Energy Transmission Authority and a Managing Partner for Forever Energy Consulting, LLC. Since joining the New Mexico Renewable Energy Transmission Authority in 2009 and Forever Energy Consulting, LLC in 2015, I have focused my career on the development of electric transmission infrastructure to interconnect renewable energy to the grid. In my capacity as Executive Director of the New Mexico Renewable Energy Transmission Authority, I worked with the Board of Directors to issue $50 million in bond financing for the transmission line upgrade to connect the High Lonesome Mesa windfarm to the Public Service Company of New Mexico transmission system. I also worked on the development and original lease agreement for the Western Spirit Transmission Line. While at Forever Energy Consulting, LLC, I served as Project Manager for the proposed Verde Transmission Project. Since

joining Pattern, I have worked on the Western Spirit Wind, Western Spirit Transmission, SunZia Wind and SunZia Transmission projects and have been part of the four most recent applications which were approved by the Commission.

Q. PLEASE DESCRIBE THE DUTIES AND RESPONSIBILITIES FOR YOUR CURRENT POSITION.

A. I serve on the Development and External Affairs teams focused on the development and construction of Pattern Energy's New Mexico Projects, including the proposed Bolo Transmission Project ("Bolo Project" or "Project") which is the subject of this proceeding. In this capacity, I assist with the coordination of activities and communication of project objectives among the Pattern teams involved in the Bolo Transmission Project, including the Permitting, Land, Power Marketing, Transmission, Engineering and Construction, Legal, Finance, and Accounting teams. I am responsible for ensuring and facilitating communication with all of the stakeholders in the development project. I am also active in negotiations with the various local and state permitting agencies and landowners. Lastly, I actively engage in external public affairs and community relations and serve as a public interface for Pattern Energy in New Mexico.

Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A. I am testifying on behalf of the Bolo Transmission LLC (the "Applicant") in support of this Application for approval of the right-of-way width for the Bolo Project right-of-way before the New Mexico Public Regulation Commission ("Commission") pursuant to NMSA 1978, § 62-9-3.2.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I am submitting testimony in support of this Application for approval of the right-of-way width for the Bolo Project.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE ANY REGULATORY AUTHORITIES?

A. Yes. I provided testimony before the Commission in NMPRC Case Nos. 18 -00065-UT, 20-00008-UT, 21-00281-UT and 22-00202-UT.

Q. PLEASE PROVIDE AN OVERVIEW OF THE APPLICANT IN THIS PROCEEDING.

A. Bolo Transmission LLC is a wholly owned subsidiary of Pattern Energy for the sole purpose of constructing a 345kV transmission project intended to interconnect the Western Spirit Switching Station on the PNM transmission system to SunZia Transmission's Pete Heinrich Switchyard, which was built in conjunction with the SunZia Transmission Project. The Bolo Project will create the first interconnection between the PNM Balancing Authority Area and the California Independent System Operator (CAISO) Balancing Authority Area. I have provided a map of the Project as Exhibit JT-1 to my testimony.

Q. PLEASE PROVIDE A MORE SPECIFIC DESCRIPTION OF THE INTERCONNECTION FACILITIES THAT WILL NEED TO BE CONSTRUCTED.

A. In response to the Applicant's Interconnection Request, PNM prepared a Facilities Study to determine any equipment that will need to be installed at the Western Spirit 345kV Switching Station to accommodate the Bolo Project. The Facilities Study identified a need for the equipment listed below.

a) Two (2) new 345 kV line positions, consisting of;

- Two (2) A-Frames
- Metering
- Six (6) substation voltage transformers (SSVT)/voltage transformers (VTs)/current transformers (CTs)
- Six (6) capacitor voltage transformers (CVTs)
- Two (2) Disconnect Switches
- Six (6) Surge Arresters - Station Class
- Communications
- Protection & Control Panels

b) Additional buildout of existing infrastructure in support of the Switching Station's full breaker-and-a-half configuration, consisting of;

- Six (6) circuit breakers
- Eleven (11) 115 kV motor-operated disconnect switches
- Six (6) 345 kV metering accuracy current transformers (CTs)
- Twelve (12) 345 kV metering accuracy capacitor voltage transformers (CVTs)
- Power Quality metering panel
- Relaying for radial 345 kV line protection, primary, secondary, and breaker-failure
- Six (6) 345 kV surge arresters
- Line termination SCADA and telecommunication additions to RTU
- Other associated substation equipment including, but not limited to, grounding, conduit, cable, etc.

Q. WHAT DOES NMSA 1978, § 62-9-3.2 REQUIRE?

A. Section 62-9-3.2 NMSA 1978 provides that 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."

Q. DOES THIS STATUTE APPLY TO THE PROPOSED BOLO LINE?

A. Yes. The Bolo Project will require a right-of-way width greater than 100 feet. The Applicant is proposing a 200-foot right-of-way width. The explanation for this proposed width is provided in the Testimony of Gregory Parent which is submitted in support of this Application.

Q. ARE THERE OTHER APPROVALS REQUIRED FROM THE COMMISSION?

A. No. The Bolo Project is not being constructed in connection with and to transmit electricity from a new plant for which approval is required pursuant to NMSA 1978, § 62-9-3. The Project is connecting the transmission grid that is connected to two specific generation resources which are not new and have already obtained location approval by the Commission in prior proceedings. Additionally, the Applicant has or will have prior to commencing construction of the Project, all the necessary right-of-way approvals from the affected landowners over which the Bolo Project will cross.

Q. PLEASE DESCRIBE THE OWNERSHIP OF THE AFFECTED LANDOWNERS.

A. There are a total of seven private landowners as well as New Mexico State Trust Land. Six of the private land agreements have been obtained, with the seventh expected in the third quarter of 2025. The Project will be applying for the necessary New Mexico State Trust Land approvals in the third quarter of 2025. A map depicting the Bolo Project and underlying landowners is attached as Exhibit JT-2.

Q. ARE THERE ANY OTHER PERMITS OR APPROVALS REQUIRED FOR THE BOLO TRANSMISSION LINE?

A. Yes, there will be some permits required. These other possible permits are described in the Testimony of Adam Cernea Clark. The Applicant will be responsible for obtaining all authorizations necessary for the commencement of construction and operations of the Project.

Q. PLEASE DESCRIBE THE PURPOSE OF THE BOLO TRANSMISSION LINE AND THE BENEFITS TO BE REALIZED.

A. The Bolo Project, when operational, will create an interconnection between two systems that are currently not integrated – PNM and the CAISO. The Project will allow for power delivery between these two systems, which allows for greater regional connectivity and better overall utilization of existing infrastructure. The SunZia Transmission Project has been granted Subscriber Participating Transmission Owner status by ais and will be managed as part of that regional system. As utilities in New Mexico continue to advance their participation in broader regional markets, the Bolo Project will allow for New Mexico to have an additional inlet and outlet across and between these regional markets. This will enable the efficient delivery of energy between western markets thereby facilitating

additional low-cost energy transfers and increasing system resilience through the diverse access to the broader Arizona and California systems that the SunZia Transmission System provides access to.

Q. WHAT IS THE PROPOSED TIME FRAME FOR THE CONSTRUCTION OF THE BOLO TRANSMISSION LINE?

A. The Joint Applicants expect to begin construction in 2026. The expectation is that the Bolo Line will be operational by the second quarter of 2027.

Q. WILL THE BOLO LINE BE CONSTRUCTED AND OPERATED IN ACCORDANCE WITH THE SAME PRINCIPLES AND COMMITMENTS FOR BEST PRACTICES AS OTHER FACILITIES OWNED AND OPERATED BY PATTERN ENERGY?

A. Yes. Although this proceeding is limited to a determination of the appropriate right-of-way width for the Bolo Line, I can assure the Commission that the Applicant will adhere to the same principles and best practice commitments in the construction and operation of the Bolo Transmission Project as we have with respect to other projects which have been built in the state. This commitment is discussed in more detail in the Testimony of Adam Cernea Clark, submitted in support of this Application.

Q. WILL THE APPLICANT NOTIFY THE PUBLIC AND THE LOCAL GOVERNMENTS THROUGH WHOSE JURISDICTION THE BOLO PROJECT WILL CROSS OF THIS APPLICATION?

A. Yes. We have been in contact with local government officials and have informed them of the Project.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

Bolo Transmission
Torrance County, New Mexico
EXHIBIT JT-1

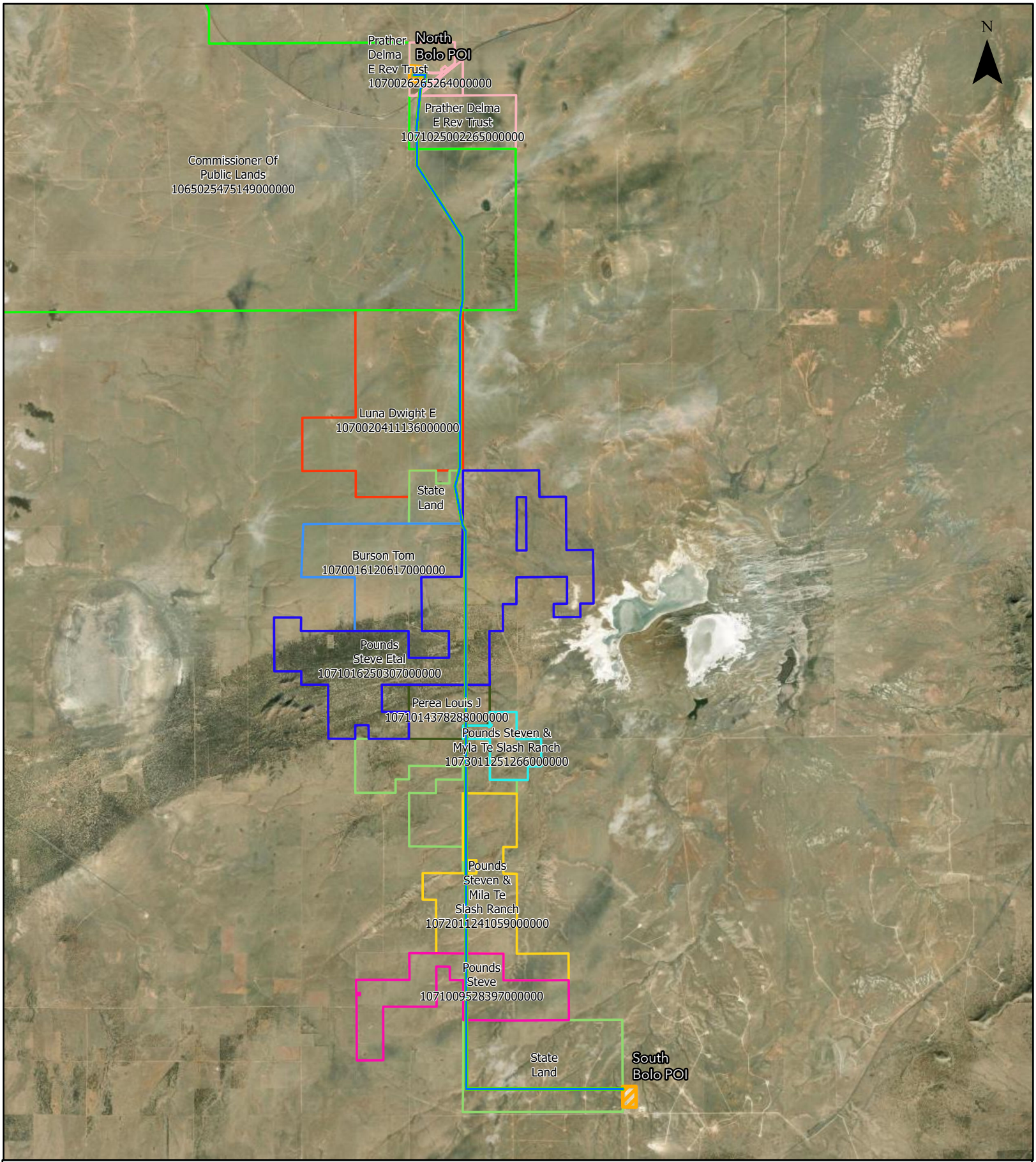
Bolo Centerline
200 ft ROW
Switchyard

0 2.5 5 Miles

Pattern

Path: G:\Projects\New Mexico\Bolo Transmission\Map Documents\Bolo_Exhibits\Bolo_Exhibits_DP.aprx

Date Exported: 7/3/2025



Bolo Transmission

Torrance County, New Mexico

EXHIBIT JT-2

Bolo Centerline

200 ft ROW

Switchyard

0 2.5 5 Miles

Pattern

Path: G:\Projects\New Mexico\Bolo Transmission\Map Documents\Bolo_Exhibits\Bolo_Exhibits_DP.aprx

Date Exported: 7/22/2025

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	**Case No. 25-00056-UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

AFFIDAVIT OF JEREMY TURNER

THE STATE OF NEW MEXICO)
)
COUNTY OF SANTA FE)

Jeremy Turner hereby deposes and states under oath that the foregoing Direct Testimony of Jeremy Turner and supporting Exhibits were prepared under my direct supervision and the statements therein are true and accurate based on my personal knowledge.

Jeremy Turner

SUBSCRIBED AND SWORN TO BEFORE ME, notary public, on this the 5 day of August 2025.

My Commission expires: 12-6-2026 Notary Public, State of: New Mexico

Angela Gonzales

ANGELA GONZALES
Notary Public - State of New Mexico
Commission # 1123657
My Comm. Expires Dec 6, 2026

BEFORE THE NEW MEXICO PUBLIC REGULATON COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	Case No. 25-00056-UT
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

DIRECT TESTIMONY

OF

ADAM CERNEA CLARK

INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Adam Cernea Clark. My business address is 1088 Sansome St., San Francisco, CA 94111.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Pattern Energy Group LP ("Pattern Energy"). I hold the position of Director of Permitting & Policy Strategy at Pattern Energy. I am the project lead on environmental and permitting issues for the Bolo Transmission Project ("Bolo Project" or "Project") and lead our environmental and permitting team's work across New Mexico.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND WORK BACKGROUND.

