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January 20, 2021

BY ELECTRONIC FILING

Mr. Bernard Logan, Interim Clerk
c/o Document Control Center
State Corporation Commission
1300 East Main Street
Tyler Building – 1st Floor
Richmond, Virginia 23219

Application of Virginia Electric and Power Company for approval and certification of electric transmission facilities: 230 kV Lines #2113 and #2154 Transmission Line Rebuilds and Related Projects
Case No. PUR-2021-00010

Dear Mr. Logan:

Please find enclosed for electronic filing in the above-captioned proceeding the application for approval of electric transmission facilities on behalf of Virginia Electric and Power Company (the "Company"). This filing contains the Application, Appendix, Direct Testimony, and DEQ Supplement, including attachments.

As indicated in Section II.A.12.b of the Appendix, three (3) color copies of the map of the Virginia Department of Transportation "General Highway Map" for York and James City Counties and the City of Williamsburg were mailed to the Commission's Division of Energy Regulation on January 18, 2021. The Company also provided the Division of Energy Regulation electronic access, via e-room on January 19, 2021, to the digital geographic information system ("GIS") map required by § 56-46.1 of the Code of Virginia, which is Attachment II.A.2 to the Appendix.

Please do not hesitate to call if you have any questions in regard to the enclosed.

Very truly yours,

Vishwa B. Link

Enclosures
cc: William H. Chambliss, Esq.
Mr. David Essah
Mr. Mike Cizenski
David J. DePippo, Esq.

Application, Appendix, DEQ Supplement, Direct Testimony and Exhibits of Virginia Electric and Power Company

Before the State Corporation Commission of Virginia

230 kV Lines #2113 and #2154 Transmission Line Rebuilds and Related Projects

Application No. 303

Case No. PUR-2021-00010

Filed: January 20, 2021

Volume 1 of 2

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC FACILITIES

230 kV Lines #2113 and #2154
Transmission Line Rebuilds and Related Projects

Application No. 303

Case No. PUR-2021-00010

Filed: January 20, 2021

COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

APPLICATION OF	)	
VIRGINIA ELECTRIC AND POWER COMPANY	)	Case No. PUR-2021-00010
	)	
For approval and certification of electric transmission	)	
facilities: 230 kV Lines #2113 and #2154	)	
Transmission Line Rebuilds and Related Projects	)	

APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY FOR APPROVAL AND CERTIFICATION OF ELECTRIC TRANSMISSION FACILITIES: 230 kV LINES #2113 AND #2154 TRANSMISSION LINE REBUILDS AND RELATED PROJECTS

Pursuant to § 56-46.1 of the Code of Virginia ("Va. Code") and the Utility Facilities Act, Va. Code § 56-265.1 *et seq.*, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company"), by counsel, files with the State Corporation Commission of Virginia (the "Commission") this application for approval and certification of electric transmission facilities (the "Application"). In support of its Application, Dominion Energy Virginia respectfully shows as follows:

1. Dominion Energy Virginia is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Energy Virginia's electric system—consisting of facilities for the generation, transmission, and distribution of electric energy—is interconnected with the electric systems of neighboring utilities and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Energy Virginia must, from time to time, replace existing transmission facilities or construct new transmission facilities in its system.

3. In this Application, in order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, the Company proposes in York and James City Counties and the City of Williamsburg, Virginia, the following:

Line #2113 Rebuild Project:

(i) Rebuild approximately 3.8 miles of 230 kV Line #2113 on single circuit steel structures between Lightfoot Substation and Waller Substation;

(ii) Remove approximately 3.8 miles of idle 115 kV Line #58 between Lightfoot Substation and Waller Substation; and

(iii) Related substation work at Lanexa, Lightfoot, and Waller Substations.

Line #2154 Rebuild Project:

(i) Rebuild approximately 6.1 miles of 230 kV Line #2154 on single circuit steel structures between Waller Substation and Kingsmill Substation;

(ii) Rebuild approximately 1.5 miles of 230 kV Line #2154 on double circuit steel structures between Kingsmill Substation and Structure #2154/482;

(iii) Remove approximately 6.1 miles of idle 115 kV Line #58 between Waller Substation and Kingsmill Substation;

(iv) Rebuild approximately 1.5 miles of 115 kV Line #19 on double circuit steel structures between Kingsmill Substation and Structure #2154/482;

(v) Related substation work at Waller, Penniman, and Kingsmill Substations and Skiffes Creek Switching Station.

(collectively, the "Rebuild Projects").

4. The proposed Rebuild Projects will replace aging infrastructure at the end of its service life in order to comply with the Company's mandatory electric transmission planning

criteria (the "Planning Criteria"), thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

5. As of April 2020, the Company's system has approximately 3,115 miles of overhead transmission lines built prior to 1980 (approximately 47% of the overall overhead transmission system mileage). The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are nearing or at the end of their life expectancy resulting in maintenance and reliability issues, which can be indicated by physical deterioration, such as cracked and decaying wood, ground line rot and woodpecker damage. The 230 kV system accounts for approximately 2,861 miles of the Company's total overhead transmission line system, of which approximately 1,502 miles were built primarily before 1980.

6. Lines #2113 and #2154, which were constructed on double circuit 3 pole wood H-frame structures with Line #19 and the idle section of 115 kV Line #58 in 1952 and 1966, have been identified for rebuild in accordance with the Company's End of Life Criteria. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductor and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The need for the Rebuild Projects is described in detail in Section I of the Appendix attached to this Application.

7. The desired in-service date for the Rebuild Projects is September 30, 2023. The Company estimates it will take approximately 18 months for detailed engineering, scheduled outages, materials procurement, permitting, and construction of the Rebuild Projects after a final order from the Commission on the Rebuild Projects. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order on the Rebuild Projects by April 1, 2022. Should the Commission issue a final order by April 1, 2022,

the Company estimates that construction of the Rebuild Projects should begin on June 1, 2022 and be completed by September 30, 2023. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Projects. This schedule is contingent upon obtaining the necessary permits. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process.

8. The estimated conceptual cost of the proposed Rebuild Projects is approximately $27.4 million, which includes s total of approximately $25.3 million for transmission-related work and $2.1 million for substation-related work (2020 dollars).

9. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for the Rebuild Projects. The impact of the proposed Rebuild Projects on scenic, environmental, and historical features is described in detail in Section III of the Appendix.

10. Based on consultations with the Virginia Department of Environmental Quality ("DEQ"), the Company has developed a supplement ("DEQ Supplement") containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

11. Based on the Company's experience, the advice of consultants, and a review of published studies by experts in the field, the Company believes that there is no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company's

existing or proposed facilities. Section IV of the Appendix provides further details on Dominion Energy Virginia's consideration of the health aspects of electric and magnetic fields.

12. Section V of the Appendix provides a proposed route description for public notice purposes and a list of federal, state, and local agencies and officials that the Company has or will notify about the Application.

13. In addition to the information provided in the Appendix and the DEQ Supplement, this Application is supported by the prefiled direct testimony of Company Witnesses Khan M. Adnan, Sherrill A. Crenshaw, Mohammad M. Othman, and Lane E. Carr filed with this Application.

WHEREFORE, Dominion Energy Virginia respectfully requests that the Commission:

(a) direct that notice of this Application be given as required by § 56-46.1 of the Code of Virginia;

(b) approve pursuant to § 56-46.1 of the Code of Virginia the construction of the Rebuild Projects; and,

(c) grant a certificate of public convenience and necessity for the Rebuild Projects under the Utility Facilities Act, § 56-265.1 *et seq.* of the Code of Virginia.

VIRGINIA ELECTRIC AND POWER COMPANY

By: /s/ Vishwa B. Link
Counsel for Applicant

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Counsel for Applicant Virginia Electric and Power Company

January 20, 2021

COMMONWEALTH OF VIRGINIA
BEFORE THE
STATE CORPORATION COMMISSION

APPLICATION OF

VIRGINIA ELECTRIC AND POWER COMPANY

FOR APPROVAL AND CERTIFICATION
OF ELECTRIC FACILITIES

230 kV Lines #2113 and #2154 Transmission Line Rebuilds and Related Projects

Application No. 303

Appendix

Containing Information in Response to
"Guidelines for Transmission Line Applications Filed Under Title 56 of the Code of Virginia"

Case No. PUR-2021-00010

Filed: January 20, 2021

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In order to maintain the structural integrity and reliability of its transmission system in compliance with mandatory North American Electric Reliability Corporation ("NERC") Reliability Standards, Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company") proposes in York and James City Counties and the City of Williamsburg, Virginia, the following:

Line #2113 Rebuild Project

- Rebuild approximately 3.8 miles of 230 kV Line #2113 on single circuit steel structures between Lightfoot Substation and Waller Substation;
- Remove approximately 3.8 miles of idle 115 kV Line #58 between Lightfoot Substation and Waller Substation; and
- Related substation work at Lanexa, Lightfoot, and Waller Substations.

Line #2154 Rebuild Project

- Rebuild approximately 6.1 miles of 230 kV Line #2154 on single circuit steel structures between Waller Substation and Kingsmill Substation;
- Rebuild approximately 1.5 miles of 230 kV Line #2154 on double circuit steel structures between Kingsmill Substation and Structure #2154/482;
- Remove approximately 6.1 miles of idle 115 kV Line #58 between Waller Substation and Kingsmill Substation;
- Rebuild approximately 1.5 miles of 115 kV Line #19 on double circuit steel structures between Kingsmill Substation and Structure #2154/482;
- Related substation work at Waller, Penniman, and Kingsmill Substations and Skiffes Creek Switching Station.

Collectively, the Line #2113 Rebuild Project and the Line #2154 Rebuild Project are referred to as the "Rebuild Projects."

As of April 2020, the Company has approximately 3,115 miles of overhead transmission lines built prior to 1980 (approximately 47% of the overall overhead transmission system mileage). The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are nearing or at the end of their life expectancy resulting in maintenance and reliability issues, which can be indicated by physical deterioration, such as cracked and decaying wood, ground line rot, and woodpecker damage. The 230 kV system accounts for approximately 2,861 miles of the Company's total overhead transmission line system, of which approximately 1,502 miles were built primarily before 1980.

The proposed Rebuild Projects will replace aging infrastructure that is at the end of its service life in order to comply with Dominion Energy Virginia's electric transmission planning criteria (the "Planning Criteria"), thereby enabling the Company to maintain the overall long-term reliability of its transmission system. Specifically, the lines identified above for rebuild run a total length of approximately 11.4 miles within an existing transmission corridor. The 3.8-mile Line #2113 Rebuild Project and 7.6-mile Line #2154 Rebuild Project were constructed on double circuit 3 pole wood H-frame structures with Line #19 (approximately 1.5 miles between Kingsmill Substation and Structure #2154/482) and the idle section of 115 kV Line #58 (approximately 9.9 miles

between Lightfoot Substation and Kingsmill Substation) in 1952 and 1966. Industry guidelines indicate equipment life for wood structures is 35 to 55 years, conductor and connectors are 40 to 60 years, and porcelain insulators are 50 years. As the Rebuild Projects were constructed in 1952 and 1966, these transmission facilities are currently between 55 and 69 years old—approaching and, in some instances, beyond the end of their expected lifespans—and therefore have been identified for rebuild based on the Company's End of Life criteria.

The proposed Rebuild Projects will replace aging infrastructure at the end of its service life in order to comply with the Company's mandatory Planning Criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

Because the existing right-of-way and Company-owned property is adequate to construct the proposed Rebuild Projects, no new right-of-way is necessary. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring new right-of-way for the Rebuild Projects.

The estimated conceptual cost of the proposed Rebuild Projects is approximately $27.4 million, which includes a total of approximately $25.3 million for transmission–related work, and approximately $2.1 million for substation-related work (2020 dollars).

The desired in-service date for the Rebuild Projects is September 30, 2023. The Company estimates it will take approximately 18 months for detailed engineering, scheduled outages, materials procurement, permitting, and construction of the Rebuild Projects after a final order from the Commission on the Rebuild Projects. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order on the Rebuild Projects by April 1, 2022. Should the Commission issue a final order by April 1, 2022, the Company estimates that construction of the Rebuild Projects should begin on June 1, 2022 and be completed by September 30, 2023. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Projects. This schedule is contingent upon obtaining the necessary permits. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process.

I. NECESSITY FOR THE PROPOSED PROJECT

A. State the primary justification for the proposed project (for example, the most critical contingency violation including the first year and season in which the violation occurs). In addition, identify each transmission planning standard(s) (of the Applicant, regional transmission organization ("RTO"), or North American Electric Reliability Corporation) projected to be violated absent construction of the facility.

Response: The proposed Rebuild Projects are necessary to rebuild existing 230 kV and 115 kV transmission lines within an existing transmission corridor—including 230 kV Lanexa-Waller Line #2113, 230 kV Waller-Skiffes Creek Line #2154, and 115 kV Kingsmill-Skiffes Creek Line #19—since they are nearing their end of life. See Attachment I.A.1 for an overview map of the proposed Rebuild Projects.

Dominion Energy Virginia's transmission system is responsible for providing transmission service: (i) for redelivery to the Company's retail customers; (ii) to Appalachian Power Company, Old Dominion Electric Cooperative, Northern Virginia Electric Cooperative, Central Virginia Electric Cooperative, and Virginia Municipal Electric Association for redelivery to their retail customers in Virginia; and (iii) to North Carolina Electric Membership Corporation and North Carolina Eastern Municipal Power Agency for redelivery to their customers in North Carolina (collectively, the "Dominion Energy Zone" or "DOM Zone").

Dominion Energy Virginia is part of the PJM Interconnection, L.L.C. ("PJM") regional transmission organization, which provides service to a large portion of the eastern United States. PJM currently is responsible for ensuring the reliability of and coordinating the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. This service area has a population of approximately 65 million and on August 2, 2006, set a record high of 166,929 megawatts ("MW") for summer peak demand, of which Dominion Energy Virginia's load portion was approximately 19,256 MW serving 2.4 million customers. On July 20, 2020, the Company set a record high of 20,087 MW for summer peak demand. On February 20, 2015, the Company set a winter peak and all-time record demand of 21,651 MW. Based on the 2020 PJM Load Forecast, the DOM Zone is expected to be one of the fastest growing zones in PJM, with average growth rates of 1.2% summer and 1.4% winter over the next 10 years compared to the PJM average of 0.6% and 0.6% over the same period for both summer and winter, respectively.

Dominion Energy Virginia is also part of the Eastern Interconnection transmission grid, meaning its transmission system is interconnected, directly or indirectly, with all of the other transmission systems in the United States and Canada between the Rocky Mountains and the Atlantic Coast, except for Quebec and most of Texas. All of the transmission systems in the Eastern Interconnection are dependent on each other for moving bulk power through the transmission system and for

reliability support. Dominion Energy Virginia's service to its customers is extremely reliant on a robust and reliable regional transmission system.

NERC has been designated by the Federal Energy Regulatory Commission ("FERC") as the electric reliability organization for the United States. Accordingly, NERC requires that the planning authority and transmission planner develop planning criteria to ensure compliance with NERC Reliability Standards. Mandatory NERC Reliability Standards require that a transmission owner ("TO") develop facility interconnection requirements that identify load and generation interconnection minimum requirements for a TO's transmission system, as well as the TO's reliability criteria.[1]

Federally mandated NERC Reliability Standards constitute minimum criteria with which all public utilities must comply as components of the interstate electric transmission system. Moreover, the Energy Policy Act of 2005 mandates that electric utilities follow these NERC Reliability Standards and imposes fines on utilities found to be in noncompliance up to $1.3 million per day per violation.

PJM's Regional Transmission Expansion Plan ("RTEP") is the culmination of a FERC-approved annual transmission planning process that includes extensive analysis of the electric transmission system to determine any needed improvements.[2] PJM's annual RTEP is based on the effective criteria in place at the time of the analyses, including applicable standards and criteria of NERC, PJM, and local reliability planning criteria, among others.[3] Projects identified through the RTEP process are developed by the TO in coordination with PJM, and are presented at the Transmission Expansion Advisory Committee ("TEAC") meetings prior to inclusion in the RTEP that is then presented for approval by the PJM Board of Managers (the "PJM Board").

Outcomes of the RTEP process include three types of transmission system upgrades or projects: (i) baseline upgrades are those that resolve a system reliability criteria violation, which can include planning criteria from NERC, ReliabilityFirst, SERC Reliability Corporation, PJM, and TOs; (ii) network upgrades are new or upgraded facilities required primarily to eliminate reliability criteria violations caused by proposed generation, merchant transmission, or long-term firm transmission service requests; and (iii) supplemental projects are projects initiated by the TO in order to interconnect new customer load, address degraded equipment performance, improve operational flexibility and efficiency, and increase infrastructure resilience. While supplemental projects are included in the RTEP, and the PJM Board administers stakeholder review of supplemental projects as part of the RTEP process, the PJM Board does not actually approve such projects.

[1] See FAC-001-2, effective January 1, 2016 at http://www.nerc.com/pa/Stand/Reliability%20Standards/FAC-001-2.pdf.
[2] PJM Manual 14B focuses on the RTEP process and can be found at http://www.pjm.com/documents/manuals.aspx.
[3] See PJM Manual 14B, Attachment D: PJM Reliability Planning Criteria.

Rebuild Projects

As of April 2020, the Company has approximately 3,115 miles of overhead transmission lines built prior to 1980 (approximately 47% of the overall overhead transmission system mileage). The Company has developed a proactive plan to rebuild transmission lines that are comprised of wood pole structures that are nearing or at the end of their life expectancy resulting in maintenance and reliability issues, which can be indicated by physical deterioration, such as cracked and decaying wood, ground line rot and woodpecker damage. The 230 kV system accounts for approximately 2,861 miles of the Company's total overhead transmission line system, of which approximately 1,502 miles were built primarily before 1980.

The proposed Rebuild Projects will replace aging infrastructure that is at the end of its service life in order to comply with the Company's mandatory Planning Criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system. Specifically, the lines identified above for rebuild run a total length of approximately 11.4 miles within an existing transmission corridor. The 3.8-mile Line #2113 Rebuild Project and 7.6-mile Line #2154 Rebuild Project were constructed on double circuit 3 pole wood H-frame structures with Line #19 (approximately 1.5 miles between Kingsmill Substation and Structure #2154/482) and the idle section of 115 kV Line #58 (approximately 9.9 miles between Lightfoot Substation and Kingsmill Substation) in 1952 and 1966. Industry guidelines indicate equipment life for wood structures is 35 to 55 years, conductor and connectors are 40 to 60 years, and porcelain insulators are 50 years. As the Rebuild Projects were constructed in 1952 and 1966, these transmission facilities are currently between approximately 55 and 69 years old—approaching and, in some instances, beyond the end of their expected lifespans—and therefore have been identified for rebuild based on the Company's End of Life criteria.

Effective March 24, 2020, the Company's Planning Criteria was updated so that infrastructure to be evaluated under end-of-life (or, "EOL") criteria changed from "all transmission lines at 69 kV and above" to "all regional transmission lines operated at 500 kV and above" per the Company's Attachment M-3 End-of-Life Planning Criteria. This M-3 End-of-life Planning Criteria was presented at the June 16, 2020 PJM Sub-Regional RTEP meeting.[4] See Attachment I.A.2 for updated slides presented by the Company at that meeting. As discussed in Attachment I.A.2, EOL projects under 500 kV that were formerly designated as baseline projects are considered to be supplemental projects as of March 24, 2020. However, the process for determining that an asset has reached its EOL remains the same; therefore, the Company continues to use the criteria evaluation process outlined in Section C.2.9 of the Planning Criteria.

[4] Also available at: https://www.pjm.com/-/media/committees-groups/committees/srrtep-s/2020/20200616/20200616-dominion-local-planning-assumptions-2020.ashx.

Section C.2.9 of the Company's Transmission Planning Criteria addresses electric transmission infrastructure approaching its end of life:[5]

> Electric transmission infrastructure reaches its end of life as a result of many factors. Some factors such as extreme weather and environmental conditions can *shorten* infrastructure life, while others such as maintenance activities can *lengthen* its life. Once end of life is recognized, in order to ensure continued reliability of the transmission grid, a decision must be made regarding the best way to address this end-of-life asset.
>
> For this criterion, "end of life" is defined as the point at which infrastructure is at risk of failure, and continued maintenance and/or refurbishment of the infrastructure is no longer a valid option to extend the life of the facilities consistent with Good Utility Practice and Dominion Energy Transmission Planning Criteria. The infrastructure to be evaluated under this end-of-life criterion are all regional transmission lines operated at 500 kV and above.
>
> The decision point of this criterion is based on satisfying two metrics:
>
> *1) Facility is nearing, or has already passed, its end of life, and*
> *2) Continued operation risks negatively impacting reliability of the transmission system.*
>
> For facilities that satisfy both of these metrics, this criterion mandates either replacing these facilities with in-kind infrastructure that meets current Dominion standards or employing an alternative solution to ensure the Dominion transmission system satisfies all applicable reliability criteria.
>
> Dominion Energy will determine whether the two metrics are satisfied based on the following assessment:
>
> *1. <u>End of Life</u>*
>
> Factors that support a determination that a facility has reached its end of life include, but are not limited to,
>
> - <u>Condition</u> of the facility, taking into consideration:

[5] The Company's EOL Transmission Planning Criteria can be found under Section C.2.9 of the revised Exhibit A of the Company's Facility Interconnection Requirements document, which is available online at the following address under the Facility Interconnection Requirements:
https://www.dominionenergy.com/our-company/moving-energy/electric-transmission-access.

- Industry recommendations on service life for the particular type of facility
- The facility's performance history
    - Documented evidence indicating that the facility has reached the end of its useful service life
- The facility's maintenance and expense history

- Third-party assessment - While not required, Dominion Energy has the option of seeking a third-party assessment of a facility to determine if industry specialists agree the facility has reached the end of its useful service life

2. Reliability and System Impact

The reliability impact of continued operation of a facility will be determined based on a planning assessment and operational performance considerations. The end-of-life determination for a facility to be tested for reliability impact will be assessed by evaluating the impact on short- and long-term reliability with and without the facility in service. The existing system with the facility removed will become the base case system for which all reliability tests will be performed.

The primary four (4) reliability tests to be considered are:

1. NERC Reliability Standards
2. PJM Planning Criteria – As documented in PJM Manual 14B PJM Region Transmission Planning Process
3. Dominion Transmission Planning Criteria contained in this document
4. Operational Performance – This test will be based on input from PJM and/or Dominion System Operations as to the impact on reliably operating the system without the facility

Additional factors to be evaluated under system impact may include but not be limited to:

1. Market efficiency
2. Stage 1A Auction Revenue Rights (ARR) sufficiency
3. Public policy
4. SERC Reliability Criteria

Failure of any of these reliability tests, along with the end-of-life assessment discussed herein, will indicate a violation of the end-of-

life criteria, and necessitate replacement as mandated earlier in this document.

The following is a discussion of the Rebuild Projects, which were developed based on construction sequencing.

Line #2113 Rebuild Project

As part of the Line #2113 Rebuild Project, the Company proposes to wreck and rebuild approximately 3.8 miles of the existing 14.5-mile long Line #2113 in existing right-of-way or on Company-owned property between the Company's existing Lightfoot Substation and Waller Substation, utilizing single circuit steel structures. Line #2113 will be rebuilt to present 230 kV standards with a minimum summer emergency rating of 1047 MVA.

Additionally, as part of the Line #2113 Rebuild Project, the Company proposes to remove approximately 3.8 miles of idle 115 kV transmission Line #58, which currently shares structures with Line #2113 between Lightfoot Substation and Waller Substation.

The Line #2113 Rebuild Project was initially reviewed at the October 11, 2018 Transmission Expansion Advisory Committee ("TEAC") meeting and it was approved by the PJM Board on December 4, 2018. See Attachment I.A.3 for the relevant slides from the October 11, 2018 TEAC Meeting,[6] and Attachment I.A.4 for the relevant slides indicating PJM Board approval. While the PJM Board approved the Line #2113 Rebuild Project as a baseline project (b3056), as noted above, the Line #2113 Rebuild Project would have been considered a supplemental project under the M-3 End of life Planning Criteria effective March 24, 2020.

1) Facility is nearing, or has already passed, its end of life

In regard to the first metric of the Company's Planning Criteria addressing end of life, the structures on Line #2113 are primarily wood 3-pole structures that were constructed in 1966, as noted above. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductor and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The majority of these structures are 55 years old, and the Company believes it is most cost-effective to rebuild Line #2113 between Lightfoot Substation and Waller Substation versus replacing individual components.

[6] At the time of the presentation at the October 11, 2018 TEAC Meeting, N-1-1 study indicated multiple thermal overload conditions on Lines #2113 and #2154, as well as violations of Dominion Energy Virginia's Planning Criteria. While current studies indicate that the permanent removal of either Line #2113 or Line #2154 results in violations of the Company's 100 MW radial line criteria and also exceeds the Company's 700 MW-mile radial line criteria based on the Company's Planning Criteria, there are no longer N-1-1 conditions, as discussed further in this section. See, specifically, Slide 8 of Attachment I.A.3 as it pertains to the Line #2113 Rebuild Project.

2) Continued operation risks negatively impacting reliability of the transmission system

With regard to the second metric of the Company's Planning Criteria addressing end of life, Line #2113 provides service to Dominion Energy Virginia's Lightfoot Substation, which in turn serves approximately 16,881 customers located in James City-York County. The Company would be unable to continue to provide reliable transmission service to these customers unless it addresses the aging infrastructure at the end of its service life.

The Company relied on Dominion Energy Virginia's Planning Criteria, including Section C.2.6 of the Company's Transmission Planning Criteria,[7] which addresses radial transmission lines, as follows.

> A Radial transmission line is defined as a single line that has one transmission source, serves load, and does NOT tie to any other transmission source (line or substation).
>
> Unlike load served from a network transmission line having two sources where a downed conductor or structure can be sectionalized for load to be served before repairs are completed, load served from a single source radial transmission line cannot be reenergized until all repairs to the line are completed. Accordingly, loading on single source radial transmission lines will be limited to the following:
>
> - 100 MW Maximum
> - 700 MW-Mile Exposure (MW-Mile = Peak MW X Radial Line Length)
>
> A factor in evaluating the load limitation on a radial transmission line is the degree to which the distribution load can be switched to circuits served from other sources and whether such capability can be reasonably added. Other factors include the ability to perform maintenance on the radial transmission line, the outage history of the radial transmission line, load density and type, tie capability, etc.
>
> Once a radial loading limit exceeds any of these thresholds, an additional transmission source is required. Acceptable transmission sources include but are not limited to the following:
>
> - Network from a separate transmission substation source (Preferred)

[7] *See* Section C.2.6 of the revised Exhibit A of the Company's Facility Interconnection Requirements document, which is available online at the following address under the Facility Interconnection Requirements: https://www.dominionenergy.com/our-company/moving-energy/electric-transmission-access.

- Loop back to same transmission substation source
- Normally open network or loop transmission source.

The Company analyzed the permanent removal of Line #2113 extending approximately 3.8 miles between the Lightfoot and Waller Substations. This resulted in the creation of an approximately 7.6-mile long radial line originating from Skiffes Creek. The radial line consists of Line #2154 (Waller-Penniman-Kingsmill-Skiffes Creek) with 125 MW, which is a violation of Dominion Energy Virginia's 100 MW radial line criteria and, at approximately 950 MW-mile, also exceeds the Company's 700 MW-mile radial line criteria. The Line #2113 Rebuild Project resolves these potential issues resulting from permanent removal of Line #2113.

Line #2154 Rebuild Project

As part of the Line #2154 Rebuild Project, the Company proposes to wreck and rebuild approximately 7.6-mile long Line #2154 in existing right-of-way or on Company-owned property between the Company's existing Waller Substation and Structure #2154/482 utilizing single circuit steel structures between Waller Substation and Kingsmill Substation and double circuit steel structures between Kingsmill Substation and Structure #2154/482. Line #2154 will be rebuilt to present 230 kV standards with a minimum summer emergency rating of 1047 MVA.

Additionally, as part of the Line #2154 Rebuild Project, the Company proposes to wreck and rebuild approximately 1.5 miles of Line #19 in existing right-of-way or on Company-owned property between the Company's existing Kingsmill Substation and Structure #2154/482 utilizing double circuit steel structures. Line #19 will be rebuilt to present 115 kV standards with a minimum summer emergency rating of 262 MVA.

Further, as part of the Line #2154 Rebuild Project, the Company proposes to remove approximately 6.1 miles of idle 115 kV transmission Line #58, which currently shares structures with Line #2154 between Waller Substation and Kingsmill Substation.

The Line #2154 Rebuild Project was initially reviewed at the October 11, 2018 TEAC meeting and it was approved by the PJM Board on December 4, 2018. See Attachment I.A.3 for the relevant slides from the October 11, 2018 TEAC Meeting,[8] and Attachment I.A.4 for the relevant slides indicating PJM Board approval. While the PJM Board approved the Line #2154 Rebuild Project as a baseline project (b3057), as noted above, the Line #2154 Rebuild Project would have been considered a supplemental project under the M-3 End of life Planning Criteria effective March 24, 2020.

[8] *See supra* n. 6. *See,* specifically, Slides 9-10 of Attachment I.A.3 as they pertain to the Line #2154 Rebuild Project.

1) Facility is nearing, or has already passed, its end of life

In regard to the first metric of the Company's Planning Criteria addressing end of life, the structures on Line #2154 and Line #19 are primarily wood 3-pole structures that were constructed in 1966 and 1952, as noted above. Industry experience indicates that life for wood pole structures is approximately 35 to 55 years, for conductor and connectors is approximately 40 to 60 years, and for porcelain insulators is approximately 50 years. The majority of these structures are more than 55 years old, and the Company believes it is most cost-effective to rebuild Lines #2154 and #19 between Waller Substation and Structure #2154/482 versus replacing individual components.

