Part 3

PREFILED TESTIMONY
OF
WAYNE D. MCCOY
ON BEHALF OF THE STAFF OF
THE STATE CORPORATION COMMISSION

APPLICATION OF
VIRGINIA ELECTRIC AND POWER COMPANY
CASE NO. PUE-2014-00025

Q1. PLEASE STATE YOUR NAME AND AFFILIATION.

A1. My name is Wayne D. McCoy. I am the President of Mid Atlantic Environmental LLC ("MAE").

Q2. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A2. I am testifying on behalf of the Staff ("Staff") of the State Corporation Commission ("Commission"). On March 31, 2014, Virginia Electric and Power Company d/b/a Dominion Virginia Power ("Dominion Virginia Power" or "Company") filed with the Commission an application ("Application") for a certificate of convenience and necessity for the Remington CT-Warrenton 230 kilovolts ("kV") Double Circuit Transmission Line, Vint Hill-Wheeler and Wheeler-Loudoun 230 kV Transmission Lines, 230 kV Vint Hill Switching Station, and 230 kV Wheeler Switching Station.

On November 14, 2014, the Company filed a Supplemental Appendix and Testimony, in part, to amend some of the routes described in the original Application. This resulted, in part, in replacement of the proposed Wheeler-Loudoun 230 kV Transmission Line with a Wheeler-Gainesville 230 kV

Transmission Line.[1] MAE was hired by the Commission's Division of Energy Regulation to conduct an independent environmental assessment of Dominion Virginia Power's Application.

Q3. PLEASE SUMMARIZE YOUR QUALIFICATIONS.

A3. My qualifications are presented in Appendix IX in the attached report.

Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A4. The purpose of this testimony is to summarize MAE's findings and conclusions and to sponsor the attached report entitled, "Report to the State Corporation Commission on the Environmental Aspects of the Remington CT-Warrenton 230 kV Double Circuit Transmission Line, Vint Hill-Wheeler and Wheeler-Gainesville 230 kV Transmission Lines, 230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station." The attached report details MAE's review and evaluation of the Company's proposed routes and alternatives. I adopt this written testimony and the attached report as my prefiled testimony in this case.

Q5. DO YOU HAVE ANY INTRODUCTORY REMARKS?

A5. Yes. In order to resolve certain NERC[2] transmission planning reliability standard violations and maintain reliable electric service within Fauquier and Prince William Counties, Dominion Virginia Power has proposed two transmission line

[1] According to the filing, the changes set forth in the Supplemental Appendix are related to the change to terminate the Proposed Projects, and the rejected Option A Alternative, at the Gainesville Substation rather than the Loudoun Substation, and to reflect Route C-1.1c-Gainesville as the Updated Proposed Route (which was described in the Supplemental Direct Testimony of Diana T. Faison filed on June 25, 2014).
[2] North American Electric Reliability Corporation.

projects, collectively called the "Projects". Three different electrical solutions (Option A, Option B, and Option C) were studied by the Company. These electrical solutions involved different transmission lines and different sets of substation and switching stations that included a mixture of existing and proposed facilities. Accordingly, there were several study areas of environmental impact to review.

The Application states that the Company requested the services of Natural Resource Group, LLC ("NRG"), to help collect information within these study areas, perform a routing analysis comparing the alternative routes, and document the routing efforts in the Environmental Routing Study filed as part of the Application. In addition, Cultural Resources, Inc., and Williamsburg Environmental Group, Inc., were engaged to identify known cultural and environmental resources.[3] The Company also held Open Houses for public input and created a Citizens Advisory Group ("CAG").

The Company's March 31, 2014 Application included a set of alternative routes for the new transmission line construction that is required in Option A and Option C. Option B does not require any new transmission line construction, uses all existing right-of-way, and has only one transmission configuration, so has no routing alternatives. The Company determined the original set of alternative routes for the Warrenton-Wheeler 230 kV line of Option A to be impractical or unbuildable. Thus, the Company requested that Option B and the set of

[3] Pre-filed testimony of Company witness Diana T. Faison at 4.

alternative routes for the Vint Hill-Wheeler 230 kV transmission line of Option C be noticed to the public.

Q6. DID THE COMPANY CONSULT MEMBERS OF THE COMMUNITY?

A6. Yes. The Company coordinated with several municipalities and state agencies for their input on the alignments. The Company also created and supported the CAG to obtain feedback from local citizens. The CAG members reviewed the study areas associated with the three electrical solutions and rejected the original Option A and its entire set of alternative routes. The CAG supported the original Option C alignment. The CAG members met on multiple occasions and offered their collective opinion. They were provided information by the Company, which did not include the fact that Option C would be in violation as of its in-service date and would require additional projects to support reliability.

Q7. DID YOUR REVIEW AND EVALUATION OF THE COMPANY'S PROPOSED ROUTES AND ALTERNATIVES CONFIRM THAT AN OPTION A TRANSMISSION LINE BETWEEN WARRENTON SUBSTATION AND WHEELER SWITCHING STATION IS UNBUILDABLE?

A7. No. The Staff met with the Company to review the original Option A Vint Hill-Wheeler alignments and associated impacts of each. During this field trip the Staff identified a new potential route that had not been studied by the Company. This new Option A alignment did not have the constraints that made

other Option A alignments "unbuildable."[4] This new alignment was later termed by the Company as "Option A-2/3 Staff Route" in the aforementioned Supplemental Appendix and Testimony.

Q8. DID THE COMPANY SUPPLEMENT ITS MARCH 31, 2014 APPLICATION AS A RESULT OF THE STAFF'S PRELIMINARY EVALUATION?

A8. Yes. As a result of my preliminary evaluation and after additional routing analysis and suggestions by the Staff, the Company filed its Supplemental Appendix and Testimony that identified three new routes for consideration: (1) Option A, Route A-2/3 Staff; (2) Option C, Route C-1.1c-Gainesville (Updated Proposed Route); and (3) Route C-2 Gainesville (Updated Viable Alternate Route).[5] Option B and its route remained unchanged.

Q9. PLEASE DESCRIBE THE COMPANY'S ANALYSIS OF OPTION A-2/3 STAFF ROUTE.

A9. Dominion Virginia Power and NRG performed an analysis of this additional route and included it as part of the updated Table 4-1, Route Alternatives Environmental Features Comparison Table. The Table is found in Company witness Lake's Supplemental Testimony.[6]

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[4] Specifically, the Company stated that Fauquier County would not allow crossing of its land, which, per the Company, would render Option A 2/3 unbuildable. However, that Fauquier County would not allow crossing of its land could not be confirmed by any documents produced by the Company or elsewhere in the record. In fact, Fauquier Board of Supervisor filed a letter that failed to make this representation.

[5] *See* Supplemental Appendix, and Supplemental Direct Testimonies of Company witnesses Diana T. Faison (Second Supplemental), Wilson O. Velazquez, Robert J. Shevenock II, Mark R. Gill, and Douglas J. Lake.

[6] Supplemental Direct Testimony of Company witness Douglas J. Lake at Schedule 1.

Q10. WHAT WERE THE RESULTS OF THE COMPANY'S ANALYSIS OF OPTION A-2/3 STAFF ROUTE?

A10. Mr. Lake's testimony is that the Option A-2/3 Staff Route alignment is the best of the Option A Warrenton-Wheeler overhead routes. However, the Company's preferred solution is Option C on its "Preferred Route," C-1.1c. Option C involves the construction of a new Vint Hill Switching Station.

Q11. PLEASE DESCRIBE THE BASIS FOR YOUR IMPACT ANALYSIS OF THE AMENDED PROPOSED AND ALTERNATIVE ROUTES.

A11. In response to the Staff's request, Dominion Virginia Power and NRG prepared an updated Table 4-1 ("updated Table"), originally found In Volume III of the Application. This updated Table combines Options A, B and C in a complete table format. Additionally, the updated Table reflects the termination point as Gainesville, not Loudoun. MAE used the updated Table in its impact analysis. Mr. Lake of NRG provided the updated Table on December 16, 2014, as part of Interrogatory Question #139. It is included as part of our Exhibits.

Q12. DID YOUR ANALYSIS INCLUDE ANY ASSUMPTIONS THAT WERE DIFFERENT FROM THE ASSUMPTIONS USED BY NRG?

A12. Yes. NRG uses a 120-foot right-of-way ("ROW") for comparison of other alignments to the 100-foot ROW of Route C-1.1c. For consistency and comparison purposes, I have used a 100-foot ROW for all alignments as the basis of my impacts comparison and as identified in the updated Table 4-1.

Q13. WHAT WAS THE OVERALL CONCLUSION FROM YOUR COMPARATIVE IMPACTS ANALYSIS?

A13. MAE concludes that Option C-1.1c-Gainesville has less environmental impact as compared to the Option A 2/3 and A 2/3 Staff. However, based upon other's testimony, it appears that Option C 1.1c may require as many as four additional projects to match the reliability of Option A 2/3 Staff Route, which would only require one additional project for long term reliability. We therefore cannot assess the total environmental impacts, as the additional projects are undefined as of this date.

Q14 PLEASE DESCRIBE YOUR FINDINGS RELATIVE TO OVERALL ROUTE LENGTH, RESIDENTIAL VIEWSHEDS, AND GREENFIELD RIGHT-OF-WAY.

A14. My conclusion that Route C-1.1c is less-impacting than Route A-2/3 Staff is based primarily on the fact that it is 6.3 miles (22.8 %) shorter. In addition, Option C-1.1c-Gainesville has 112 fewer houses (131 versus 243) within 500 feet of the ROW than Option A-2/3 Staff Route, though only 6 fewer houses (39 versus 45) within 200 feet of the ROW. We offer no opinion as to the visual screening of the identified homes. Option C-1.1c-Gainesville would also require less new greenfield ROW than Option A-2/3 Staff Route by approximately 5.8 miles.

Q15. PLEASE DESCRIBE YOUR FINDINGS REGARDING THE POTENTIAL USE OF EXISTING ROW.