A. I am a 2005 graduate of Kenyon College with a B.A. in English and an Integrated Program in Humane Studies concentration. I am also a 2014 graduate of both Northeastern University School of Law and Vermont Law School, where I earned a Juris Doctor and a Master's Degree in Environmental Law and Policy, respectively. In 2015, I was admitted as an attorney to the New York State Bar but am not a practicing attorney. I have been working in the wind industry since 2015, when I joined Pattern Energy as an associate of environmental and natural resources. In the course of my employment with Pattern Energy, I lead Pattern Energy's environmental policy work with industry groups and environmental organizations and am responsible for environmental, permitting, and non-permitting development issues related to our largest and most complex renewable energy and transmission projects. I also oversee environmental and permitting for all our projects in New Mexico. I have led the permitting, including before the Commission, for the Corona Wind Projects, the Corona Wind North Project, the Grady Wind Project, the Western Spirit

Wind Project, the Western Spirit Transmission Project, and the SunZia Transmission Project. In my capacity as a representative of renewable and transmission projects such as the Bolo Project, I am in charge of assessing and mitigating environmental impacts of Pattern Energy's projects and securing all requisite permits prior to project construction and financing. In this capacity, I work closely with federal regulatory and environmental agencies, such as the Bureau of Land Management, National Park Service, the U.S. Army Corps of Engineers ("USACE"), and the U.S. Fish and Wildlife Service ("USFWS"), as well as state and local agencies and officials in communities where Pattern Energy builds its projects. I also engage with federal agencies, other renewable companies, and non-profit organizations as a representative of Pattern Energy more generally to advance progress in environmental policy and research.

Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?

A. I am appearing on behalf of the Applicant, Bolo Transmission LLC in support of its Application for approval of a 200-foot-width for the right-of-way for the proposed Bolo Project.

Q. HAVE YOU PREVIOUSLY PRESENTED TESTIMONY BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION?

A. Yes. I have submitted testimony in each of the location permit and Right-of-Way Width proceedings brought by Pattern Energy before the New Mexico Public Regulation Commission ("Commission").

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

A. I am here to describe the best management practices which the Applicant and Pattern Energy will utilize in the construction and operation of the Bolo Project.

Q. ARE THESE BEST MANAGEMENT PRACTICES REQUIRED AS PART OF THE COMMISSION'S CONSIDERATION OF THE APPLICANT'S REQUEST IN THIS PROCEEDING?

A. No they are not. The Bolo Project is a transmission line that will connect existing generation sources for which location approval has previously been granted by the Commission. The Public Utility Act only requires location approval for transmission lines with a nominal voltage of 230 kilovolts or more to be constructed in connection with a new generation plant for which approval is required.

Although the Applicant is not required as part of this proceeding to commit to the implementation of the same best management practices that have been used with respect to siting of new plants and associated transmission lines, the Applicant and Pattern Energy as a matter of sound environmental policy, consistency with our prior environmental practices in New Mexico, and in recognition of the consultative process with stakeholders that resulted in these best practices, are notifying the Commission of their intent to voluntarily incorporate these best management practices into the construction and operation of the Project.

Q. PLEASE DESCRIBE THE BEST MANAGEMENT PRACTICES WHICH THE APPLICANT WILL INCORPORATE INTO THE CONSTRUCTION AND OPERATION OF THE BOLO PROJECT.

A. The best management practices are focused on addressing, avoiding, and minimizing impacts to sensitive resources such as soils and ephemeral streams, with a particular emphasis on construction and post-construction activities. These best management practices are identified in Exhibit ACC-1 to my testimony.

Q. ARE THERE OTHER RELEVANT ENVIRONMENTAL PRACTICES YOU WOULD LIKE TO DISCUSS?

A. Yes, in addition to the environmental best management practices I discussed earlier, we will conduct a voluntary risk analysis of potential avian impacts utilizing the methods identified in the Avian Powerline Interaction Committee collision guidelines. Using this analysis, we will identify any areas that represent moderate to high risk of avian collision to install bird flight diverters prior to commercial operation of the project.

Q. WHAT OTHER PERMITS MIGHT BE REQUIRED FOR THE APPLICANT TO CONSTRUCT THE BOLO PROJECT?

A. The Applicant anticipates that it may need to obtain the following permits for the Project:

1. A Section 404 Nationwide Permit pursuant to the Clean Water Act from the United States Army Corps of Engineers;

2. Oversize/Overweight Vehicle Permit; Entrance/Access Permit from the New Mexico Department of Transportation and the Department of Public Safety;

3. Business Lease of Commercial Lands from the New Mexico State Land Office;;

4. Section 402 Permit under the Clean Water Act from the New Mexico Environment Department; and,

5. Stormwater Pollution Prevention Plan (SWPPP) Notice of Intent from the United

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

EXHIBIT ACC-1

	Category	No.	Bolo Environmental Best Management Practices (August 5, 2025)
	New Mexico State Land Office Required Practices for Surface Users		
New Mexico State Land Office Required Practices for Surface Users	Design	1	New surface disturbance will be minimized within 200 feet of the boundary of riparian areas, wetlands, playas or other water bodies (e.g., the ordinary high water mark) to the extent practicable. Where avoidance is not practicable, impacts will be minimized and comply with the U.S. Army Corps of Engineers Nationwide Permit under Section 404 of the Clean Water Act. Boring under these water features may be utilized where practicable and designs are approved. To minimize new surface disturbance within 200 feet of the boundary of any riparian area, wetland, playa or other water body means: only temporary use will be allowed; no blading, grading, or digging; no permanent structures; no permanent roads (with the exception of the permanent maintenance road where no other route is possible, but never across playas); no introduction of outside material, (i.e. gravel, caliche, base course), no mechanical compaction, and full reclamation requirements for any temporary use: flipping or ripping compacted temporary use areas if necessary; reseeding, weed control, re-contouring to previous condition. For any permanent maintenance road crossing a riparian area, to minimize new surface disturbance means the minimum width that is absolutely necessary, and the road must be designed to allow the natural hydrology of the basin to continue functioning as if the road was not there: built to allow water to move under, through or across the road, without catchments or pooling or channeling, with erosion control structures and flow dispersal structures as necessary, and plantings as necessary to manage hydrologic functioning condition.
		2	All efforts should be made to minimize new surface disturbance: new roads and rights-of-way should make use of pre-existing disturbed areas, including existing roadbeds, pipeline or utility line rights-of-way, or in pre-existing or dedicated corridors when practicable.
		3	No new surface disturbance will be permitted within 200' feet of the centerline of ephemeral drainages, floodways, arroyos or other short duration flow channels, except when crossing these channels and drainages. Where avoidance is not practicable, impacts will be minimized and comply with the U.S. Army Corps of Engineers Nationwide Permit under Section 404 of the Clean Water Act. Drainage crossings will be perpendicular to flow, and will be built to accommodate 25-year flood events and to control erosion. Boring under these water features may be utilized where practicable and designs are approved.
		4	Establish property boundaries.
		5	Minimize new surface disturbance and design for minimum necessary width/area of impact according to expected purpose and use.
		6	Avoid wetlands, known critical habitat and protected areas;
		7	Avoid steep slopes (>12%) where practicable; grades from 4-10% are preferred for managing drainage; roads and rights-of-way are best placed at the toe of slopes where cross slope is between 5% and 40%
		8	Preserve as much natural vegetation and living root structure as possible. If the material is less than three inches in diameter, lopping and scattering is permitted. If greater than three inches, the material can be chipped or masticated then spread to no thicker than four and a half inches.
		9	Provide adequate surface drainage; as grade steepens drainage features, such as water bars, must be closer together; drainage features on fine grained soils should be closer together;
		10	Account for cultural resources at least in accordance with minimum standards as set forth in NMSLO policy ADM-0106
		11	Account for biological resources at least in accordance with minimum standards as set forth in NMSLO Policy ADM-0105
		12	Include a spill containment and prevention plan where hazardous materials are involved
		13	Include a reclamation plan detailing soil stabilization and revegetation process;
		14	Include an access control plan
		15	All reclamation success criteria shall follow federal NPDES guidelines whereas a minimum of 70% density (of pre-existing conditions) of native flora shall be successfully reestablished prior to release from permit requirements for ongoing inspections and maintenance of temporary ESC BMPs.
		16	Use only native weed-free certified seed for reclamation
		17	Include a noxious weed prevention plan
		18	Include a dust abatement plan
		19	Address crown, inslope, outslope and shoulder design (roads)
		20	Address trenching and boring design, including depth, casing, core sampling, valve location and access management (pipelines)
		21	Define use, location and size of temporary work space, temporary storage and turnouts;
		22	Address logistics of construction;
	Construction Practices	23	Address all pertinent state and federal regulations.
		24	Control access to the construction site;
		25	Control unauthorized use of space adjacent to permitted rights-of-way and use areas
		26	Maintain temporary erosion control structures, such as silt fencing to prevent sediment flow during construction
		27	All water utilized for dust abatement shall be suitable for meeting federal NPDES guidelines for revegetation, whereby a minimum of 70% density (of pre-existing conditions) of native flora shall be successfully reestablished prior to release from permit requirements for ongoing inspections and maintenance of temporary ESC BMPs
		28	When requested by the Commissioner, engage a compliance inspection officer to monitor quality control and compliance with NMSLO best management practices
		29	Sample, test and monitor to ensure construction materials meet design specifications;
	Operation Practices	30	Dispose of unsuitable or excess excavation material in approved locations to minimize adverse impacts to water quality or other resources.
		31	Grade and shape roadway surfaces to maintain distinct inslope, outslope or crown shape to move water effectively off the road surface
		32	Compact graded roadway surfaces to preserve hard driving surface; replace surface material when needed; implement dust abatement plans
		33	Fill ruts and potholes with gravel or compacted fill or remove ruts through rolling dips and water bars; reshape structures to maintain proper function
		34	Clean ditches and reshape when necessary to allow adequate flow capacity;

	Category	No.	Bolo Environmental Best Management Practices (August 5, 2025)
		35	Remove debris from the entrance of culverts to prevent plugging and overtopping; check for signs of damage
		36	Replace or repair rock armor, erosion control structures, or vegetation used for slope protection, scour protection or energy dissipation
		37	Inspect and repair fencing, gates, cattle-guards and other access control structures;
		38	Inspect reclamation, revegetation and noxious weed treatments and retreat as necessary to maintain proper functioning of erosion control and establishment of native vegetation
		39	Seek a remediation right-of-entry for any reclamation of state trust land outside the bounds of the permitted right-of-way
		40	Verify compliance with NMSLO biological and cultural resource policies (ADM-0105 and ADM-0106) for the area to be reclaimed;
		41	Sample, remove and properly dispose of any contaminated soils
		42	Remove and properly dispose of any caliche or other surface base course
		43	Contaminated soils and caliche should be disposed of only in state permitted disposal locations, such as land farms or hazardous disposal sites
		44	Replace caliche, base course or contaminated soils with certified clean top soil comparable to undisturbed clean soils in the near vicinity
		45	Contour the ground surface to blend in with the surrounding topography and to allow the natural hydrology of the basin to function without impediment or impact;
	Reclamation	46	Install erosion control structures as necessary to repair and control gullies, head-cuts, rills, and other forms of sediment movement
		47	Erosion control structures should be designed to restore natural hydrologic function and to the extent possible should use local rock or bio-degradable materials and low-energy, minimum necessary designs;
		48	Structures may include, but are not limited to, one rock dams, rock mulch rundowns, zuni bowls, media lunas, swales, berms, terraces, wattles, rock or log mats, hay mulch, gabions, bales or other stabilizing enhancements to control erosion
		49	Prepare the seedbed to maximize potential for success. This may include, but is not limited to, a combination of watering, mechanical packing to consolidate loose soils, disking to loosen compacted soils, or crimping hay mulch into the soil, (2 tons/acre), adding soil amendments, contouring and/or importing top soil
		50	Install water bars, or other NMSLO approved flow control, at an angle of 30% to the grade along the contour of the road or right-of-way, up to two feet high and six feet wide; water bars should be placed on any slope greater than level, every ten feet in elevation change or every 300 feet, whichever is less
		51	Seed the prepared seedbed with a drill seeder or hydraulic seeder. Hydroseeding will be used on 3:1 slopes or greater. The seed mix will be based on NMSLO revegetation guidelines and will be provided or approved by the NMSLO;
		52	In the event of a spill or hazardous materials release, the project SPCC Plan guidelines must be followed and reporting requirements set forth by NMED shall be followed. Provide draft copy of SPCC Plan to SLO for approval.
		53	A noxious weed plan will be developed and noxious weeds will be monitored and treated on an annual basis, or as needed, for three years post construction.
	New Mexico State Land Office Minimum Requirements for Surface Reclamation		
	Objective		To reduce and prevent erosion, remove contaminants and contaminated materials, restore clean soils, restore native plant diversity and abundance, restore and maintain hydrological regime, and restore and maintain productive habitat for livestock and wildlife;
	Applicability		These Minimum Requirements are applicable to all reclamation activities on state trust lands including: hazardous materials spills/releases, site closure for oil and gas, mineral and business leases, plug and abandon site reclamation, mine site reclamation, pit, pad, or pond reclamation, illegal dump reclamation, road and pipeline reclamation, dairy farm or other agricultural impact reclamation, and any other clean up or reclamation activity on state trust land;
	Access	1	If the spill/release or reclamation project extends beyond the lease boundary or permitted right of way, contact the NMSLO Rights Of Way Division and obtain a remediation right-of-entry;
	Compliance	2	Before commencing any new ground disturbing activity:
		3	(a). Conduct an archaeological survey of the impacted area, or verify that the area has already been surveyed and that no cultural properties will be impacted by ground disturbing activities;
		4	(b). If cultural properties have been impacted by a spill/release or reclamation project, immediately stop all ground disturbing activities and contact NMSLO for further direction;
		5	(c). Verify compliance with NMSLO biological and cultural resource policies (ADM-0105 and ADM-0106) for the area to be reclaimed; conduct surveys where necessary;
		6	(d). Verify compliance with all state and federal regulations, including but not limited to storm water pollution and prevention, air quality control, and hazardous materials disposal;
	Hazard Material Spill / Releases	7	Other Spills/Releases: (i). Upon discovery of any non-oil and gas related hazardous material release, including mine waste, either current or historic, immediately notify NMED and NMSLO;
	Delineation	8	Upon discovery of contaminated soils, delineate the horizontal and vertical extent of the contamination;
		9	For any spill on State Trust Lands: Written Report for all spills. For spills greater than 25 gallons, immediate notification (email address to be defined) to SLO within 24 hours
		10	For non-oil and gas related contamination, the NMED may require delineation and monitoring related to surface and ground water impacts
		11	The NMSLO may require any necessary sampling or reclamation related to the restoration of surface conditions within 60 days post-notification.
	Reclamation Plan	12	A project revegetation plan will be designed to meet NPDES requirements and submitted to NMSLO for review and approval.
	Removal/ Containment	13	Remove and replace, or stabilize and contain any contaminated soils, including contaminated caliche or base course; remove and replace all caliche or base course; contaminated soils and caliche should be disposed of only in state permitted disposal locations, such as land farms or hazardous disposal sites, and in accordance with state and federal regulations
	Soil Replacement	14	Replace contaminated soils, caliche or base course, and uncontaminated caliche or base course, with certified clean top soil; soils should have comparable structure and chemistry to healthy, native undisturbed soils in the vicinity;