2) Continued operation risks negatively impacting reliability of the transmission system

Regarding the second metric of the Company's Planning Criteria addressing end of life, Line #2154 provides service to Dominion Energy Virginia's Penniman Substation and Kingsmill Substation, which in turn serve approximately 5,973 customers. Line #19 provides service to Kingsmill Substation with a total of 7 customers. The Company would be unable to continue to provide reliable transmission service to these customers unless it addresses the aging infrastructure at the end of its service life.

The Company relied on Dominion Energy Virginia's Planning Criteria, including Section C.2.6 discussed above.[9] The Company analyzed the permanent removal of Line #2154. This resulted in the creation of an approximately 14.5-mile-long radial line originating from Lanexa. The radial line consists of Line #2113 (Lanexa-Lightfoot-Waller) with 124 MW, which is a violation of Dominion Energy Virginia's 100 MW radial line criteria and, at approximately 1,798 MW-mile, also exceeds the Company's 700 MW-mile radial line criteria. The Line #2154 Rebuild Project resolves these potential issues resulting from permanent removal of Line #2154.

***

In summary, the proposed Rebuild Projects will replace aging infrastructure at the end of its service life in order to comply with the Company's mandatory Planning Criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

[9] *See supra* n. 7 and related text.

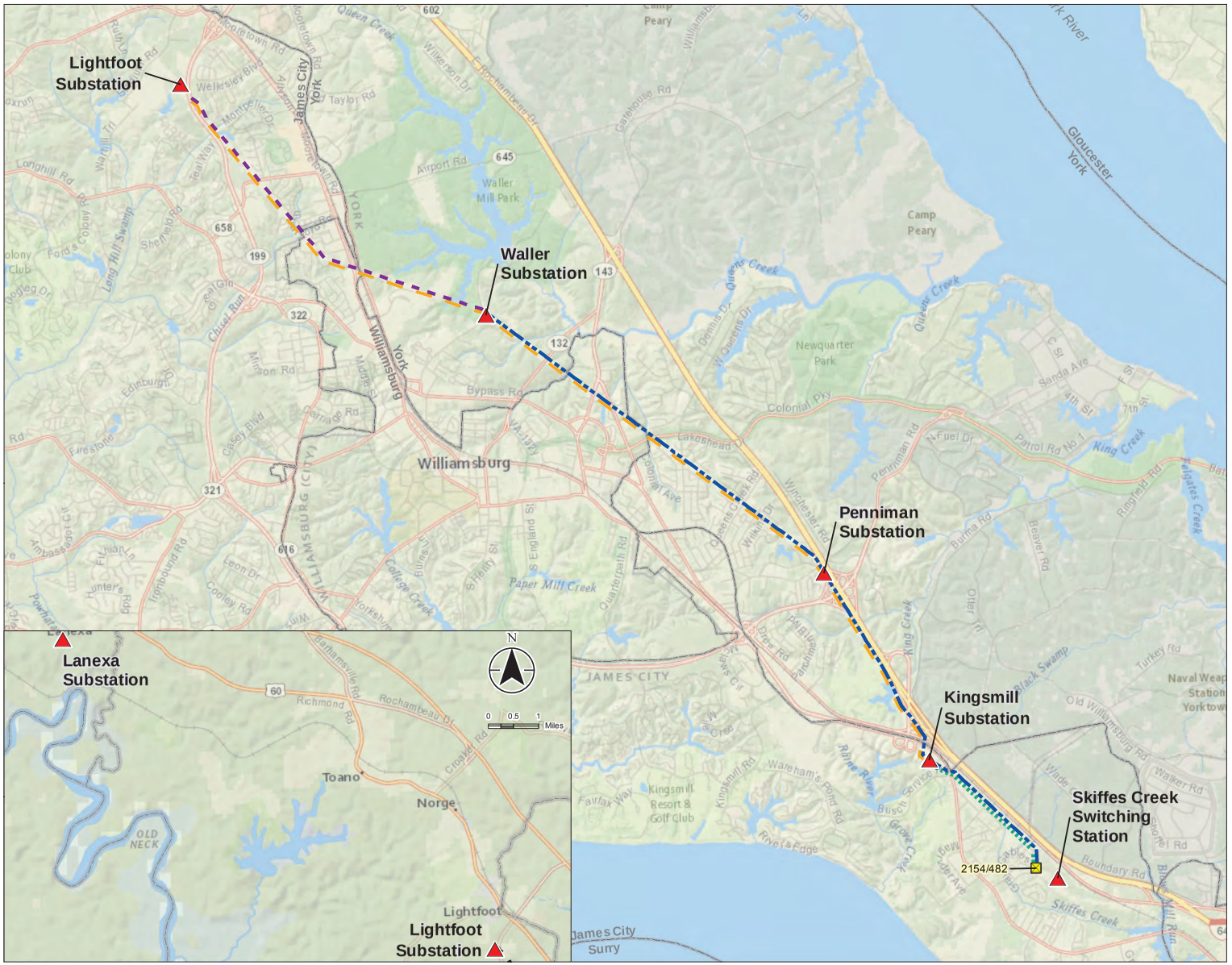


Figure No.
I.A.1

Title
Project Overview Map

Client/Project 203401488
Dominion Energy Virginia
230 kV Lines #2113 and #2154 Transmission Line Rebuilds and Related Projects

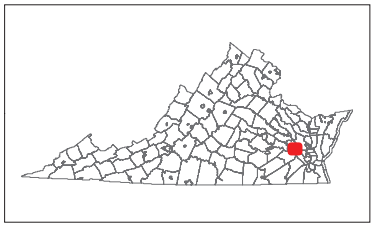
Project Location
James City County, New Kent County, York County, and City of Williamsburg, Virginia

Prepared by LJJ on 2020-09-16
TR by ECL on 2020-09-18
IR by RLR on 2020-09-24

N

0 5,000 10,000 Feet
(At original document size of 11x17)
1:60,000

- Substation/Switching Station
- Structure 2154/482
- Line #2154 Rebuild Project (7.6 Miles)
- Line #2113 Rebuild Project (3.8 Miles)
- Line #19 Rebuild (1.5 Miles)
- Line #58 Removal (9.9 Miles)



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, DCR
3. Base Map © National Geographic

Stantec

Page 01 of 01

Dominion Energy

PJM Southern Sub-Regional RTEP Meeting

Update to the Dominion Energy Local Planning Assumptions previously discussed at the December 2019 Sub-Regional RTEP Meeting

Attachment I.A.2

Dominion Energy

Planning Criteria and Assumptions

- PJM Assumptions Apply
- All analysis and solutions must satisfy
  - NERC TPL standards
  - PJM Planning Criteria in Attachment D & G of PJM Manual 14B
  - Dominion Energy's Facility Interconnection Requirements
    - Requirements to connect to Dominion's Transmission system
    - Exhibit A – Dominion's FERC 715 Planning Criteria
    - Exhibit C – Generation Interconnection Protection Requirements
    - Supplemental Project Drivers as Described Below
- PJM and Dominion validate each other's study results to ensure solutions resolve specific need and create no other harm to system
- Proposed solutions are presented
  - TEAC for facilities 230 kV and above
  - Southern Sub-regional for facilities below 230 kV

Update to Slide #2

Dominion Energy

Dominion Energy's Form No. 715 End of Life Planning Criteria

- Dominion has an End of Life (EOL) FERC 715 criteria for addressing transmission lines
  - The Infrastructure to be evaluated under this end-of-life criteria are all regional transmission lines operated at 500 kV and above.
  - The decision point of this criterion is based on satisfying two metrics:
    1) Facility is nearing, or has already passed, its end of life, and
    2) Continued operation risks negatively impacting reliability of the transmission system.
- Projects approved by PJM under this criteria are classified as baseline
- Detailed discussion on the End of Life criteria can be found in Exhibit A, section C.2.9 of Dominion Energy's Facility Interconnection Requirements document
- All other asset management of transmission infrastructure is covered by the M-3 Supplemental process
- The Appendix lists transmission lines expected to be evaluated using the Form No. 715 and Attachment M-3 End of Life criteria in the 2020 RTEP cycle

Update to Slide #4

Dominion Energy

Equipment Material Condition, Performance and Risk

Types of equipment assessed include but not limited to:

- Transmission Lines below 500 kV
- Line Components (not part of EOL Criteria)
- Transformers
- Breakers
- Circuit Switchers
- Reactors
- Capbanks
- Wave Traps
- Relaying
- Switches
- Bus Work, Leads
- FACTS Devices

Update to Slide #10

Dominion Energy's Attachment M-3 End of Life Planning Criteria

- Infrastructure to be evaluated under this end of life criteria are all transmission lines below 500 kV
- Projects must satisfy the following two decision point metrics:
  1) Facility is nearing, or has already passed, its end of life, and
  2) Continued operation risks negatively impacting reliability of the transmission system, including our ability to serve local load.
- Projects will be classified as supplemental
- The Appendix lists transmission lines expected to be evaluated using the Form No. 715 and Attachment M-3 End of Life criteria in the 2020 RTEP cycle

New Slide #14

Dominion Energy

Appendix: Transmission lines expected to be evaluated using Form No. 715 and Attachment M-3 End of Life criteria in 2020 RTEP cycle

Line A	Line B	Line Section	Line A kV	Line B kV	Line A Year	Line B Year
293		Staunton – Valley	230		1981/1971	
1001		Battleboro – Chestnut	115		1959	
1024		Chestnut – South Justice Branch	115		1959	
2019		Greenwich – Thalia	230		1970/1988	
87		Chesapeake Energy Center – Churchland	115		1957	
514		Goose Creek – Doubs	500		1966	
204	220	Gum Springs -Jefferson St, Gum Springs - Ox	230		1966	
579	2110	Septa – Yadkin, Suffolk – Thrasher	500	230	1975	1975
26		Balcony Falls – Lexington	115		1928	
2007		Lynnhaven – Thalia	230		1970	
2049		Chesterfield – Allied	230		1994	

Note: This list covers lines to be evaluated under Dominion's Form No. 715 and Attachment M-3 End of Life criteria during the 2020 planning cycle. The evaluation could lead to some of these facilities being delayed, cancelled or removed from consideration as well as other facilities added.

Reliability Analysis Update

Transmission Expansion Advisory Committee

October 11, 2018

Dominion End of Life Criteria

Dominion Transmission Zone: Baseline
Line #2113 Waller to Lightfoot Partial Rebuild

Baseline Reliability: TO Criteria Violation

Problem Statement: Dominion "End of Life Criteria"
Waller to Lightfoot section of 230kV Line #2113 and 115kV Line #58 were constructed on double circuit 3 pole wood H-frame structures in 1966 and 1952. Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years. This section of the Line #2113 have been identified for rebuild based on the company's End of Life criteria.

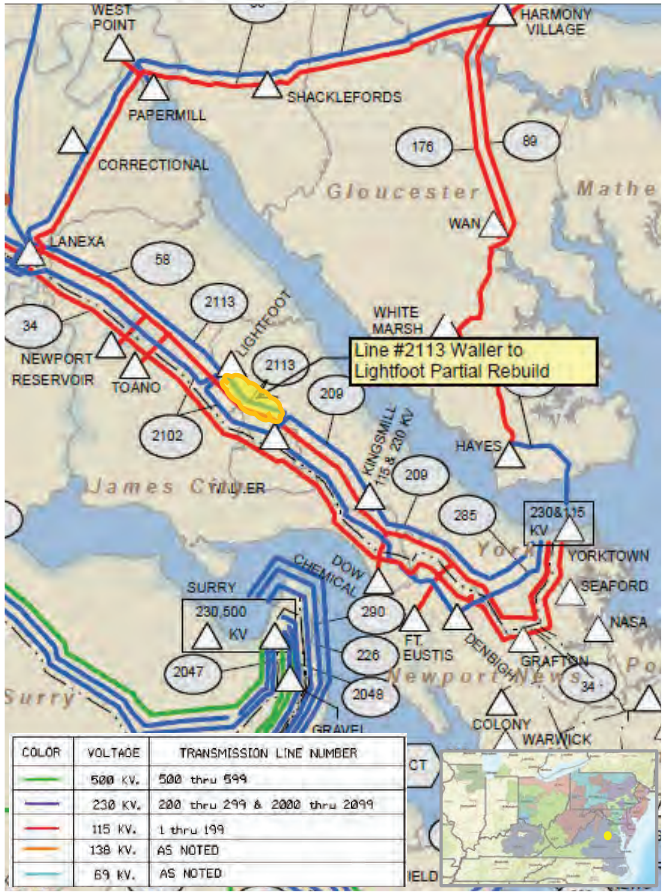
The Line #2113 runs between Lanexa Substation and Waller Substation. It provides service to Lightfoot Substation with a total of 16,881 customers. Permanent load loss is 83 MW. Waller to Lightfoot section of this line is approximately 4 miles long and has a current summer emergency rating of 470 MVA.

End-of-Life reliability assessment, with Waller to Lightfoot section removed from service, creates a radial line from Skiffes Creek to Waller with 118 MW. This is a violation of Dominion's 100 MW planning criteria. N-1-1 study also indicates multiple thermal overload conditions.

Potential Solution:
Rebuild 4 miles of Line #2113 between Waller and Lightfoot Substation to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV utilizing single circuit steel structures. Remove this section of Line #58.

Alternative: No feasible alternatives.

Estimated Project Cost: $4 M
Required In-service Date: Immediate Need
Projected In-service Date: 12/30/2024
Project Status: Conceptual



Dominion Transmission Zone: Baseline
Line #2154 and #19 Waller to Skiffes Creek Rebuild

Baseline Reliability: TO Criteria Violation

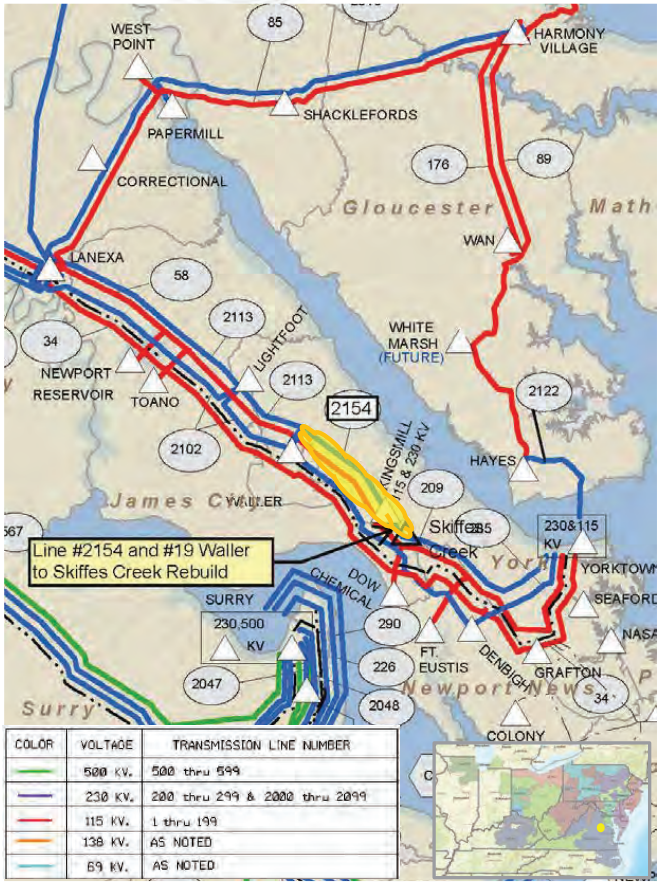
Problem Statement: Dominion "End of Life Criteria"

230kV Line #2154 from Waller to Skiffes Creek was constructed on double circuit 3 pole wood H-frame structures with 115kV Line #58 (from Waller to Kings Mill) and #19 (from Kings Mill to Skiffes Creek) in 1966 and 1952. Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years. Line #2154 and #19 have been identified for rebuild based on the company's End of Life criteria. Line #2154 has a current summer emergency rating of 470 MVA. Line #19 has a current summer emergency rating of 147 MVA.

The Line #2154 provides service to Penniman Substation and Kings Mill Substation with a total of 5,973 customers. Permanent load loss is 51 MW. The Line #19 provides service to Kings Mill substation with 7 customers. Permanent load loss is 19 MW.

End-of-Life reliability assessment, with the line #2154 removed from service, creates a radial line from Lenexa to Waller with 113.5 MW. This is a violation of Dominion's 100 MW planning criteria. N-1-1 study also indicates multiple thermal overload conditions.

Continued on next slide…

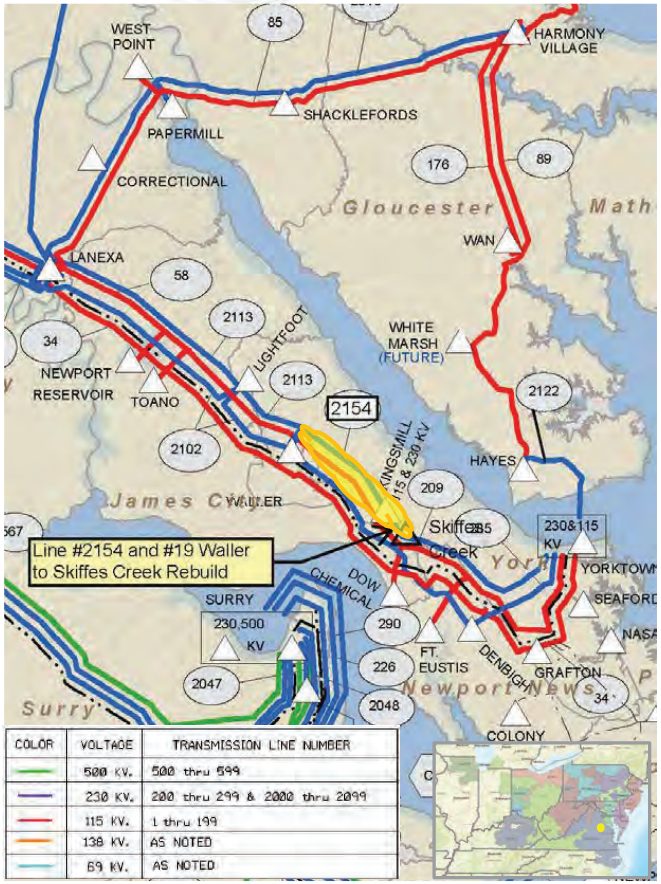


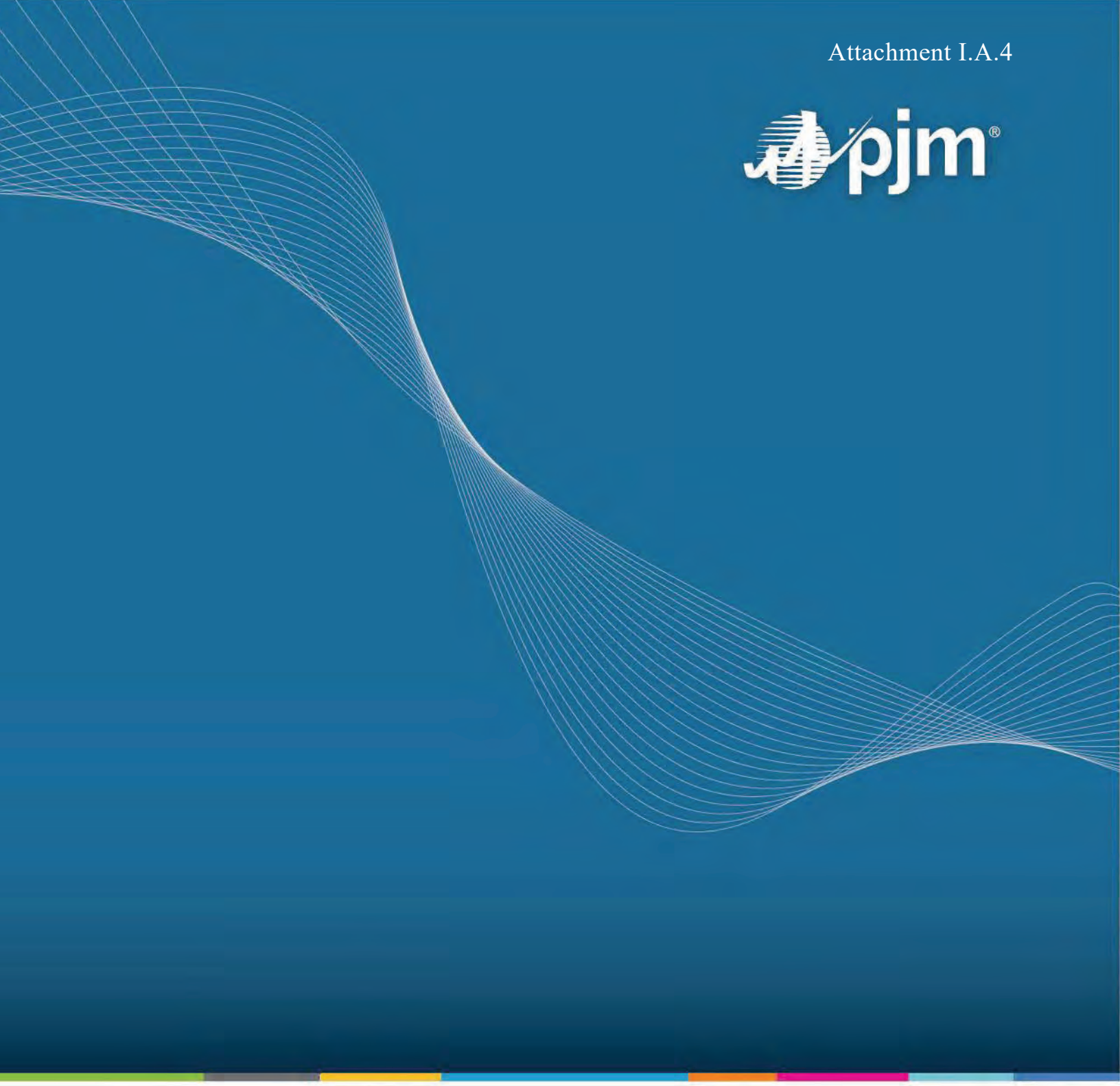
Dominion Transmission Zone: Baseline
Line #2154 and #19 Waller to Skiffes Creek Rebuild

Continued from previous slide…

Potential Solution:
Rebuild 6.1 miles of Line #2154 between Waller and Kings Mill to current standards with a minimum summer emergency rating of 1047 MVA utilizing single circuit steel structures. Remove this 6.1 mile section of Line #58 between Waller and Kings Mill. Rebuild the 1.6 miles of Line #2154 and #19 between Kings Mill and Skiffes Creek to current standards with a minimum summer emergency rating of 1047 MVA at 230 kV for Line #2154 and 261 MVA at 115kV for Line #19, utilizing double circuit steel structures.

Alternative: No feasible alternatives.
Estimated Project Cost: $10 M
Required In-service Date: Immediate Need
Projected In-service Date: 12/30/2024
Project Status: Conceptual





Transmission Expansion Advisory Committee (TEAC) Recommendations to the PJM Board

PJM Staff Whitepaper
Dec. 2018

For Public Use

Executive Summary

On October 2, 2018, the PJM Board of Managers approved changes to the Regional Transmission Expansion Plan (RTEP), totaling $201.5 million, primarily to resolve baseline reliability criteria violations.

Since then, PJM has identified additional baseline reliability criteria violations and the transmission system enhancements needed to solve them, at an estimated cost of $183.6 million. In addition, three previously approved baseline projects have been canceled resulting in a net cost decrease of $17.5 million. This yields an overall RTEP net increase of $166.1 million.

PJM staff is recommending two interregional Targeted Market Efficiency Projects (TMEPs) with MISO - with a total estimated cost of $4.5 million and an estimated market efficiency benefit of $31.9 million. The two TMEP projects were found to meet all criteria for inclusion in the interregional market efficiency process, as developed by the PJM/MISO IPSAC in 2016.

PJM staff has also completed 187 new interconnection queue impact studies. 176 of those projects are generation interconnection requests, for a total of over 12,500 MW of capacity. Additionally, 250 projects have withdrawn their interconnection requests from the queue. 252 new network upgrades, are required for the interconnection of queued projects. The net impact of these associated RTEP changes is an increase of $1,135.9 million.

The total RTEP change for which PJM recommended Board approval is a net increase of $1,302 million. With these changes, the RTEP comprises $38,223.9 million of transmission enhancements since the first Board approvals in 2000.

The projects are summarized in the following paper and were brought for the Board Reliability Committee's consideration and for recommendation to the Board for approval.

Attachment A - Reliability Project Single Zone Allocations

Upgrade ID	Description	Cost Estimate ($M)	Trans Owner	Cost Responsibility	Required IS Date
b2943	Perform a LIDAR study on the Clifty Creek - Dearborn 345 kV line to increase the Summer Emergency rating above 1023MVA).	$0.17	OVEC	OVEC	6/1/2018
b3027.1	Add a 2nd 500/230 kV 840 MVA transformer at Dominion's Ladysmith Substation	$20.00	Dominion	Dominion	6/1/2021
b3027.2	Re-conductor Line #2089 between Ladysmith and Ladysmith CT Substations to increase the line rating from 1047 MVA to 1225 MVA.	$2.40	Dominion	Dominion	6/1/2021
B3027.3	Replace the Ladysmith 500kV breaker "H1T581" with 50kA breaker	$0.52	Dominion	Dominion	6/1/2021
B3027.4	Update the nameplate for Ladysmith 500kV breaker "H1T575" to be 50kA breaker	$0.52	Dominion	Dominion	6/1/2021
B3027.5	Update the nameplate for Ladysmith 500kV breaker "568T574" (will be renumbered as "H2T568") to be 50kA breaker	$0.00	Dominion	Dominion	6/1/2021
b3032	Greenfield-NASA 138 kV Terminal Upgrades: NASA Substation, Greenfield exit: Revise CT tap on Breaker B22 and adjust line relay settings; Greenfield	$0.10	ATSI	ATSI	12/1/2023

b3048	Replace 138 kV breakers 937, 941 and 945 at TODHunter station	$1.90	DEOK	DEOK	12/31/2020
b3049	Replace 345kV breaker at Joliet Substation	$4.00	ComEd	ComEd	6/1/2020
b3050	Install redundant relay to Port Union 138 kV Bus#2	$0.37	DEOK	DEOK	6/1/2023
b3051.1	Ronceverte Cap Bank and Terminal Upgrades	$0.72	APS	APS	6/1/2018
b3051.2	Adjust CT tap ratio at Ronceverte 138 kV	$0.01	AEP	AEP	6/1/2018
B3052	Install a 138 kV capacitor (29.7 MVAR effective) at West Winchester 138 kV.	$1.01	APS	APS	6/1/2018
B3056	Partial Rebuild 230 kV Line #2113 Waller to Lightfoot	$4.00	Dominion	Dominion	6/1/2018
B3057	Rebuild 230 kV Lines #2154 and #19 Waller to Skiffes Creek	$10.00	Dominion	Dominion	6/1/2018
B3058	Partial Rebuild of 230 kV Lines #265, #200 and #2051 Rebuild	$11.50	Dominion	Dominion	6/1/2018

I. NECESSITY FOR THE PROPOSED PROJECT

B. Detail the engineering justifications for the proposed project (for example, provide narrative to support whether the proposed project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Applicant's system, etc.). Describe any known future project(s), including but not limited to generation, transmission, delivery point or retail customer projects, that require the proposed project to be constructed. Verify that the planning studies used to justify the need for the proposed project considered all other generation and transmission facilities impacting the affected load area, including generation and transmission facilities that have not yet been placed into service. Provide a list of those facilities that are not yet in service.

Response: Engineering Justification for Project

For a detailed description of the engineering justification for the Project, see Section I.A.

Known Future Projects

Based on PJM's RTEP process, the following known generation project requires the proposed Rebuild Projects to be constructed:

- AC1-161 Septa 500 kV 240 MW

Planning Studies

Not applicable.

Facilities List

Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

C. Describe the present system and detail how the proposed project will effectively satisfy present and projected future electrical load demand requirements. Provide pertinent load growth data (at least five years of historical summer and winter peak demands and ten years of projected summer and winter peak loads where applicable). Provide all assumptions inherent within the projected data and describe why the existing system cannot adequately serve the needs of the Applicant (if that is the case). Indicate the date by which the existing system is projected to be inadequate.

Response: Attachment I.G.1 shows the portion of the Company's existing transmission system in the area of the Rebuild Projects. Existing Lines #2113 and #2154 are part of the Company's 230 kV network and Line #19 is part of the Company's 115 kV network, both of which support the delivery of generation to retail and wholesale customers.

The tables in Attachment I.C.1 provide 10 years of historical summer and winter loads for the Yorktown load area, which includes 230 kV Lines #2113 and #2154 and 115 kV Line #19, and 10 years of projected summer and winter peak loads for the Yorktown load area. The projected loads in Attachment I.C.1 represent the Company's forecasted peaks based on actual load and the PJM 2020 Load Forecast, and demonstrate stable load demand in the area. Over the period from 2020 to 2029, the summer peak electrical demand for this area is projected to grow from 1,442 MW to 1,493 MW, and the winter peak electrical demand for this area is projected to grow from 1,217 MW to 1,273 MW.

The existing Lines #2113, #2154, and #19 cannot continue to adequately serve the needs of the Company and its customers because of aging infrastructure, as discussed in Section I.A. The Company has created a plan to address its end-of-life facilities, setting target completion dates for end-of-life projects based on the condition of the facilities, the Company's resources, and the need to schedule outages. The desired in-service date for completion of the proposed Rebuild Projects is September 30, 2023.