A15. Option C-1.1c-Gainesville has collocation opportunities totaling 17.9 miles (84 % of its total route length). Option A-2/3 Staff Route has collocation opportunities totaling 18.4 miles (66.7 % of its total route length).

Q16. WHAT ADDITIONAL FINDINGS RELATIVE TO LAND USE WOULD YOU LIKE TO HIGHLIGHT?

A16. There are 4.3 fewer miles of forested lands impacted by Option C-1.1c-Gainesville compared to Option A-2/3 Staff Route. However, on balance, Option A-2/3 Staff Route has less impact within the Rural Crescent area than Option C-1.1c-Gainesville (0.5 mile versus 5.2 miles) and less impact in developed areas (3.9 miles versus 4.4 miles).

Q17. PLEASE DESCRIBE YOUR FINDINGS RELATIVE TO WETLANDS.

A17. Total wetlands potentially disturbed by the centerline and in ROW are approximately the same for each route (36.7acres for Option C-1.1c-Gainesville versus 35.3 acres for Option A-2/3 Staff Route).

Q18. PLEASE CONTINUE WITH YOUR FINDINGS RELATIVE TO CULTURAL RESOURCES.

A18. Fauquier and Prince William Counties enjoy a high concentration of cultural resources. Both routes impact these cultural resources to some extent. Option A-2/3 Staff Route has fewer archeological sites within its ROW (2 versus 4), but more National Register-Eligible and -Listed Sites (7 versus 5) within 0.5 mile than Option C-1.1c-Gainesville. The number of architectural resources

located between 0.5 mile and 1.0 mile of the ROW centerline are equal for both routes. No Battlefield Core areas appear to be impacted by either route.

The Option A-2/3 Staff Route traverses an open field between Mile Markers 3 and 4. South of this area is the Auburn/Coffee Hills Historic District/Battlefield, and the line could potentially have a visual effect on this area. Based upon testimony heard at the September 30, 2014 public hearing, this area is to be developed into a residential subdivision. A subsequent visit to the site revealed a sign offering building sites for sales. Option A-2/3 Staff Route crosses the Auburn II Study area. This area appears to be a supply corridor, located between the Auburn I/II and Buckland Mills Study areas.

Q19. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A19. This is a complex case involving multiple routing options. An evaluation of these options necessitates weighing the costs and benefits of two competing and noncommensurate objectives: the minimization of environmental impacts versus the maintenance of electrical reliability at minimum cost. Option C-1.1c-Gainesville would cause the least environmental impact. Option A-2/3 Staff Route is longer and has greater environmental impact, quantitatively; however, I believe it is clearly a buildable option. The Company's Preferred Route (Option C-1.1c-Gainesville), based upon Staff's testimony, would require four additional projects to achieve the same long term reliability as Option A-2/3 Staff Route. We are unable to assess the additional impacts associated with the four additional projects in this very sensitive area of Virginia.

As a result, we can offer no evaluation of the total impacts associated with this option, which could cause it to be more impacting.

Q20. DOES THIS CONCLUDE YOUR TESTIMONY?

A20. Yes, it does. Thank you.

REPORT TO THE

VIRGINIA STATE CORPORATION COMMISSION

THE ENVIRONMENTAL ASPECTS OF THE

Virginia Electric and Power Company

Remington CT-Warrenton 230 kV Double Circuit Transmission Line, Vint Hill-Wheeler and Wheeler-Gainesville 230 kV Transmission Lines, 230 kV Vint Hill Switching Station, and 230 kV Wheeler Switching Station

CASE NO. PUE 2014-00025

PREPARED FOR

THE STAFF OF

THE VIRGINIA STATE CORPORATION COMMISSION

MAE PROJECT #14-465

APRIL 13, 2015

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ON THE ENVIRONMENTAL ASPECTS OF THE

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Remington CT-Warrenton 230 kV Double Circuit Transmission Line, Vint Hill-Wheeler and Wheeler-Gainesville 230 kV Transmission Lines, 230 kV Vint Hill Switching Station, and 230 kV Wheeler Switching Station

Table of Contents

I. Executive Summary

On March 31, 2014, Virginia Electric and Power Company ("Dominion Virginia Power" or "Company") filed with the State Corporation Commission ("Commission") an application ("Application") for a certificate of public convenience and necessity for the Remington CT-Warrenton 230 kilovolt ("kV") double circuit transmission line, Vint Hill-Wheeler and Wheeler-Loudoun 230 kV transmission lines, 230 kV Vint Hill Switching Station, and the 230 kV Wheeler Switching Station (collectively, the "Projects"). On May 29, 2014, the Commission entered its Order for Notice and Hearing in which the Commission docketed the Application, established a procedural schedule, scheduled a Public Hearing in Richmond to begin on September 30, 2014, and appointed a Hearing Examiner to conduct all proceedings and to file a final report.

Mid Atlantic Environmental LLC ("MAE") was hired by the Commission's Division of Energy Regulation to conduct an independent assessment of the Application filed in this case, PUE 2014-00025. MAE was tasked with reviewing the Application, as well as reviewing input from respondents and the public. MAE performed an independent analysis of the environmental aspects of the proposed Projects and has prepared this report as part of my testimony in this case.

On November 14, 2014, the Company filed its Supplemental Appendix and Supplemental Direct Testimonies, in part, to amend some of the routes described in the original Application. This included a significant modification to the originally-proposed Wheeler-Loudoun 230 kV Transmission Line of Option C such that it terminated at, rather than bypassing, Gainesville Substation. The result was a Wheeler-Gainesville 230 kV Transmission Line.[1]

[1] According to the filing, the changes set forth in the Supplemental Appendix are related in part to the change to terminate the proposed Projects, and the rejected Option A Alternative, at the Gainesville Substation and to reflect

The Company studied various routing alternatives for Option A, which included a variety of new overhead and underground 230 kV lines from the Warrenton Substation to the proposed Wheeler Switching Station. Wheeler Switching Station would be constructed adjacent to, and on the east side of, Northern Virginia Electric Cooperative's ("NOVEC") Wheeler Substation. The Warrenton-Wheeler transmission line of Option A requires all new right-of-way and is the only transmission line component of Option A that requires new right-of-way. Hence, all discussion of Option A routing refers only the Warrenton-Wheeler 230 kV transmission line. The Company stated that, of its routing alternatives for Option A, Route A-2/3 was, overall, the best in terms of being less impacting but, was unbuildable due to it crossing parcels that were either owned by Fauquier County or were encumbered by non-common open space easements held by Fauquier County; however, this is not the position expressed by the Fauquier County Board of Supervisors in its letter of September 8, 2014. These government encumbrances prohibit the Company from using condemnation for the purpose of constructing electrical facilities on the parcels.

On September 3, 2014, at the Staff's request, Dominion Virginia Power and its routing consultant, Natural Resources Group, LLC ("NRG"), arranged for a field inspection for the purpose of identifying a potential buildable route. During this field inspection the Staff identified a potential overhead route (referred to as "Option A-2/3 Staff Route") that did not have Fauquier ownership or easement constraints.

On March 14, 2015, the Staff filed a Motion for Order requesting notice of Routes A-2/3 and A-2/3 Staff Route. The Motion for Order was denied by the Hearing Examiner; however, he allowed for continued study of the routes.

Route C-1.1c-Gainesville as the Updated Proposed Route based on the Supplemental Direct Testimony of Diana T. Faison filed on June 25, 2015.

In response to a request from the Staff, Dominion Virginia Power and NRG prepared an update ("Updated Table") to the Route Alternatives Environmental Features Comparison Table of Volume III of the Application.[2] The Updated Table was submitted by Company witness Douglas Lake of NRG on December 16, 2014, as part of the Company's response to Staff Interrogatory Question #139. The Company has now adopted this Updated Table as its exhibit and included it as part of Mr. Lake's Supplemental Testimony. The Updated Table is included as an attachment to this report and found in Appendix II and identified as the Impact Matrix.

Dominion Virginia Power has continued to support Option C as it proposed electrical solution and Route C-1.1c as its proposed route for the Vint Hill-Wheeler transmission line component of Option C. This combination is referred to as Option C-1.1c. The Vint Hill-Wheeler transmission line of Option C requires all new line construction, and new right-of-way over its Vint Hill-Dam Junction segment. Thus, the Vint Hill-Wheeler transmission lines are the only transmission line component of Option C that requires any new right-of-way. NRG's Updated Table provides a comparison of Route C-1.1c and Route A-2/3 Staff Route. For our review, we have utilized a ROW of 100 feet for comparison purposes. Route C-1.1c has 131 homes within 500 feet of its centerline versus 243 homes for Route A-2/3 Staff Route, a difference of 112 homes. There are 39 homes within 200 feet of Route C-1.1c, versus 45 homes for Route A-2/3 Staff Route, a difference of only 6 homes. Within 100 feet of the Route C-1.1c and Route A-2/3 Staff Route, both alignments impact 8 homes. With respect to linear wetland impact, the Updated Table shows that Route A-2/3 Staff Route crosses 0.3 mile more wetlands than Route C-1.1c; however, its wetland area impact is lower by 1.4 acres.

Comparative impacts to cultural resources are mixed. While Route A-2/3 Staff Route has two fewer impacts to archeological sites within the ROW than Route C-1.1c, it has two more

[2] *See* Application Environmental Routing Study at 4-1–4-9.

identified National Register-Eligible and -Listed sites within 0.5 mile, but the routes are equal in the 0.5 mile to 1.0 mile radius.

One area of concern was the visual impact of Option A-2/3 Staff Route on the core areas of the Auburn/Coffee Hill Battlefield. The Natural Register of Historic Places ("NRHP") lists these areas as Historic District/ Battlefield. However, in the hearing for public witnesses held in Richmond on September 30, 2014, the testimony of Ed Moore of Vint Hill indicates that a large farm, adjacent to Dumfries Road, is to be developed into a residential subdivision and will not remain in its current state of pasture land. Currently, lots are being offered for sale.