	Category	No.	Bolo Environmental Best Management Practices (August 5, 2025)
	Trash and Debris	15	Unless equipment is to be re-used onsite, any trash, debris, garbage, rubbish, junk, scrap, or broken or contaminated equipment, such as pipelines, plastic lining, surface flowlines, tanks, scrap materials of any kind, or other equipment must be removed and disposed of in accordance with state and federal regulations within 30 days of final use or completion of construction;
		16	No hazardous substances, trash or litter will be buried or placed in pits
	Surface Preparation	17	Contour the ground surface to blend in with the surrounding topography to allow the natural hydrology of the basin to function without impediment or impact;
		18	No major depressions or pits will be left that will trap water or cause ponding except where the project involves a mining pit where there is no possible outlet, such as a caliche pit;
	Erosion Control	19	Where active transportation of sediment through gullying, headcutting, slumping or deep or excessive rills (greater than 3 inches deep) occurs within the lease area or within the adjacent area of impact, install erosion control structures to repair and control gullies, head-cuts, rills, and other forms of sediment movement
		20	(a). Erosion control structures should be designed to restore natural hydrological function and flood regime, and to the extent possible should use local rock or biodegradable materials and low-energy, minimum-necessary designs
		21	(b). Erosion control structures may include, but are not limited to, one rock dams, rock mulch rundowns, zuni bowls, media lunas, swales, berms, terraces, wattles, rock or log mats, hay mulch, gabions, bales or other stabilizing enhancements to control erosion
	Drainage Control	22	Drainage control structures should be designed to mimic natural hydrological function and flood regime as much as possible so as not to increase the erosional impact of hydrologic flows to the structure or to the upstream or downstream landscape; drainage control designs should be engineered and stamped by a PE.
		23	(b). Drainage control structures may include but are not limited to road bars, culverts, water bars, parallel and lateral ditches, drains, and low water crossings;
	Seedbed Preparation	24	Revegetation to meet or exceed 70% density of surrounding cover. If straw/hay mulching is used, straw/hay must be certified weed free.
	Revegetation	25	On 3:1 slopes or greater additional revegetation BMPs shall be deployed (such as: hydromulching, crimp mulching, or erosion control blanket)
	Noxious Weeds	26	A noxious weed plan will be developed and approved by the NMSLO and noxious weeds will be monitored and treated on a semi-annual basis for three years post-construction.
	Access Control * applicable to SLO properties	27	a. Gate and Fencing Specifications: Unless otherwise directed by the NMSLO, a locked metal gate with 4-inch H-braces and a permanent fence extending at least 100 feet from either side of the gate, or to the next adjacent gate, will be installed to block public access to all closed reclamation sites; fence will be constructed with steel T-posts on 16-foot spacing, with stays every 8 feet and 4 strands ofbarbed wire; the top wire should be set at 42 inches above the ground surface; inline braces will be used at intervals not to exceed 660 feet; corners will be braced and set in concrete; fence wire will be attached on the outside of the T-posts with wire ties;
		28	b. Permanent Closure Specifications: Dirt berms, permanent hard barriers or rock barricades will be installed to block unauthorized access points to reclamation sites; berms and barriers will be at least 3 feet high and will extend the width of the access point; berms will be hard packed; barriers and barricades may be constructed of metal pipe rail, concrete, or rock and may be used in combination with berm work to ensure closure of an access point; Keep these areas from being general access routes for the public. Require fencing with requests for other options on a case-by- case basis.
	Monitoring	29	The responsible party will monitor the reclamation site annually until relinquished by the NMSLO during restoration sign-off process and completion of action item list.
		30	Prior to relinquishment, the NMSLO will retain the right to inspect and to provide sign-off prior to release and may require supplemental clean up, maintenance of erosion control structures, additional reseeding efforts, or noxious weed treatments to ensure success of reclamation.
		31	The NMSLO may request detailed annual monitoring reports depending on the severity of the situation
	Reporting	32	The NMSLO may require monthly updates during the course of the initial reclamation work; monthly updates will include a brief narrative statement of work completed with photo documentation; upon completion of the initial reclamation work, the responsible party will notify the NMSLO that the site is ready for inspection; rights of way lessees will provide an affidavit of completion (NMAC 19.2.10.21); annual monitoring reports may be required depending on the severity of the situation.
	Relinquishment	33	The NMSLO will inspect the initial reclamation work upon completion and will provide the responsible party with a statement indicating that the initial work has been completed as required and detailing any follow up work that may be necessary prior to relinquishment; notice of relinquishment will be provided upon complete satisfaction of all NMSLO reclamation requirements;
	Watershed	34	Minimize the number of roads constructed in a watershed through comprehensive road planning, recognizing intermingled ownership, and foreseeable future uses.
		35	All personnel appointed as fire watch under hot work permitting will have immediate access to shovel, fire extinguisher, and backpack water sprayer. In addition, all project work will follow guidelines detailed in the site fire protection and prevention plan.
	Riparian/ Wetland Edge	36	No constructed features of the project should be located in a wetland. Linear features which must cross a riparian area will be required to follow U.S. Army Corps of Engineers regulations.
		37	Wetlands and other environmentally sensitive areas will be marked in the field for easy identification by crews. Sensitive features will be defined in Waters of the U.S. Report.
	Streamside Management Areas	38	200' minimum for Streamside Management Area (SMA) boundaries
		39	Leave trees on the bank that will eventually fall across the stream, helping to create a stair step of pools in the stream channel, providing a fish habitat component. Larger trees increase the benefits for the habitat. Hazard trees may be felled and left in place at contractor's discretion.
		40	Do not service vehicles where chemicals, oil, or other toxic substances might contaminate soils, waterways, or waterbodies.
		41	Properly design roads and drainage facilities to prevent potential water quality problems before construction starts.
		42	Minimize the number of roads constructed in a watershed through comprehensive planning, recognizing intermingled ownership, and future uses.

	Category	No.	Bolo Environmental Best Management Practices (August 5, 2025)
New Mexico Forest Practices Guidelines	Roads	43	Road design specifications should be included in a contract between the landowner and the road builder. The contract should include exact road locations, dimensions, erosion control and drainage features, stream crossing and structure specifications, season(s) of construction and use, and maintenance schedule, road closure and re-vegetation procedures, and penalties for non-compliance. The more specific the road contract, the more protection there is for the resources and landowner.
		44	Fit the road to the landscape. This entails altering natural drainage patterns as little as possible by following contours and minimizing cuts, fill, and stream crossings. Utilize natural road building locations away from streams.
		45	Avoid problem areas such as flood zones, narrow canyon bottoms, wet areas and highly erodible or unstable soils. Do not locate roads on slopes more than 60 percent.
		46	Keep the road grade to a minimum, usually less than 10 percent. This can be exceeded for short distances where necessary. An easy grade prevents runoff from building up erosive force and also provides for safer and more efficient travel.
		47	Prevent the concentration of water on the road by designing adequate drainage features. Some suggested drainage methods are insloping and outsloping the road surface, and installation of grade dips and cross drains. Installation of these features is explained in the civil details.
		48	When a stream crossing is necessary, locate the site on a stable, straight portion of the stream. The approach to the crossing should be at a minimal grade and a right angle to the stream.
		49	Leave 200' buffer of undisturbed soil and vegetation on either side of a stream being impacted.
	Culverts	50	Schedule construction activities to avoid heavy seasonal rains. Excavation operations may expose mineral soil which is highly susceptible to erosion. Soil stabilization and erosion control measures should be completed before the monsoon (thunderstorm) season of July, August, and September. Clear only that part of the route that can be completed in the current season.
		51	Minimize disturbance during construction activities by restricting machinery to the designated road. Clear vegetation to the width required for cut and fill slopes. Excessive removal of vegetation further increases erosion and is more costly. Keep machinery out of streams except when absolutely necessary for culvert installation and bridge construction. Round the top of cut slopes only when this will provide more stability than a vertical cut.
		52	During clearing operations, do not mix organic debris with fill materials. Trees and brush will eventually decay in the fill material causing the road surface to become unstable. Dispose of organic debris properly by utilization, piling and burning, chipping, or lopping and scattering. A good use for slash is to place it along fill slopes to slow runoff and trap sediment.
		53	Remove debris from stream channels that was added during construction. It is a good practice to remove all debris from channels for at least 100 feet upstream from culverts to reduce the chance of the culvert becoming plugged. However, never remove well established logs from a stream, as this will likely cause accelerated channel erosion.
		54	Deposit surplus soil and rock in designated areas where sediment from this material will not threaten streams. Do not simply cast surplus material downslope from the road. This material is highly susceptible to erosion and may have future value as fill.
		55	Compact all fill material. This can be done simply by running a bulldozer up and down the fill slope where it is safe to do so. Large fills should be constructed and compacted in layers of approximately 18 inches. The slots made perpendicular to the slope in the soil by the bulldozer's tracks retard runoff and moisture, thus inhibiting erosion and encouraging re-vegetation. In addition, the chance of fill slumping and requiring expensive repair will be reduced.
		56	Servicing and refueling machinery must be conducted well away from wetlands, lakes or watercourses. Fluids such as oil, diesel fuel, and antifreeze are easily washed or leached into streams and present a significant threat to water quality and aquatic life.
		57	Make certain the road surface is adequately drained. This can be accomplished in a number of ways depending on the site factors, the type and level of use, and the standard to which the road is built.
		58	A shallow gravel fill on either side of the culvert will lessen maintenance requirements. As with any cross drain, rocks and slash should be placed at the outlet to slow runoff and spread sediment. Care must be taken to disperse the discharge from these cross drains through vegetation.
		59	The culvert must be long enough to extend at least one foot beyond the fill.
		60	Align the culvert exactly with the stream, on the existing grade, and at the depth of the streambed.
		61	Culverts on fish-bearing streams must be installed to allow fish passage so as not to isolate populations.
	Recommendations	62	Fill should be well compacted to half the diameter of the culvert, and fill over the culvert should be to a depth of half the diameter but not less than one foot. Compaction will prevent water from seeping around the culvert and washing away the fill material. Fill over the culvert must be deep enough to prevent damage from heavy vehicles. If more than one culvert must be installed side by side, they should spread half their diameter so that the fill may be compacted between them
		63	Protect the fill material around the culvert inlets and outlets with riprap. Deep fills or culverts on large streams may require more elaborate protection such as wingwalls constructed of concrete or gabions
		64	Inspect newly constructed roads after the first good rain to insure all drainage structures and erosion control features are functioning properly. Gullies forming on cut and fill slopes should be filled in and the drainage formed.
		65	Grade the road surface as needed to correct washboarding and rutting. Maintain the proper inslope, outslope, or crown, and reshape grade dips. Ditches should be disturbed only if they are becoming clogged with sediment. Apply gravel to spots on the road that are persistently wet
		66	Inspect drainage structures frequently. Culverts and ditches should be cleared of sediment and debris.
		67	Application of chemicals to roads to reduce dust should be limited to those road sections where dust will cause major discomfort. Applications should be avoided where road runoff discharges into or near a stream.
		68	Inspect all tracked equipment for excessive soil prior to entering the site.

Notes:

Practicability of these BMPs means capable of being done or feasible without significant or unreasonable costs or delay. Any such costs or delays must take into account the overall activity (e.g., a minor route adjustment of a road may increase cost in a non-significant degree but could result in a significant delay in construction schedule depending on the circumstance).

Any BMP that references coordination with or reporting to NM State Land Office or other agencies will be followed as applicable (e.g., on State Trust Lands for NM State Land Office).

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	**Case No. 25-00056-UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

AFFIDAVIT OF ADAM CERNEA CLARK

THE STATE OF TEXAS)
)
COUNTY OF HARRIS)

Adam Cernea Clark hereby deposes and states under oath that the foregoing Direct Testimony of Adam Cernea Clark and the supporting Exhibit were prepared under my direct supervision and the statements therein are true and accurate based on my personal knowledge.

SUBSCRIBED AND SWORN TO BEFORE ME, notary public, on this the 5th day of August 2025.

My Commission expires: 3-15-2029 Notary Public, State of: Texas

Emily McClary Davis

EMILY MCCLARY-DAVIS
My Notary ID # 131046982
Expires March 15, 2029

BEFORE THE NEW MEXICO PUBLIC REGULATON COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	Case No. 25-00056-UT
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

DIRECT TESTIMONY

OF

GREGORY PARENT

INTRODUCTION

Q PLEASE STATE YOUR NAME.

A. Greg Parent, P.E., S.E., P.Eng. The P.E. stands for licensed Professional Engineer and the S.E. stands for licensed Structural Engineer.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOUR EMPLOYED?

A. I am employed by Ulteig Engineers, Inc. as a Principal Engineer in the Transmission and Distribution Department. My business address is 5575 DTC Parkway, Suite 200, Greenwood Village, CO 80111.

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

A. I am providing testimony on behalf of the Applicant in this proceeding. I support the Applicant's contention that the necessary right-of-way ("ROW") width for the Bolo Transmission Project should be 200 feet as I explain in detail. In my testimony I sometimes refer to the Bolo Transmission Project as simply the "Project."

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND WORK EXPERIENCE.

A. I have a Master of Science in Structural Engineering from Lehigh University. I am a licensed P.E. in 16 states including in New Mexico and am also a licensed Structural Engineer in Illinois, Hawaii, Nevada and Utah. I have more than 16 years of transmission line design experience and have designed approximately 1,000 miles of high voltage transmission lines.

Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY OTHER PROCEEDING?

A. Yes. I have submitted testimony in several cases before the Commission, including NMPRC Case No. 18-00065-UT, NMPRC Case No. 19-00139-UT, NMPRC Case No. 20-00008-UT, and 21-00281-UT on behalf of the Corona Wind Companies.

Q. ARE YOU FAMILIAR WITH THE PROPOSED TRANSMISSION LINE FACILITES WHICH ARE THE SUBJECT OF THIS JOINT APPLICATION?

A. Yes. I worked closely with Pattern Energy personnel in the design of this Bolo Transmission Project. More specifically, the ROW width requirement calculation for the Bolo Transmission Project was performed by Ulteig Engineers, Inc. I supervised this work.

Q. CAN YOU ELABORATE ON THE BASIC DESIGN CONDITIONS YOU EVALUATED IN DETERMINING THAT A 200-FOOT ROW WAS REQUIRED FOR THE SINGLE CIRCUIT TRANSMISSION LINE.