Completing the Rebuild Projects will support Dominion Energy Virginia's continued reliable electric service to retail and wholesale customers and will support the future overall growth and system generation capability in the area.

Attachment I.C.1

Historical Load (MW)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Yorktown - Summer	1,484	1,468	1,367	1,350	1,294	1,420	1,411	1,363	1,325	1,362
Yorktown - Winter	1,217	1,159	1,163	1,119	1,255	1,395	1,207	1,193	1,297	1,108

Projected Load (MW)*

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Yorktown - Summer	1,442	1,450	1,458	1,464	1,470	1,477	1,478	1,483	1,486	1,493
Yorktown - Winter	1,217	1,244	1,251	1,256	1,258	1,271	1,272	1,273	1,273	1,273

*Forecasted values are based on the PJM 2020 Load Forecast

I. NECESSITY FOR THE PROPOSED PROJECT

D. If power flow modeling indicates that the existing system is, or will at some future time be, inadequate under certain contingency situations, provide a list of all these contingencies and the associated violations. Describe the critical contingencies including the affected elements and the year and season when the violation(s) is first noted in the planning studies. Provide the applicable computer screenshots of single-line diagrams from power flow simulations depicting the circuits and substations experiencing thermal overloads and voltage violations during the critical contingencies described above.

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

E. Describe the feasible project alternatives, if any, considered for meeting the identified need including any associated studies conducted by the Applicant or analysis provided to the RTO. Explain why each alternative was rejected.

Response: No feasible alternatives have been submitted to PJM. As stated in Section I.A, not rebuilding the approximate total 11.4 miles of the Rebuild Projects results in a radial line exceeding the Company's 100 MW and 700 MW-mile criteria.

Pursuant to the Commission's November 26, 2013, Order entered in Case No. PUE-2012-00029, and its November 1, 2018, Final Order entered in Case No. PUR-2018-00075 ("2018 Final Order"), the Company is required to provide analysis of demand-side resources ("DSM") incorporated into the Company's planning studies. DSM is the broad term that includes both energy efficiency ("EE") and demand response ("DR"). In this case, PJM and the Company have identified a need for the proposed Project based on aging infrastructure that is at the end of its service life to maintain the overall long-term reliability of its transmission system and to resolve potential violations of Dominion Energy Virginia's Planning Criteria.[10] Notwithstanding, when performing an analysis based on PJM's 50/50 load forecast, there is no adjustment in load for DR programs that are bid into the PJM reliability pricing model ("RPM") auction because PJM only dispatches DR when the system is under stress (i.e., a system emergency). Accordingly, while existing DSM is considered to the extent the load forecast accounts for it, DR that has been bid into PJM's RPM market is not a factor in this particular application because of the identified need for the Project. Based on these considerations, the evaluation of the Project demonstrated that despite accounting for DSM consistent with PJM's methods, the Project is necessary. As noted in the 2018 Final Order, pursuant to the Grid Transformation and Modernization Act of 2018, the Company must propose $870 million of EE programs by 2028. Since July 1, 2018, the Company has proposed approximately $476 million for the design, implementation, and operation of energy efficiency programs in the Commonwealth. This amount includes approximately $128.6 million of new energy efficiency programs, designated as "Phase IX" of the Company's DSM portfolio, which the Company filed for approval of on December 2, 2020. These programs are pending before the Commission and have not been accounted for in PJM's load forecast, and thus, were not part of the Company's planning studies.

[10] While the PJM load forecast does not directly incorporate DR, its load forecast incorporates variables derived from Itron that reflect EE by modeling the stock of end-use equipment and its usages. Further, because P JM's load forecast considers the historical non-coincident peak ("NCP") for each load serving entity ("LSE") within PJM, it reflects the actual load reductions achieved by DSM programs to the extent an LSE has used DSM to reduce its NCPs.

I. NECESSITY FOR THE PROPOSED PROJECT

F. Describe any lines or facilities that will be removed, replaced, or taken out of service upon completion of the proposed project, including the number of circuits and normal and emergency ratings of the facilities.

Response: Line #2113 Rebuild Project

The proposed Line #2113 Rebuild Project includes the removal of the following structures supporting existing 230 kV Line #2113 and idle 115 kV Line #58:

- 31 double circuit 115/230 kV H-frame structures,
- 2 single circuit 115 kV 3-pole structures,
- 2 single circuit 230 kV 3-pole structures,
- 1 single circuit 115 kV H-frame double dead end structure,
- 1 single circuit 230 kV switch structure, and
- 1 single circuit 115 kV switch structure.

These structures will be replaced with the following structures to support rebuilt Line #2113:

- 30 single circuit 230 kV weathering steel suspension H-frame structures,
- 2 single circuit 230 kV weathering steel double dead end H-frame structures,
- 1 single circuit 230 kV weathering steel double dead end 3-pole structure, and
- 2 single circuit 230 kV switch structures.

Along this approximate 3.8 miles of the Line #2113 Rebuild Project, the existing Line #2113 3-phase 1033.5 ACSR conductors will be replaced with 3-phase twin-bundled 636 ACSR conductors and the idle Line #58 3-phase 477 ACSR conductors will be removed. The existing Line #2113 3-phase 1033.5 ACSR and idle Line #58 3-phase 477 ACSR conductor has a normal/emergency transfer capability of 470 MVA and 147 MVA, respectively. The two 3/8 steel shield wires will be replaced with two fiber optic shield wires.

Line #2154 Rebuild Project

Waller Substation to Kingsmill Substation Section

The section of the proposed Line #2154 Rebuild Project between the Waller Substation and the Kingsmill Substation (approximately 6.1 miles) includes the removal of the following structures supporting existing 230 kV Line #2154 and idle 115 kV Line #58:

- 37 double circuit 115/230 kV suspension H-frame structures,
- 2 double circuit 115/230 kV double dead end H-frame structures,

- 1 single circuit 2-pole structure,
- 3 single circuit 230 kV double dead end H-frame structures,
- 2 single circuit 115 kV double dead end H-frame structures,
- 1 single circuit 115 kV 3-pole structure,
- 1 single circuit 230 kV 3-pole structure,
- 1 single circuit 230 switch structure, and
- 1 single circuit 115 kV switch structure.

These structures will be replaced with the following structures to support rebuilt Line #2154:

- 38 single circuit 230 kV weathering steel suspension H-frame structures,
- 4 single circuit 230 kV weathering steel double dead end H-frame structures,
- 2 single circuit 230 kV weathering steel double dead end 3-pole structures, and
- 1 single circuit 230 kV switch structure.

Along this approximate 6.1-mile section of the Line #2154 Rebuild Project, the existing Line #2154 3-phase 1033.5 ACSR conductors will be replaced with 3-phase twin-bundled 636 ACSR conductors and the existing idle Line #58 3-phase 477 ACSR conductors will be removed. The existing Line #2154 3-phase 1033.5 ACSR and idle Line #58 3-phase 477 ACSR conductors have a normal/emergency transfer capability of 470 and 147 MVA, respectively. The two 3/8 steel shield wires will be replaced with two fiber optic shield wires.

Kingsmill Substation to Structure #2154/482 Section

The section of the proposed Line #2154 Rebuild Project between the Kingsmill Substation and Structure #2154/482 (approximately 1.5 miles) includes the removal of the following structures supporting existing 230 kV Line #2154 and existing 115 kV Line #19:

- 12 double circuit 115/230 kV H-frame structures,
- 1 single circuit 115 kV pole,
- 4 single circuit 115 kV 3-pole structures, and
- 4 single circuit 230 kV 3-pole structures.

These structures will be replaced with the following structures to support rebuilt Line #2154 and Line #19:

- 11 double circuit 115/230 kV weathering steel suspension H-frame structures,
- 5 double circuit 115/230 kV weathering steel double dead end 2-pole structures,

- 1 single circuit 230 kV switch structure, and
- 1 single circuit 115 kV switch structure.

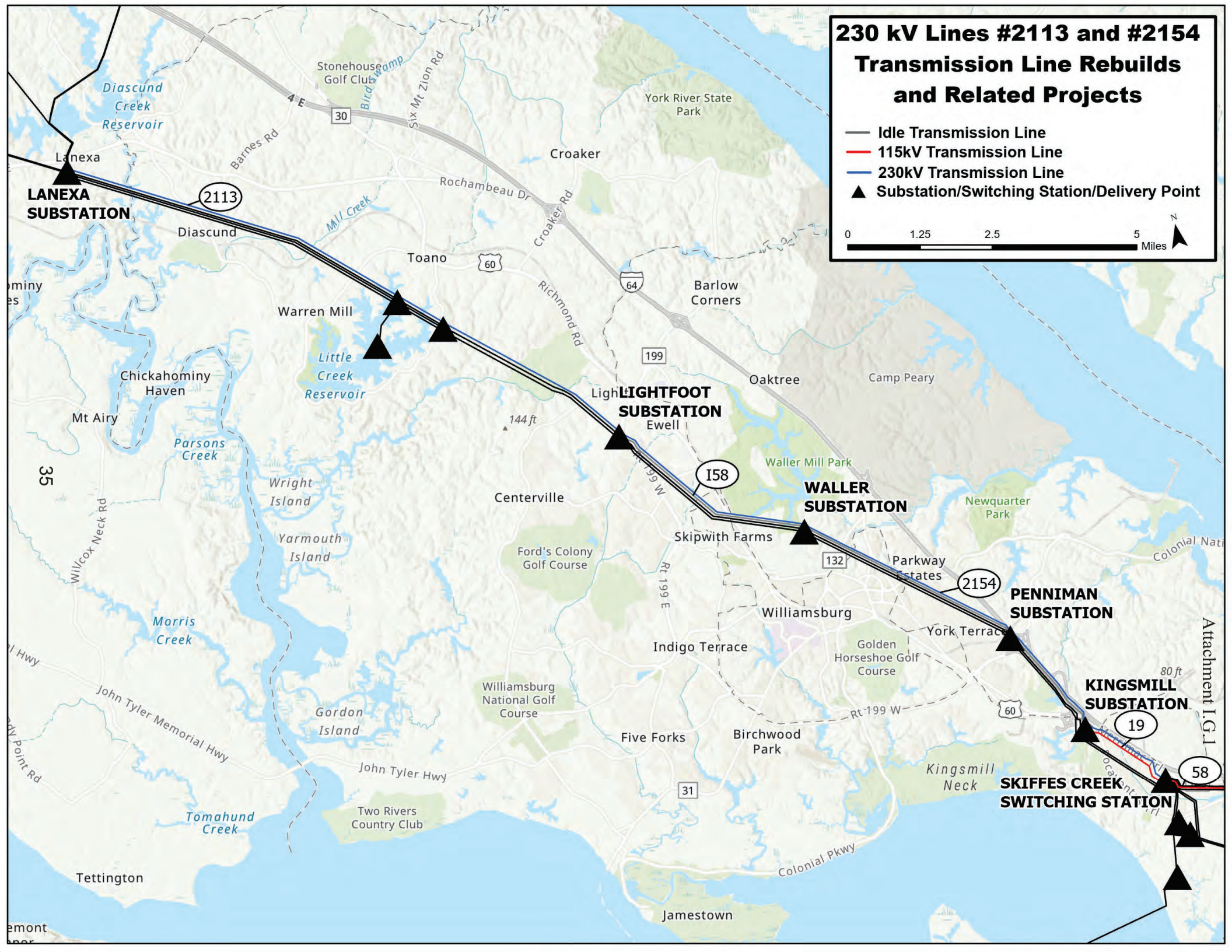
Along this approximate 1.5-mile section of the Line #2154 Rebuild Project, the existing Line #2154 3-phase 1033.5 ACSR conductors will be replaced with 3-phase twin-bundled 636 ACSR conductors and the existing Line #19 3-phase 477 ACSR conductors will be replaced with 3-phase 636 ACSR conductors. The existing Line #2154 3-phase 1033.5 ACSR and Line #19 3-phase 477 ACSR conductors have a normal/emergency transfer capability of 470 and 147 MVA, respectively. The two 3/8 steel shield wires will be replaced with two fiber optic shield wires. The only work to be completed beyond Structure #2154/482 as part of the Line #2154 Rebuild Project will include the replacement of two existing 3#6 alumoweld shield wires with two optical ground wire ("OPGW") shield wires between Structure #2154/482 and the backbones at Skiffes Creek Switching Station.[11]

[11] The Lines #2154 and #19 conductor in this area was replaced as part of a prior project. Due to the minor nature of this OPGW work, it has not been included in the total mileage of the Line #2154 Rebuild Project.

I. NECESSITY FOR THE PROPOSED PROJECT

G. Provide a system map, in color and of suitable scale, showing the location and voltage of the Applicant's transmission lines, substations, generating facilities, etc., that would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly label on this map all points referenced in the necessity statement.

Response: See Attachment I.G.1.


230 kV Lines #2113 and #2154
Transmission Line Rebuilds
and Related Projects
Idle Transmission Line
115kV Transmission Line
230kV Transmission Line
Substation/Switching Station/Delivery Point
0
1.25
2.5
5
Miles
N
LANEXA
SUBSTATION
2113
LIGHTFOOT
SUBSTATION
I58
WALLER
SUBSTATION
2154
PENNIMAN
SUBSTATION
KINGSMILL
SUBSTATION
19
58
SKIFFES CREEK
SWITCHING STATION
Lanexa
Diascund
Creek
Reservoir
Barnes Rd
Stonehouse
Golf Club
Bird's Swamp
Six Mt Zion Rd
York River State
Park
Croaker
Rochambeau Dr
Croaker Rd
Mill Creek
Toano
Richmond Rd
Barlow
Corners
Warren Mill
Little
Creek
Reservoir
Chickahominy
Haven
Mt Airy
Parsons
Creek
Oaktree
Camp Peary
Ewell
144 ft
Waller Mill Park
Centerville
Wright
Island
Yarmouth
Island
Wilcox Neck Rd
Skipwith Farms
Newquarter
Park
Ford's Colony
Golf Course
Parkway
Estates
Williamsburg
York Terrace
Indigo Terrace
Golden
Horseshoe Golf
Course
Morris
Creek
Williamsburg
National Golf
Course
Gordon
Island
John Tyler Memorial Hwy
John Tyler Hwy
Five Forks
Birchwood
Park
Kingsmill
Neck
Tomahund
Creek
Two Rivers
Country Club
Colonial Pkwy
Tettington
Jamestown
Rt 199 W
Rt 199 E
80 ft
Attachment I.G.1

I. NECESSITY FOR THE PROPOSED PROJECT

H. Provide the desired in-service date of the proposed project and the estimated construction time.

Response: The desired in-service date for the Rebuild Projects is September 30, 2023.

The Company estimates it will take approximately 18 months for detailed engineering, scheduled outages, materials procurement, permitting, and construction of the Rebuild Projects after a final order from the Commission on the Project. Accordingly, to support this estimated construction timeline and construction plan, the Company respectfully requests a final order on the Rebuild Projects by April 1, 2022. Should the Commission issue a final order by April 1, 2022, the Company estimates that construction of the Rebuild Projects should begin on June 1, 2022 and be completed by September 30, 2023. This construction timeline will enable the Company to meet the targeted in-service date for the Rebuild Projects. This schedule is contingent upon obtaining the necessary permits. Dates may need to be adjusted based on permitting delays or design modifications to comply with additional agency requirements identified during the permitting application process.

I. NECESSITY FOR THE PROPOSED PROJECT

I. Provide the estimated total cost of the project as well as total transmission-related costs and total substation-related costs. Provide the total estimated cost for each feasible alternative considered. Identify and describe the cost classification (e.g. "conceptual cost," "detailed cost," etc.) for each cost provided.

Response: The estimated conceptual cost of the proposed Rebuild Projects is approximately $27.4 million, which includes a total of approximately $25.3 million in transmission-related work, and a total of approximately $2.1 million for substation-related work (2020 dollars). A further breakdown by project is as follows:

Transmission-related costs

Line #2113 Rebuild Project – approximately $8.4 million

Line #2154 Rebuild Project – approximately $16.9 million

Substation-related costs

Line #2113 Rebuild Project – approximately $0.62 million

Line #2154 Rebuild Project – approximately $1.44 million

I. NECESSITY FOR THE PROPOSED PROJECT

J. If the proposed project has been approved by the RTO, provide the line number, regional transmission expansion plan number, cost responsibility assignments, and cost allocation methodology. State whether the proposed project is considered to be a baseline or supplemental project.

Response: The proposed Rebuild Projects were approved by the PJM Board at its December 2018 meeting as baseline projects #b3056 (Line #2113 Rebuild Project) and #b3057 (Line #2154 Rebuild Project). See Attachment I.A.4. While the PJM Board approved these rebuilds as baseline projects, as noted above, the rebuilds would have been considered supplemental projects under the M-3 EOL Planning Criteria effective March 24, 2020. See Section I.A.

The Rebuild Projects are presently 100% cost allocated to the DOM Zone.

I. NECESSITY FOR THE PROPOSED PROJECT

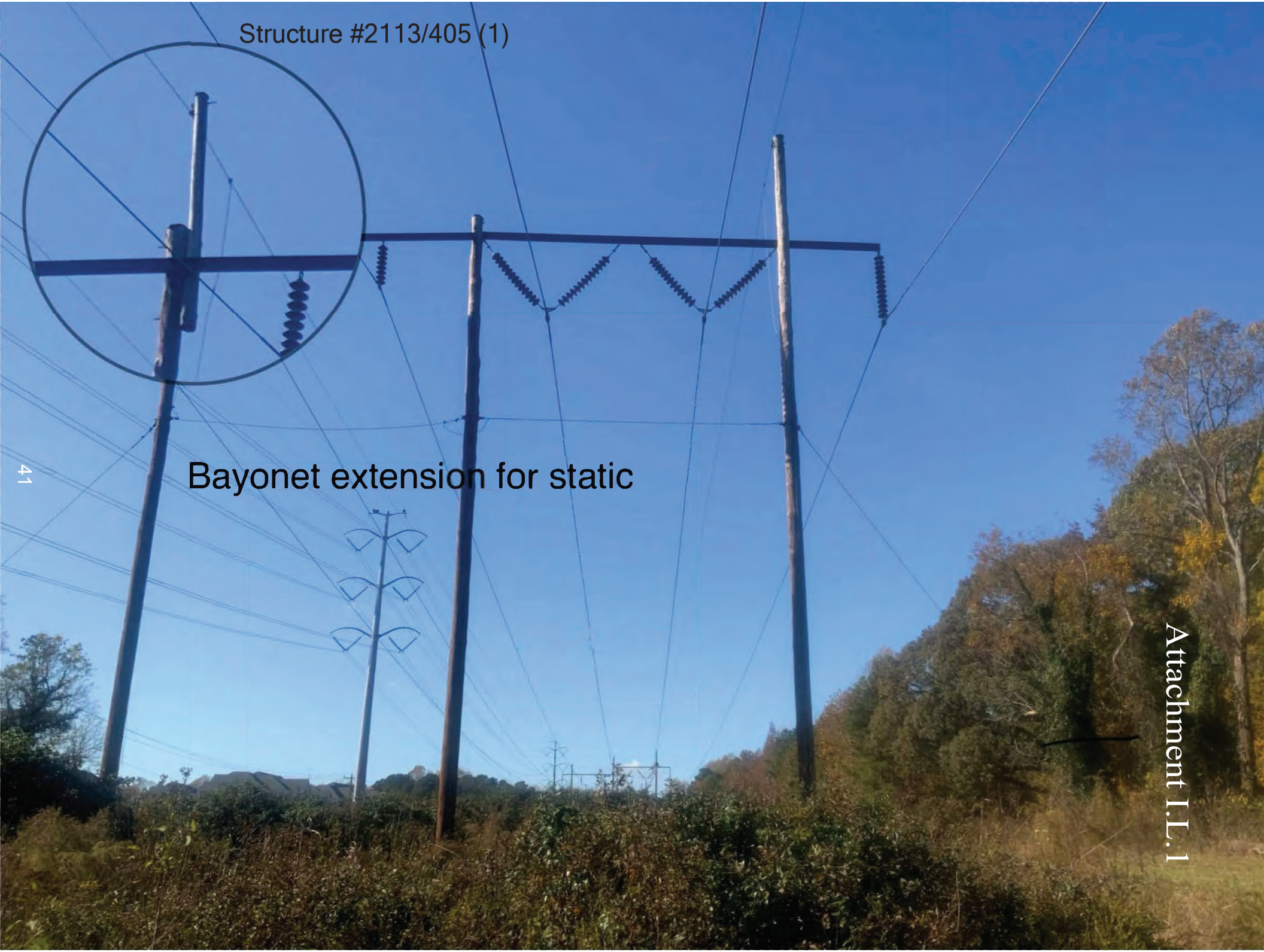
K. If the need for the proposed project is due in part to reliability issues and the proposed project is a rebuild of an existing transmission line(s), provide five years of outage history for the line(s), including for each outage the cause, duration and number of customers affected. Include a summary of the average annual number and duration of outages. Provide the average annual number and duration of outages on all Applicant circuits of the same voltage, as well as the total number of such circuits. In addition to outage history, provide five years of maintenance history on the line(s) to be rebuilt including a description of the work performed as well as the cost to complete the maintenance. Describe any system work already undertaken to address this outage history.

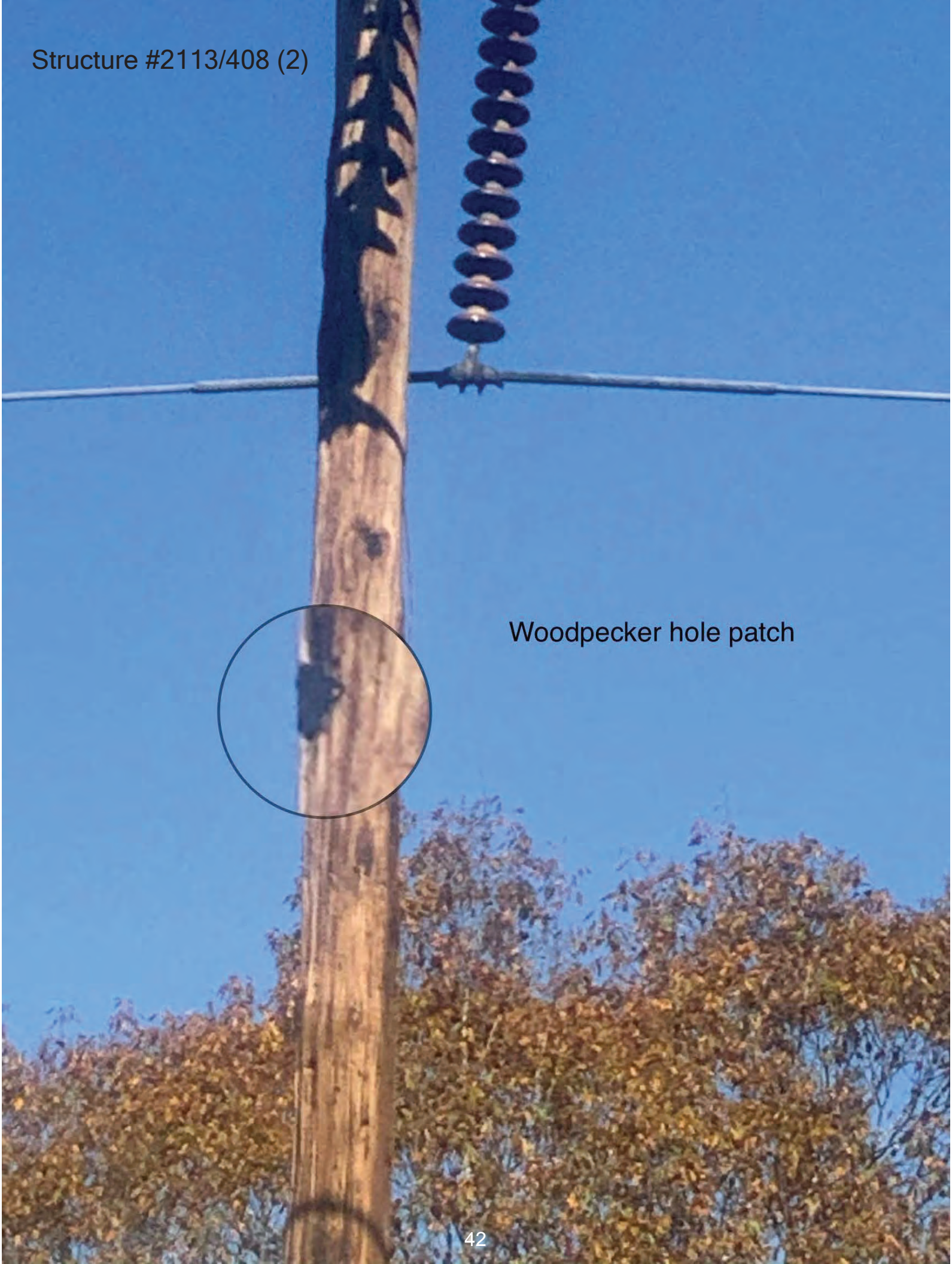
Response: The need for the Rebuild Projects is not driven by outage history, but rather by the need to replace transmission infrastructure approaching its end of life. See Section I.A of this Appendix.

I. NECESSITY FOR THE PROPOSED PROJECT

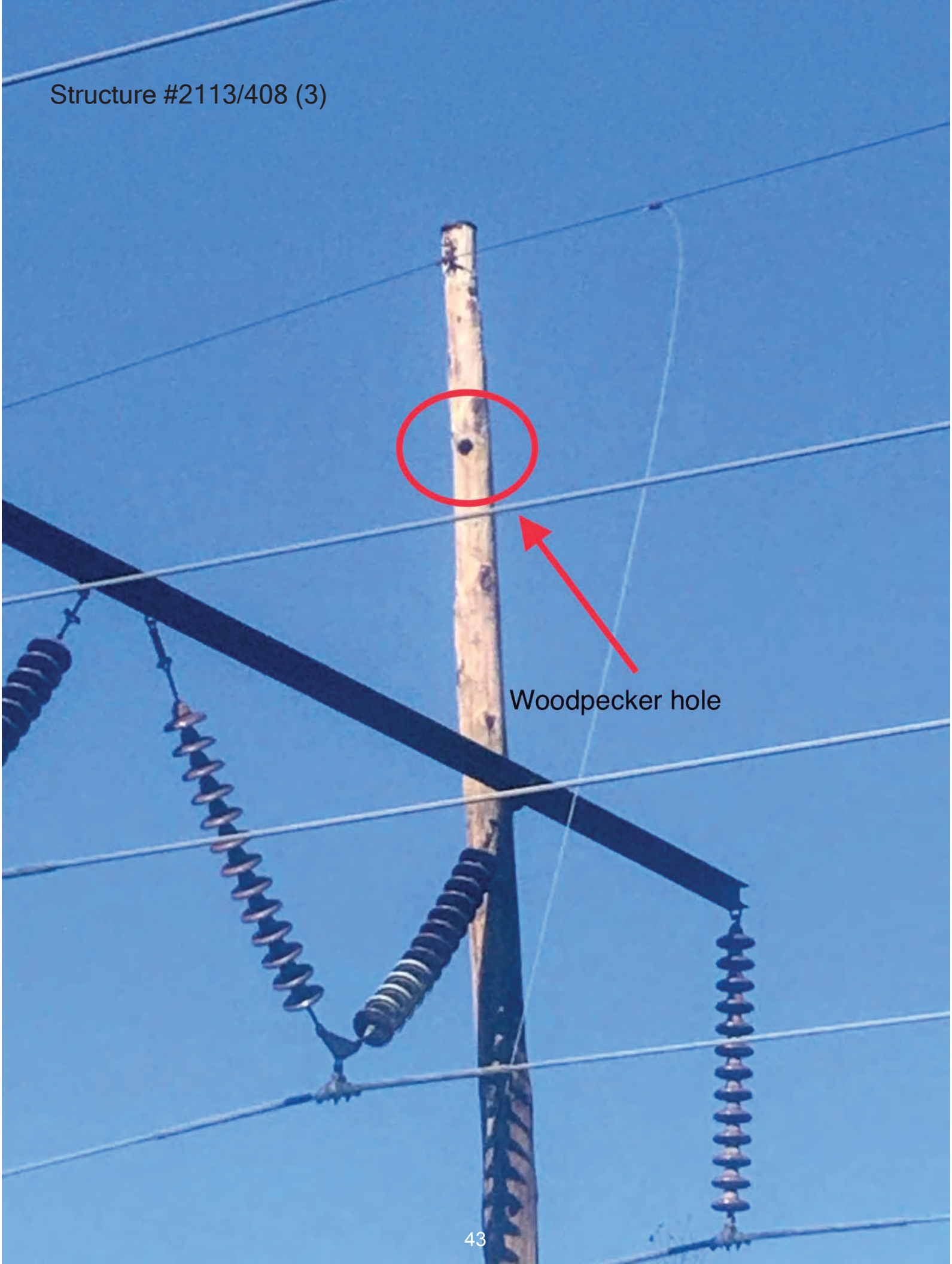
L. If the need for the proposed project is due in part to deterioration of structures and associated equipment, provide representative photographs and inspection records detailing their condition.

Response: The proposed Rebuild Projects will replace aging infrastructure that is at the end of its service life in order to comply with the Company's mandatory planning criteria, thereby enabling the Company to maintain the overall long-term reliability of its transmission system. To the extent that need is due, in part, to deterioration of the structures and associated equipment proposed for replacement as part of the Rebuild Projects, representative photographs and notifications are provided in Attachments I.L.1 and I.L.2, respectively.