In summary, MAE finds that Option A-2/3 Staff Route is the best overhead route of the Option A routes, which determination is supported by NRG. While the Company still suggests that the original routes for Option A are unbuildable, Company Witness Mark Gill, Director of Transmission Line Construction, states in his response to the Staff's Motion for Notice of March 19, 2015, that while "A-2/3 Staff Route as stated in Staff's Second Motion is constructible, there are reasons why this option would be more difficult and time consuming to construct."

With respect to an underground or hybrid underground Warrenton-Wheeler transmission line, MAE reviewed both the original underground and hybrid underground routes. MAE's analysis concludes that an underground alignment that parallels the existing gas transmission line, while possibly constructible, would be very constrained for construction activities and would make line maintenance difficult in the future. Thus it is not reasonable or desirable. MAE's analysis concludes that Option C-1.1c has the least environmental impact based upon the data and information provided in this Application.

II. Introduction and General Description

The proposed Projects involve the construction of two 230 kV transmission lines and associated electrical Switching Stations. The purpose of the Projects is to provide reliable electrical service to this region of Virginia, consistent with the Company's duty under the mandatory requirements of the North American Electric Reliability Corporation Standards for transmission.

The Company proposed several alternatives to accomplish the electrical reliability in this area. Option A, as originally proposed in the Application, involved the construction of a new single circuit 230 kV transmission line from Warrenton Substation to Wheeler Substation and reconductoring of the existing Remington CT-Warrenton 230 kV transmission line. It would have uprated and converted Wheeler-Gainesville and Gainesville-Loudoun to 230 kV as well as been reconfigured to bypass Gainesville. Lastly, it would have required a new Switching Station at Wheeler and the expansion of the Warrenton Substation. This option was not included in the original public notice of the Application.

Option B as originally proposed included a wreck and rebuild of the Remington CT-Warrenton Line with a double circuit 230 kV line. Additionally, Dominion Virginia Power proposed to wreck and rebuild the Wheeler to Gainesville Line with a Double Circuit Structure. Lastly, the Company proposed to convert Gainesville to Loudoun from a 115 kV to a 230 kV line with a bypass of Gainesville. This would include the expansion of the Warrenton Substation and constructing a new Wheeler Switching Station. There would be no connection between Warrenton and Wheeler.

Lastly, Option C, as originally proposed, would have included a wreck and rebuild of the Remington CT-Warrenton Line to a double circuit 230 kV line. A new overhead 230 kV line

would be constructed between Wheeler Substation and Vint Hill Substation. Wheeler-Gainesville and Loudoun would be converted to a 230 kV with a bypass of Gainesville. The Wheeler Substation would be expanded and switching stations would be added at Wheeler and Vint Hill.

Following initial review, Staff found that Option A would provide the most electrical reliability and sought to have this option noticed. However, the Hearing Examiner denied the Motion, although clarified that Staff could continue to study and develop the record for Option A. Staff continued to look at Option A and met with Dominion Virginia Power and NRG in the field to look at the alignment and what the Company viewed as its disqualifying constraints. During that field trip, another alignment that had not been studied was identified and the Company was asked to look at its constraints. Primarily, this new alignment, Option A-2/3 Staff Route, avoided municipal property and the Vint Hill Economic Development Area, formerly an Army Base. Based upon the Company's insistence that Option A-2/3 was unbuildable due to Fauquier County being unwilling to grant access to their land holdings, this new alignment removed the alleged obstacle to construction. Based upon subsequent information, Staff believes that both the A-2/3 and A-2/3 Staff Route alignments are constructible and thus warrant review.

After much coordination and study between Staff, Dominion Virginia Power, and NRG, a new termination point for the Projects was identified. Gainesville was a superior termination point for this Project, not Loudoun, and all current options include the Gainesville Substation. The Company has provided a comparison matrix of the viable options, including Option A-2/3 Staff Route. Additionally, the Company has provided a detailed description and mapping for the Option A-2/3 Staff Route, in addition to its previously filed Option A-2/3 alignment.

III. General Methodology

a. Dominion Virginia Power

A study team consisting of in-house staff from Dominion Virginia Power, Natural Resources Group ("NRG"), and TRUESCAPE Visual Communications ("TRUESCAPE") and Stantec was tasked to identify and study the potential alignments and impacts. An in-house Dominion Virginia Power team investigated the constructability of identified alignments and NRG was tasked with identifying study corridors within the selected study area. Studies were performed in the various areas of environmental impact, such as but not limited to, cultural resources, scenic impacts, natural resources, geology, recreation and water resources. NRG provided routing studies, wetland surveys and cultural and archeological investigations to identify the impact to cultural resources. Lastly, TRUESCAPE and Stantec prepared photographic simulations. In addition, Dominion Virginia Power coordinated public information meetings or Open Houses. Open Houses were held in September of 2013 and the Company created a Citizens Advisory Group ("CAG") to review and help identify constraints. Dominion Virginia Power coordinated with federal, state and municipal entities to derive its data. The Company also coordinated with the Department of Environmental Quality ("DEQ") to receive comments on the proposed alignments. The Company then utilized the agencies' comments and available databases for information as part of developing its report. In addition, the Company performed field studies to confirm findings. Once the studies were completed, constraints and impacts were analyzed to develop viable alternative alignments. These data then became the basis for the submission of the Application, along with the electrical analysis. Lastly, Dominion Virginia Power reanalyzed the alignments and resubmitted, through the Supplemental Appendix and Testimony, alignments that reflect termination of the Projects at Gainesville.

b. MAE

MAE was retained by the Commission Staff to review route selection and the potential environmental impacts within the Commonwealth of Virginia. More specifically, MAE was assigned three tasks: (1) evaluate the Company's preferred route and all environmental impacts associated within that area and state any potential impacts that may have been omitted in the Application; (2) review and evaluate possible alternative routes, including verification of environmental impacts that may have been omitted, and provide recommendations to Staff on reducing the impacts in sensitive areas; and (3) develop and prepare a balanced report, by reviewing the Company's and respondents' filings, attending the public hearings, reviewing commenting agencies' filings, visiting the potential alignment sites and presenting the findings. MAE was not tasked with issues related to the need for the line and performed its duties assuming a need for the line. Additionally, issues related to electromagnetic fields, cost or electrical reliability were not part of MAE's assignment.

The Company prepared its Application pursuant to Commission Guidelines and §§ 56-46.1 and 265.2 (Utility Facilities Act) of the Code. The Guidelines define baseline parameters for applications to the Commission. Section 3 of the Guidelines identifies the parameters most relevant to this report, i.e. "Impact of Line on Scenic, Environmental and Historic Features." MAE used Section 3 of the Guidelines as a minimum standard by which to evaluate the Company's diligence and thoroughness in its selection of appropriate corridors. Therefore, the statistical data that MAE presents in this report are derived from information prepared by Dominion Virginia Power for its Application. MAE performed independent GIS analysis and mapping. Additionally, MAE reviewed available databases and reviewed regulatory comments. MAE attended all the public hearings, reviewed documentation filed with

the Commission by interested parties and participants, and toured the potential alignments in an effort to verify the Application and research information.

MAE was tasked to review and analyze where the proposed line would be best placed, although the proposed Project had to be electrically viable. MAE had to assume the need for the line had been defined, and therefore MAE's study was based upon finding the best alignment within the Commonwealth. MAE did not feel constrained to only review the alignments proffered in the Application. MAE could not, however, conduct a full investigation into other alignments, but rather assessed if other routes might exist as the line traverses the Project area. Accordingly, it was important to assure that all the readily available impact data was identified and used. Should the Commission find the need for this line and an acceptable route, it is anticipated that an in-depth study of the approved alignment will be performed by the Company. Full analysis of specific alignments would be cost prohibitive during the initial phases of the Application. Inventories of attributes, such as historic resources, natural resources, and archeological assets would be performed and appropriate action taken to preserve them, as the Project's permits would require.

As a first step, MAE performed a systematic review of the Application. The DEQ's initial coordination review was included within the documents. We reviewed DEQ's analysis of the routing. MAE downloaded the GIS database information and began its review of the identified features. Wayne McCoy attended the Public Hearings held in Nokesville, Virginia on August 20, 2014. Additionally, he attended a third Public Hearing in Richmond on September 30, 2014.[3]

[3] The Public Evidentiary Hearing was changed to a Public Witness Hearing in light of Staff's Motion for Order, requesting Option A be noticed.

MAE performed field work in Fauquier County, Prince William County and Loudoun County. MAE identified key targets to evaluate, such as historical sites. Representatives from the Company, NRG and the Commission Staff accompanied MAE on a ground tour. In addition, MAE drove the alignments, unaccompanied, to view the areas in more depth and, in some cases, speak to owners/tenants of property in the area, such as the Aviacres Airport. MAE also visited sites of historical value and interest in the project area.

In addition, MAE issued various interrogatories and received responses during the course of its analysis. MAE reviewed the documents relating to the routing, as they were received. MAE recognizes its responsibility to provide a fair, unbiased report. To that end, MAE has coordinated with the Company, reviewed County Comprehensive Plans, heard and reviewed testimony and submissions by the public and coordinated with third party agencies, which have no vested interest in this Project. This report is the summation of that effort.

IV. Public and Agency Input

Prior to the filing of the Application, Open Houses were held by the Company to receive input from the public. Open Houses were held in September of 2013 at Gainesville Middle School, Stoneridge Events Center and Liberty High School. Additional Open Houses were held in November of 2013 at Auburn Middle School and Beacon Hall/ CMU Campus. Additionally, Dominion Virginia Power reached out to community stakeholders to form the CAG. This group attended six meetings from April through November of 2013. The purpose of the CAG was to identify and discuss constraints within the region. These efforts afforded public input and additional data for Dominion Virginia Power's routing team.