A. Yes. Preliminary design considerations include geotechnical soil studies, topographical surveys and wind and weather conditions to determine a range of preliminary specifications for equipment and infrastructure for the proposed location for the proposed transmission and interconnection facilities. The loading conditions for the transmission lines follow the requirements stated in the National Electrical Safety Code (NESC-2012). We analyzed the required ROW width for the following load cases:

1. NESC 234.C.1.a (At Rest)
    a. 0 psf wind pressure acting perpendicular to the conductor
    b. 60 deg Fahrenheit ambient temperature.
2. NESC 234.C.1.b (6 psf Wind)
    a. 6 psf wind pressure acting perpendicular to the conductor
    b. 60 deg Fahrenheit ambient temperature

3. Extreme Wind.

a. 91 mph wind speed (21.2psf) acting perpendicular to the conductor

b. 60 deg Fahrenheit ambient temperature

New Mexico's regulation and licensing department specifies following the 2012 NESC. The wind load map in 2012 NESC Rule 250C matches the basic wind speed map in the American Society of Civil Engineers – Minimum Design Loads for Building and Other Structures - ASCE 7-05. The Project is located in the 90-mph wind speed region of the 2012 NESC extreme wind map. However, the latest version of the NESC was released in 2023. In the 2023 NESC the extreme wind speed where this project is located has increased to 91-mph. The Applicant has decided to utilize this 91-mph wind speed. Under these conditions, and the aforementioned considerations, we evaluate the clearances, conductor movement, and structure deflection to calculate span lengths and structure types and configurations.

Q. DO YOU BELIEVE THAT THE CRITERIA YOU RELIED UPON IN DETERMINING THE NECESSITY FOR 200-FOOT ROW FOR THE DOUBLE CIRCUIT TRANSMISSION LINE IS APPROPRIATE AND REASONABLE?

A. Yes. These criteria are appropriate and consistent with the accepted practice within the industry. I have designed over fifteen (15) 345kV transmission lines and the right of way widths for those projects ranged between 150ft – 200ft. The variations in right of way width for these projects depended on the number of circuits, design spans, structure types and audible noise requirements that were used on each line.

Q. DO YOU HAVE EXHIBITS SUPPORTING YOUR CALCULATIONS THAT WARRANT THE 200-FOOT ROW WIDTH FOR THE DOUBLE CIRCUIT

TRANSMISSION LINE THAT THE APPLICANT' REQUEST IN THIS PROCEEDING?

A. Yes. Please see the attached exhibit titled Exhibit GP-1.

Q. PLEASE EXPLAIN THE INFORMATION CONTAINED IN EXHIBIT GP-1.

A. Page 6 of this exhibit provides the calculations for the NESC required horizontal clearances from the transmission line conductor to building structures for NESC Rules 234B1a, 234B1b. Also provided is the recommended horizontal clearance when the transmission line is subject to 91-mph wind speed. The above clearances have been adjusted for an altitude of 7200ft. The following pages of this Exhibit GP-1 illustrate the results of the blowout analysis for one structure type as follows:

- Double Circuit Steel Monopole Tangent Structure Types that consist of:
  - (6) Davit Arms with three V-String Insulators

The final conductor sizes are still being determined. However, the current design assumes one of the following conductor sizes: The first is a bundled (2) 954kcmil ACSR "CARDINAL" conductor per phase. The second is slightly larger. It is a bundled (2) 1272kcmil ACSR "PHEASANT" conductor per phase. Both of these conductors are Aluminum Conductor Steel Reinforced (ACSR) conductor types. As the name implies, they are made up of two different wire materials, aluminum and steel. Using a conductor with both of these materials achieves a desirable balance between electrical conductivity and strength. Each 954kcmil "Cardinal" wire has a diameter of 1.196 inches and weighs 1.23 lbs per foot. Each 1272kcmil "Pheasant" wire has a diameter of 1.382 inches and weighs 1.63 lbs per foot. The 954kcmil "Cardinal" and the 1272kcmil "Pheasant" sag and blowout with similar magnitudes due to the conductor having very similar ratios of steel

and aluminum. The smaller conductor diameter of the 954kcmil "Cardinal" creates higher audible noise and electric field values, therefore only the bundled (2) 954kcmil ACSR "CARDINAL" conductor was displayed in the exhibits. A 1300 ft design span between structures was assumed as a maximum design span. Typical design spans will vary depending on the topography. A design span of 1300ft could likely be a maximum design span. Pole heights were determined to provide adequate vertical clearance under the conductor during maximum operating temperature at mid-span assuming flat terrain.

Each structure type was analyzed under the following four different load cases:

1. NESC Rule 234B1a – [At Rest Condition, 0 psf wind, 60 degF]
2. NESC Rule 234B1b – [6psf Condition, 6 psf wind, 60 degF]
3. Extreme Wind [91 mph (21.2 psf), 60 degF]

To determine the conductor blowouts and pole deflections, each structure type and each load case was modeled in the transmission line design software PLS-CADD. The results of the required right of way width are illustrated in Exhibit GP-1. The controlling structure type and load case for the single circuit structures was the double circuit steel monopole supporting a bundled (2) 954kcmil ACSR "CARDINAL" conductor per phase. The design load case was the Extreme Wind [91 mph (21.2 psf), 60 degF]. This structure type and load case would require a minimum right of way width approximately 119'-0" wide, which is below the requested 200'-0" Right of Way width requested for a double circuit structure. A detailed analysis of the double circuit monopole structure under the 250C – Extreme Wind case is provided on pages 9 of Exhibit GP-1. The transmission line design is in the early phase. How the transmission line structures transfer the lateral loads from the structure to the ground has not been finalized. A common structure type is a guyed dead-

end. A guyed double circuit structure will require slightly larger footprint than for a single circuit structure. On page 11 of exhibit GP-1, an illustration of a double circuit guyed structure is provided. As can be seen on page 11, a 200ft ROW provides a tight but adequate width to fit the numerous guywires within the ROW.

Other calculations that were performed were the calculations for audible noise volume that would be heard at the edge of the right of way. In 1974, the Environmental Protection Agency (EPA) published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in which the EPA set 55dBA as the outdoor noise threshold that would prevent activity interference or annoyance. The EPA audible noise limit of 55dBA was set for the maximum audible noise that would occur at the edge of the transmission line ROW. These calculations were performed for the three structure types described above. The double circuit structures were analyzed modeling a bundled (2) 954kcmil ACSR "CARDINAL" per phase. The audible noise calculations display results for "Audible Noise at Mid-Span". This is the location where the conductor sags and is closest to the ground. This close proximity to the ground can result in higher audible noise at the edge of the ROW. These audible noise calculations are provided beginning on page 11 of exhibit GP-1.

The double circuit structures in a 200ft ROW the highest audible noise at the edge of the ROW would occur for the double Circuit Monopole Tangent with a bundled (2) 954kcmil ACSR "CARDINAL" per phase. This structure type and conductor size would create an audible noise of 54.9 dBA at the edge of the 200ft ROW. This audible noise is less than the EPA's recommended 55dBA limit. All the other double circuit structure types, at the

edge of a 200ft ROW, would produce even lower levels of audible noise. A summary of the audible noise and EMF calculations are provided o page 16 exhibit GP-1.

From the analysis performed to determine required ROW widths, it is my opinion that a 200-foot ROW width is appropriate for the double circuit transmission line.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BOLO TRANSMISSION PROJECT
GENTIE TRANSMISSION
EXHIBIT GP-1

TABLE OF CONTENTS

GENTIE TRANSMISSION LAYOUT.....2

SUNZIA EAST SWITCHYARD - SWITCHING DIAGRAM.....3

WESTERN SPIRIT SWITCHYARD - SWITCHING DIAGRAM.....4

BLOWOUT CALCULATIONS

HORIZONTAL OFFSET CALCULATIONS.....6

BLOWOUT OF DOUBLE CIRCUIT (2) 954KCMIL MONOPOLE TANGENT.....7

DEAD END GUYING FOOTPRINT DIAGRAMS

DOUBLE CIRCUIT (2) POLE GUYED DEAD END.....11

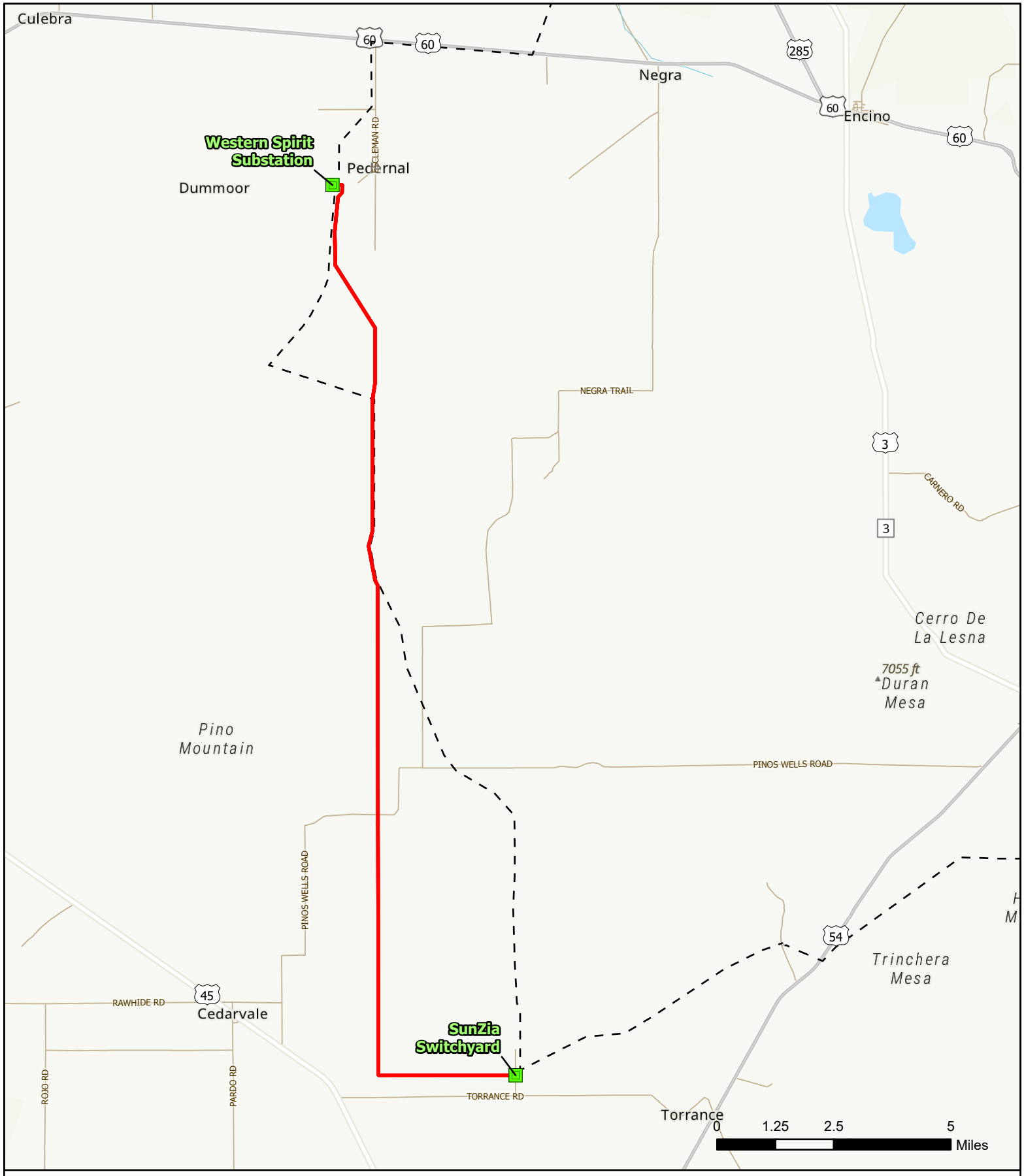
EMF AND AUDIBLE NOISE CALCULATIONS

DOUBLE CIRCUIT (2) 954KCMIL MONOPOLE TANGENT AT MIDSPAN.....13

DOUBLE CIRCUIT (2) 954KCMIL DEADEND AT MIDSPAN.....14

DOUBLE CIRCUIT (2) 954KCMIL DEADEND AT STRUCTURE.....15

AUDIBLE NOISE AND EMF SUMMARY TABLE.....16



Bolo Transmission Line Overview
Torrance County, NM

- Substations
- Bolo Centerline
- Western Spirit Centerlines

N

Ulteig
We listen. We solve.™

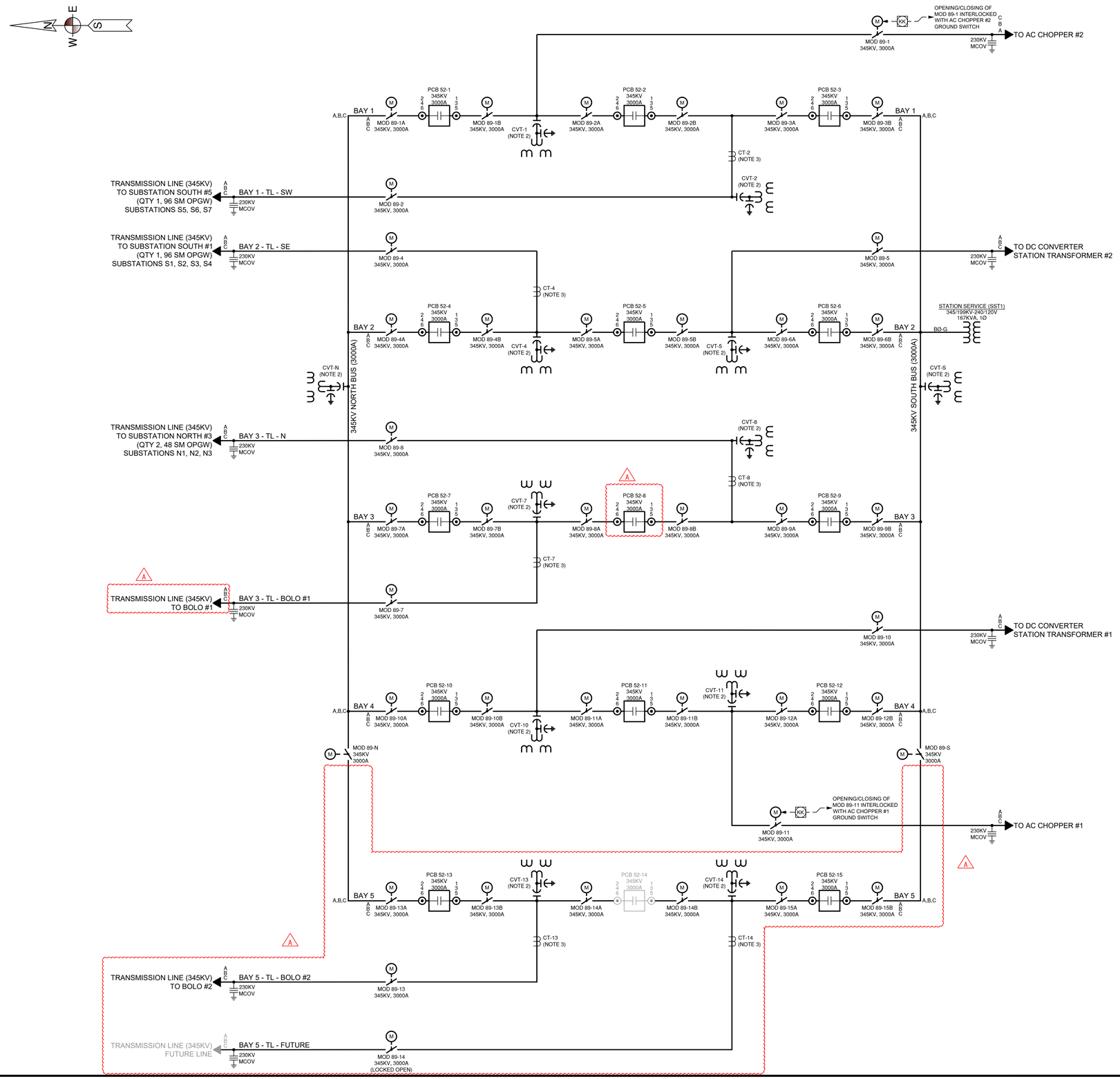
Pattern
Exported 6/24/2025

Path: \\uei.com\Storage\GISDatabases\2024\24.02050_Bolo_Tline\APRX\Bolo_Figures\Bolo_Figures.aprx