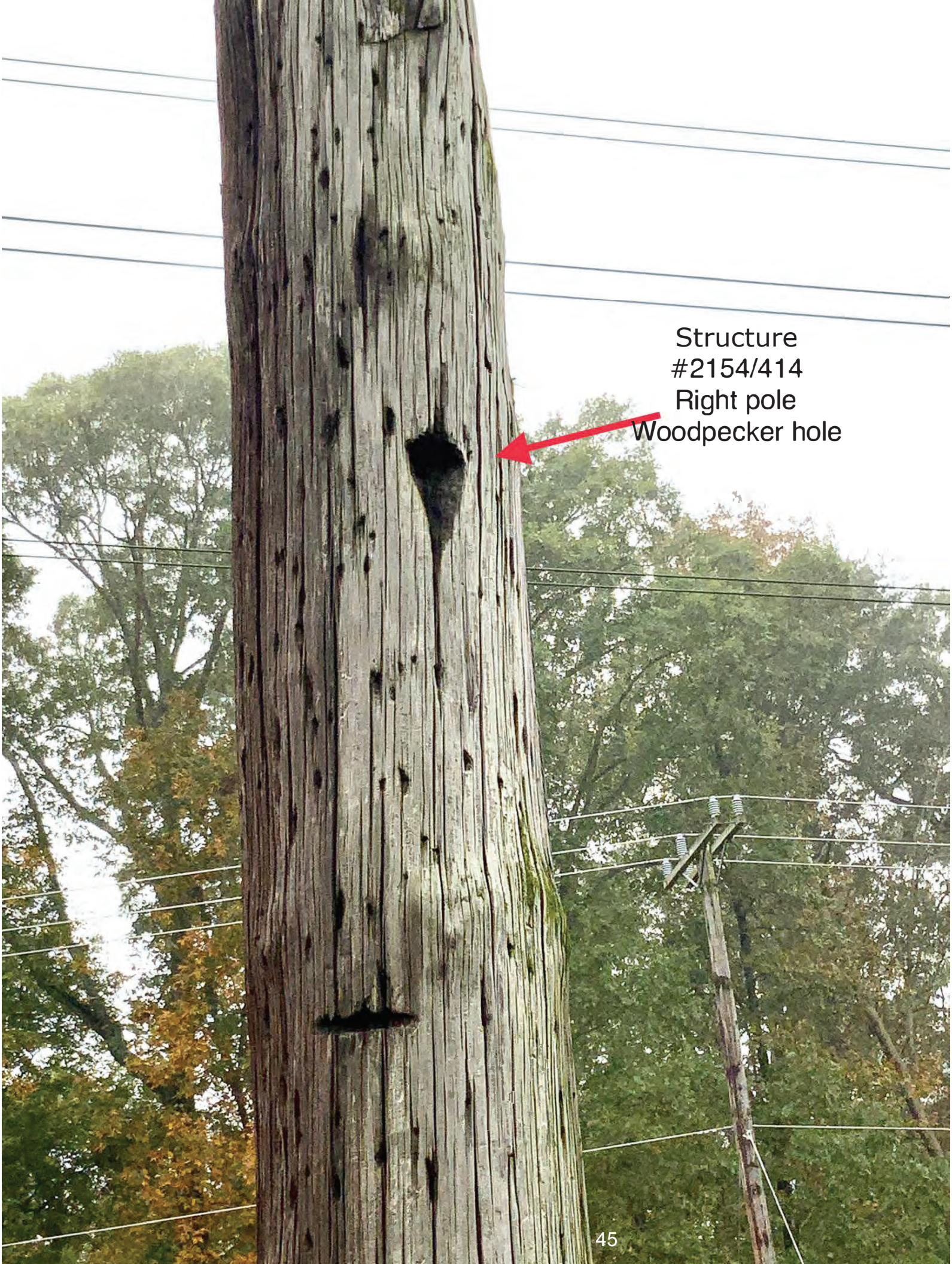

Structure #2113/405 (1)
Bayonet extension for static


Structure #2113/408 (2)
Woodpecker hole patch

Structure #2113/408 (3)




Structure #2154/412 (2)

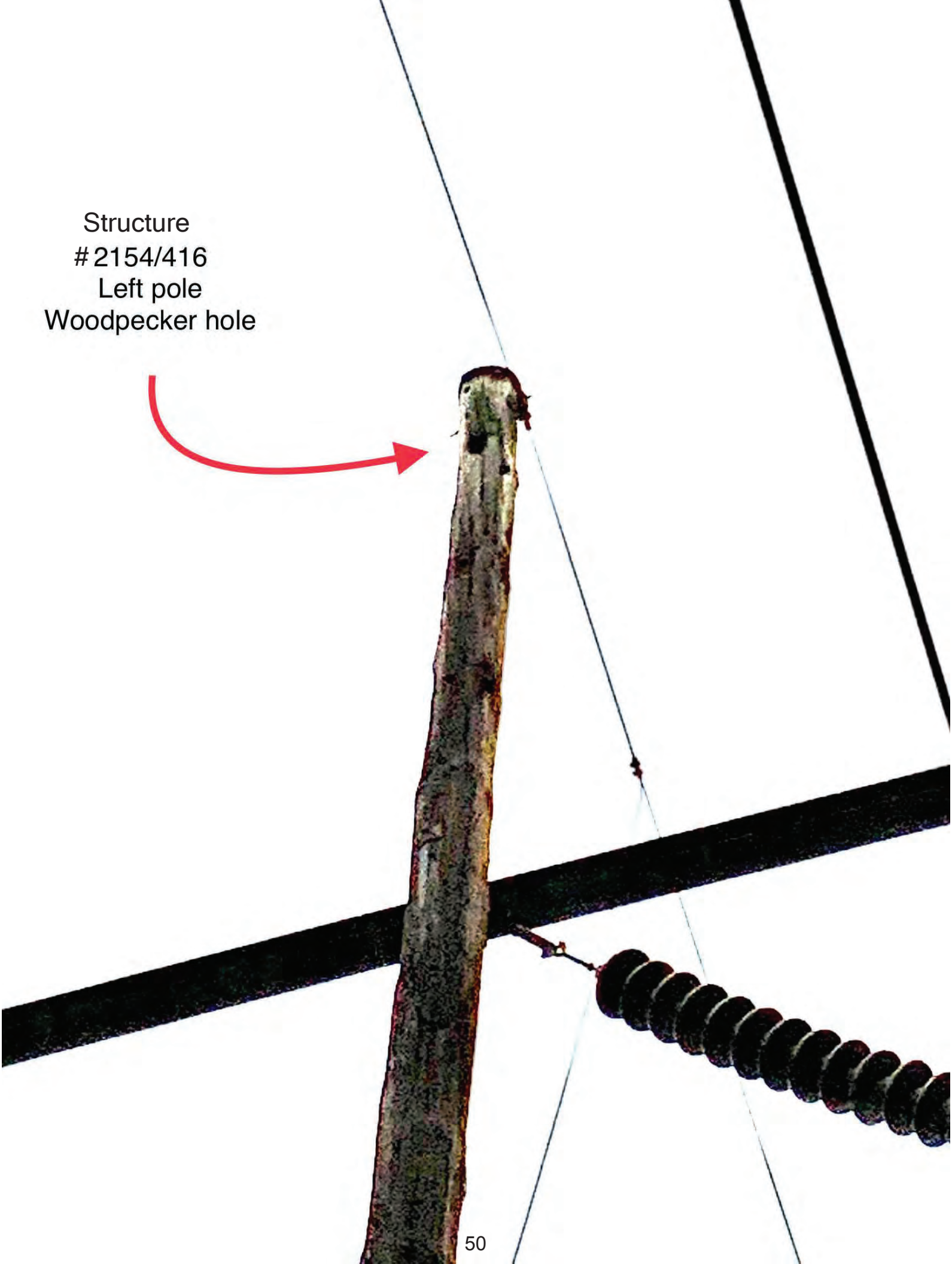

Structure
#2154/414
Right pole
Woodpecker hole

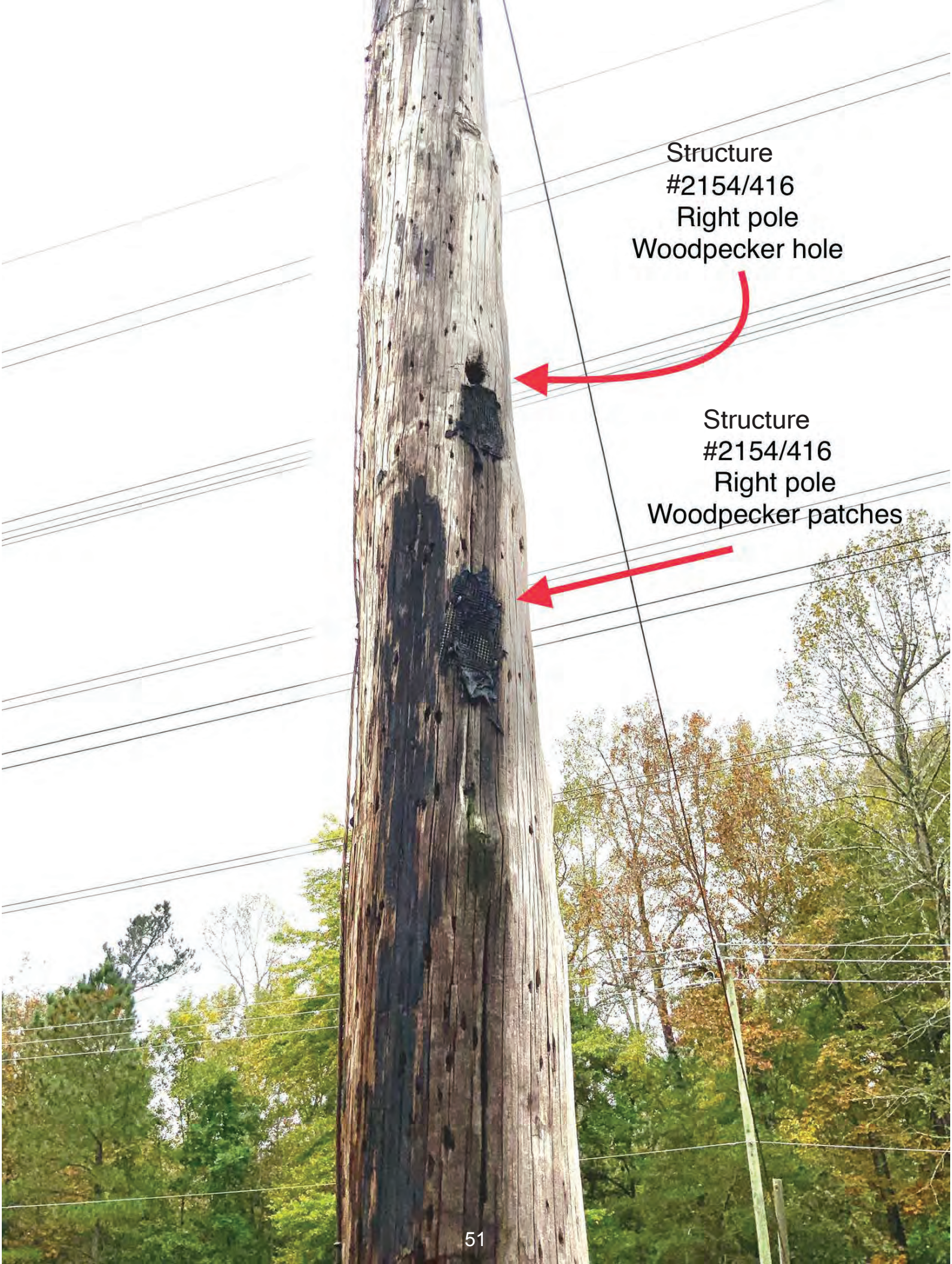
Structure #2154/414 (6)

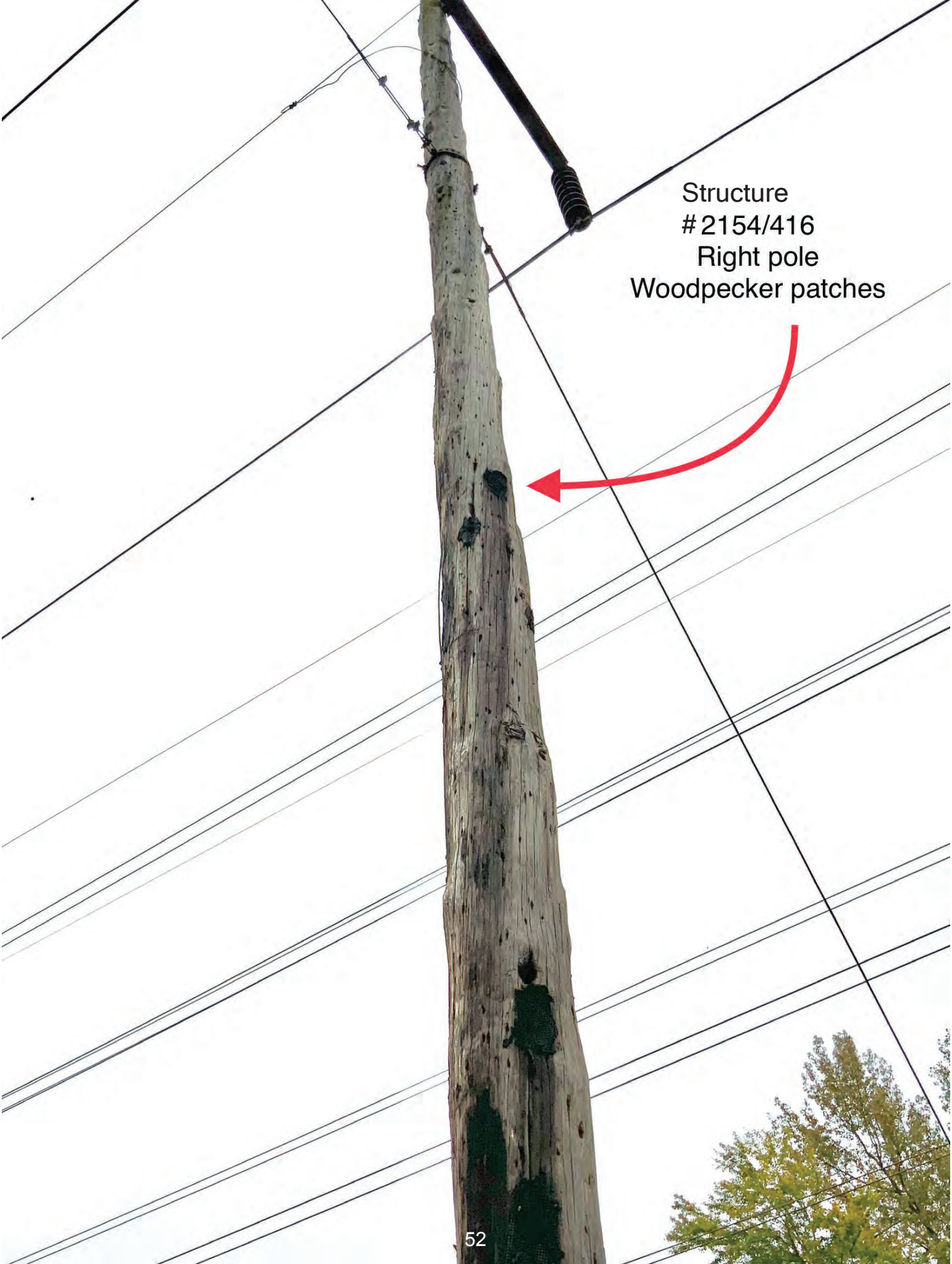

Structure
#2154/415
Middle pole
Shell rot

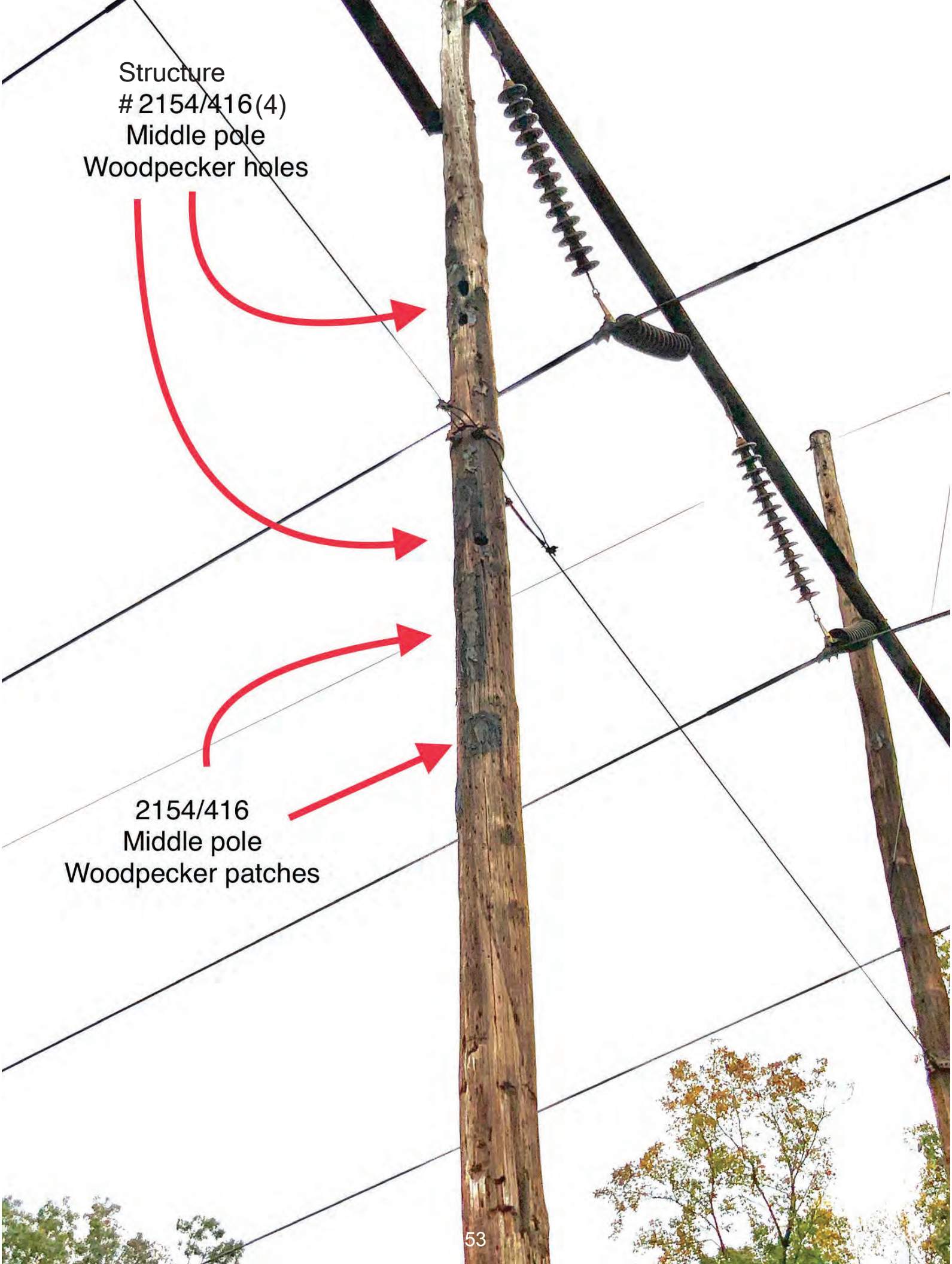
Structure #2154/415 (4)

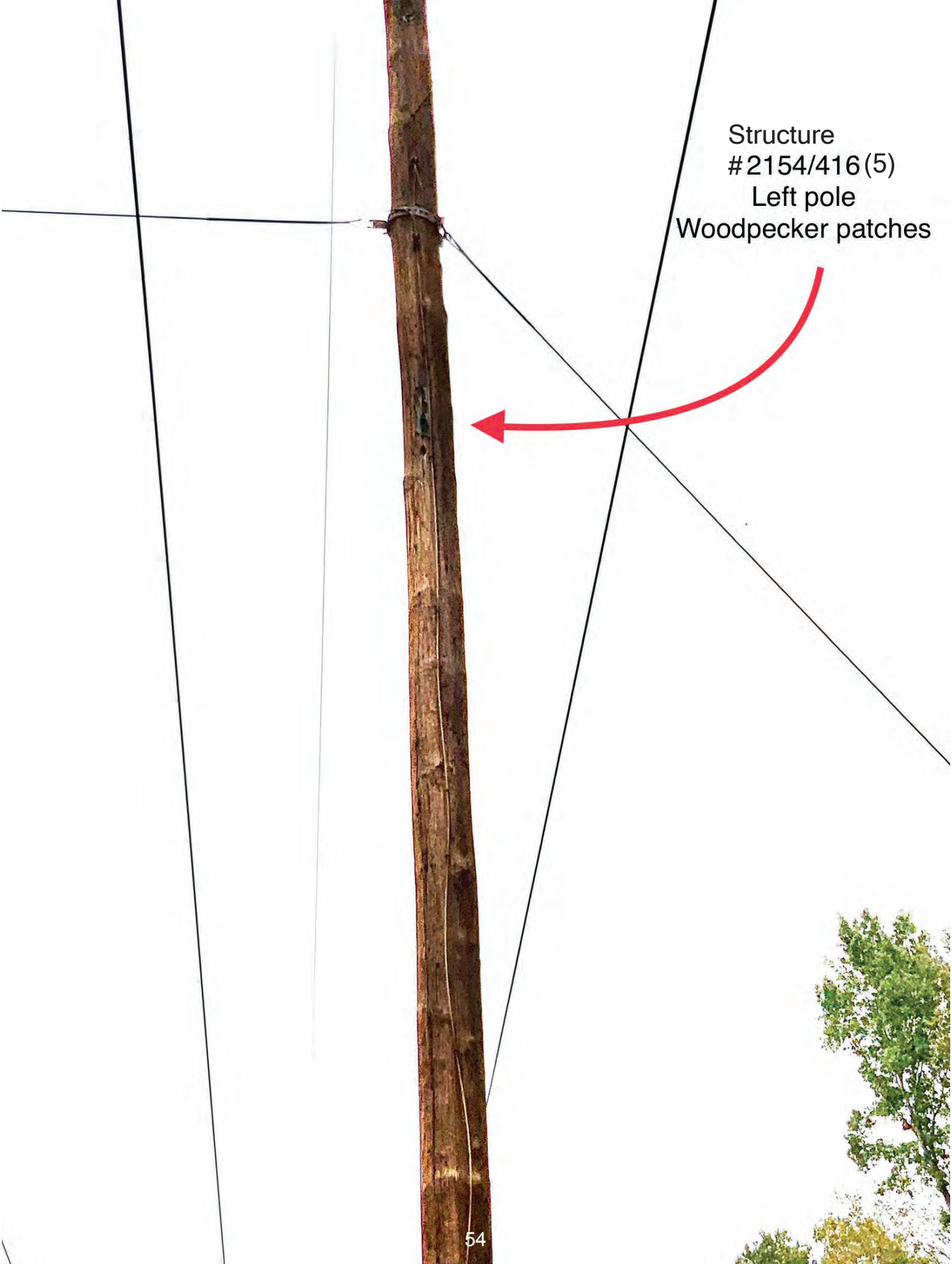
Structure #2154/415 (5)

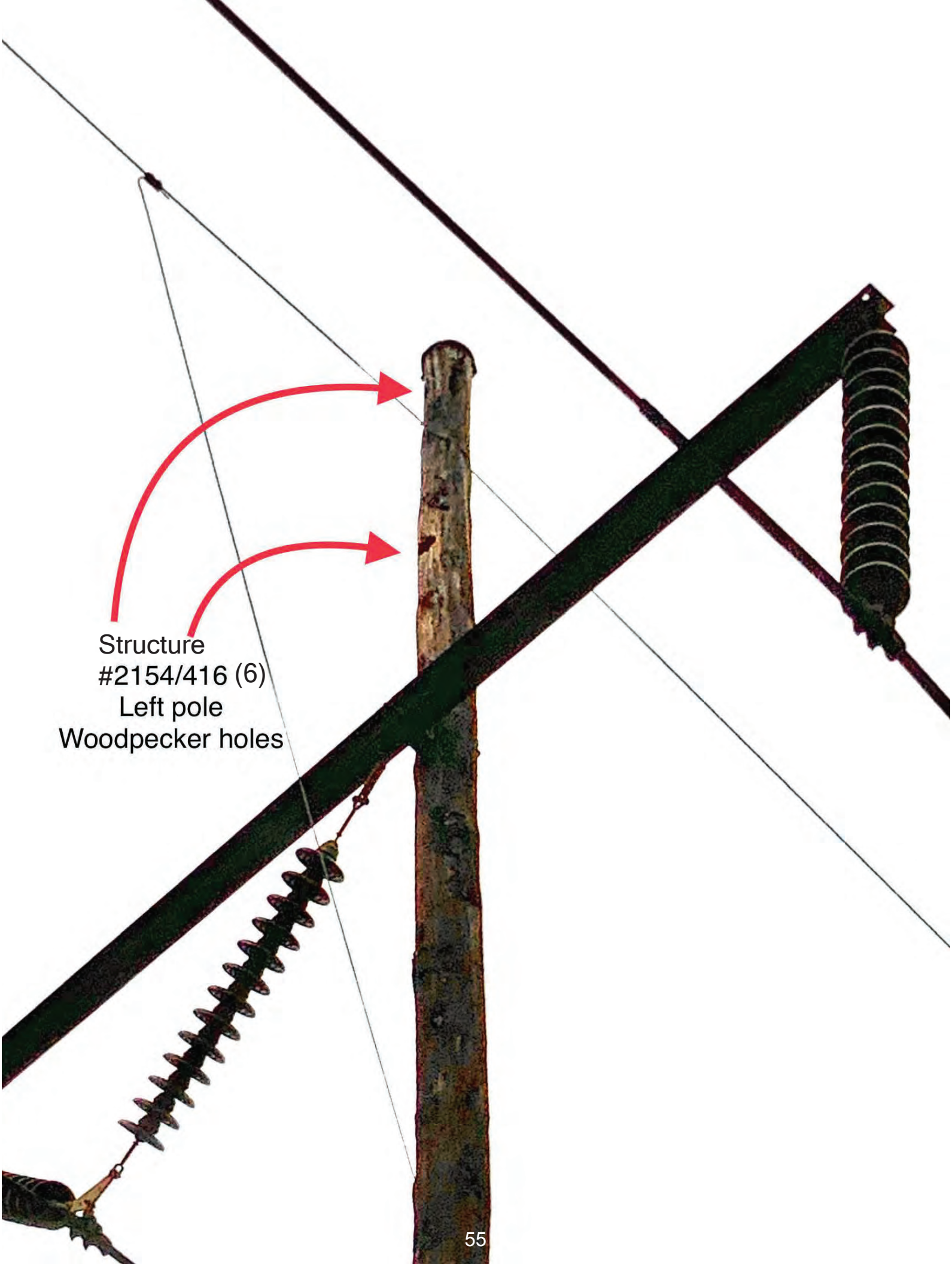

Structure
2154/416
Left pole
Woodpecker hole

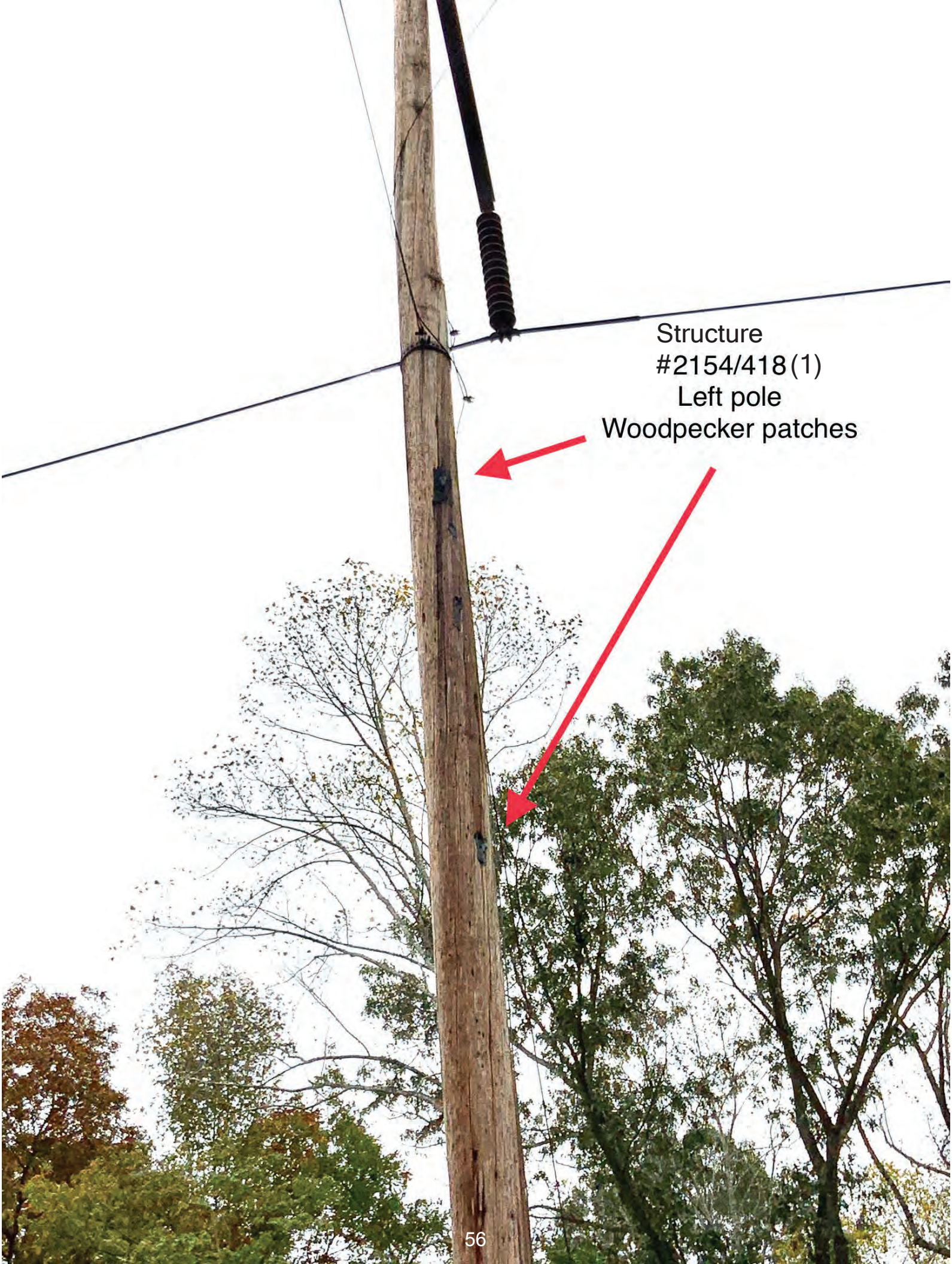

Structure
#2154/416
Right pole
Woodpecker hole
Structure
#2154/416
Right pole
Woodpecker patches