Public Hearings were held at 4:00 and 7:00 p.m. in Nokesville on August 20, 2014, and at 10 a.m. on September 30, 2014, in Richmond, Virginia. An additional Public Hearing will be

held on April 20, 2015, in Richmond. At the Public Hearings, witnesses testified regarding their respective concerns regarding the Projects. Some witnesses felt that the routing process was unfair. Roy Beckner testified that he was a member of the CAG and they worked hard to help identify an appropriate alignment. Andrew Wacke did not agree that the CAG work was unbiased and pointed out that the Company had already purchased the Vint Hill property. He felt that the matrix provided to the CAG was biased and led the group towards Option C. Frank Grimes testified that he had been building his home for 14 months and that the Company did not identify his home in their study. At the second Hearing, Roy Beckner spoke again regarding the work of the CAG and the Staff's Motion to notice Option A. He felt that it was wrong and "arrogant" of the Staff to disregard the CAG's recommendation and to ask for Option A-2/3 and Option A-2/3 Staff Route to be studied. He felt that the committee of 16 people was all that was needed for public review and Staff was disrespectful of the CAG's efforts. Multiple generations of the Rogers Family spoke about the impact of an Option A alignment on their home and land. They own a 19th century farm, across from the Warrenton Substation, called Eastwood. They said that the Option A transmission line would traverse their property and have a significant impact to their way of life. Ed Moore spoke on behalf of Vint Hill. He and his partners purchased a major portion of the former military complex and seek to transform it into a residential/commercial community. Option A alignments would bisect many of the planned and existing subdivisions and parcels that his organization has interest in.

The DEQ is tasked with coordinating the Environmental Impact Review and preparing an umbrella report with the agencies' comments and recommendations. DEQ has filed its findings in this case. Additional filings are anticipated as Option A-2/3 Staff Route will need to be evaluated. In her Supplemental Testimony, Company Witness Diana Faison indicates that there

are no further environmental impacts that have not been reviewed by DEQ and thus no further coordination is required at this point. However, this was before the inclusion of Option A-2/3 Staff Route. SCC Staff has requested that DEQ review the newly noticed Option A-2/3 Staff Route.

V. Identification of Potential Impacts

Potential impacts in this case can be divided into three areas. First, impacts to Land Usage would include, but not be limited to, land ownership, number of structures impacted, recreational areas, airports and zoning. Second, impacts to Natural Resources/Environmental Constraints would include, but not be limited to, wetlands, conservation easements, forested areas, and threatened/endangered species and habitat. Third, impacts to Cultural/Historic Resources would include, but not be limited to, archeological and architectural sites, battlefields, historic districts and associated study areas.

MAE utilized the Updated Table, which was prepared and subsequently updated by Dominion Virginia Power and NRG to include Option A-2/3 Staff Route alignments. Additionally, MAE did ground work, both with the Company and NRG, and on its own, to assess visual impacts. MAE confirmed the mapping provided by Dominion Virginia Power by preparing its own mapping as support for its effort to assess the impacts of the proposed routes on the target areas.

a. Land Usage

In review of the various options, two routes appear to be the best of the various alignments with regard to land usage. Option C-1.1c is the Company's preferred option and is the shortest in length. In coordination with Staff, Dominion Virginia Power also studied the Option A alignment designated by the Company as Option A-2/3 Staff Route. These two routes

appear to be the best of the various alignments. Option A-2/3 Staff Route addresses Dominion Virginia Power's concern that Fauquier County would not allow a crossing of its property, which, according to Dominion Virginia Power, would have rendered the Option A routes unbuildable. On September 8, 2014, the Fauquier County Board of Supervisors ("Board") sent a letter to the Clerk of the Commission in which the Board stated that it would not comment on which route is preferable; however, it did express a preference that the line be placed underground if either Options A or C are chosen. We believe that both Option A-2/3 and Option A-2/3 Staff Route are buildable. Option A-2/3 Staff Route is 6.3 miles longer than the Preferred Route, Option C-1.1c, as it avoids Fauquier County lands. It should be noted that NRG used a 120 foot ROW to assess impacts of Option A-2/3 Staff Route for its initial analysis, rather than the 100 foot ROW used for the other alignments. Therefore, some of the impacts identified in Company witness Douglas Lake's testimony of Option A-2/3 Staff Route are higher, as compared to impacts of Option C-1.1c due to this use of a 20% wider ROW. The Updated Table has nine routes/columns and an analysis of the comparable 100 foot ROW for Option A-2/3 Staff Route is included in this table and is the basis of our comparison. Option A-2/3 Staff Route has a 0.5 mile impact to the Rural Crescent, while Option C-1.1c has a 5.2 mile impact. Conversely, there is a 9.2 mile impact to Greenfield ROW by Option A-2/3 Staff Route versus a 3.4 mile impact by Option C-1.1c. NRG has identified 131 homes within 500 feet of the ROW for Option C-1.1c-Gainesville and 243 homes within 500 feet of the ROW for Option A-2/3 Staff Route. Within 200 feet of the ROW, there is only a 6-home difference between the two routes.

Private parcels crossed are indicated at 96 for Option C-1.1c versus 149 for Option A-2/3 Staff Route. Collocation opportunities are minimally different at 0.5 miles longer

for Option A-2/3 Staff Route versus Option C-1.1c. With regard to federal, state, and municipal recreational lands crossed, Option C-1.1c has more mileage by 0.2 miles, but Option A-2/3 Staff Route traverses more private recreation and golf courses by 0.6 miles. Option A-2/3 Staff Route crosses more residential lands by 3.2 miles and rural agricultural lands by 4.6 miles. Option C-1.1c crosses more agricultural land by 3.9 miles. Based upon public input, the Rural Crescent is a sensitive area. Option C-1.1c crosses 5.2 miles versus 0.5 by Option A-2/3 Staff Route. Other land use parameters are identified in the Updated Table.

MAE visited Aviacres (3VA2), a grass private airfield located in Fauquier County, which is to the east of the existing line between Remington and Warrenton. It is currently used by the owner, his friends, and other aviators, along with a commercial pilot that does aerial signage and hot air balloonists. Runways 6 and 24 have been in use since 1975. Currently, there is an electric transmission line that parallels the north side of the field and crosses the approach end of Runway 6. Dominion Virginia Power has agreed to use a lower H structure in this area, so there would be no increase in height of the structures. It is our understanding that the owner of Aviacres agrees that a wider ROW that does not include higher structures is acceptable to his flight operations.

b. Natural Resources/Environmental Constraints

There is clearly a higher impact to forested lands by Option A-2/3 Staff Route by 4.3 miles, as compared to Option A-2/3 Staff Route, though there is no impact to Virginia Department of Forestry High Forest Values 4 or 5. Impacts to Resource Protected Areas, as defined in the Chesapeake Bay Act include 3 by Option C-1.1c and none for Option A-2/3 Staff Route. Impacts to total wetlands in the Updated Table indicate an increased impact by the

Option A-2/3 Staff Route versus Option C-1.1c by 0.3 miles, but a lower impact by 1.4 acres. There are no impacts to Sensitive Species by any of the alignments.

Option C-1.1c will require additional temporary ROW (0.4 miles) of approximately 20 feet in Common Open Space Easements and (2.4 miles) in Non-Common Open Space for the wreck and rebuild portion in Fauquier County. Lastly, in Fauquier County, one mile of temporary ROW is required within Conservation Easements. Prince William County impacts are less with 0.3 miles of temporary ROW within Agricultural and Forestal Lands. Permanent ROW within Permanently Protected Open Space and Virginia Department of Conservation and Recreation (VDCR) Conservation Lands will require 0.3 miles and 0.2 miles, respectively, for Option C-1.1c. In each of these parameters, Option A-2/3 Staff Route has no impact.

c. Cultural/ Historical Resources

This area of Virginia is rich in its Cultural/ Historic assets. The region has many Core Battlefield areas, along with many Potential and Study areas. Avoiding Core Battlefield areas, where blood was shed in conflict and which should remain hallowed ground, is a high priority. Study areas are defined as areas that represent the historic extent of the battle upon the landscape. Potential National Register Lands ("POTNR") are defined by the National Park Service's American Battlefield Protection Plan ("ABPP") as land that retains historic character and may be eligible for listing in the National Register of Historic Places (NRHP), as determined by ABPP. Fortunately, the two alternatives, Option A-2/3 Staff Route and Option C-1.1c do not traverse any Core Battlefield areas. They do cross areas of Potential and Study. Option C-1.1c has the potential to impact 1.6 miles (three sites) within the ABPP Study area and 1.4 miles (three sites) within the Potential area. Option A-2/3 Staff Route would potentially affect

2.9 miles (four sites) of Study Area and 2.4 miles (four sites) within the Potential Area, as defined by ABPP.

Under the VDHR listings, Option C-1.1c has impact on five sites that are Eligible or Listed in the National Register within 0.5 miles. Option C-1.1c potentially impacts eight sites between 0.5 and 1.0 mile. Option A-2/3 Staff Route potentially would impact seven sites Eligible or Listed in the National Register. Option A-2/3 Staff Route, like Option C-1.1c, would potentially impact eight sites Eligible or Listed in the National Register within 0.5 and 1.0 miles of the ROW. VDHR has identified four Archeological Sites that would be within the Option C-1.1c ROW, as opposed to two sites within the ROW for Option A-2/3 Staff Route. Lastly, VDHR identifies two sites on Option C-1.1c for NRHP-Eligible Battlefields for a total of 1.6 miles. Option A-2/3 Staff Route has the potential to impact three sites for a total of 1.9 miles.