SUNZIA AC SWITCHYARD

DEVICE FUNCTION NUMBERS (ANSI C37.2)

NO.	FUNCTION AND DEFINITION
11	MULTIFUNCTION
21	DISTANCE
21G	GROUND DISTANCE
24	VOLTS PER HERTZ
25	SYNCH. CHECK (HOT LINE/DEAD BUS)
26Q	OIL TEMPERATURE THERMOMETER
27	UNDERVOLTAGE
27B	DEAD BUS (SYNCH. CHECK)
46	REVERSE PHASE LOCK-OUT
49T	TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT
50G	GROUND INSTANTANEOUS OVERCURRENT
50BF	BREAKER FAILURE
51	AC TIME OVERCURRENT
51P	PHASE AC TIME OVERCURRENT
51G	GROUND AC TIME OVERCURRENT
51N	NEUTRAL TIME OVERCURRENT
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE
59N	NEUTRAL VOLTAGE DISPLACEMENT
59L	HOT LINE (SYNCH. CHECK)
59B	HOT BUS (SYNCH. CHECK)
62	TIMING RELAY
63	TRANSFORMER PRESSURE RELAY
64	GROUND FAULT
67P	AC DIRECTIONAL OVERCURRENT
67G	GROUND DIRECTIONAL OVERCURRENT
71Q	OIL LEVEL INDICATOR DEVICE
81	FREQUENCY
86B	BUS LOCK-OUT RELAY
86BF	BREAKER FAILURE LOCK-OUT RELAY
86T	TRANSFORMER LOCK-OUT RELAY
87	DIFFERENTIAL
87L	LINE DIFFERENTIAL
87B	BUS DIFFERENTIAL
87T	TRANSFORMER DIFFERENTIAL
87N	RESTRICTED EARTH FAULT
87V	ZERO SEQ. VOLTAGE DIFFERENTIAL
89	LINE DISCONNECT SWITCH
90	REGULATING DEVICE



DEVICE LEGEND

- SURGE ARRESTER
- MOTOR OPERATED DISCONNECT SWITCH
- SF6 OR VACUUM CIRCUIT BREAKER
- CURRENT TRANSFORMER
- COUPLING CAPACITOR VOLTAGE TRANSFORMER

2025.07.03

PETE HEINRICH SWITCHYARD
TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	07/05/25	FOR REFERENCE ONLY	UEI

Pattern

PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

BLATTNER ENERGY

BLATTNER ENERGY, LLC
392 COUNTY ROAD 50
AVON, MINNESOTA 56310

NOTES:

1. NOT USED.
2. CCVT RATINGS:
   (3-1Ø CCVTS)
   207,000:115/69V
   1800/3000:1:1
   0.15% @ W,X,Y,Z
3. METERING CT RATINGS:
   600:5A SR
   RF=4.0
   0.15SB1.8
   EXTENDED RANGE: METERING CT'S WILL HAVE 0.15% ACCURACY FROM 1% OF NOMINAL THROUGH THE RATING FACTOR.
4. SUNZIA WIND TO PROCURE AND INSTALL CONDUCTORS/BUS CONNECTIONS ON HVDC INTERCONNECT SWITCHYARD DEADEND STRUCTURES.

REFERENCE

THIS DOCUMENT IS FOR REFERENCE ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION.

Ulteig
We listen. We solve.™

3350 38th Avenue South
Fargo, North Dakota 58104
Phone: 701.280.8500
Fax: 701.237.3191
www.ulteig.com

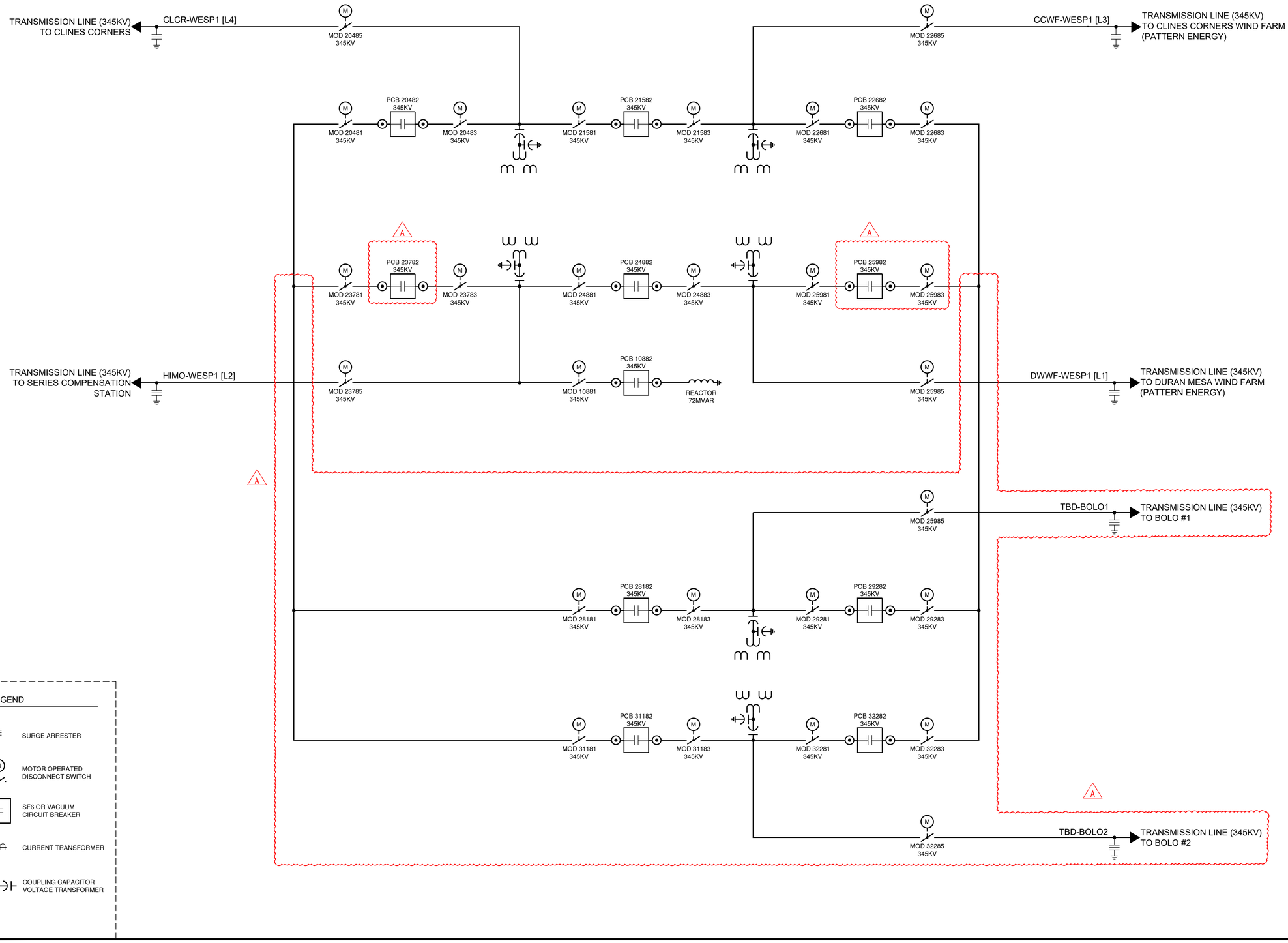
Design By: C. BYE
Drawn By: T. ADAMS
Approved By: D. SWARTZ
Project Number: 20.02726

SUNZIA AC SWITCHYARD SWITCHING DIAGRAM

REVISION:
A

DRAWING NUMBER:
SNZY-IS0-R-OL0-R00-01

WESTERN SPIRIT 345KV SWITCHYARD



DEVICE LEGEND

- SURGE ARRESTER
- MOTOR OPERATED DISCONNECT SWITCH
- SF6 OR VACUUM CIRCUIT BREAKER
- CURRENT TRANSFORMER
- COUPLING CAPACITOR VOLTAGE TRANSFORMER

2025-07-07

WESTERN SPIRIT SWITCHYARD

TORRANCE & LINCOLN COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	07/05/25	FOR REFERENCE ONLY	UEI

Pattern

PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

BLATTNER ENERGY

BLATTNER ENERGY, LLC
392 COUNTY ROAD 50
AVON, MINNESOTA 56310

NOTES:
1. NOT USED.

REFERENCE

THIS DOCUMENT IS FOR REFERENCE ONLY. IT IS NOT TO BE USED FOR CONSTRUCTION.

Ulteig
We listen. We solve.™

3350 38th Avenue South
Fargo, North Dakota 58104
Phone: 701.280.8500
Fax: 701.237.3191
www.ulteig.com

Design By:	C. BYE
Drawn By:	T. ADAMS
Approved By:	D. SWARTZ
Project Number:	20.02726

WESTERN SPIRIT WIND SWITCHYARD SWITCHING DIAGRAM

REVISION:
A

DRAWING NUMBER:
WSW-IS0-R-OL0-R00-01

CORONA WIND PROJECT

BLOWOUT CALCULATIONS

Ulteig Engineering
Project Name: BOLO 345kV GenTie Transmission Line
Required NESC Horizontal Clearances - Rule 234B1a & 234B1b
Engineer: Greg Parent
Date: 6-18-2025

We listen. We solve.™

(VN) = Nominal Operating Voltage Phase-Phase (kV)

(VM) = Max Transient Overvoltage Phase-Phase (kV)

(Elev) = Design Elevation (ft)

(CHAR) = Required Horizontal Clearance At Rest (ft) NESC RULE 234B1a

(CH@6psf) = Required Horizontal Clearance under 6psf (ft) NESC RULE 234B1b

(CH@EX_WIND) = Recommended Horizontal Clearance under Extreme Wind

$$V_N := 345\ kV$$

$$V_M := 1.05 \cdot V_N = 362.25\ kV$$

$$Elev := 7200\ ft$$

$$Elev_{DESIGN} := \text{if}(Elev < 3300\ ft, 3300\ ft, Elev) \qquad Elev_{DESIGN} = 7200\ ft$$

$$CH_{AR} := 7.5\ ft + ((50\ kV - 22\ kV)) \cdot \left(\frac{0.4\ \frac{in}{kV}}{12\ \frac{in}{ft}}\right) + \left(\left(\frac{V_M}{\sqrt{3}} - 50\ kV\right) \cdot \left(\frac{0.4\ \frac{in}{kV}}{12\ \frac{in}{ft}}\right) \cdot 1.03^{\frac{Elev_{DESIGN} - 3300\ ft}{1000\ ft}}\right)$$

$$CH_{AR} = 14.386\ ft$$

$$CH_{@6psf} := 4.5\ ft + ((50\ kV - 22\ kV)) \cdot \left(\frac{0.4\ \frac{in}{kV}}{12\ \frac{in}{ft}}\right) + \left(\left(\frac{V_M}{\sqrt{3}} - 50\ kV\right) \cdot \left(\frac{0.4\ \frac{in}{kV}}{12\ \frac{in}{ft}}\right) \cdot 1.03^{\frac{Elev_{DESIGN} - 3300\ ft}{1000\ ft}}\right)$$

$$CH_{@6psf} = 11.386\ ft$$

$$CH_{@EX\_WIND} := V_M \cdot \frac{0.1\ \frac{in}{kV}}{12\ \frac{in}{ft}} \cdot 1.03^{\frac{Elev_{DESIGN} - 3300\ ft}{1000\ ft}}$$

Assuming 10kV per inch dielectric constant for air

$$CH_{@EX\_WIND} = 3.388\ ft$$

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern

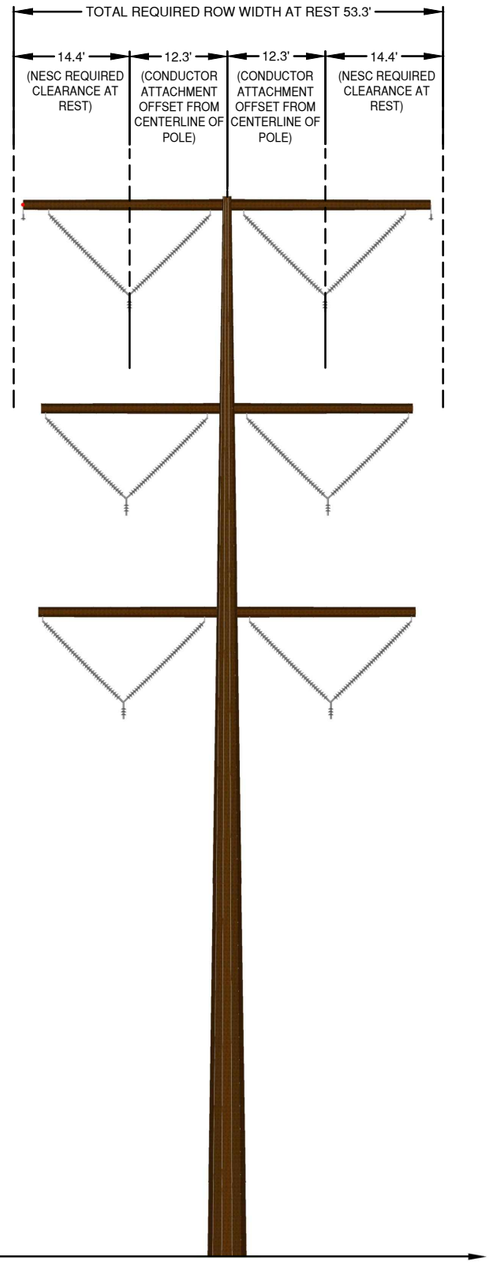
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
We listen. We solve.™
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE BLOWOUT HORIZONTAL CLEARANCE CALCULATIONS

DRAWING NUMBER: BOL-TRN-ROW-BO-01
REVISION: A



SCALE: N.T.S.