Structure
#2154/416
Right pole
Woodpecker patches


Structure
2154/416 (4)
Middle pole
Woodpecker holes
2154/416
Middle pole
Woodpecker patches

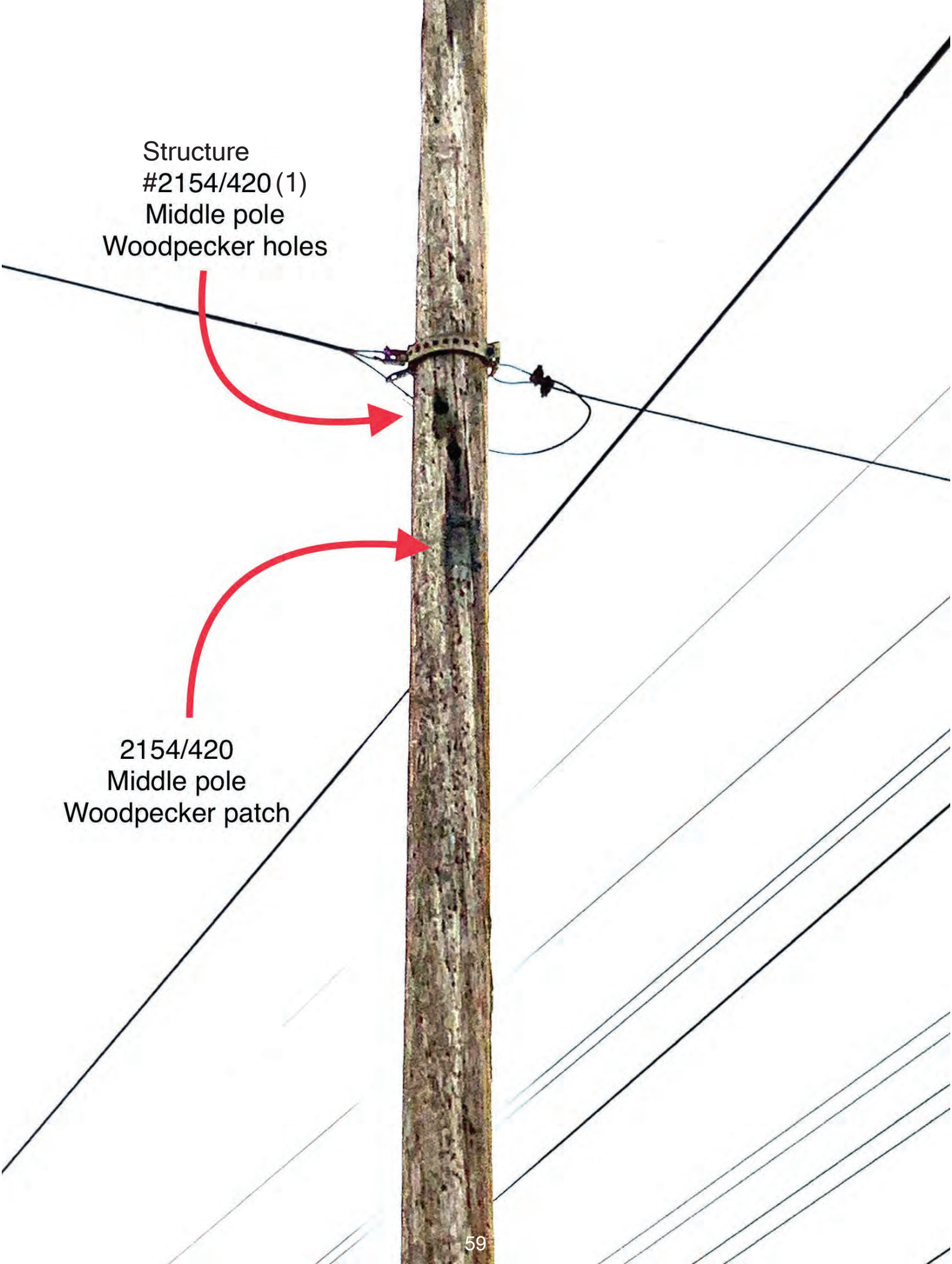

Structure
#2154/416(5)
Left pole
Woodpecker patches


Structure
#2154/416 (6)
Left pole
Woodpecker holes


Structure
#2154/418 (1)
Left pole
Woodpecker patches

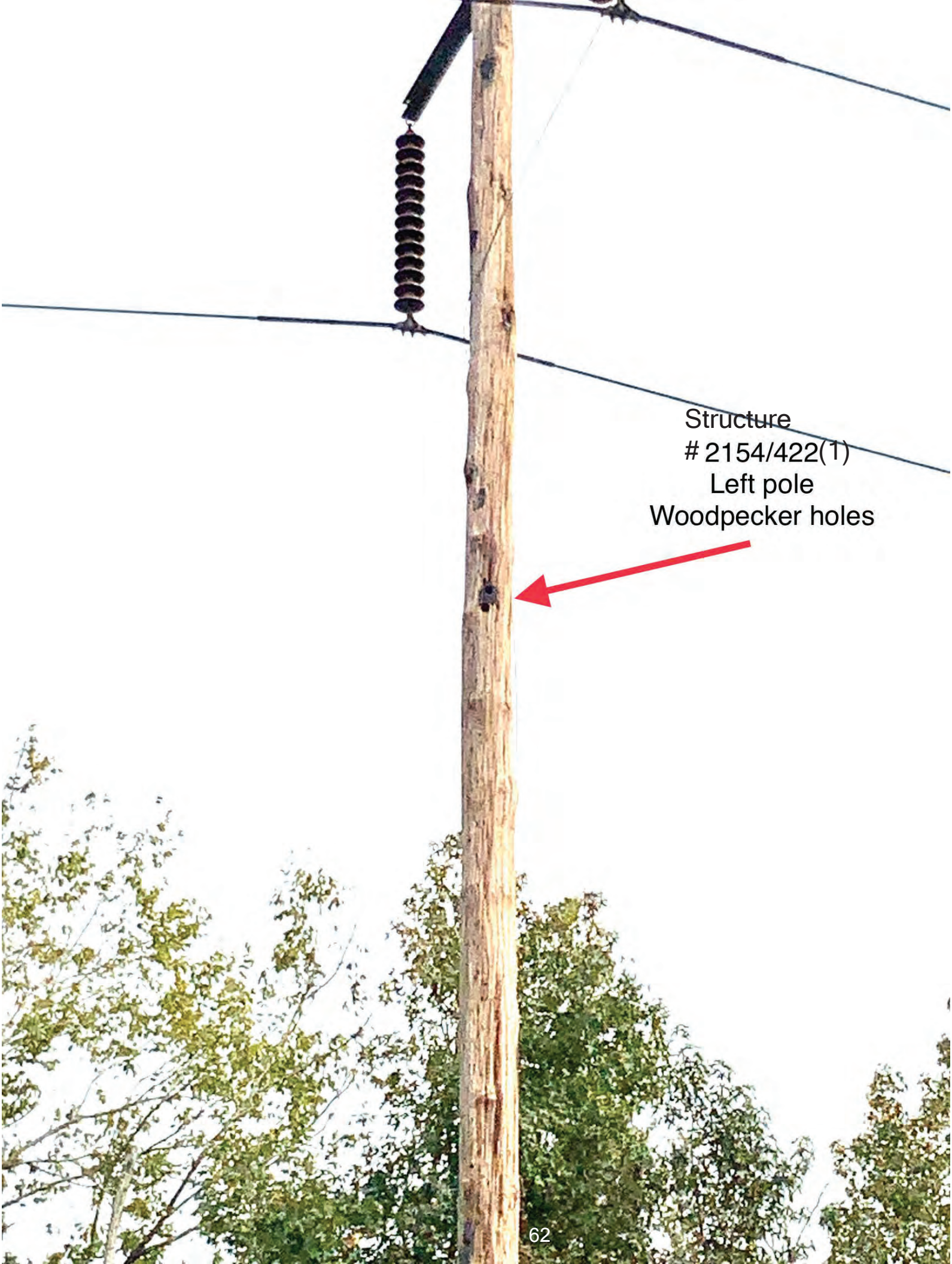

Structure #2154/419(1)
Left pole
Woodpecker patches

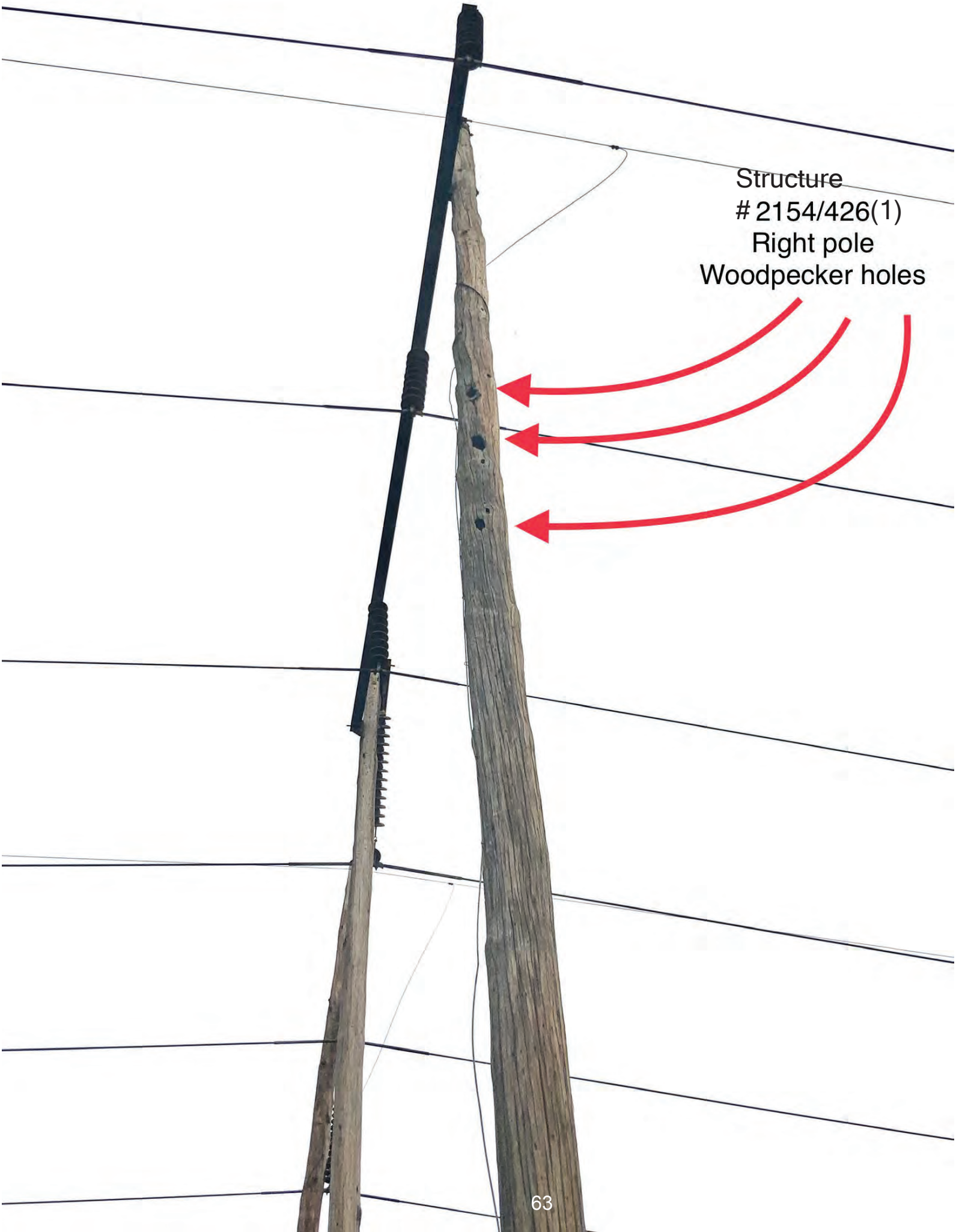

Structure #2154/419 (4)

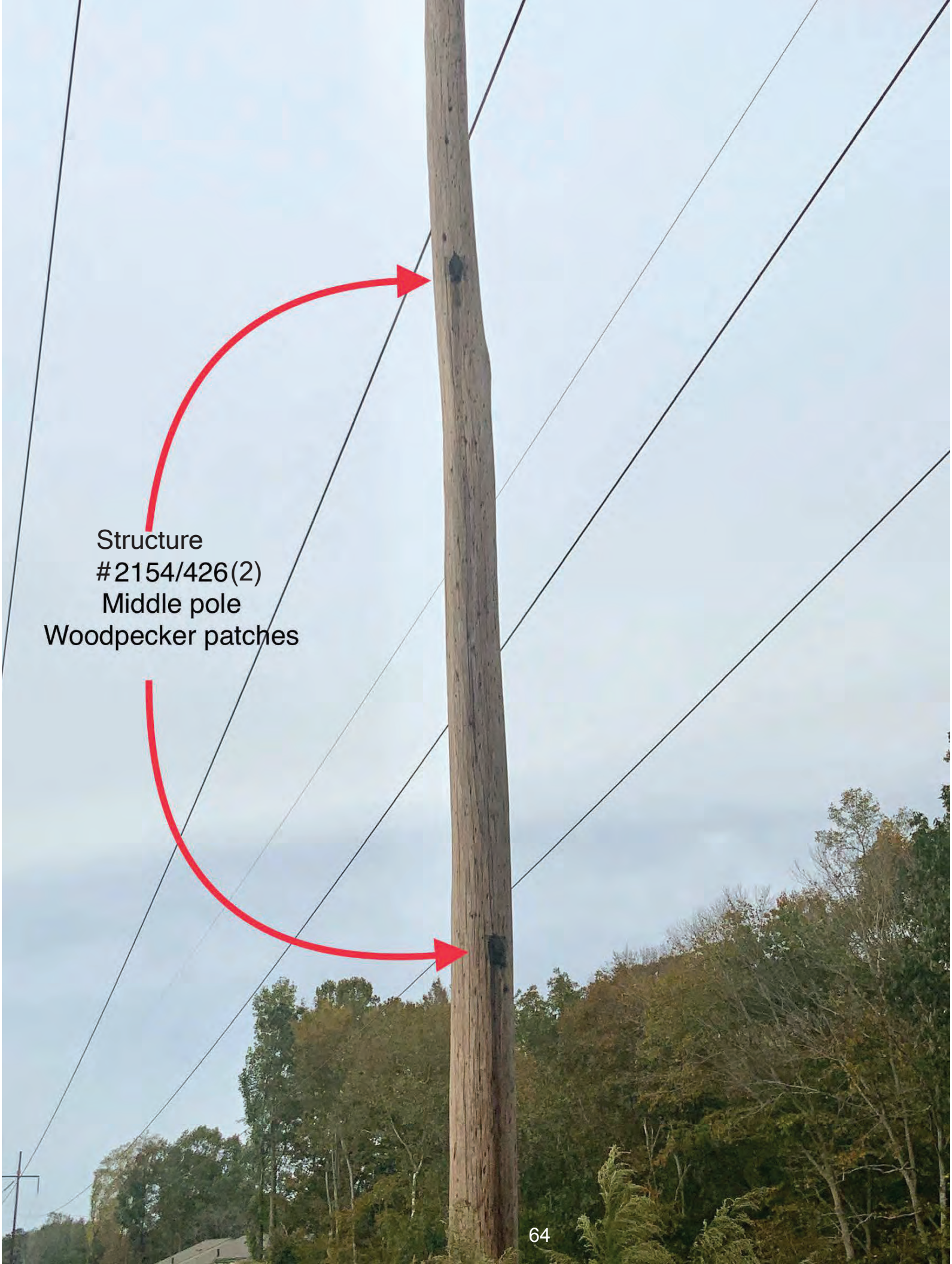

Structure
#2154/420 (1)
Middle pole
Woodpecker holes
2154/420
Middle pole
Woodpecker patch

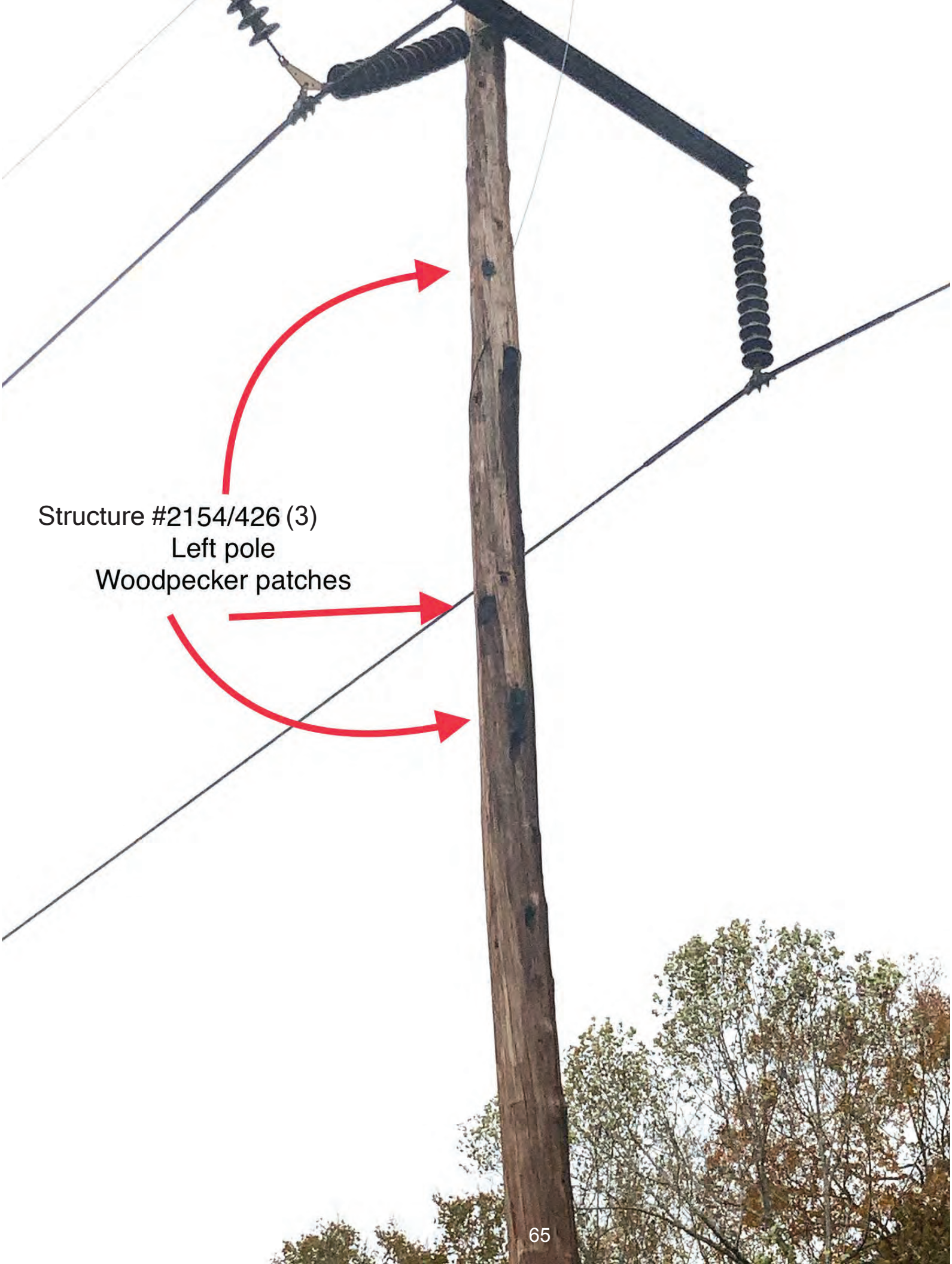

Structure #2154/420 (5)

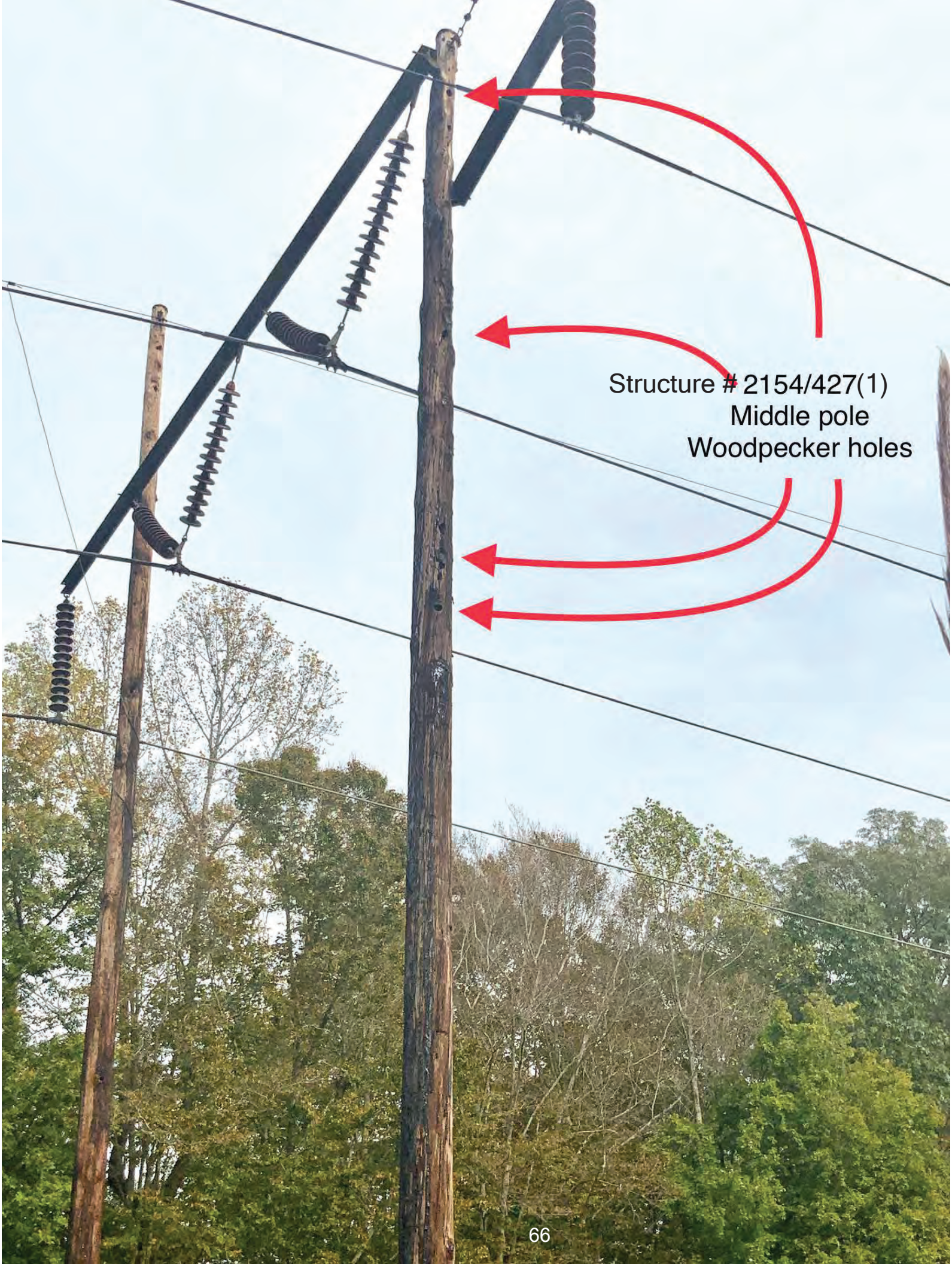
Structure #2154/421 (2)