In reviewing visual impacts, specifically, MAE spent time analyzing the aerial data and assessing visual impacts in the field. The submitted aerials identify potential impacts by Option A-2/3 Staff Route on the Auburn I and II Study Area POTNR and the Buckland Mills POTNR. These areas appear to be supply routes for the respective battlefields, not core areas, especially in the Vint Hill and Rogues Road area. Option A-2/3 Staff Route crossings are generally at right angles to the identified areas. In the area of the Rappahannock Station I Study Area and POTNR, A-2/3 Staff Route departs the Warrenton Station, stays adjacent to the tree line and exits the designated area at the end of the field with a length of approximately 0.3 miles. Where Option A-2/3 Staff Route crosses the Auburn II Study Area and Rogues Road, it daylights out of the woods and goes back into a wooded buffer. We would also note that new development is occurring within this Auburn II Study and POTNR area, such as that along Edington Road and

Bill Court. The large open space area/farm that contains the gas pipeline has been sold and is currently being subdivided into individual lots and homes. There was concern about the visual impact on the Auburn Historic District and Battlefield by an overhead power line. Due to the topography of the area, we believe the potential for visual impact to be at worst, minimal. Considering this area is to be developed as a residential subdivision, this might also have the potential for a visual impact, depending on the height of the structures and their placement on the associated hills. Either way, as noted in the Company's Application, it should be minimal. Further discussion of the Stantec analysis is found in the next paragraph.

We also reviewed the analysis by Stantec with regard to visual impacts. In Volume V, Page 78, they provide an analysis in Table 5 of the impact by Option A-2/3 on the previously identified Architectural Resources. In much of the shared alignments, Options A-2/3 and A-2/3 Staff Route would have the same impacts. With the exception of the Vint Hill Farms Historic District, the impacts are identified as either "No Impact" or "Minimal Impact".

These are also areas that have some of the highest identified impacts to residences. By changing the route of the A-2/3 alignment to Option A-2/3 Staff Route, many of those homes affected are avoided. This is true of the impacts to Vint Hill Farms Historic District and the associated residential subdivision. Additionally, much of the Vint Hill Complex was originally held by the Economic Development Authority. Most of those holdings have been purchased by private organizations and will be developed as a Planned Urban Development. In light of the master planning presented at the Public Hearing by Mr. Moore, Option A-2/3 Staff Route reduces the impact to this area, as compared to Option A-2/3. This is an area that is proposed to have a mixed use of Commercial/Office and residential. As a result of the proposed development

of the area in the Dumfries/Rogues/Auburn Road area, we would assess any potential line impacts to be incremental.

Option C-1.1c also has a potential visual impact on five historical assets. Two of the assets are NRHP-Listed and include the Greenwich Presbyterian Church and The Lawn. In addition, the Buckland Mills Battlefield, Buckland Farm and Bristoe Station Operations Battlefield are NRHP-Eligible. MAE understands that an "eligible" listing would require additional coordination to assess the status of the identified areas. However, many of these areas are already impacted significantly by residential building, either prior to being identified as eligible or after the fact. Whether Option C-1.1c or Option A-2/3 Staff Route alignments are ultimately selected, they will require additional coordination with the Department of Historic Resources.

There was much discussion of using an underground crossing, more specifically, paralleling an existing gas transmission line. Underground electric and gas lines are generally compatible as parallel ROW partners, where underground gas transmission and overhead electric lines are not. Fauquier County took no definitive stand on Option A and C alignments, but did ask that the line be placed underground. In this case, two options were reviewed. First, the underground option for A or C was studied as a total underground alignment. NRG indicated that it studied a "Hybrid" line that would have been partially overhead and partially underground. At Staff's request, the Company provided the analysis of this Hybrid line, as part of Staff's effort to assess the viability and constructability of such a line. A 230 kV line placed underground utilizes transition stations, which adds to the overall cost of the line. An appropriate area was identified to place a station in pasture land near Dumfries Road. A second transition station area was identified at the Wheeler Substation. While it is not part of our

evaluation, underground routing would significantly increase the cost of the Projects. In this case, other factors are also of concern. First, the impact of the additional ROW for the underground line is significant in the developed areas. It appears as if the ROW would be within very close proximity to existing homes. The permanent clearing of ROW would effectively remove the backyards of these homes at several chokepoints. The Hybrid line utilizes the same route as the Option A-2/3 Staff Route, until it intersects the gas line corridor. Therefore, there would be a lower visual impact to homes in the Albrecht/Riley Road area. It is assumed that the transition station would be placed south of the proposed alignment and connected in the pasture/wooded area to the west of Dumfries Road. This is where the gas pipeline currently traverses the farm. One of the major considerations with regard to underground electrical transmission lines is maintenance of the line. The cost and difficulty of identifying the location of a failure and the subsequent repair are significantly increased. Aside from the cost of repair, the impact of construction on developed areas is also significant.

VI. Conclusions

Transmission lines are difficult to route, at best. The northern region of Virginia has a rapidly growing population which, combined with commercial and industrial development, particularly with high load concentration data centers, dictates that upgrades to the area's bulk power delivery system will continue to be needed. As stated before, MAE was tasked, not with the determination of need, and not with the verification of the Company's claim of need, but with critically reviewing the Company's routing impacts analysis, performing an independent routing impacts analysis using Company-supplied and MAE information, preparing a comparative analysis of the impacts of the final set of transmission lines routes under consideration, and identifying the least impacting route of that set. Balancing the many parameters that need to be

assessed in selecting a route is, at best, difficult. Based upon our work, we offer the following conclusions.

This case changed during its review. The termination of the line was changed from Loudoun to Gainesville in response to the issue of Option C being in violation at its in-service date. This new termination was not shared with the CAG or others, because Staff identified this issue after the Company filed its Application. When the Application was filed, the Company identified Option A as the most cost effective and robust. This was the Company's position, when the public coordination was initiated. However, the Company did not include Option A alignments as a possible route for the Commission's consideration because it was rejected by the CAG and the Company deemed Option A unbuildable. These routing difficulties included the crossing of Fauquier County-owned and -eased parcels for certain routes. When asked for supporting documentation for its "unbuildable" conclusion, the Company provided a letter that had been sent to the Clerk of the Commission in which Fauquier County declined to state which route was preferable but recommended that any line that was built be placed underground. However, the Staff identified an Option A alignment that avoided the Fauquier-owned or -eased parcels. That alignment, Route A-2/3 Staff Route, was ultimately determined by the Staff and the Company to be the best alternative for an Option A overhead line. Route A-2/3 and Route A-2/3 Staff Route are both constructible in MAE's opinion. As with any transmission line route, these alignments have impacts. Of the three routes currently under consideration, Route A-2/3 Staff Route and Route C-1.1c are the most viable; Route A-2/3 is the least viable. Accordingly, for an Option A electrical solution, Route A-2/3 Staff Route appears to be the best route. Douglas Lake of NRG concurs that this alignment is the best overhead Option A alignment. Option A-2/3 Staff Route is longer than Option C-1.1c by 6.3 miles with 112 more homes

identified within 500 feet of the ROW. Additionally, 4.3 miles or 45.8 acres of forested lands would be affected by Option A-2/3 Staff Route. However, Option C-1.1c has more mileage in the Rural Crescent than Option A-2/3 Staff Route by 4.7 miles. Option C-1.1c appears to have a direct impact on two VDHR-listed architectural sites, but is generally less impacting to Historic resources. Each of the alignments has its own set of constraints. Each will require coordination regarding impacts to Historic resources, once a route is selected. Each route should be balanced in the context of overall project considerations.

It appeared to the Staff that Option A would not only be less expensive to construct than Option C, but would offer more reliability benefits to the transmission system over time. It is not within the scope of MAE's services to make determinations of electrical performance, reliability, or construction cost but, rather to review and comment on the impacts to the natural and human-made environment of potential alignments of transmission lines. Based upon information provided by the Company at the Staff's request, Option C-1.1c requires four additional future projects to maintain system reliability, whereas Option A requires only one or possibly two additional future projects. Although we cannot identify all environmental impacts of these future projects, it is very possible that an Option A alignment would be less environmentally impacting in the long term.

The Company's prefiled testimony provides considerable discussion regarding an underground alternative for a Warrenton-Wheeler 230 kV line. We do not view this as a viable option. The identified construction impacts and difficulty of access for any line repairs make this an unreasonable routing option for both homeowners adjacent to the alignment. Further, the much greater cost would be unreasonable to ratepayers.

In conclusion, based upon MAE's analysis of the information provided in the Application and additional information acquired by MAE, Route C-1.1c is the least impacting alignment of all Option A and Option C routes. The second-least impacting alignment, and the least impacting of the more electrically robust Option A routes under current consideration, is alignment A-2/3 Staff Route.