STRUCTURE AND CONDUCTOR INFORMATION:

OPERATIONAL VOLTAGE = 345KV
STRUCTURE TYPE = DOUBLE CIRCUIT STEEL MONOPOLE
INSULATOR TYPE = V-STRING SUSPENSION INSULATOR
MAXIMUM DESIGN SPAN = 1300FT
CONDUCTOR TYPE = BUNDLED (2) 954KCMIL ACSR "CARDINAL"
NESC RULE ANALYZED = 234B1A
WEATHER CONDITION DISPLAYED = 0 PSF @ 60 DEG F

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern

PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

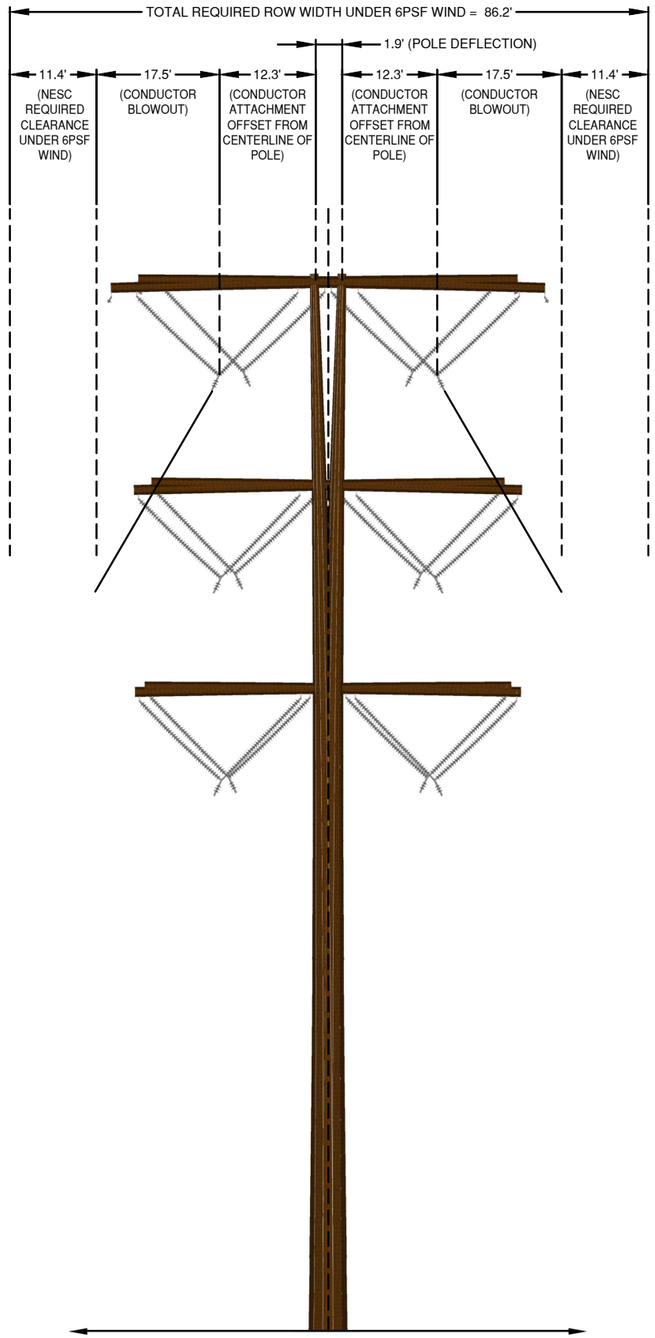
Ulteig
We Listen. We Envision.™
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
BLOWOUT (2) 954KCMIL
DOUBLE CIRCUIT
MONOPOLE TANGENT

DRAWING NUMBER: BOL-TRN-ROW-BO-02
REVISION: A

2025-06-20



SCALE: N.T.S.

STRUCTURE AND CONDUCTOR INFORMATION:

OPERATIONAL VOLTAGE = 345KV
STRUCTURE TYPE = DOUBLE CIRCUIT STEEL MONOPOLE
INSULATOR TYPE = V-STRING SUSPENSION INSULATOR
MAXIMUM DESIGN SPAN = 1300FT
CONDUCTOR TYPE = BUNDLED (2) 954KCMIL ACSR "CARDINAL"
NESC RULE ANALYZED = 234B1B
WEATHER CONDITION DISPLAYED = 6 PSF @ 60 DEG F

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern

PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

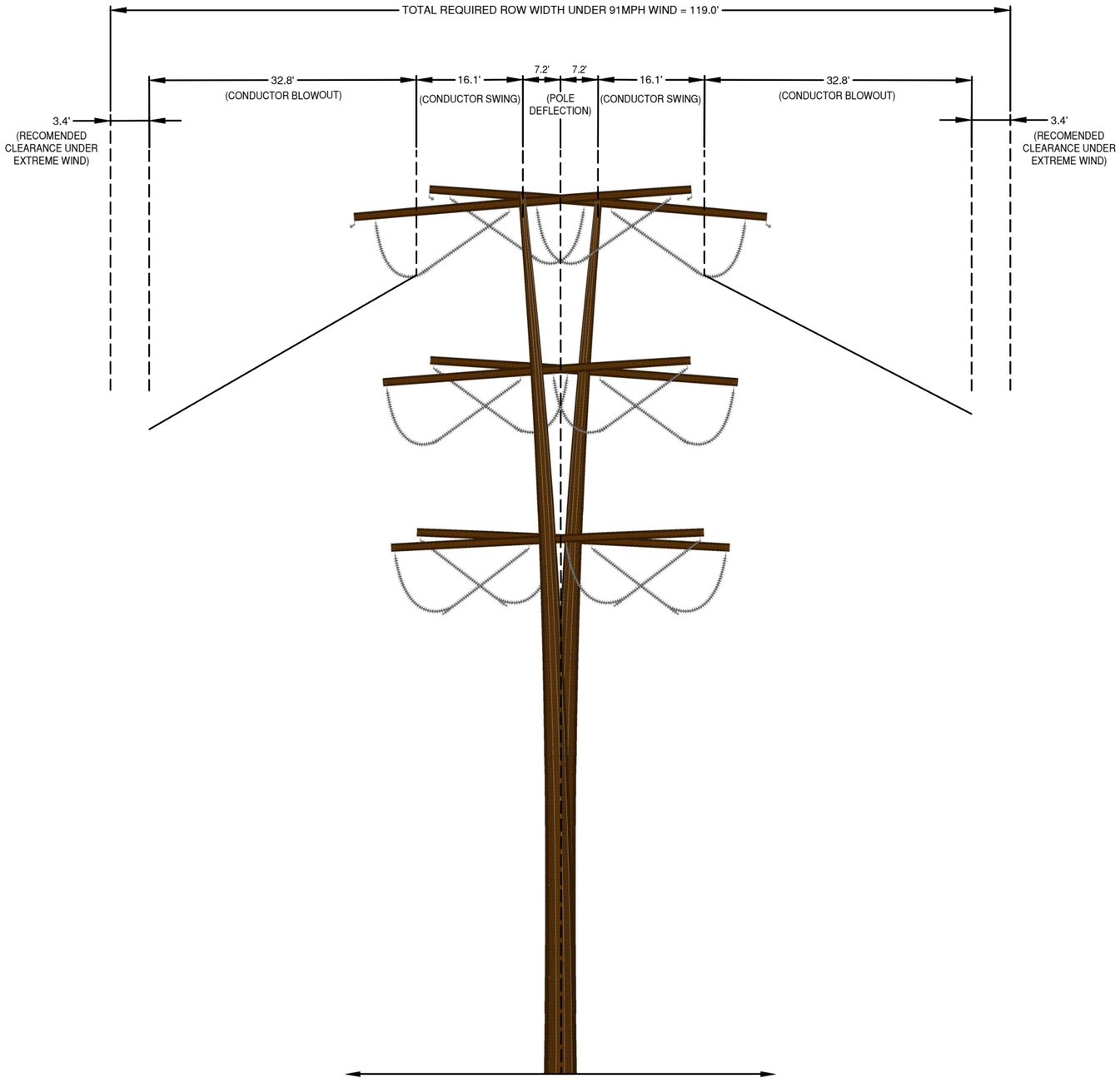
Ulteig
"We Believe, We Include."
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
BLOWOUT (2) 954KCMIL
DOUBLE CIRCUIT
MONOPOLE TANGENT

DRAWING NUMBER: BOL-TRN-ROW-BO-03
REVISION: A

2023-06-09



SCALE: N.T.S.

STRUCTURE AND CONDUCTOR INFORMATION:

OPERATIONAL VOLTAGE = 345KV
STRUCTURE TYPE = DOUBLE CIRCUIT STEEL MONOPOLE
INSULATOR TYPE = V-STRING SUSPENSION INSULATOR
MAXIMUM DESIGN SPAN = 1300FT
CONDUCTOR TYPE = BUNDLED (2) 1272KCMIL ACSR "PHEASANT"
NESC RULE ANALYZED = 250C EXTREME WIND
WEATHER CONDITION DISPLAYED = 91 MPH @ 60 DEG F

2025.07.31

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	07/31/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern

PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
"Miles Between, Miles Ahead."

5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

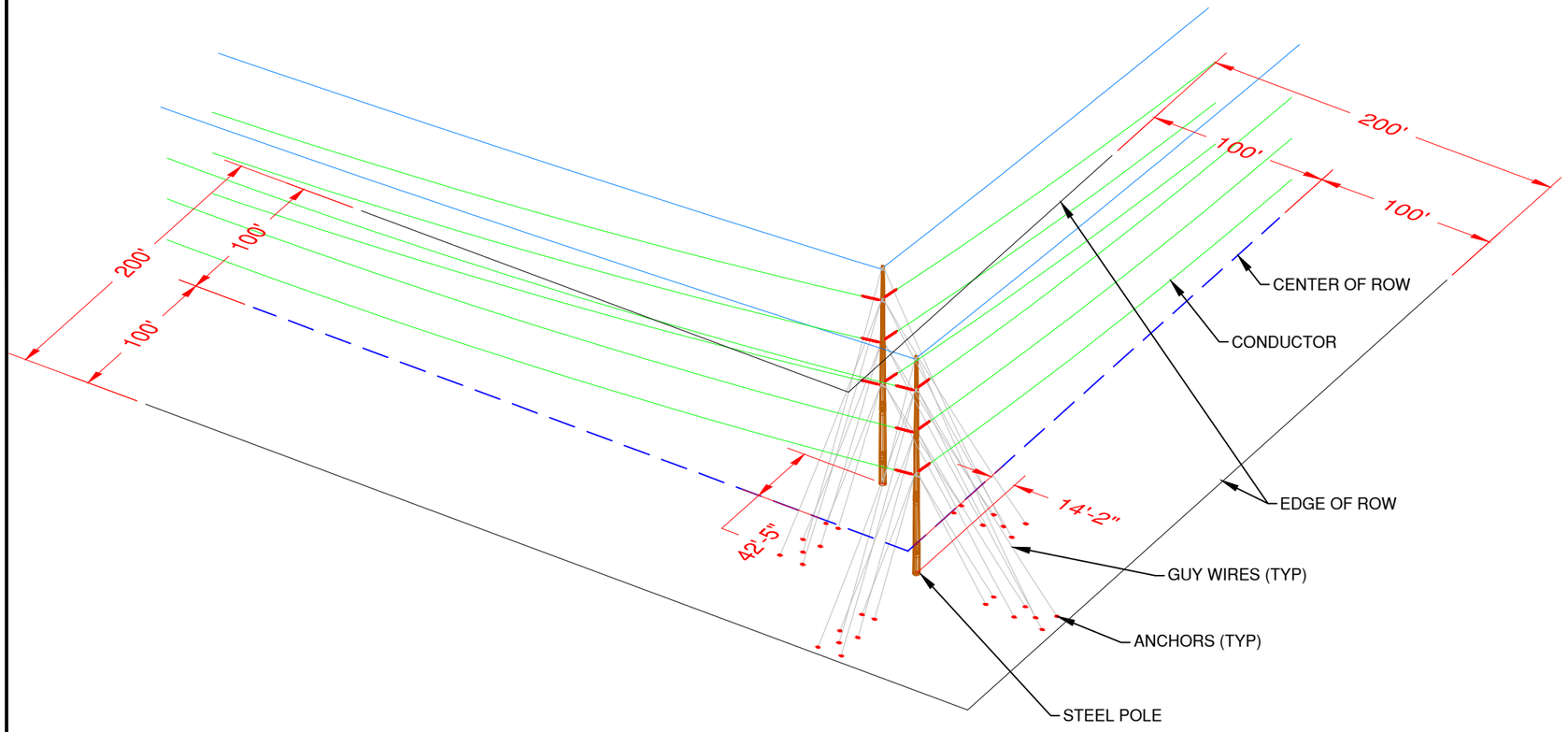
Project Number: 24.02050

TRANSMISSION LINE
BLOWOUT (2) 1272KCMIL
DOUBLE CIRCUIT
MONOPOLE TANGENT

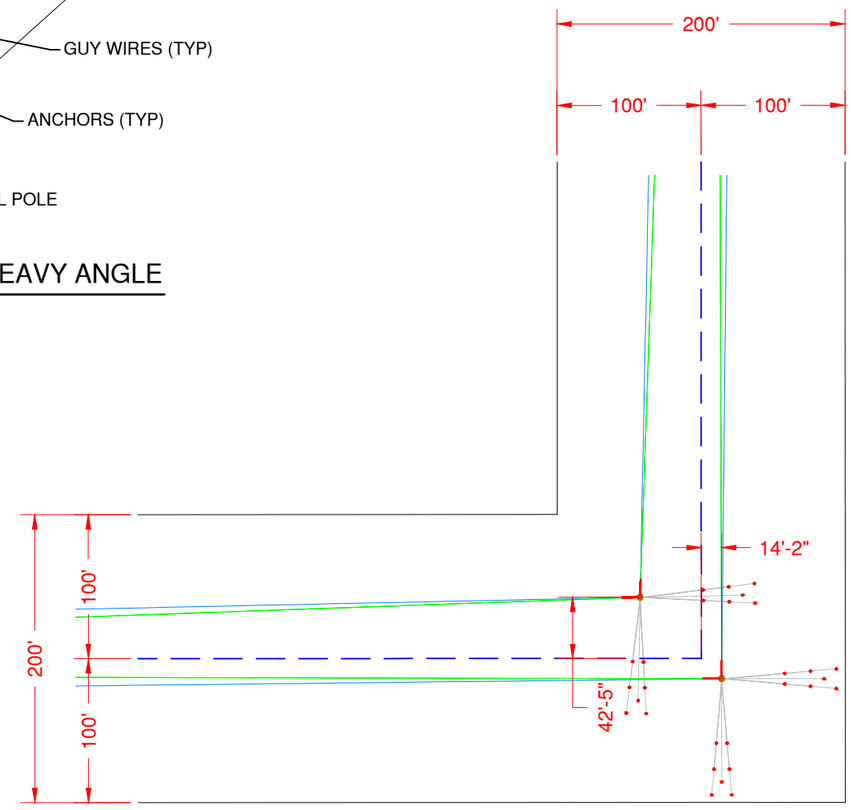
DRAWING NUMBER: BOL-TRN-ROW-BO-04
REVISION: A

CORONA WIND PROJECT

DEAD END
GUYING FOOTPRINT DIAGRAMS



ISOMETRIC VIEW OF DOUBLE CIRCUIT GUYED HEAVY ANGLE



PLAN VIEW OF DOUBLE CIRCUIT GUYED HEAVY ANGLE

STRUCTURE INFORMATION:

OPERATION NOMINAL VOLTAGE = 345KV
STRUCTURE TYPE = DOUBLE CIRCUIT (2) POLE GUYED HEAVY ANGLE DEADEND
INSULATOR TYPE = STRAIN INSULATORS
TYPICAL DESIGN SPAN = 800FT

A DOUBLE CIRCUIT (2) POLE GUYED HEAVY ANGLE DEADEND STRUCTURE USES GUY WIRES TO RESIST THE LATERAL LOADS THAT ARE APPLIED TO THE STRUCTURE FROM TENSIONED CONDUCTORS. THESE GUY WIRES EXTEND DOWN AT AN ANGLE FROM THE POLE STRUCTURE TO THE GROUND LINE. EACH GUY WIRE CONNECTS TO AN ANCHOR WHICH IS EMBEDDED INTO THE GROUND.