Structure
2154/422(1)
Left pole
Woodpecker holes

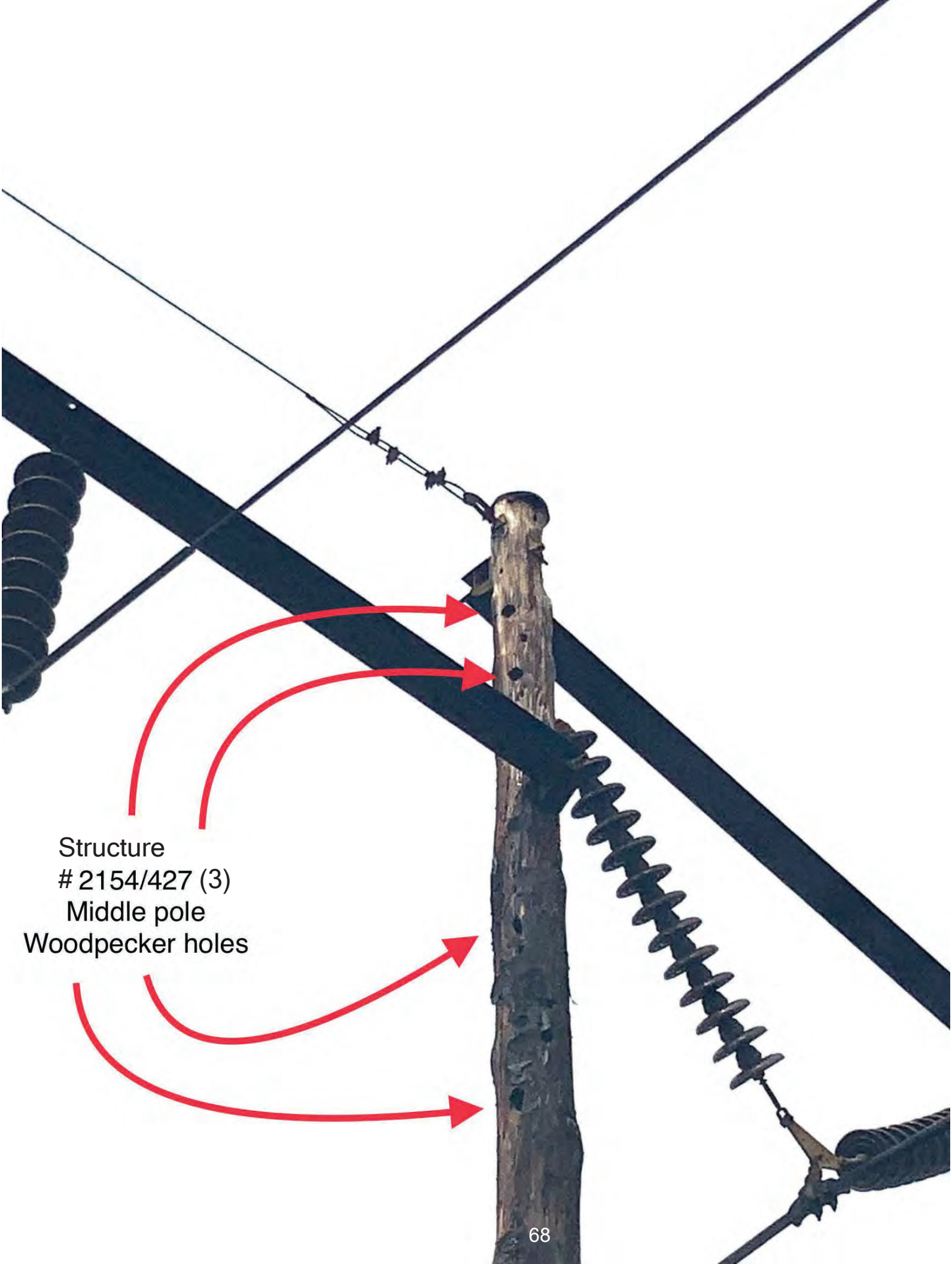

Structure
2154/426(1)
Right pole
Woodpecker holes

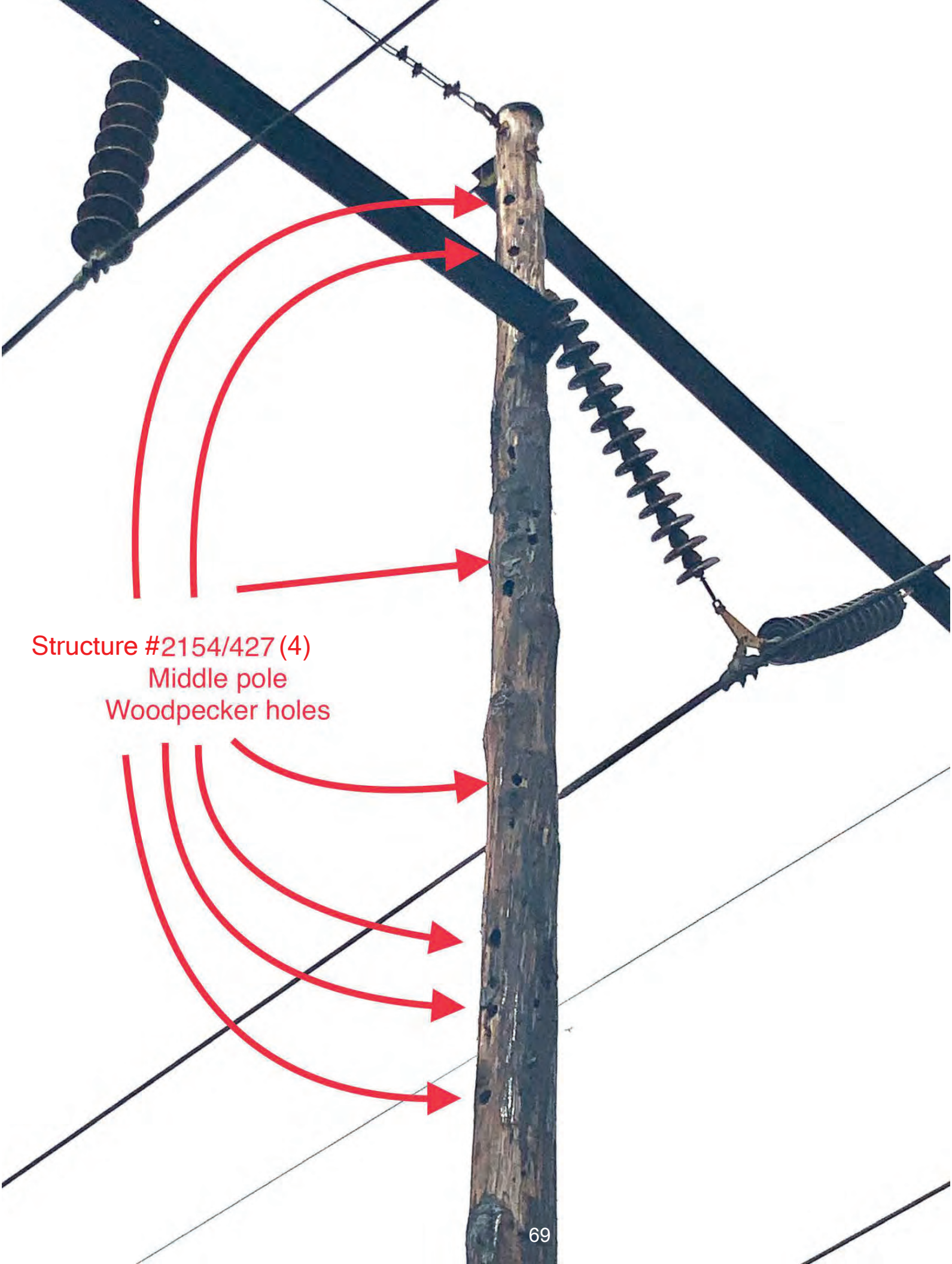

Structure
#2154/426(2)
Middle pole
Woodpecker patches


Structure #2154/426 (3)
Left pole
Woodpecker patches


Structure # 2154/427(1)
Middle pole
Woodpecker holes


Structure # 2154/427 (2)
Left pole
Woodpecker holes


Structure
2154/427 (3)
Middle pole
Woodpecker holes

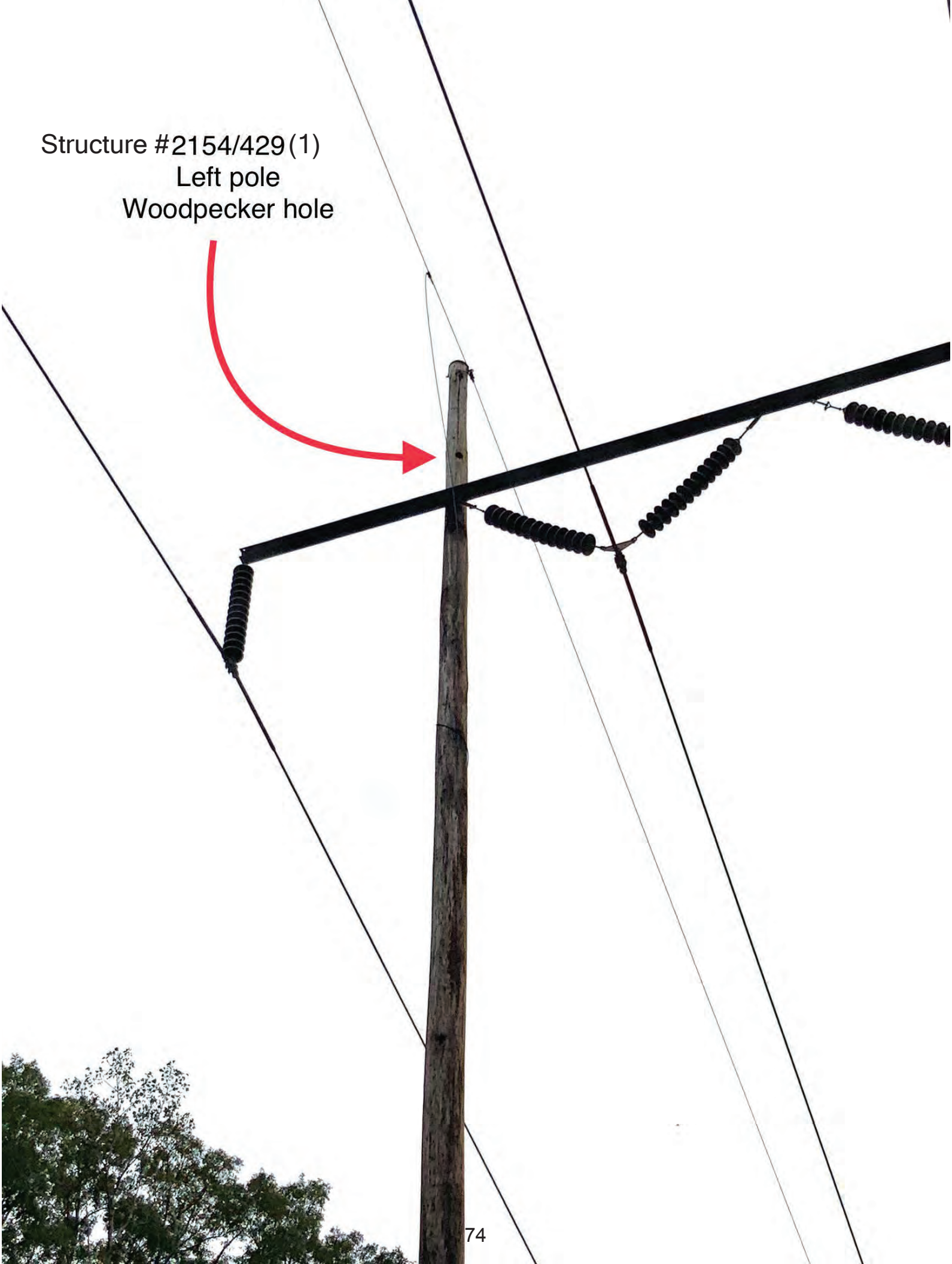

Structure #2154/427 (4)
Middle pole
Woodpecker holes

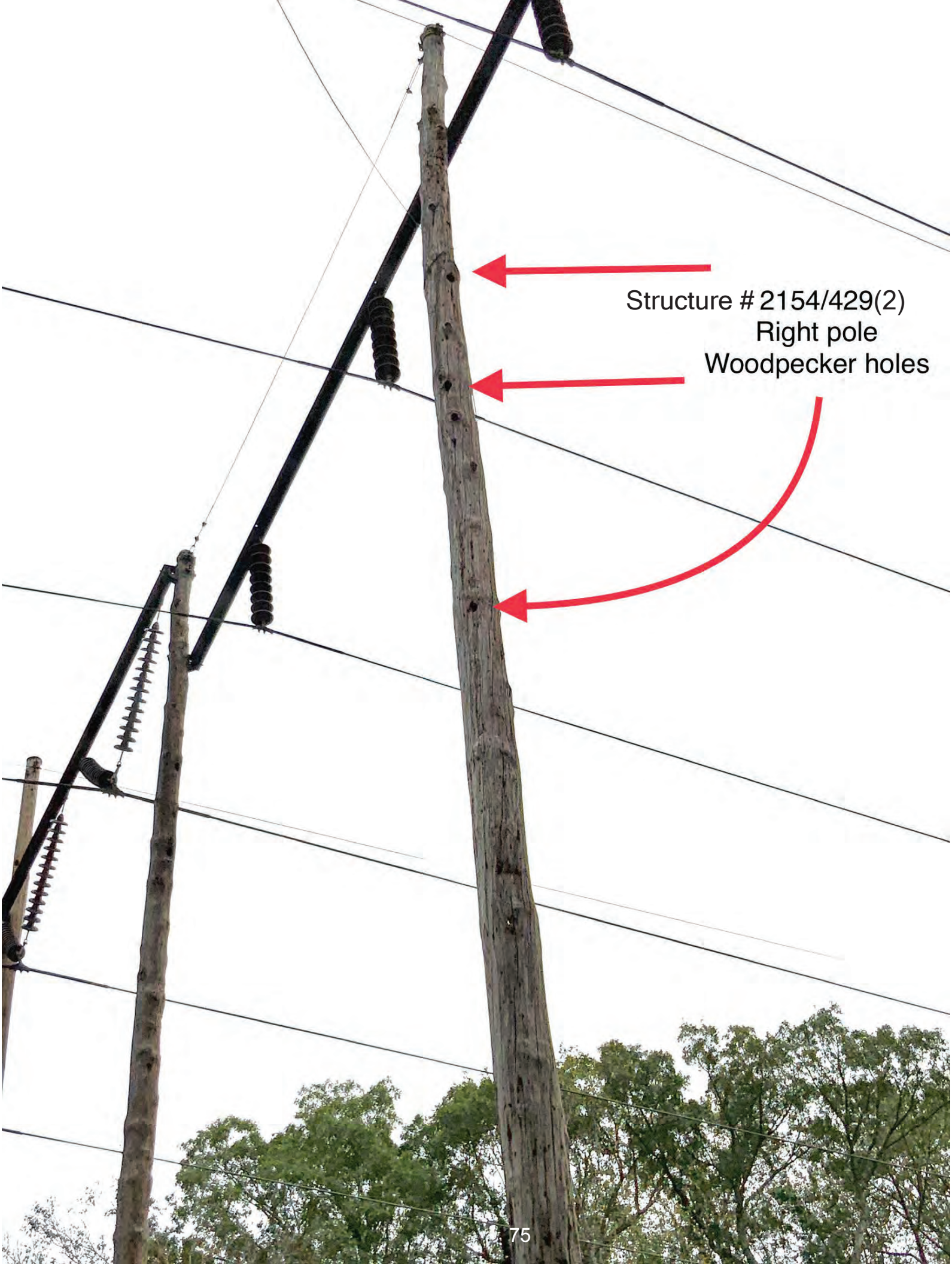

Structure # 2154/427(5)
Left pole
Woodpecker hole

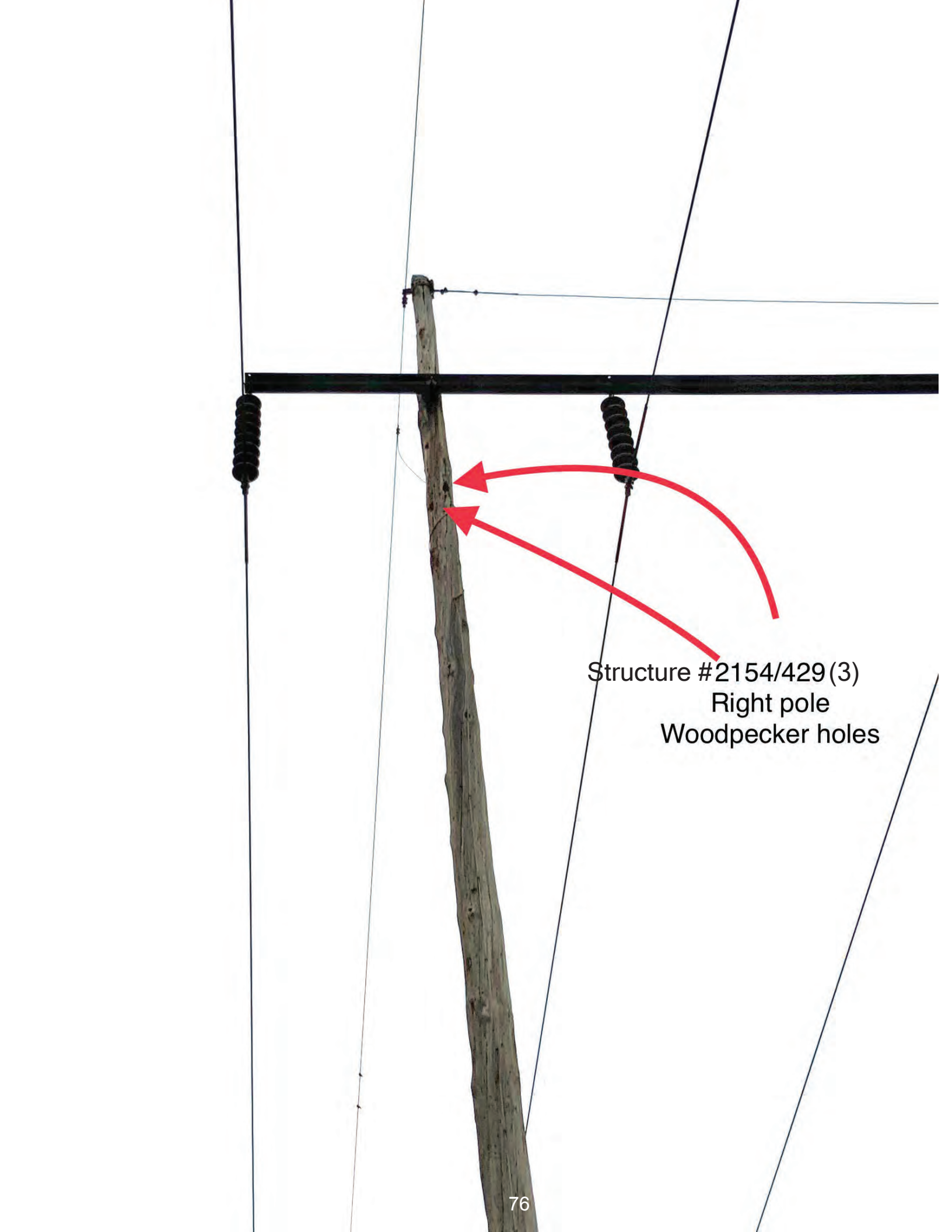

Structure #2154/428 (2)

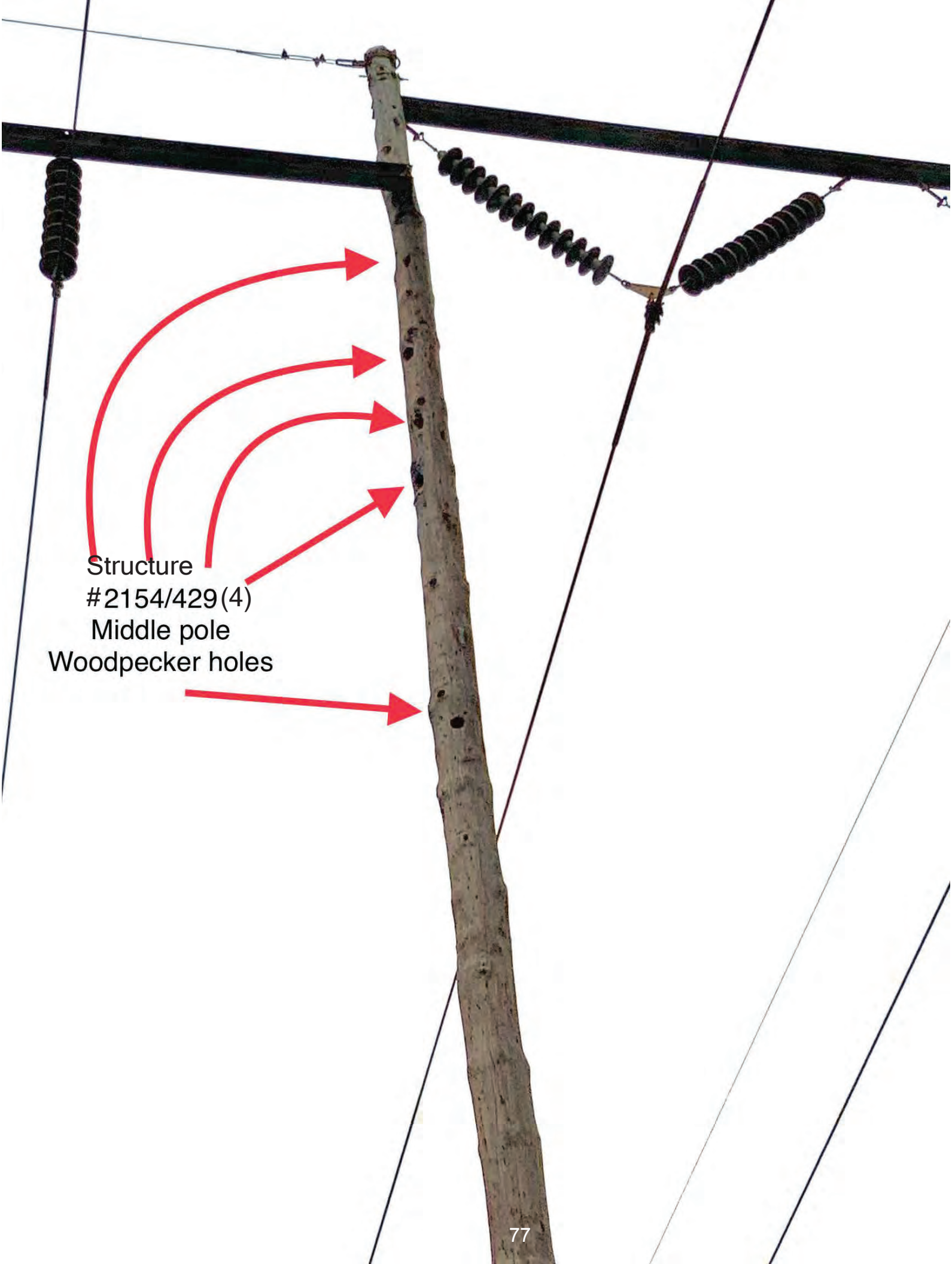
Structure #2154/4208(3)

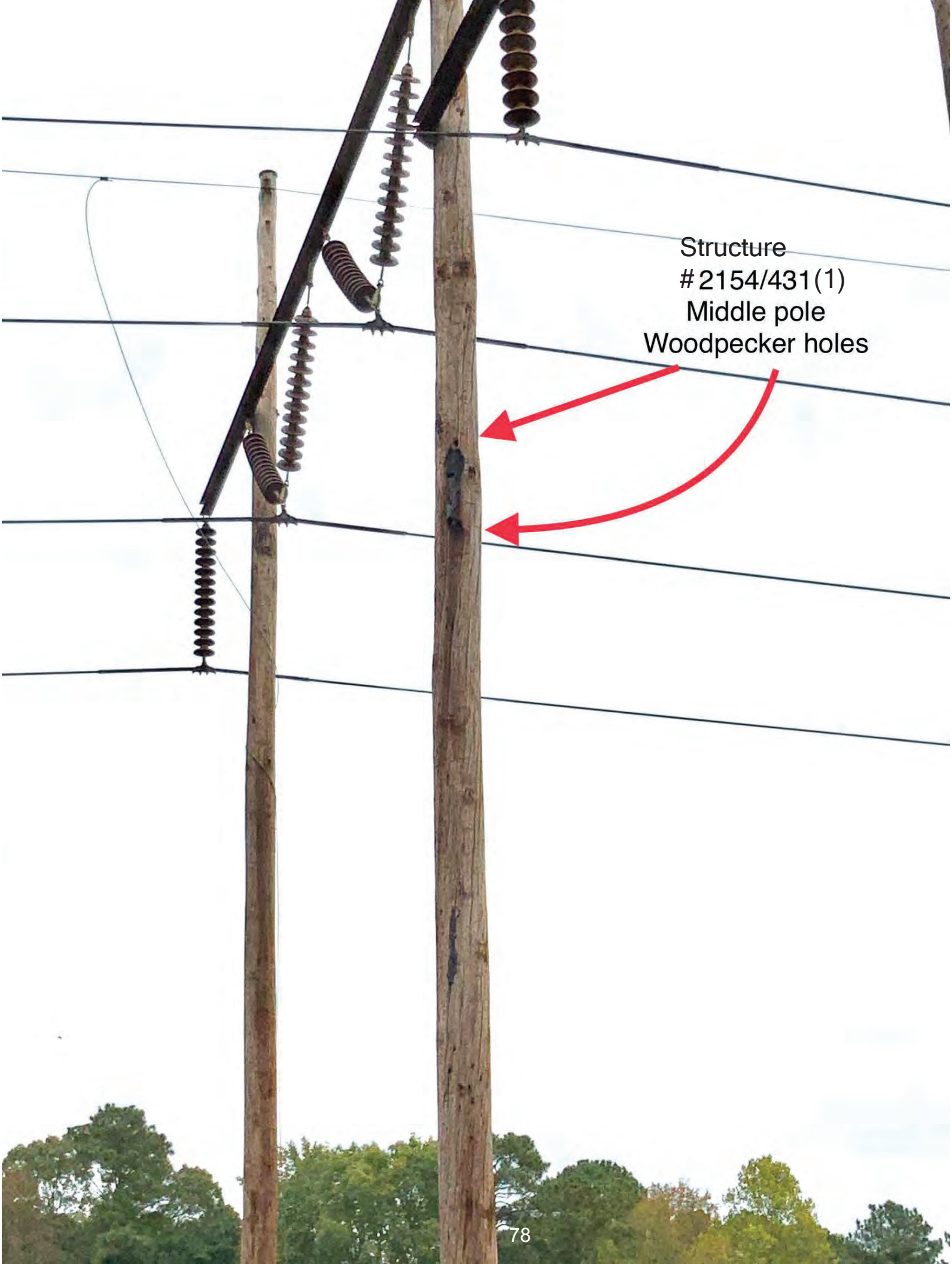
Structure #2154/4208(7)