APPENDIX I

PROJECT MAPPING

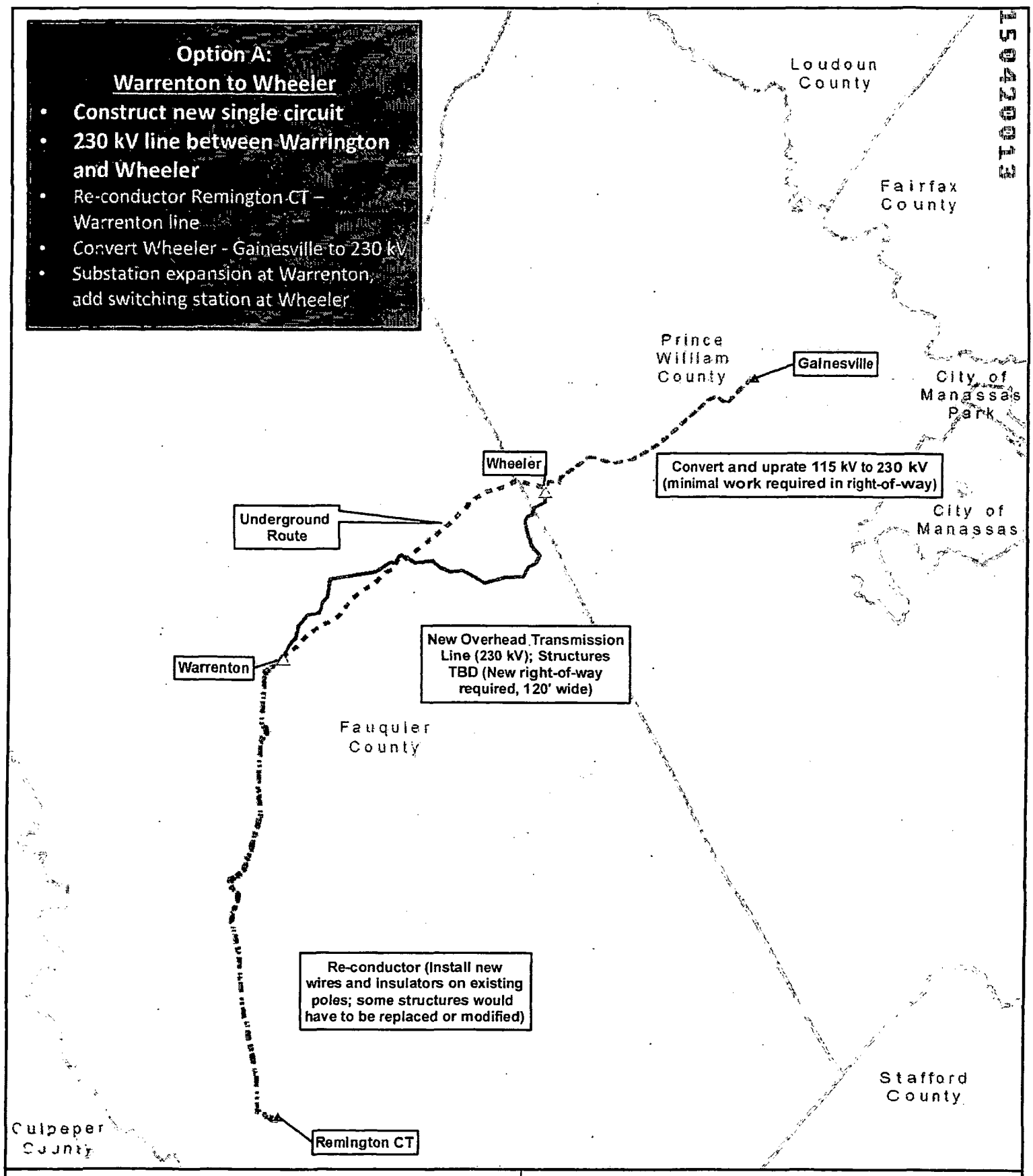

Figure 1-1
Option A
Warrenton - Wheeler 230 kV Transmission Line
Overhead: Rejected Alternative
Undergound: Rejected Alternative
Fauquier and Prince William Counties

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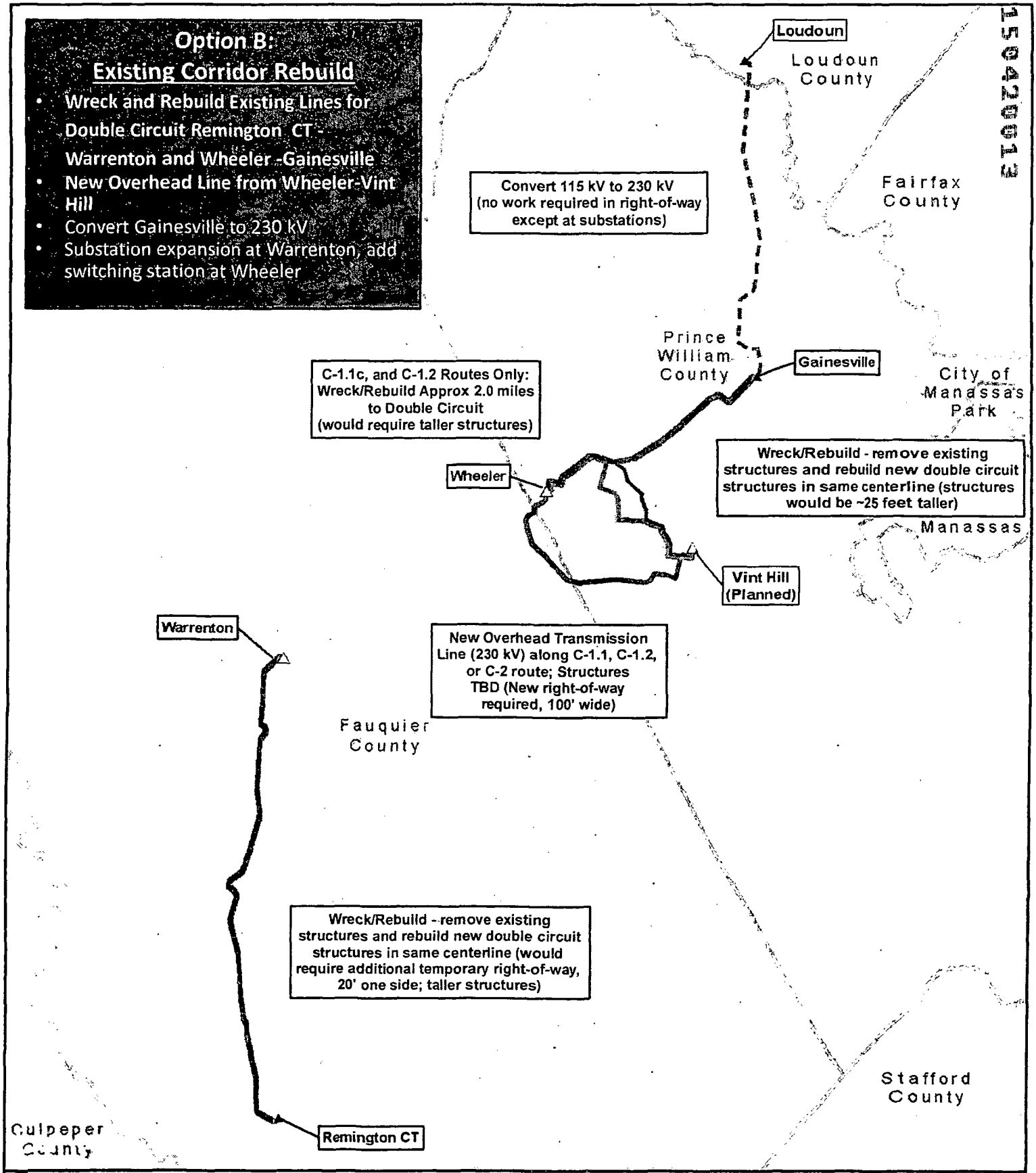

Figure 1-2
Option B
Remington CT - Warrenton and Wheeler - Gainsville - Loudoun and Vint Hill - Wheeler 230 kV Double Circuit Transmission Lines
Fauquier, Prince William, and Loudoun Counties

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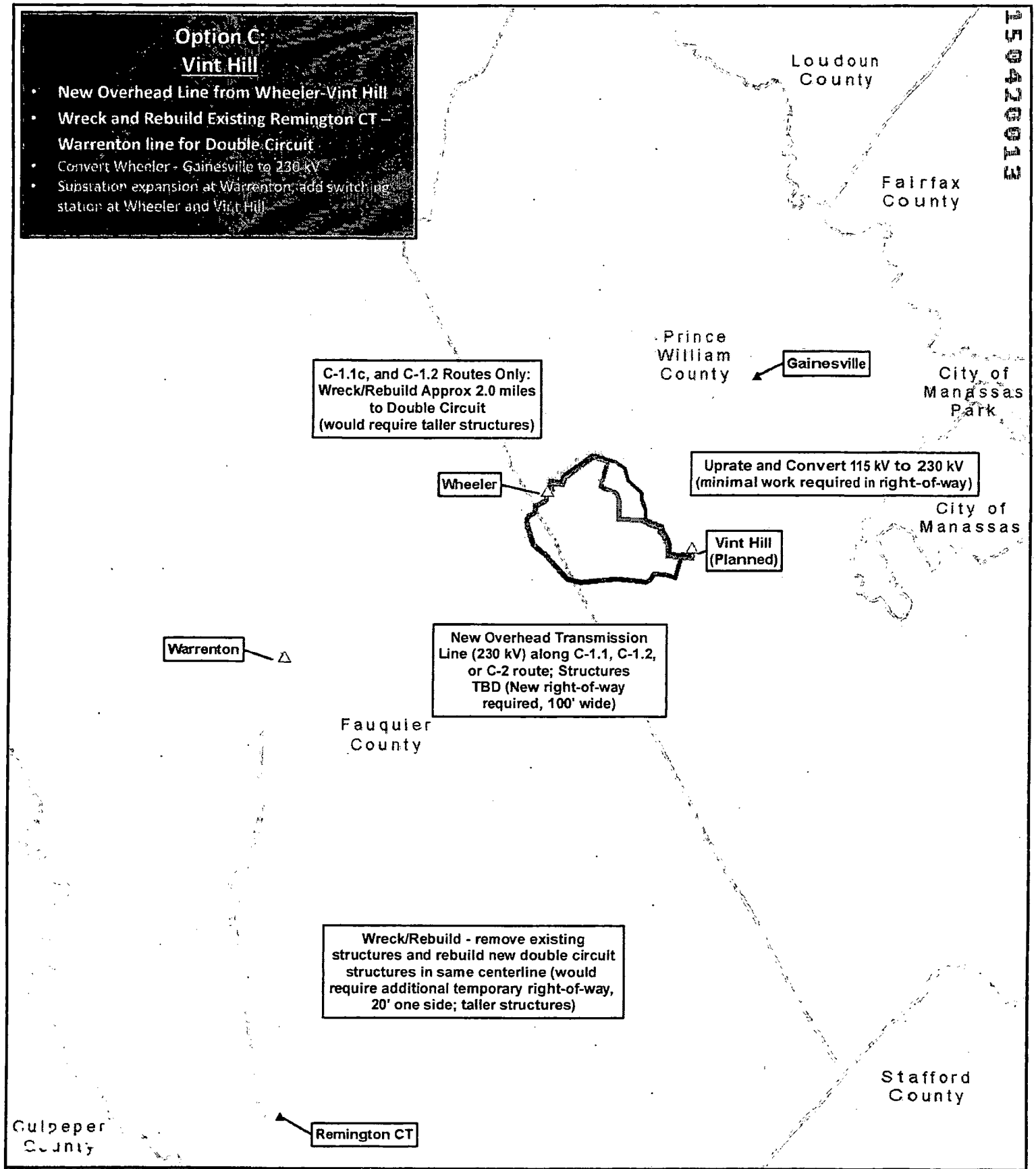