TO FIT THE "GUY WIRE FOOTPRINT" IN A 200FT ROW THE (2) POLE STRUCTURE IS OCCASIONALLY OFFSET TOWARD THE INSIDE EDGE OF THE ROW. PLEASE SEE THE DRAWINGS ABOVE AND TO THE RIGHT WHICH ILLUSTRATE THIS STRUCTURE/ROW GEOMETRY.

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
"We Believe, Therefore..."
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE GUYING FOOTPRINT DOUBLE CIRCUIT (2) POLE GUYED TANGENT

DRAWING NUMBER: BOL-TRN-ROW-GF-01
REVISION: A

CORONA WIND PROJECT

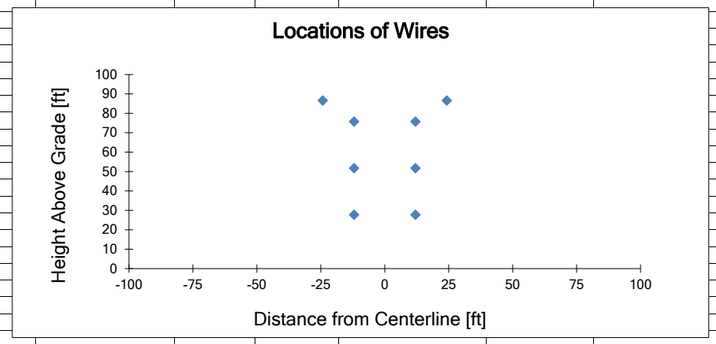
EMF AND AUDIBLE NOISE CALCULATIONS

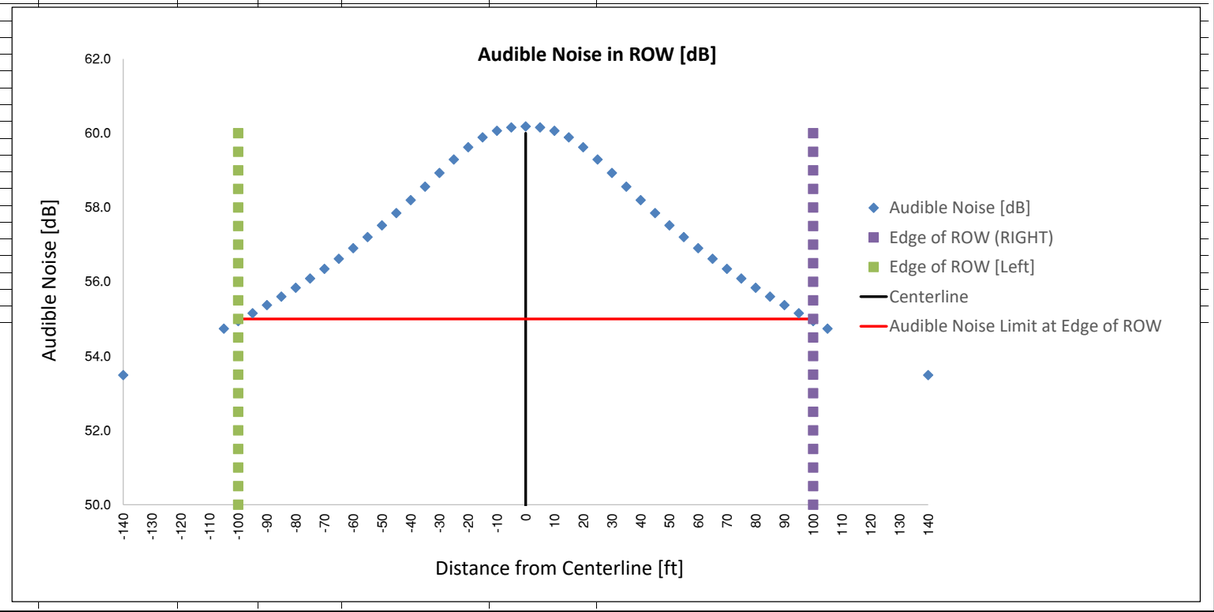
AUDIBLE NOISE CALCULATION FOR A DOUBLE CIRCUIT MONOPOLE TANGENT STRUCTURE WITH (2) 954KCMIL CONDUCTORS PER PHASE
PROJECT NAME: BOLO TRANSMISSION PROJECT
ENGINEER: GREG PARENT

Bundle	x-feet	y-feet	n cond	cond dia	spacing	l-n voltage (avg max)	phase	Kv/cm	line name	l-l voltage (rated)	l-l voltage (avg max)
1	12	75.75	2	1.196	18	204.9622	0	16.9989	WS A	345	355.005
2	12	51.75	2	1.196	18	204.9622	120	15.6194		345	355.005
3	12	27.75	2	1.196	18	204.9622	240	17.0646		345	355.005
4	-12	75.75	2	1.196	18	204.9622323	240	16.9989	ST A	345	355.005
5	-12	51.75	2	1.196	18	204.9622323	120	15.6194		345	355.005
6	-12	27.75	2	1.196	18	204.9622323	0	17.0646		345	355.005
7	24.25	86.58	1	0.6	0	0	0	5.8611	OPGW1	0	0
8	-24.25	86.58	1	0.6	0	0	0	5.8611		0	0
9								0.0000			
10								0.0000			
11								0.0000			
12								0.0000			
13								0.0000			
14								0.0000			
15								0.0000			
16								0.0000			
17								0.0000			
18								0.0000			
19								0.0000			
20								0.0000			
21								0.0000			
22								0.0000			
23								0.0000			
24								0.0000			
NPH=	8.00										

Altitude ft= 7200

Dist	Vert	Calculated L50 rain	Coord on RoW Center : Dist
-200	5	51.85	-200.00
-180	5	52.34	-180.00
-160	5	52.88	-160.00
-140	5	53.49	-140.00
-105	5	54.74	-105.00
-100	5	54.94	-100.00
-95	5	55.15	-95.00
-90	5	55.37	-90.00
-85	5	55.60	-85.00
-80	5	55.84	-80.00
-75	5	56.09	-75.00
-70	5	56.35	-70.00
-65	5	56.62	-65.00
-60	5	56.91	-60.00
-55	5	57.20	-55.00
-50	5	57.52	-50.00
-45	5	57.85	-45.00
-40	5	58.20	-40.00
-35	5	58.56	-35.00
-30	5	58.93	-30.00
-25	5	59.29	-25.00
-20	5	59.62	-20.00
-15	5	59.89	-15.00
-10	5	60.07	-10.00
-5	5	60.16	-5.00
0	5	60.18	0.00
5	5	60.16	5.00
10	5	60.07	10.00
15	5	59.89	15.00
20	5	59.62	20.00
25	5	59.29	25.00
30	5	58.93	30.00
35	5	58.56	35.00
40	5	58.20	40.00
45	5	57.85	45.00
50	5	57.52	50.00
55	5	57.20	55.00
60	5	56.91	60.00
65	5	56.62	65.00
70	5	56.35	70.00
75	5	56.09	75.00
80	5	55.84	80.00
85	5	55.60	85.00
90	5	55.37	90.00
95	5	55.15	95.00
100	5	54.94	100.00
105	5	54.74	105.00
140	5	53.49	140.00
160	5	52.88	160.00
180	5	52.34	180.00
200	5	51.85	200.00
220	5	51.40	220.00
240	5	50.99	240.00
260	5	50.61	260.00
280	5	50.25	280.00





RoW Data

Distance from X=0 to Left RoW edge	-100.00
Distance from X=0 to RoW center	0.00
Width of RoW	200.00
Project Identifier	Line Name No. 1 and Li

Audible Noise [dBA]

at Left RoW Edge	**54.942**
at Right RoW Edge	**54.942**
Max ANoise Value	**60.2**
Max E Field times 1.1	66.201
Last row on sheet with data	120.00

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
"We Believe, Therefore..."
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
AUDIBLE NOISE (2)
954KCMIL DOUBLE CIRCUIT
TANGENT

DRAWING NUMBER: BOL-TRN-ROW-AN-01
REVISION: A

2025-05-17

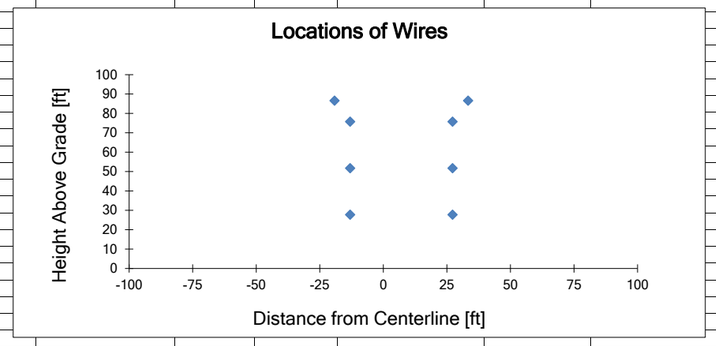
AUDIBLE NOISE CALCULATION FOR A DOUBLE CIRCUIT (2) POLE DEADEND STRUCTURE AT MIDSPAN WITH (2) 954KCMIL CONDUCTORS PER PHASE
PROJECT NAME: BOLO TRANSMISSION PROJECT
ENGINEER: GREG PARENT

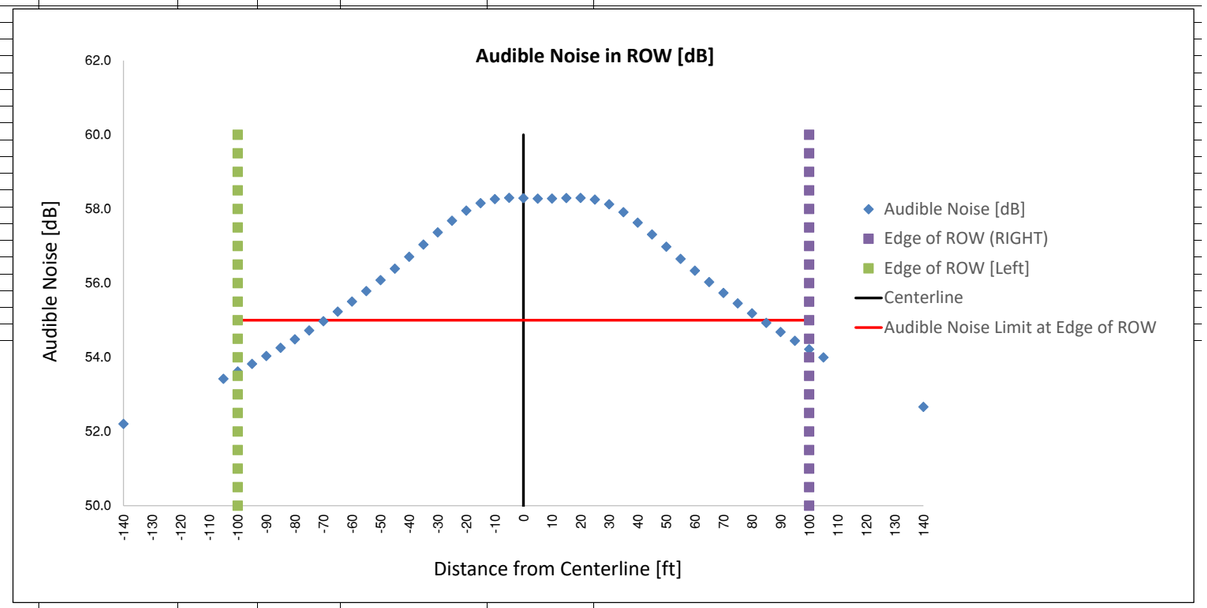
Bundle	x-feet	y-feet	n cond	cond dia	spacing	l-n voltage (avg max)	phase	Kv/cm	line name	l-l voltage (rated)	l-l voltage (avg max)
1	27.21	75.75	2	1.196	18	204.9622	0	16.4713	WS A	345	355.005
2	27.21	51.75	2	1.196	18	204.9622	120	16.1178		345	355.005
3	27.21	27.75	2	1.196	18	204.9622	240	16.4066		345	355.005
4	-13.08	75.75	2	1.196	18	204.9622323	240	16.4713	ST A	345	355.005
5	-13.08	51.75	2	1.196	18	204.9622323	120	16.1178		345	355.005
6	-13.08	27.75	2	1.196	18	204.9622323	0	16.4066		345	355.005
7	33.34	86.58	1	0.6	0	0	0	8.4072	OPGW1	0	0
8	-19.21	86.58	1	0.6	0	0	0	8.4072		0	0
9								0.0000			
10								0.0000			
11								0.0000			
12								0.0000			
13								0.0000			
14								0.0000			
15								0.0000			
16								0.0000			
17								0.0000			
18								0.0000			
19								0.0000			
20								0.0000			
21								0.0000			
22								0.0000			
23								0.0000			
24								0.0000			