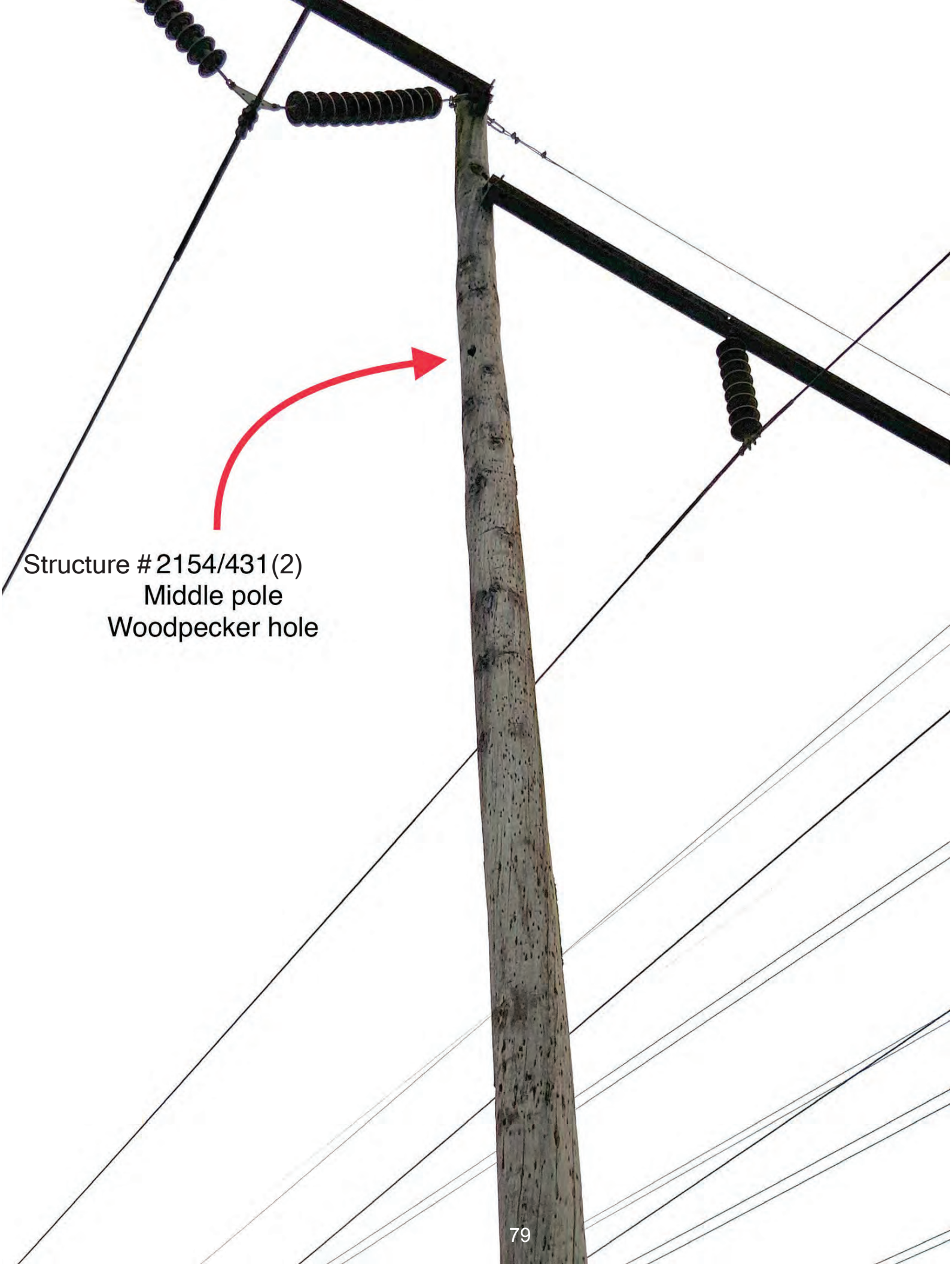

Structure #2154/429(1)
Left pole
Woodpecker hole


Structure # 2154/429(2)
Right pole
Woodpecker holes


Structure #2154/429 (3)
Right pole
Woodpecker holes

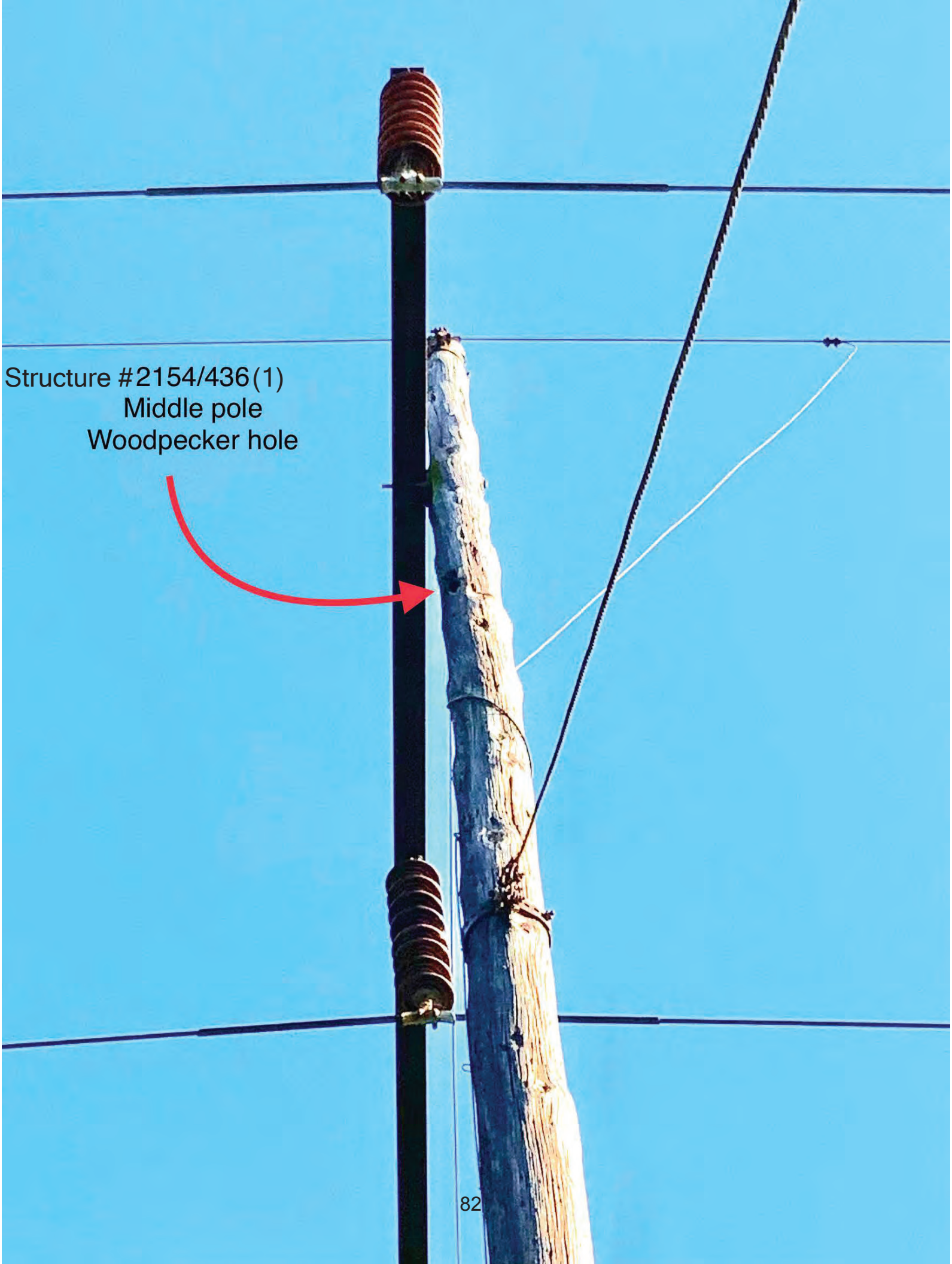

Structure
#2154/429(4)
Middle pole
Woodpecker holes

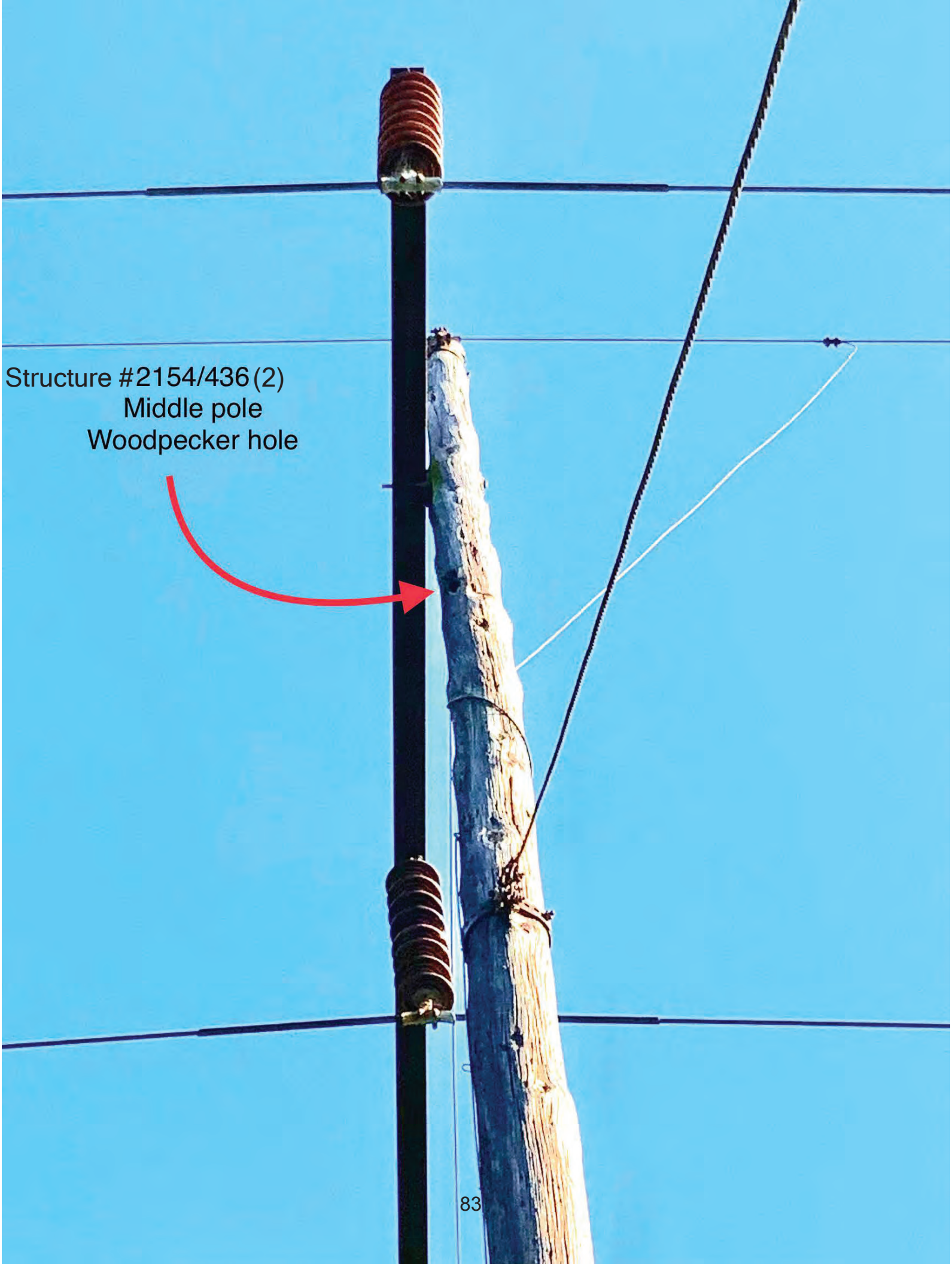

Structure
#2154/431(1)
Middle pole
Woodpecker holes

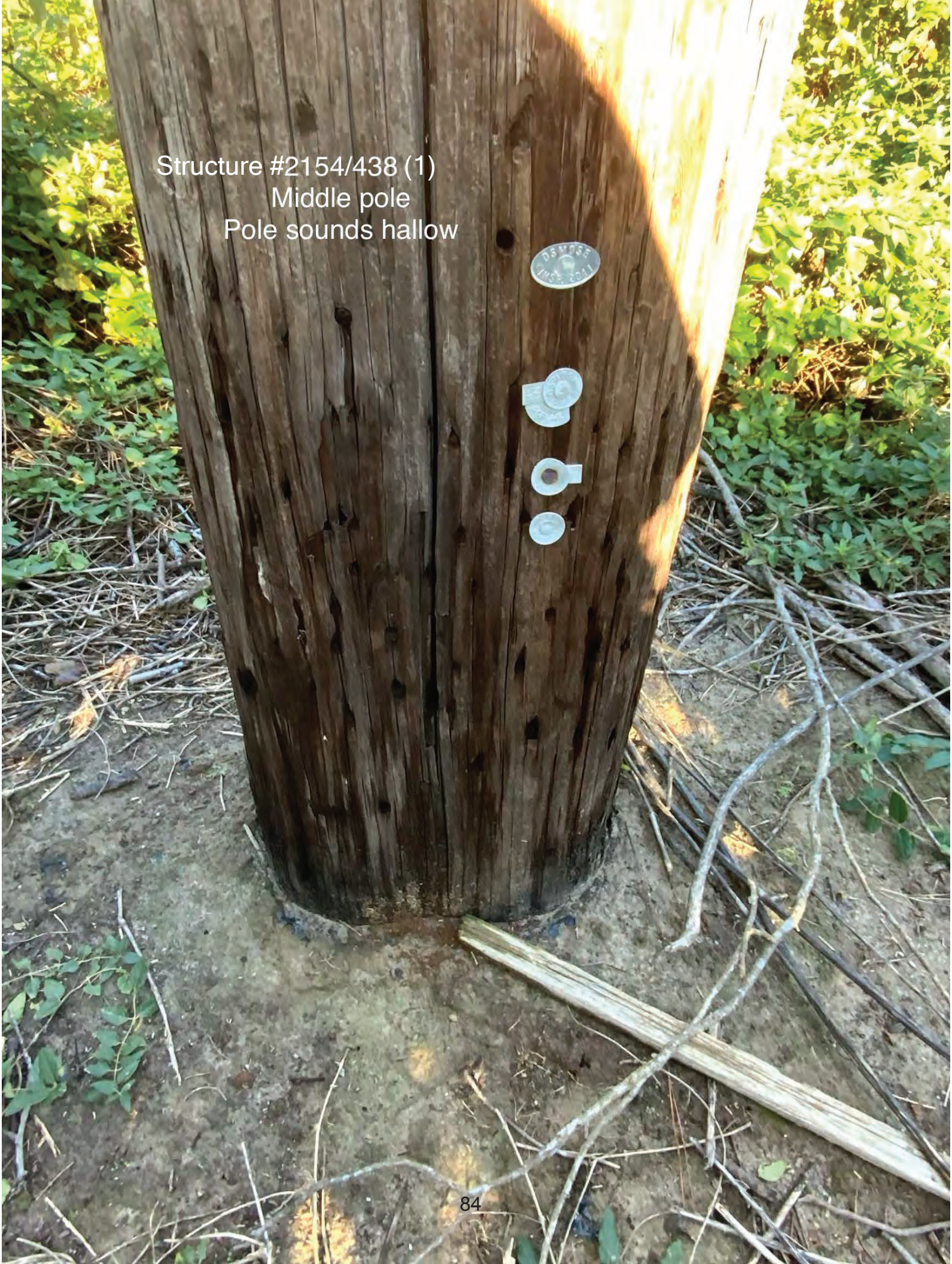

Structure # 2154/431 (2)
Middle pole
Woodpecker hole


Structure #2154/4232(2)


Structure #2154/432 (3)