Figure 1-3
Option C
Remington - Warrenton 230 kV Double Circuit Line
Vint Hill - Wheeler and Wheeler - Gainesville 230 kV Transmission Lines
Fauquier and Prince William Counties

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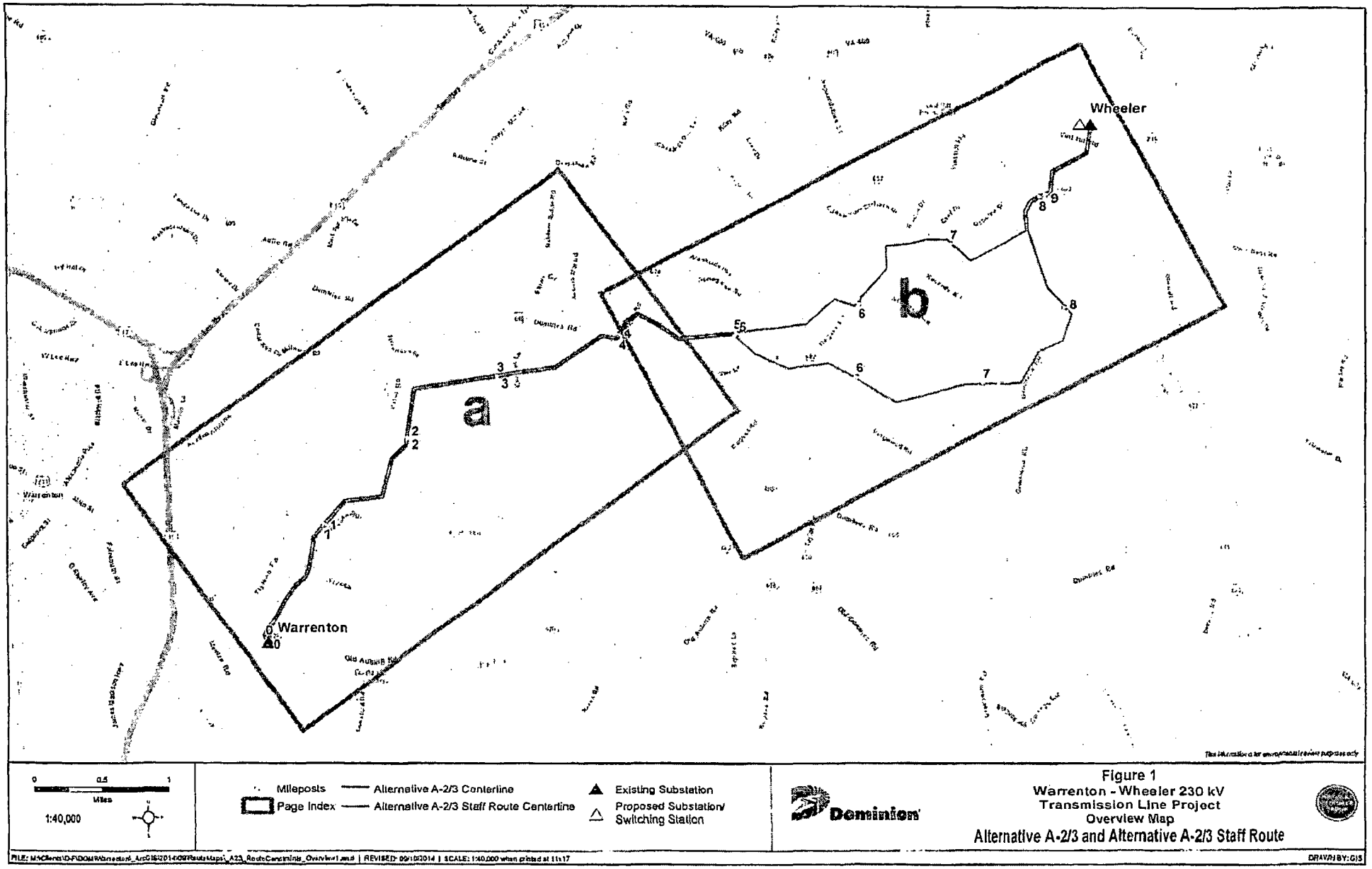

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APPENDIX II

IMPACT SPREADSHEET

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
Total Length Crossed	miles	21.3	24.1	26.6	26.6	26.6	27.6	27.6	27.6	29.1
Greenfield Right-of-Way (ROW)	miles	3.4	5.6	7.5	7.5	7.5	9.2	9.2	9.2	3.4
Percentage of Existing ROW Utilized	percentage	84%	74%	67%	67%	67%	65%	65%	65%	88%
Routing Opportunities										
Collocation Opportunities (total)	miles	17.9	18.5	19.1	19.1	19.1	18.4	18.4	18.4	23.9
Electric Lines	miles	17.9	17.9	18.1	18.1	18.1	17.9	17.9	17.9	23.9
Pipeline ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Railroads	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road Corridor	miles	0.0	0.6	1.0	1.0	1.0	0.5	0.5	0.5	0.0
Land Use Features/Constraints										
Local Government Lands	miles	2.0	1.4	1.6	1.6	1.6	1.4	1.4	1.4	2.4
Private Lands Crossed										
Fauquier Co.	miles	10.3	12.6	18.0	18.0	18.0	19.3	19.3	19.3	10.3
Prince William Co.	miles	4.7	3.8	0.5	0.5	0.5	0.5	0.5	0.5	7.8
State Land	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Virginia Department of Transportation Crossings [b]	miles	0.2	0.2	0.4	0.4	0.4	0.3	0.3	0.3	0.8
Private Parcels Crossed (total)	number	96	105	144	144	144	149	149	149	142
Fauquier County	number	65	87	139	139	139	144	144	144	65
Prince William County	number	31	15	5	5	5	5	5	5	99

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table*

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
Recreational Areas Crossed										
Federal, State, County or Municipal Managed Recreation Areas Crossed	miles	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	(number)	(1)	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(2)
Golf Courses and Privately Owned Recreation Areas Crossed	miles	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(1)	(1)	(1)	(0)
Trails Crossed	number	2	2	2	2	2	2	2	2	3
Virginia Birding and Wildlife Trail Crossings	number	2	2	2	2	2	2	2	2	2
Existing Land Use										
Open Land	miles	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.6
Cropland	miles	6.4	6.1	7.1	7.1	7.1	7.1	7.1	7.1	6.6
Forested	miles	5.1	7.3	8.3	8.3	8.3	9.4	9.4	9.4	6.1
Developed	miles	4.4	3.4	4.0	4.0	4.0	3.9	3.9	3.9	6.8
Open Water	miles	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Zoning										
Residential	miles	1.3	1.3	3.6	3.6	3.6	4.5	4.5	4.5	2.0
Rural Residential	miles	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Village	miles	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.0
Rural Agricultural	miles	9.9	12.1	14.8	14.8	14.8	14.5	14.5	14.5	9.9
Agricultural	miles	5.4	3.9	0.5	0.5	0.5	1.5	1.5	1.5	7.0
Commercial	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Industrial	miles	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	1.3
Planned Residential Development	miles	0.2	0.2	0.4	0.4	0.4	0.2	0.2	0.2	0.2
Planned Development Mixed Residential	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table[a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c *Proposed Route*	Option C-Gainesville Route C-2 *Alternative Route*	Option A-Gainesville A-2/3 Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option B *Rejected Alternative*
Planned Commercial Industrial Development	miles	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0
Rural Crescent	miles	5.2	3.9	0.5	0.5	0.5	0.5	0.5	0.5	5.5
Existing Subdivisions/Homeowners Associations Crossed	miles	1.0	1.0	1.6	1.6	1.6	1.0	1.0	1.0	2.7
	(number)	(3)	(3)	(6)	(6)	(6)	(3)	(3)	(3)	(8)
Planned Developments Crossed	miles	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.1
	(number)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(2)	(1)
Other Land Use Constraints										
Houses Within 500 Feet of Centerline	number	131	158	268	268	268	243	243	243	744
Houses Within 200 Feet of Centerline	number	39	34	24	24	24	45	45	45	255
Houses Within 100 Feet of Centerline	number	8	8	8	8	8	8	8	8	103
Houses Within 60 Feet of Edge of ROW	number	12[c]	12[c]	15[d]	12	10	15[d]	12	10	139
Total Buildings Within ROW	number	6	6	1	1	1	1	1	1	7
Houses Within ROW	number	2	2	0	0	0	0	0	0	3
Outbuildings Within ROW	number	4	4	1	1	1	1	1	1	4
Commercial Buildings Within ROW	number	0	0	0	0	0	0	0	0	0
Farm Buildings Within ROW	number	0	0	0	0	0	0	0	0	0
Cemeteries Within 500 Feet of Centerline	number	0	2	0	0	0	1	1	1	1
Churches Within 500 Feet of Centerline	number	0	0	1	1	1	2	2	2	0
Schools Within 500 Feet of Centerline	number	0	0	1	1	1	0	0	0	1