NPH= 8.00

Altitude ft= 7200

Dist	Vert	Calculated L50 rain	Coord on RoW Center : Dist
-200	5	50.61	-200.00
-180	5	51.09	-180.00
-160	5	51.62	-160.00
-140	5	52.20	-140.00
-105	5	53.42	-105.00
-100	5	53.62	-100.00
-95	5	53.82	-95.00
-90	5	54.04	-90.00
-85	5	54.26	-85.00
-80	5	54.49	-80.00
-75	5	54.72	-75.00
-70	5	54.97	-70.00
-65	5	55.23	-65.00
-60	5	55.50	-60.00
-55	5	55.79	-55.00
-50	5	56.08	-50.00
-45	5	56.39	-45.00
-40	5	56.71	-40.00
-35	5	57.04	-35.00
-30	5	57.37	-30.00
-25	5	57.68	-25.00
-20	5	57.96	-20.00
-15	5	58.16	-15.00
-10	5	58.27	-10.00
-5	5	58.30	-5.00
0	5	58.29	0.00
5	5	58.28	5.00
10	5	58.28	10.00
15	5	58.29	15.00
20	5	58.30	20.00
25	5	58.25	25.00
30	5	58.13	30.00
35	5	57.91	35.00
40	5	57.63	40.00
45	5	57.31	45.00
50	5	56.98	50.00
55	5	56.65	55.00
60	5	56.33	60.00
65	5	56.03	65.00
70	5	55.74	70.00
75	5	55.45	75.00
80	5	55.19	80.00
85	5	54.93	85.00
90	5	54.68	90.00
95	5	54.45	95.00
100	5	54.22	100.00
105	5	54.00	105.00
140	5	52.66	140.00
160	5	52.03	160.00
180	5	51.46	180.00
200	5	50.94	200.00
220	5	50.47	220.00
240	5	50.04	240.00
260	5	49.65	260.00
280	5	49.28	280.00
300	5	48.94	300.00





RoW Data

Distance from X=0 to Left RoW edge	-100.00
Distance from X=0 to RoW center	0.00
Width of RoW	200.00
Project Identifier	Line Name No. 1 and Li

Audible Noise [dBA]

at Left RoW Edge	**53.618**
at Right RoW Edge	**54.217**
Max ANoise Value	**58.3**
Max E Field times 1.1	64.129
Last row on sheet with data	120.00

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
"We Believe, Who Wonders"
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
AUDIBLE NOISE (2)
954KCMIL DOUBLE CIRCUIT
GUYED DEADEND

DRAWING NUMBER: BOL-TRN-ROW-AN-02
REVISION: A

2023-06-17

AUDIBLE NOISE CALCULATION FOR A DOUBLE CIRCUIT (2) POLE DEADEND STRUCTURE AT STRUCTURE WITH (2) 954KCMIL CONDUCTORS PER PHASE
PROJECT NAME: BOLO TRANSMISSION PROJECT
ENGINEER: GREG PARENT

Bundle	x-feet	y-feet	n cond	cond dia	spacing	I-n voltage (avg max)	phase	Kv/cm	line name	I-l voltage (rated)	I-l voltage (avg max)
1	-42.42	106	2	1.196	18	204.9622	0	15.6483	WS A	345	355.005
2	-42.42	80	2	1.196	18	204.9622	120	16.0655		345	355.005
3	-42.42	54	2	1.196	18	204.9622	240	15.5195		345	355.005
4	14.167	106	2	1.196	18	204.9623323	240	15.6483	ST A	345	355.005
5	14.167	80	2	1.196	18	204.9623323	120	16.0655		345	355.005
6	14.167	54	2	1.196	18	204.9623323	0	15.5195		345	355.005
7	-42.42	126	1	0.6	0	0	0	6.0623	OPGW1	0	0
8	14.167	126	1	0.6	0	0	0	6.0623		0	0
9								0.0000			
10								0.0000			
11								0.0000			
12								0.0000			
NPH=	8.00										

RoW Data

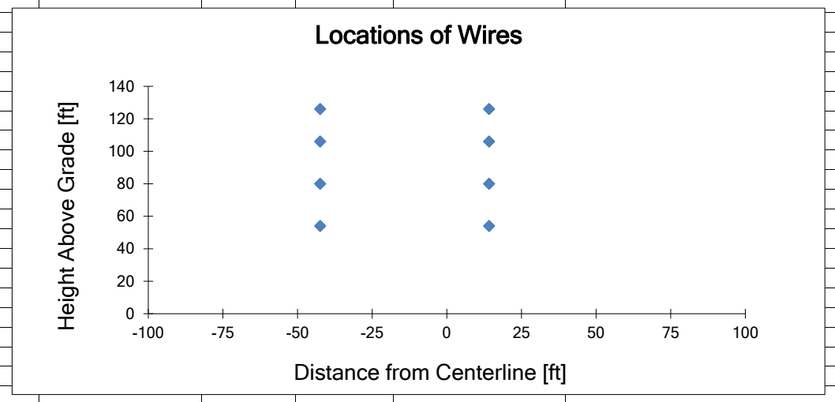
Distance from X=0 to Left RoW edge	-100.00
Distance from X=0 to RoW center	0.00
Width of RoW	200.00
Project Identifier	Line Name No. 1 and Li

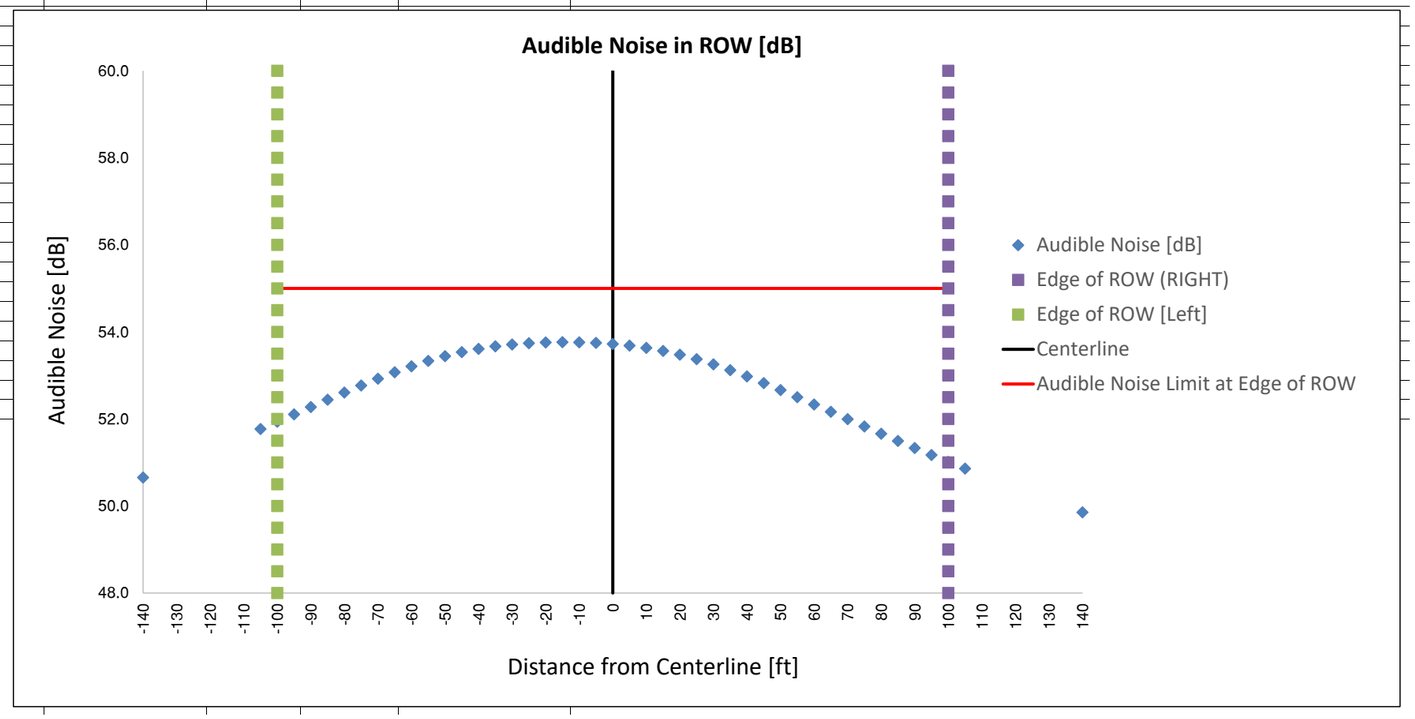
Audible Noise [dBA]

at Left RoW Edge	**51.936**
at Right RoW Edge	**51.014**
Max ANoise Value	**53.8**

Altitude ft= 7200

Dist	Vert	Calculated L50 rain	Coord on RoW Center : Dist
-200	5	49.06	-200.00
-180	5	49.55	-180.00
-160	5	50.08	-160.00
-140	5	50.65	-140.00
-105	5	51.77	-105.00
-100	5	51.94	-100.00
-95	5	52.11	-95.00
-90	5	52.27	-90.00
-85	5	52.44	-85.00
-80	5	52.61	-80.00
-75	5	52.77	-75.00
-70	5	52.92	-70.00
-65	5	53.07	-65.00
-60	5	53.21	-60.00
-55	5	53.33	-55.00
-50	5	53.44	-50.00
-45	5	53.54	-45.00
-40	5	53.61	-40.00
-35	5	53.67	-35.00
-30	5	53.71	-30.00
-25	5	53.74	-25.00
-20	5	53.76	-20.00
-15	5	53.76	-15.00
-10	5	53.76	-10.00
-5	5	53.75	-5.00
0	5	53.72	0.00
5	5	53.69	5.00
10	5	53.63	10.00
15	5	53.56	15.00
20	5	53.48	20.00
25	5	53.37	25.00
30	5	53.25	30.00
35	5	53.12	35.00
40	5	52.98	40.00
45	5	52.82	45.00
50	5	52.66	50.00
55	5	52.50	55.00
60	5	52.33	60.00
65	5	52.16	65.00
70	5	52.00	70.00
75	5	51.83	75.00
80	5	51.66	80.00
85	5	51.49	85.00
90	5	51.33	90.00
95	5	51.17	95.00
100	5	51.01	100.00
105	5	50.86	105.00
140	5	49.85	140.00
160	5	49.34	160.00
180	5	48.87	180.00
200	5	48.44	200.00
220	5	48.03	220.00
240	5	47.65	240.00
260	5	47.30	260.00
280	5	46.97	280.00





BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
We Listen. We Learn.™
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
AUDIBLE NOISE (2)
954KCMIL DOUBLE CIRCUIT
GUYED DEADEND

DRAWING NUMBER: BOL-TRN-ROW-AN-03
REVISION: A

AUDIBLE NOISE, ELECTRIC FIELD AND MAGNETIC FLUX DENSITY RESULT SUMMARY PER STRUCTURE TYPE
PROJECT NAME: BOLO TRANSMISSION PROJECT
ENGINEER: GREG PARENT

Audible Noise and EMF Calculations			Audible Noise			Electric Field			Magnetic Flux Density		
Corona Wind Project - GenTie			Left ROW [dB]	Max [dB]	Right ROW [dB]	Left ROW [kV/m]	Max [kV/m]	Left ROW [kV/m]	Left ROW [mGauss]	Max [mGauss]	Left ROW [mGauss]
Engineer: GCP	Date:	6/18/2025	Audible Noise and EMF Limits								
Structure Type	**Conductor Type per Phase**	**Proposed ROW Width**	55*	NA	55*	5**	10**	5**	9000***	9000***	9000***
345kV Double Circuit Monopole Tangent at midspan	(2) 954kcmil ACSR "CARDINAL"	200	54.9	60.2	54.9	0.1	5.6	0.1	14.1	323.0	23.5
345kV Double Circuit (2) Pole Deadend at midspan	(2) 954kcmil ACSR "CARDINAL"	200	53.6	58.3	54.2	0.1	6.5	0.1	22.7	385.1	43.9
345kV Double Circuit (2) Pole Deadend at Structure	(2) 954kcmil ACSR "CARDINAL"	200	51.9	53.8	51.0	0.6	2.2	0.2	49.9	136.6	23.1

NOTES:
* EPA - Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety
** IEEE C95-6 - Table 4
*** ICNIRP Figure 1

BOLO TRANSMISSION PROJECT

TORRANCE COUNTY, NEW MEXICO

Rev.	Date	Description	By
A	XX/XX/2025	PRC TESTIMONY EXHIBIT	UEI

Pattern
PATTERN ENERGY GROUP
4225 EXECUTIVE SQUARE
LA JOLLA, CA 92037

Ulteig
5575 DTC Parkway, Suite 200
Greenwood Village, Co 80111
Phone: 720.873.5700
Fax: 720.873.5701
www.ulteig.com
We Believe, We're modern.™
Bismarck - Denver - Detroit Lakes - Fargo - Sioux Falls - St. Paul

Project Number: 24.02050

TRANSMISSION LINE
EMF SUMMARY
CALUCULATIONS

DRAWING NUMBER: BOL-TRN-ROW-AN-04
REVISION: A

2025-06-17

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	
	)	**Case No. 25-00056-UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

AFFIDAVIT OF GREGORY PARENT

THE STATE OF Colorado)
)
COUNTY OF Jefferson)

Gregory Parent hereby deposes and states under oath that the foregoing Direct Testimony of Gregory Parent and the supporting Exhibit were prepared under my direct supervision and the statements therein are true and accurate based on my personal knowledge.

SUBSCRIBED AND SWORN TO BEFORE ME, notary public, on this the 5th day of August 2025.

My Commission expires: Dec 19th, 2027 Notary Public, State of: Colorado

MAYTE PAEZ GURROLA
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20234047300
MY COMMISSION EXPIRES 12/19/2027

BEFORE THE NEW MEXICO PUBLIC REGULATION COMMISSION

IN THE MATTER OF THE APPLICATION FOR THE RIGHT-OF-WAY WIDTH APPROVAL OF THE BOLO TRANSMISSION PROJECT PURSUANT TO THE PUBLIC UTILITY ACT, NMSA 1978, §62-9- 3.2	)	**Case No. 25-00056-UT**
BOLO TRANSMISSION LLC	)	
APPLICANT.	)	

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a true and correct copy of Bolo Transmission, LLC's ***Application for Right-of-Way Width Approval for the Bolo Transmission Project*** was sent via email on this 8th day of August 2025 to the individuals listed below:

John Bogatko	John.Bogatko@prc.nm.gov;
Ed Rilkoff	Ed.Rilkoff@prc.nm.gov;
Jack Sidler	jack.sidler@prc.nm.gov;
Orland Whitney	orland.whitney@prc.nm.gov;

DATED this 8th day of August 2025.

Respectfully submitted,

VIRTUE & NAJJAR, PC

/s/ Daniel A. Najjar

Daniel A. Najjar
Jared D. Najjar
2204 Brothers Road, Suite A
P.O. Box 22249
Santa Fe, NM 87502-2249
(505) 983-6101
dnajjar@virtuelaw.com
jnajjar@virtuelaw.com
Attorneys for Bolo Transmission LLC