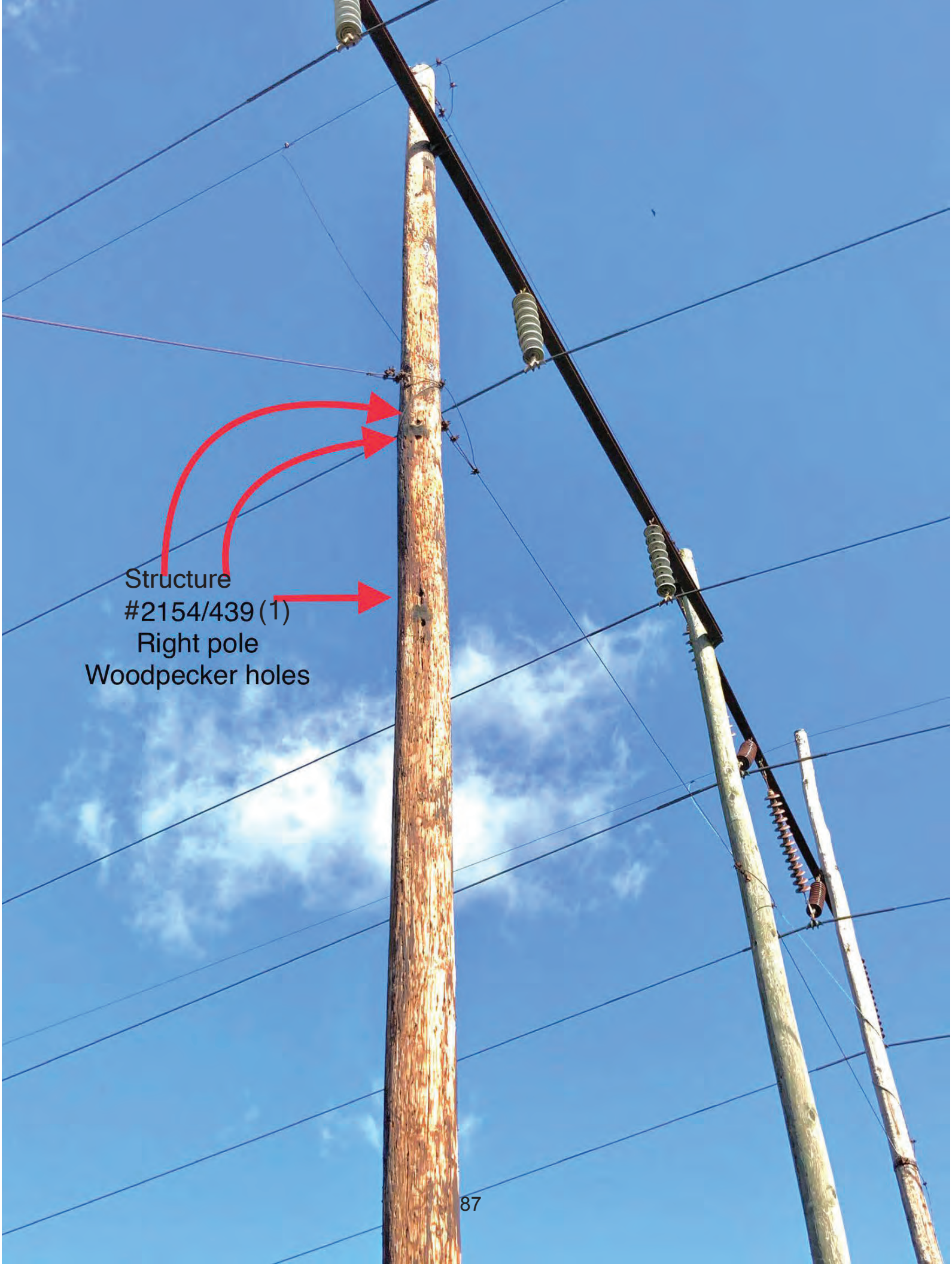

Structure #2154/436(1)
Middle pole
Woodpecker hole

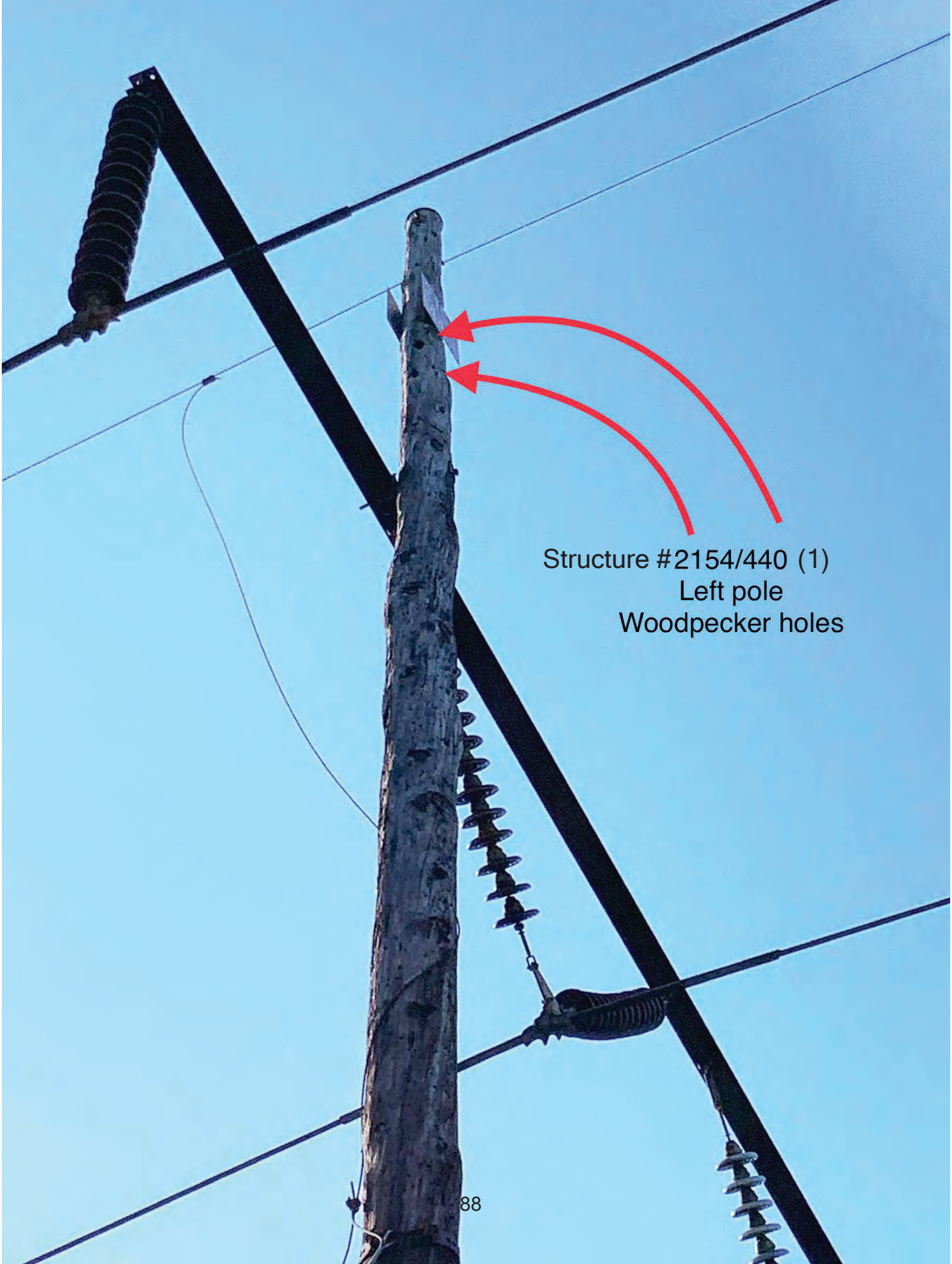

Structure #2154/436 (2)
Middle pole
Woodpecker hole

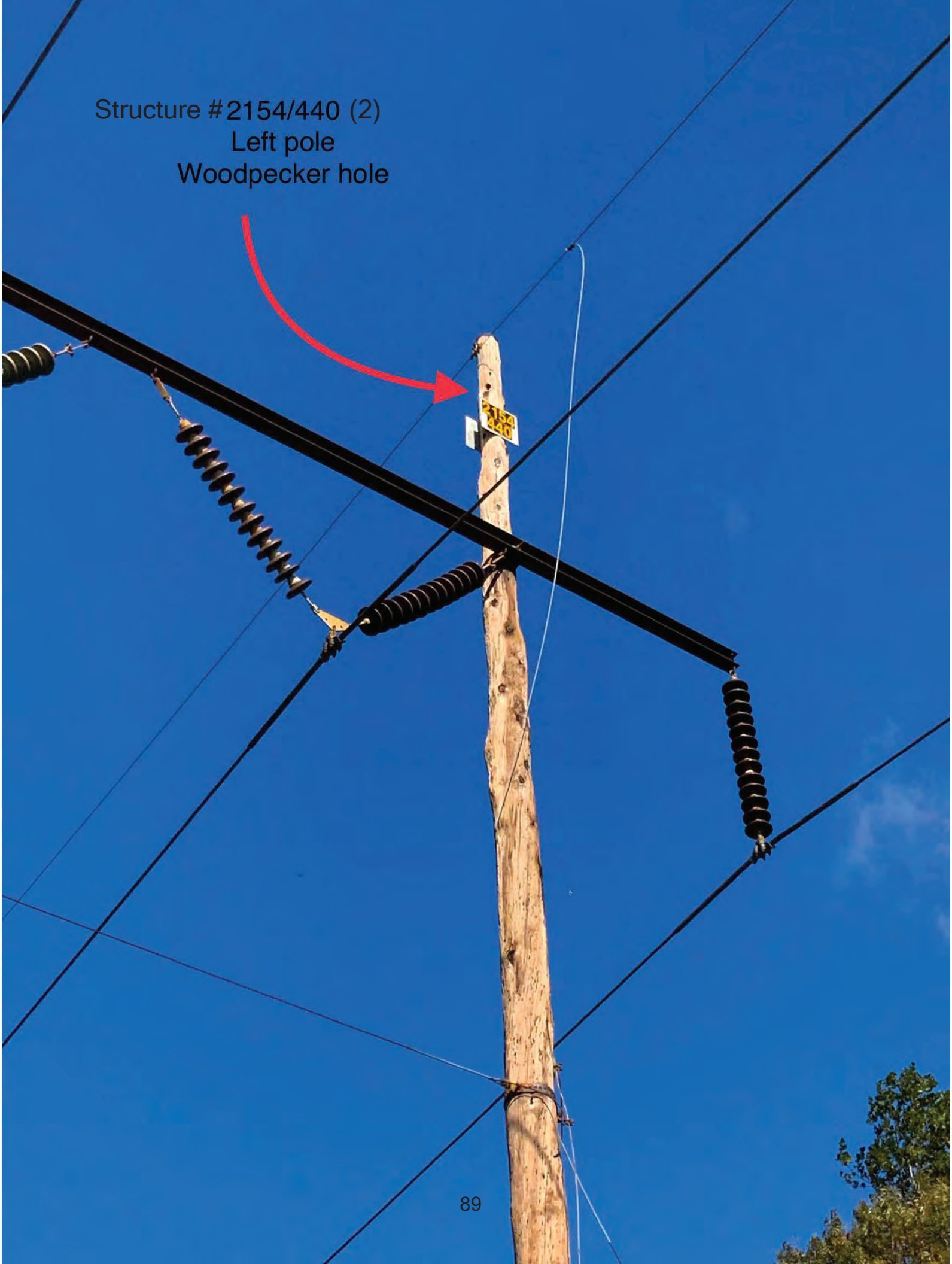

Structure #2154/438 (1)
Middle pole
Pole sounds hallow

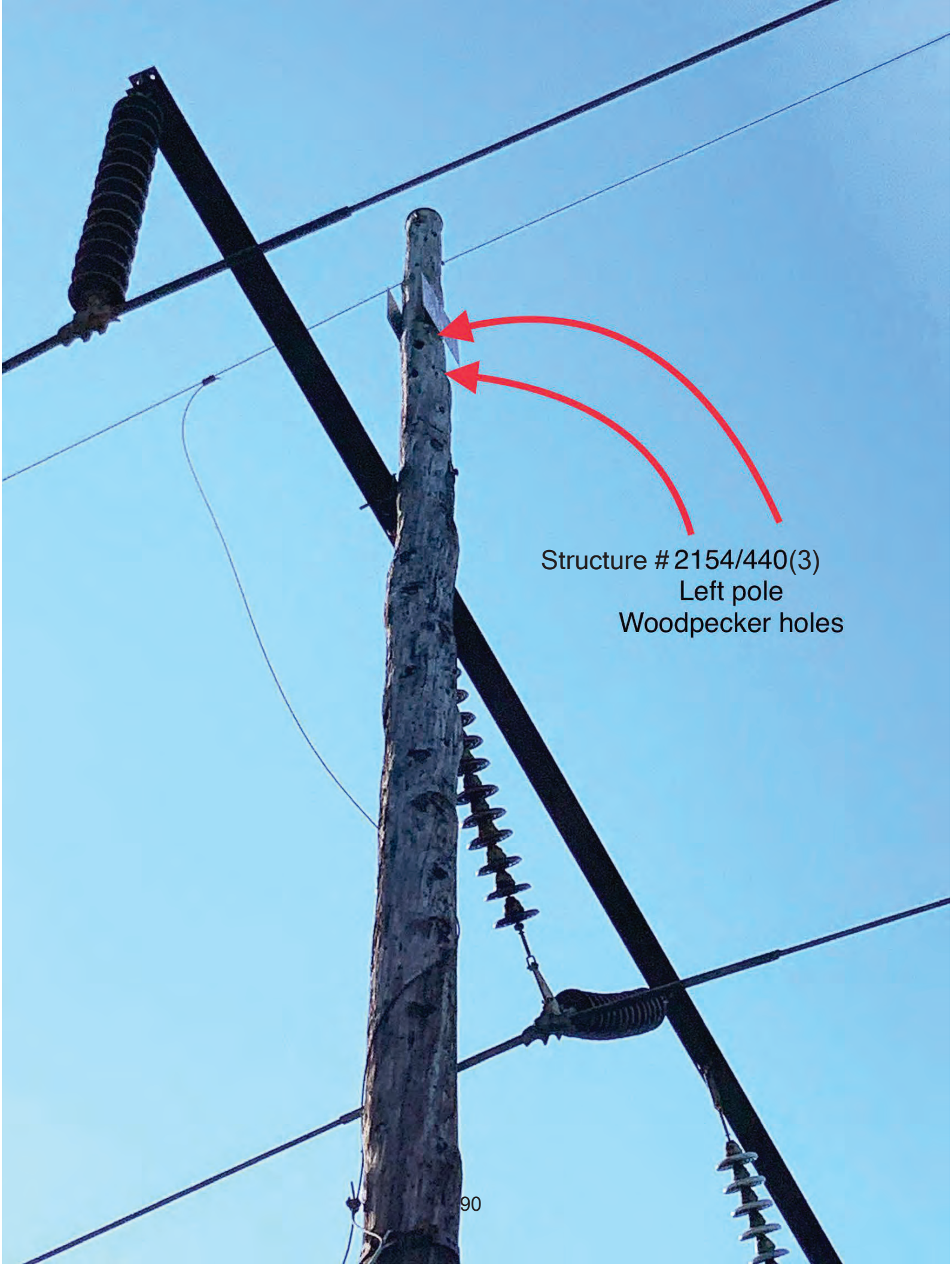

Structure #2154/438 (2)
Middle pole
Woodpecker holes

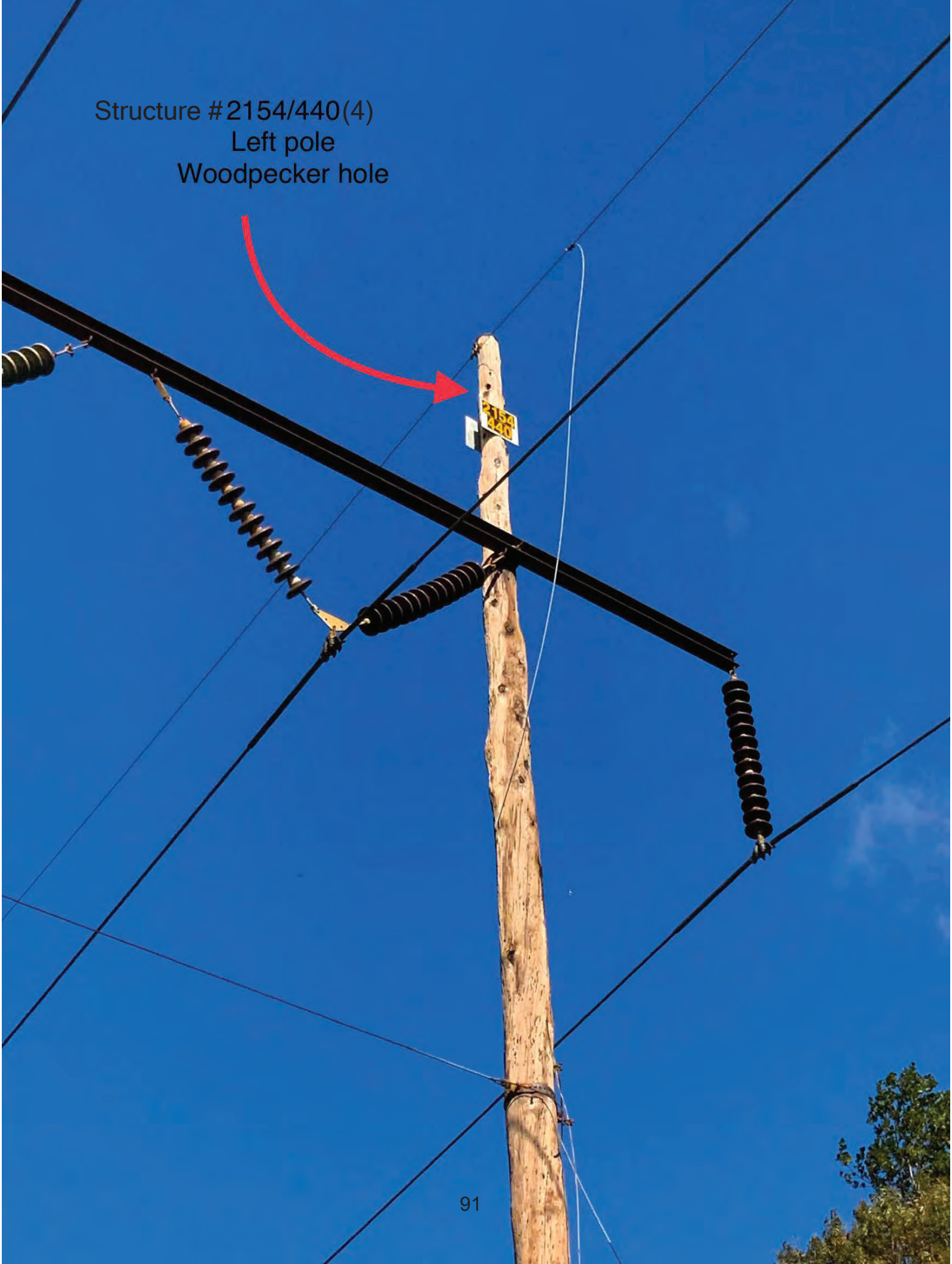

Structure #2154/438(4)
Middle pole
Woodpecker holes


Structure
#2154/439 (1)
Right pole
Woodpecker holes


Structure #2154/440 (1)
Left pole
Woodpecker holes


Structure #2154/440 (2)
Left pole
Woodpecker hole
2154
440

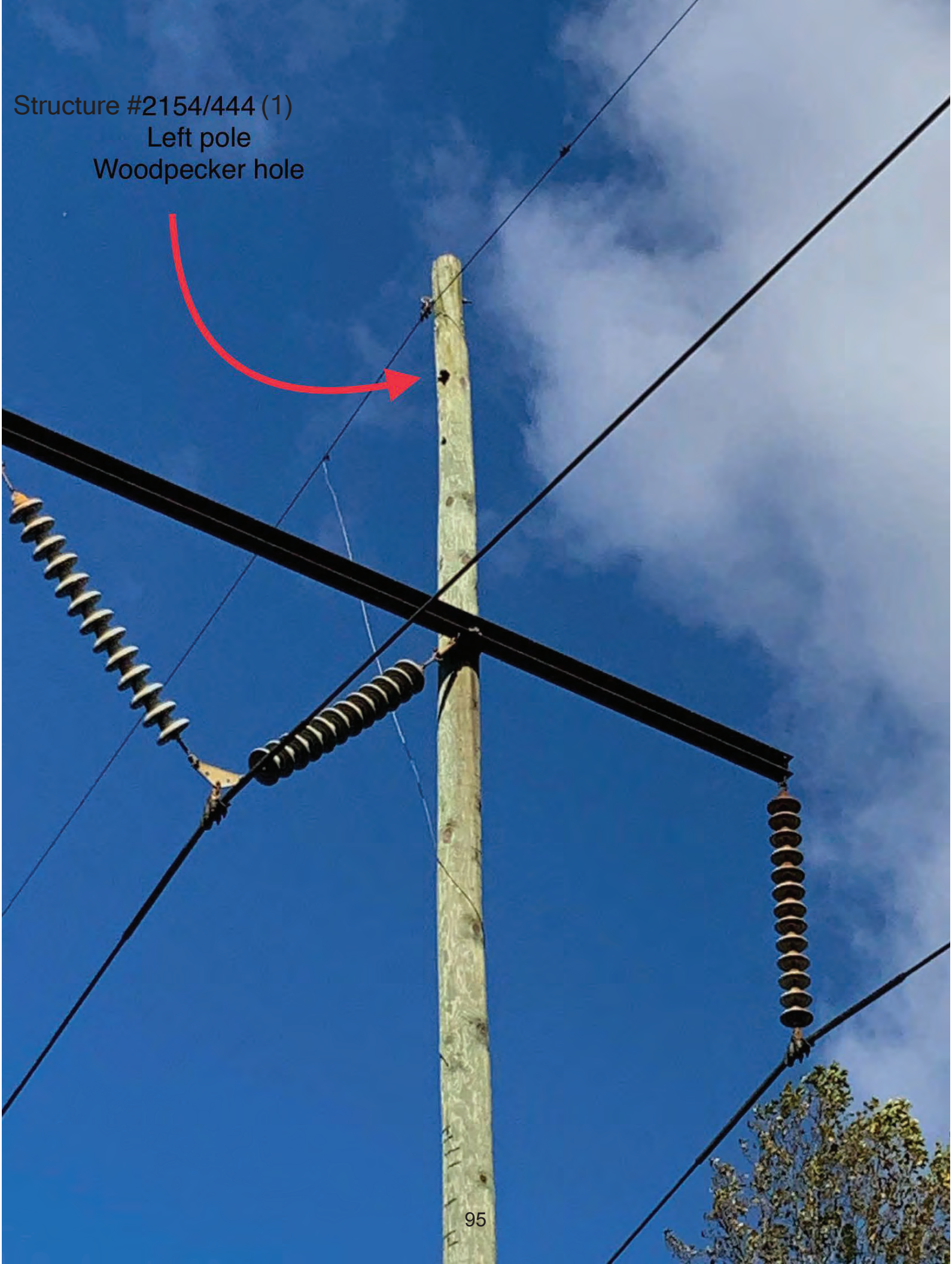

Structure # 2154/440(3)
Left pole
Woodpecker holes

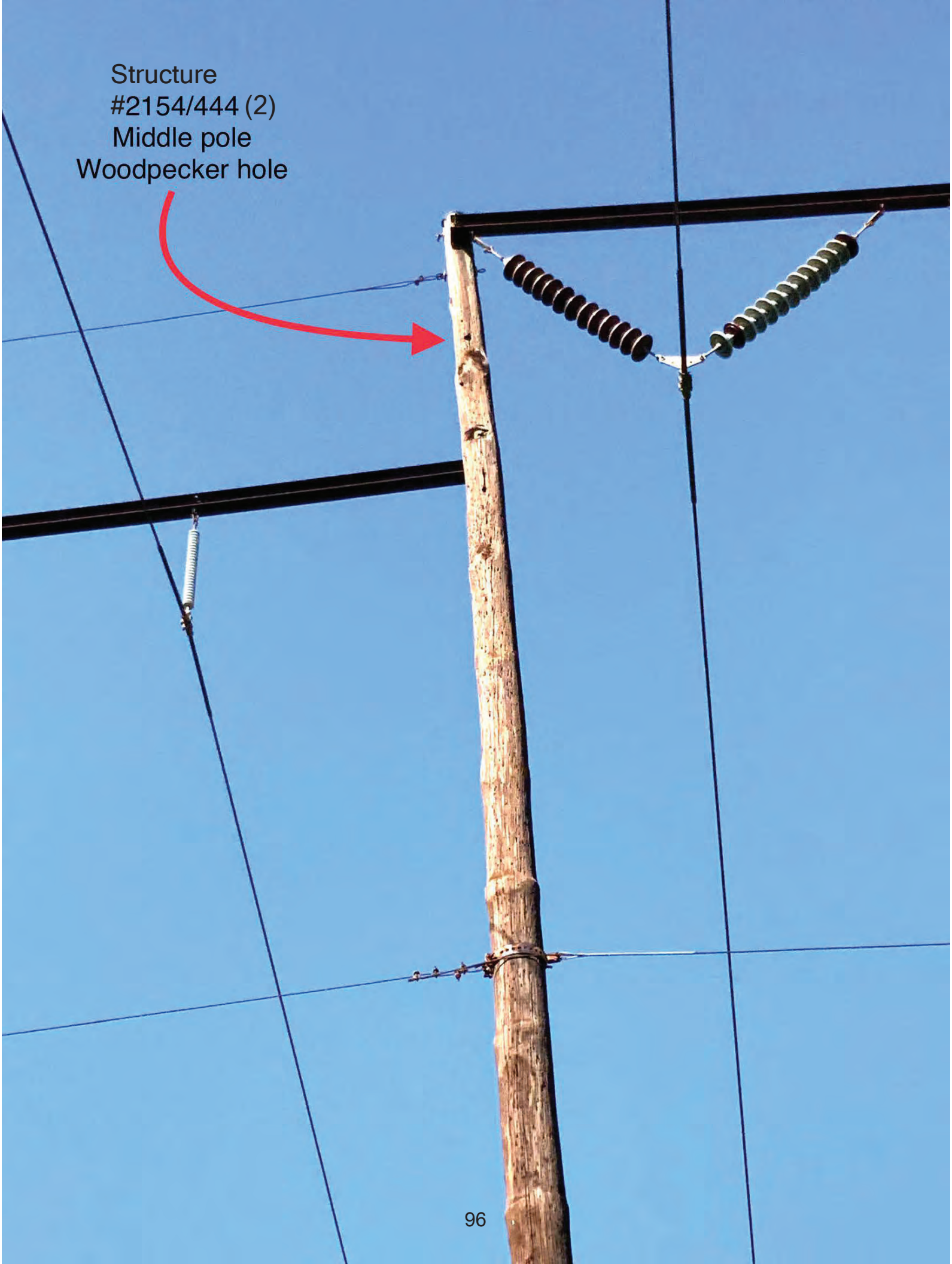

Structure #2154/440(4)
Left pole
Woodpecker hole
2154
440


Structure #2154/442 (3)


Structure #2154/442 (5)

Structure #2154/443 (2)


Structure #2154/444 (1)
Left pole
Woodpecker hole


Structure
#2154/444 (2)
Middle pole
Woodpecker hole

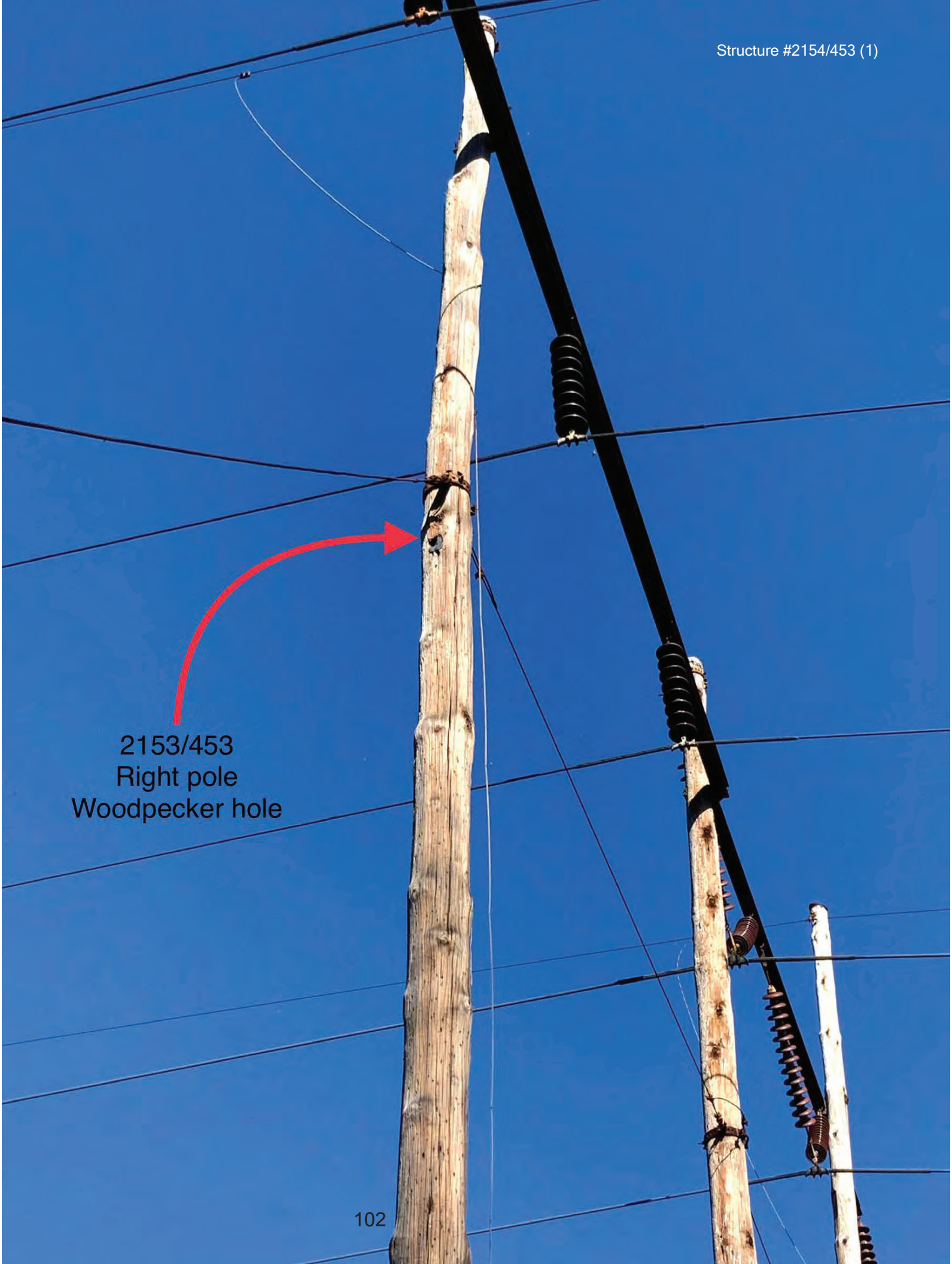
Structure #2154/445 (2)

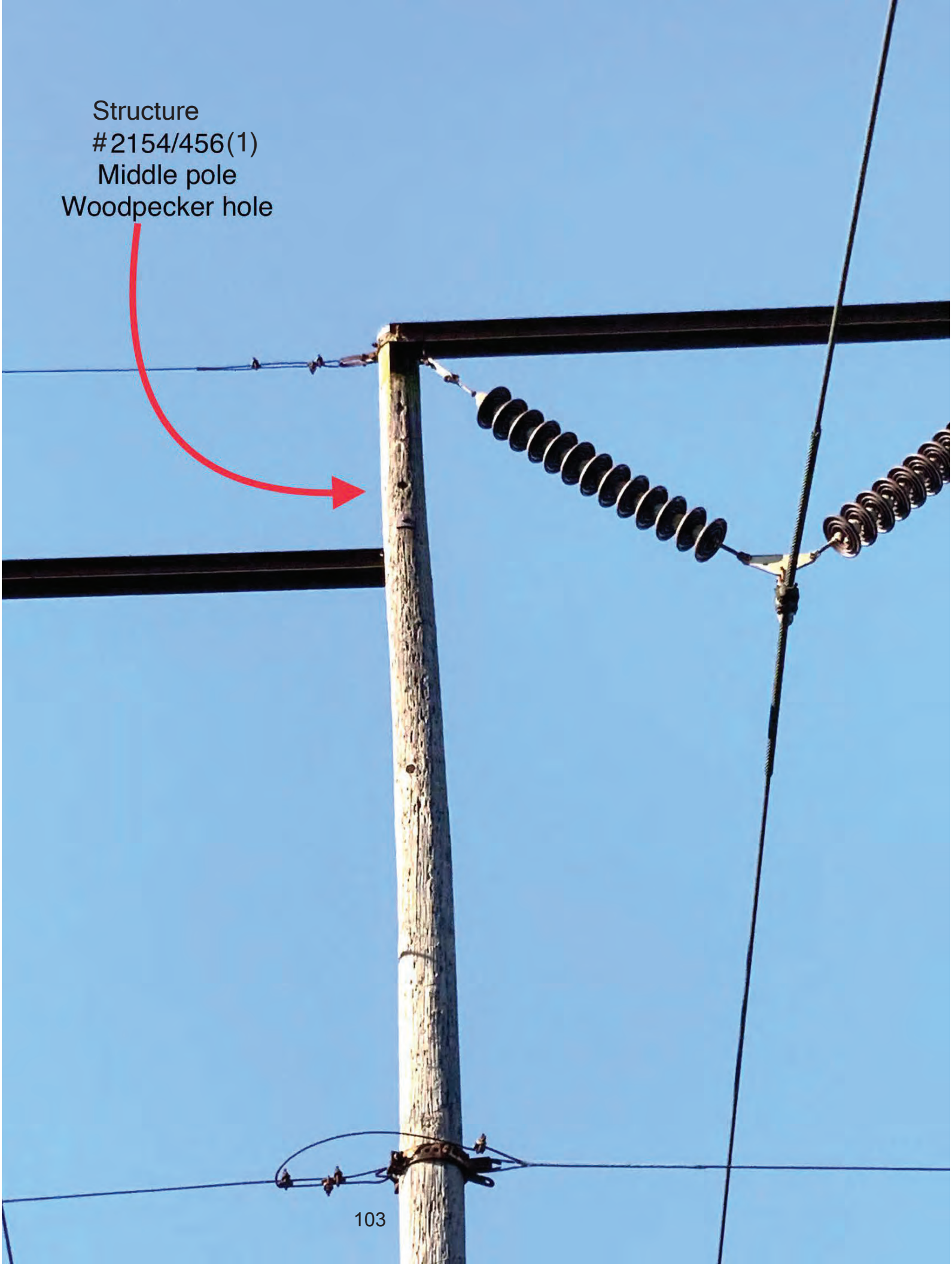
Structure #2154/445 (8)

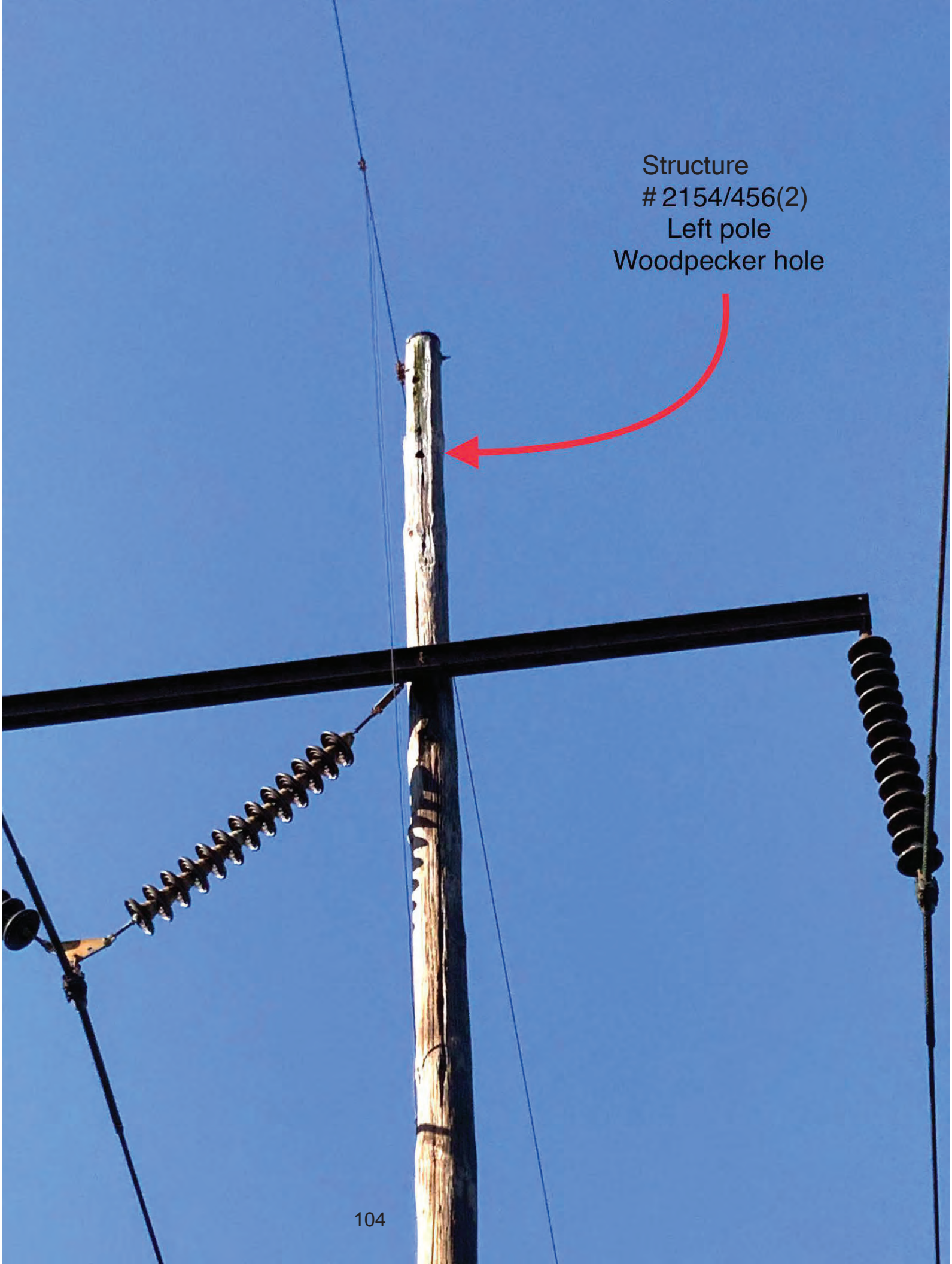
Structure #2154/445 (10)

Structure #2154/451 (2)

Structure #2154/451 (4)


2153/453
Right pole
Woodpecker hole


Structure
#2154/456(1)
Middle pole
Woodpecker hole


Structure
2154/456(2)
Left pole
Woodpecker hole

Structure #2154/465 (2)

Structure #2154/465 (3)

Structure #2154/465 (4)

Structure #2154/465 (7)

Structure #2154/465 (8)


Structure
#2154/470 (1)
Left pole

Structure #2154/471 (2)

Structure #2154/471 (3)

Structure #2154/471 (4)

Structure #2154/471 (5)

Structure #2154/471 (6)


Structure #2154/471 (7)

Structure #2154/471 (10)

Structure #2154/476 (3)

Structure #2154/476 (5)

Structure #2154/476 (7)


Structure #2154/476 (9)


Structure
#2154/477(1)
Middle pole is splitting


Structure # 2154/477(2)
Middle pole is splitting

Structure #2154/479 (2)

Structure #2154/479 (3)

OPEN NOTIFICATIONS

LINE/STR	CAUSE GROUP	CAUSE CODE	CAUSE TEXT	NOTIF. DATE	REPORTED BY
19/193, 2154/468	Guy	Guy Other=	loose	3/29/2018	HAZON
19/196, 2154/471	Insulator Conductor	Wire Position L,M,R,T,B	L	1/27/2016	HAVERFIELD
19/196, 2154/471	Insulator Conductor	Flashed		1/27/2016	HAVERFIELD
19/199, 2154/474	Guy	Corroded		1/27/2016	HAVERFIELD
19/199, 2154/474	Wood Pole	Pole Position=	Right	1/27/2016	HAVERFIELD
19/201, 2154/476	Static Wire	Cotter Key-BO=Backed Out, M=Mi	B/O	3/29/2018	HAZON
19/201, 2154/476	Static Wire	Wire Position L,M,R,T,B	R	3/29/2018	HAZON
19/202, 2154/477 Pending Removal	Wood Pole	Pole Other=	middle pole bad - 3 years	5/18/2017	ADAM063
19/202, 2154/477 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063
19/204, 2154/479	Guy	Guy Other=	broken	3/29/2018	HAZON
2154/413	Guy	Guy Other=	Broken	6/3/2016	
2154/413	Wood Pole	Pole Position=	Left	6/3/2016	
2154/414	Wood Pole	Pole Position=	Left	6/3/2016	
2154/414	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/415	Guy	Corroded		1/27/2016	HAVERFIELD
2154/415	Wood Pole	Pole Position=	Right	1/27/2016	HAVERFIELD
2154/415	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	M the 1 in 140	3/29/2018	HAZON
2154/416	Wood Pole	WP Damage-MI=Minor, MA=Major		5/18/2017	ADAM063
2154/416	Wood Pole	Pole Position=	Middle pole	5/18/2017	ADAM063
2154/420	Wood Pole	Pole Position=	Left	6/3/2016	
2154/420	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/421	Wood Pole	Pole Position=	Left	6/3/2016	
2154/421	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/421			Reported again 7.17.17	6/3/2016	
2154/423 Pending Removal	Wood Pole	Pole Other=	Middle pole bad	5/18/2017	ADAM063
2154/423 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063
2154/423 Pending Removal	Guy	Guy Other=	slack in wire	3/29/2018	HAZON
2154/425 Pending Removal	Wood Pole	Pole Other=	pole bad - 3 years	5/18/2017	ADAM063
2154/425 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063
2154/426	Wood Pole	Pole Position=	Left	6/3/2016	
2154/426	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/427 Pending Removal	Wood Pole	Pole Other=	Right pole bad	5/18/2017	ADAM063
2154/427 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major	middle & left WP damage	5/18/2017	ADAM063
2154/427 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063
2154/428 Pending Removal	Wood Pole	Pole Other=	middle pole bad - 3 years	5/18/2017	ADAM063
2154/428 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063
2154/429	Wood Pole	WP Damage-MI=Minor, MA=Major		5/18/2017	ADAM063
2154/429	Wood Pole	Pole Position=	Middle	5/18/2017	ADAM063
2154/431	Wood Pole	Str Number-M=Missing,F=Faded,A=Aerial	M the 15 in 156	3/29/2018	HAZON

2154/434	Wood Pole	Pole Position=	Left	1/27/2016	HAVERFIELD
2154/434	Wood Pole	Pole Other=	loose	1/27/2016	HAVERFIELD
2154/435	Wood Pole	Pole Position=	Left	6/3/2016	
2154/435	Wood Pole	WP Damage-MI=Minor, MA=Major	Hollow	6/3/2016	
2154/435			Reported again 5.18.17	6/3/2016	
2154/436	Guy	Corroded		1/27/2016	HAVERFIELD
2154/436	Wood Pole	Pole Position=	R	1/27/2016	HAVERFIELD
2154/439	Wood Pole	WP Damage-MI=Minor, MA=Major		1/27/2016	HAVERFIELD
2154/439	Wood Pole	Pole Position=	R	1/27/2016	HAVERFIELD
2154/440	Guy	Guy Other=	slack in wire	3/29/2018	HAZON
2154/440	Wood Pole	Pole Position=	R	3/29/2018	HAZON
2154/444	Insulator Conductor	Wire Position L,M,R,T,B	R	1/27/2016	HAVERFIELD
2154/444	Insulator Conductor	Pins- BO=Backed Out, D=Damaged	B/O	1/27/2016	HAVERFIELD
2154/444	Insulator Conductor	Wire Position L,M,R,T,B	L	1/27/2016	HAVERFIELD
2154/444	Insulator Conductor	Contaminated		1/27/2016	HAVERFIELD
2154/444	Insulator Conductor	Wire Position L,M,R,T,B	M	1/27/2016	HAVERFIELD
2154/444	Insulator Conductor	Broken- L=Leave, R=Replace		1/27/2016	HAVERFIELD
2154/454 Pending Removal	Wood Pole	Pole Position=	Right	6/3/2016	
2154/454 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/454 Pending Removal	Wood Pole	Pole Other=	middle pole bad - 3 years	5/18/2017	ADAM063
2154/454 Pending Removal	Wood Pole	R/R(RP=Replace,RE=Repair) Severity=	RP	5/18/2017	ADAM063

COMPLETED NOTIFICATIONS					
LINE/STR	CAUSE GROUP	CAUSE CODE	CAUSE TEXT	NOTIF. DATE	REPORTED BY
19/193, 2154/468	Guys	Guys - Other	See TEXT	2/12/2004	
19/193, 2154/468	Anchors	Anchors Broken		3/11/1999	
19/194, 2154/469	Guys	Guys - Damaged Fiber Glass Breaker		2/12/2004	
19/194, 2154/469	1A-Structure - Type	3 Pole		6/16/2011	JEREMY3
19/194, 2154/469				6/16/2011	JEREMY3
19/194, 2154/469	1B-Structure - Material	Galv Steel		6/16/2011	JEREMY3
19/194, 2154/469	Wood Pole	Pole Other=	Pole Leaning	2/5/2013	HELOAIR
19/195, 2154/470	Hardware	Hardware - Loose	cross arm needs secured	6/2/2011	
19/195, 2154/470	Structure - Arms	Structure - Arms - Other	arm bent by strom	6/2/2011	
19/202, 2154/477 Pending Removal	Structure - Wood or Concrete	Structure - Drill Pole	DC 3 pole Hframe	2/12/2004	
19/202, 2154/477 Pending Removal	Pole Position	2nd Pole From Left		2/12/2004	
19/204, 2154/479	Guys	Guy Buried		2/12/2004	
19/204, 2154/479	Anchors	Anchors Broken		3/11/1999	
2154/363A	Steel Pole	Needs Painting		5/8/2017	
2154/412	Switch	Switch Other=	Install Anti-Climb Device	10/19/2015	
2154/413	Hardware	Hardware - Corroded		3/8/1999	
2154/413	Guys	Guys - Other	BROKEN DOWN GUY	6/16/2011	WIL0152
2154/413	Guy	Guy Other=	Broken	6/3/2016	
2154/413	Wood Pole	Pole Position=	Left	6/3/2016	
2154/414	Wood Pole	Pole Position=	Left	6/3/2016	
2154/414	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/416	Static Wire	Cotter Key-BO=Backed Out, M=Mi	BO- middle pole	3/30/2018	HAZON
2154/420	Hardware	Hardware - Damaged		3/8/1999	
2154/420	Guys	Guys - Other	BROKEN	6/16/2011	WIL0152
2154/420	Wood Pole	Pole Position=	Left	6/3/2016	
2154/420	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/421	Structure - Wood or Concrete	Structure - Minor Woodpecker Hole / Hole		2/12/2004	
2154/421	Guy	Guy Other=	SLACK	6/16/2011	WIL0152
2154/421	Wood Pole	Pole Position=	Left	6/3/2016	
2154/421	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/422	Right-of-way	Right-of-Way - Excess Undergrowth	BAMBO	6/16/2011	WIL0152
2154/423 Pending Removal	Right-of-way	Right-of-Way - Excess Undergrowth	BAMBO	6/16/2011	WIL0152
2154/423 Pending Removal	Guy	Guy Other=	installing guy guards	6/14/2016	
2154/424	Conductor	Damaged Conductor		3/8/1999	
2154/425 Pending Removal	Conductor	Damaged		1/26/2007	CBH
2154/425 Pending Removal	Conductor	Wire Position L,M,R,T,B	C	1/26/2007	CBH
2154/426	Encroachment	Encroachment - Other	Construction in ROW between str 426-4	12/10/2008	CBH
2154/426	Wood Pole	Pole Position=	Left	6/3/2016	
2154/426	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	

2154/435	Wood Pole	Pole Position=	Left	6/3/2016	
2154/435	Wood Pole	WP Damage-MI=Minor, MA=Major	Hollow	6/3/2016	
2154/436	Encroachment	Encroachment - Building / Structure	Shed	1/26/2007	CBH
2154/444	Structure - Wood or Concrete	Structure - Drill Pole	DC 3 pole Hframe	2/12/2004	
2154/445		Conductor Insulators - Corona		1/26/2007	CBH
2154/445	Phase Position	Left	between 1 & 2 bells	1/26/2007	CBH
2154/451	Wood Pole	Ground Wire-M=Missing,C=Cut	pole ground needs repairing	6/13/2017	
2154/452	Hardware	Hardware - Damaged		3/11/1999	
2154/454 Pending Removal	Wood Pole	Pole Position=	Right	6/3/2016	
2154/454 Pending Removal	Wood Pole	WP Damage-MI=Minor, MA=Major		6/3/2016	
2154/457	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/458	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/458	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/459	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/459	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/460	Hardware	Hardware - Loose		3/10/1999	
2154/460	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/460	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/461	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/461	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/462	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/462	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/463	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/463	Steel Pole	Pole Other=	Painted on 05.13.15	5/27/2015	
2154/464	Insulator Conductor	Cond Insulator- Other=	replacing Vintage NGK Polymer ins.	2/15/2012	
2154/466	Switch	Vacuum Bottle(s)-Finger Reset	Closed Switch Out	5/16/2012	
2154/466				5/16/2012	

I. NECESSITY FOR THE PROPOSED PROJECT

M. In addition to the other information required by these guidelines, applications for approval to construct facilities and transmission lines interconnecting a Non-Utility Generator ("NUG") and a utility shall include the following information:

1. The full name of the NUG as it appears in its contract with the utility and the dates of initial contract and any amendments;

2. A description of the arrangements for financing the facilities, including information on the allocation of costs between the utility and the NUG;

3. a. For Qualifying Facilities ("QFs") certificated by Federal Energy Regulatory Commission ("FERC") order, provide the QF or docket number, the dates of all certification or recertification orders, and the citation to FERC Reports, if available;

b. For self-certificated QFs, provide a copy of the notice filed with FERC;

4. Provide the project number and project name used by FERC in licensing hydroelectric projects; also provide the dates of all orders and citations to FERC Reports, if available; and

5. If the name provided in 1 above differs from the name provided in 3 above, give a full explanation.

Response: Not applicable.

I. NECESSITY FOR THE PROPOSED PROJECT

N. Describe the proposed and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations and other ground facilities associated with the proposed project.

Response: Not applicable.