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table[a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c *Proposed Route*	Option C-Gainesville Route C-2 *Alternative Route*	Option A-Gainesville A-2/3 Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option B *Rejected Alternative*
Environmental Constraints										
Total Wetlands Crossed by Centerline and in ROW	miles	2.6	3.0	3.3	3.3	3.3	2.9	2.9	2.9	3.0
	(acres)	(36.7)	(41.4)	(40.7)	(38.7)	(36.5)	(36.6)	(35.3)	(33.8)	(40.8)
Palustrine Emergent Wetlands	miles	2.4	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.8
	(acres)	(29.8)	(29.3)	(28.1)	(27.8)	(27.4)	(28.4)	(28.1)	(27.7)	(33.7)
Forested Wetlands	miles	0.2	0.6	0.9	0.9	0.9	0.4	0.4	0.4	0.2
	(acres)	(6.9)	(12.1)	(12.6)	(10.9)	(9.1)	(8.2)	(7.2)	(6.1)	(7.1)
Palustrine Scrub-Shrub Wetlands	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(acres)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(<0.1)
Total Waterbody Crossings[e]	number	30	36	36	36	36	38	38	38	40
Perennial	number	6	10	9	9	9	9	9	9	10
Intermittent	number	18	22	22	22	22	24	24	24	24
Section 10 Navigable	number	0	0	0	0	0	0	0	0	0
Open Waters Within ROW	number	6	4	5	5	5	5	5	5	6
	(acres)	(4.0)	(1.2)	(1.1)	(1.1)	(0.9)	(1.1)	(1.1)	(0.9)	(4.6)
Major Waterbodies (100 feet or greater in crossing width)	number	3	2	2	2	2	2	2	2	4
Forested Lands Crossed	miles	5.1	7.3	8.3	8.3	8.3	9.4	9.4	9.4	6.1
	(acres)[f]	(32.4)	(63.3)	(74.7)	(62.4)	(50.4)	(93.1)	(78.2)	(63.0)	(32.6)
VDOF High Forest Conservation Value 4	miles	0.1	0.1	<0.1	<0.1	<0.1	0.0	0.0	0.0	0.3
	(acres)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.0)	(0.0)	(0.0)	(0.1)
VDOF High Forest Conservation Value 5	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(acres)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Resource Protection Areas Crossed	miles	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	(number)	(3)	(3)	(0)	(0)	(0)	(0)	(0)	(0)	(4)

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c *Proposed Route*	Option C-Gainesville Route C-2 *Alternative Route*	Option A-Gainesville A-2/3 Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**120 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**100 ft. ROW** for Option A Segment) *Rejected Alternative*	Option A-Gainesville A-2/3 Staff Route (**80 ft. ROW** for Option A Segment) *Rejected Alternative*	Option B *Rejected Alternative*
Sensitive Species and Habitat (note: other species to be determined)										
Threatened and Endangered Species Waters Crossed	number	0	0	0	0	0	0	0	0	0
Bald Eagle Nests Within 750 Feet (Center for Biology, 2011 data)	number	0	0	0	0	0	0	0	0	0
Bald Eagle Nests Within 1,320 Feet (Center for Biology, 2011 data)	number	0	0	0	0	0	0	0	0	0
Conservation Easements Crossed [g, h, i]										
Virginia Outdoors Foundation Conservation Easements										
New Permanent ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
New Temporary ROW	miles	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	(number)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Fauquier County Common Open Space Easements										
New Permanent ROW	miles	0.0	0.0	0.3	0.3	0.3	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(3)	(3)	(3)	(0)	(0)	(0)	(0)
New Temporary ROW	miles	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	(number)	(4)	(4)	(0)	(0)	(0)	(0)	(0)	(0)	(4)

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
Fauquier County Non-Common Open Space Easements										
New Permanent ROW	miles	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(2)	(2)	(2)	(0)	(0)	(0)	(0)
New Temporary ROW	miles	2.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	2.4
	(number)	(6)	(6)	(0)	(0)	(0)	(0)	(0)	(0)	(6)
Fauquier County Conservation Easements										
New Permanent ROW	miles	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(1)	(1)	(1)	(0)	(0)	(0)	(0)
New Temporary ROW	miles	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
	(number)	(3)	(3)	(0)	(0)	(0)	(0)	(0)	(0)	(3)
Prince William County Permanently Protected Open Space										
New Permanent ROW	miles	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	(number)	(2)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(2)
New Temporary ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Agricultural and Forestal Lands										
New Permanent ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
New Temporary ROW	miles	0.3	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	(number)	(1)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(1)

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
VDCR Conservation Lands										
New Permanent ROW	miles	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	(number)	(1)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
New Temporary ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Cultural Resources Constraints										
Archaeology (VDHR[1])										
Archaeological Sites Within ROW	number	4	2	2	2	2	2	2	2	4
Architectural Resources (VDHR)										
Architectural Resources Within ROW (Battlefields listed below)	number	0	1	1	1	1	0	0	0	0
National Register-Eligible and -Listed Properties, Battlefields, Historic Landscapes, and National Historic Landmarks Within 0.5 Mile	number	5	6	7	7	7	7	7	7	8
National Register-Listed Properties, Battlefields, Historic Landscapes, and National Historic Landmarks Between 0.5 and 1.0 Mile	number	8	8	8	8	8	8	8	8	11
National Historic Landmarks Between 1.0 and 1.5 Miles	number	0	0	0	0	0	0	0	0	0

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table[a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
Historic Districts (VDHR) Within ROW	miles	0.0	0.0	0.7	0.7	0.7	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(1)	(1)	(1)	(0)	(0)	(0)	(0)
National Register of Historic Places (NRHP)-Listed Battlefields (VDHR) Within ROW	miles	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
NRHP-Eligible Battlefields (VDHR) Within ROW	miles	1.6	1.6	1.9	1.9	1.9	1.9	1.9	1.9	2.2
	(number)	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(3)	(4)
Easements (VDHR) Within ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Historic High Sensitivity Areas (PWC[k] only)	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(1)
Battlefields (NPS ABPP[l])										
Core Areas Within ROW	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	(number)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Study Areas Within ROW	miles	1.6	2.4	4.1	4.1	4.1	2.9	2.9	2.9	2.2
	(number)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(5)
Potential NRHP Boundary Within ROW	miles	1.4	2.1	3.1	3.1	3.1	2.4	2.4	2.4	1.4
	(number)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(3)
Visual Features/Constraints										
Length Parallel to Scenic Byway/Road	miles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Road, Railroad and Facility Crossings										
Road Crossings (total)	number	21	24	37	37	37	33	33	33	34
U.S. or State Highways (including on/off ramps)	number	4	4	4	4	4	4	4	4	6
County or Local Roads	number	17	20	33	33	33	29	29	29	28
Active Railroad Crossings	number	2	2	2	2	2	2	2	2	2

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (**120 ft. ROW** for Option A Segment)	Option A-Gainesville A-2/3 Route (**100 ft. ROW** for Option A Segment)	Option A-Gainesville A-2/3 Route (**80 ft. ROW** for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (**120 ft. ROW** for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (**100 ft. ROW** for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (**80 ft. ROW** for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*
Existing Electric Facilities Crossed	number	7	5	4	4	4	4	4	4	11

Table 4-1

Remington CT – Warrenton 230 kV Double Circuit Transmission Line
Vint Hill – Wheeler and Wheeler– Gainesville 230 kV Transmission Lines
230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station

Route Alternatives Environmental Features Comparison Table [a]

Environmental Features	Unit	Option C-Gainesville Route C-1.1c	Option C-Gainesville Route C-2	Option A-Gainesville A-2/3 Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Route (80 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (120 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (100 ft. ROW for Option A Segment)	Option A-Gainesville A-2/3 Staff Route (80 ft. ROW for Option A Segment)	Option B
		Proposed Route	*Alternative Route*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*	*Rejected Alternative*

a With the exception of the total length, length of greenfield ROW, and collocation opportunities, all of the remaining features were quantified only along those facilities that would require significant construction or be affected by ground disturbing activities within the temporary and permanent ROW of reach route option. The Vint Hill – Wheeler 230 kV Transmission Line would have a 100-foot ROW. The Remington CT – Warrenton 230 kV Transmission Line would have a 100-foot ROW with 20 feet of temporary ROW needed during construction for Route C-1.1c . However, the reconductoring of the Remington CT – Warrenton 230 kV Transmission Line for the A-2/3 Staff Route would be limited to the existing 100-foot ROW. The Warrenton to Wheeler 230 kV Transmission Line would have a 120-foot ROW but has been studied at a reduced width where residences were located within 60 feet of the edge of the ROW as set forth in footnote d.

b This includes Virginia Department of Transportation ROW and may include state-, county-, and locally owned roads.

c These 12 houses are all located along the Remington CT to Warrenton 230 kV Transmission Line segment of Route C-1.1c and Route C-2.

d For the A-2/3 Route and A-2/3 Staff Route, ten of the houses are located along the Remington CT to Warrenton 230 kV Transmission Line segment. There are 5 houses within 60 feet of the edge of the ROW where the two Warrenton to Wheeler 230 kV Transmission Line options share a common ROW. These distance measurements were made using recent aerial photography which has an inherent reported margin of error of up to 4 meters (3.3-feet). Actual distances between the house structures and the edge of the ROW would need to be determined using civil survey methods for complete accuracy. Reducing the ROW width for the Warrenton to Wheeler 230 kV Transmission Line from 120 to 100 feet would reduce the number of houses potentially within 60 feet of the edge of the A-2/3 Route and A-2/3 Staff Route from 5 to 2. One house along Rogues Road and one house on the north side of Dumfries Road still appear to be within 60 feet of the edge of the ROW along the Warrenton to Wheeler 230 kV Transmission Line. The Company would need to conduct a civil survey to confirm the actual distance of all houses in question from the edge of the ROW for complete accuracy.

e For streams and rivers, the number of crossings includes each crossing of a stream or river, while in the case of lakes and ponds, the number of crossings equals the number of lakes or ponds crossed.

f Where applicable, in addition to the forest clearing required for the ROW, acres also include: 1 acre forested land at Warrenton Substation, 2 acres at Wheeler Substation, and 2 acres at Vint Hill Switching Station.

g Impacts associated with all conservation easements, where applicable, have been broken down into new permanent ROW and new temporary ROW. New permanent ROW represents those portions of the projects where Dominion will need to construct a new ROW. New temporary ROW specifically refers to that needed to construct the wreck and rebuild for Route C-1.1c of the Remington CT – Warrenton 230 kV double circuit transmission line, where Dominion will require an additional 20 feet of temporary ROW.

h In some cases easements are classified and fit into more than one category causing easements to be counted more than once.

i Miles crossed along new temporary ROW was calculated based on the edge of the additional 20-feet of temporary ROW needed along the Remington CT – Warrenton 230 kV line.

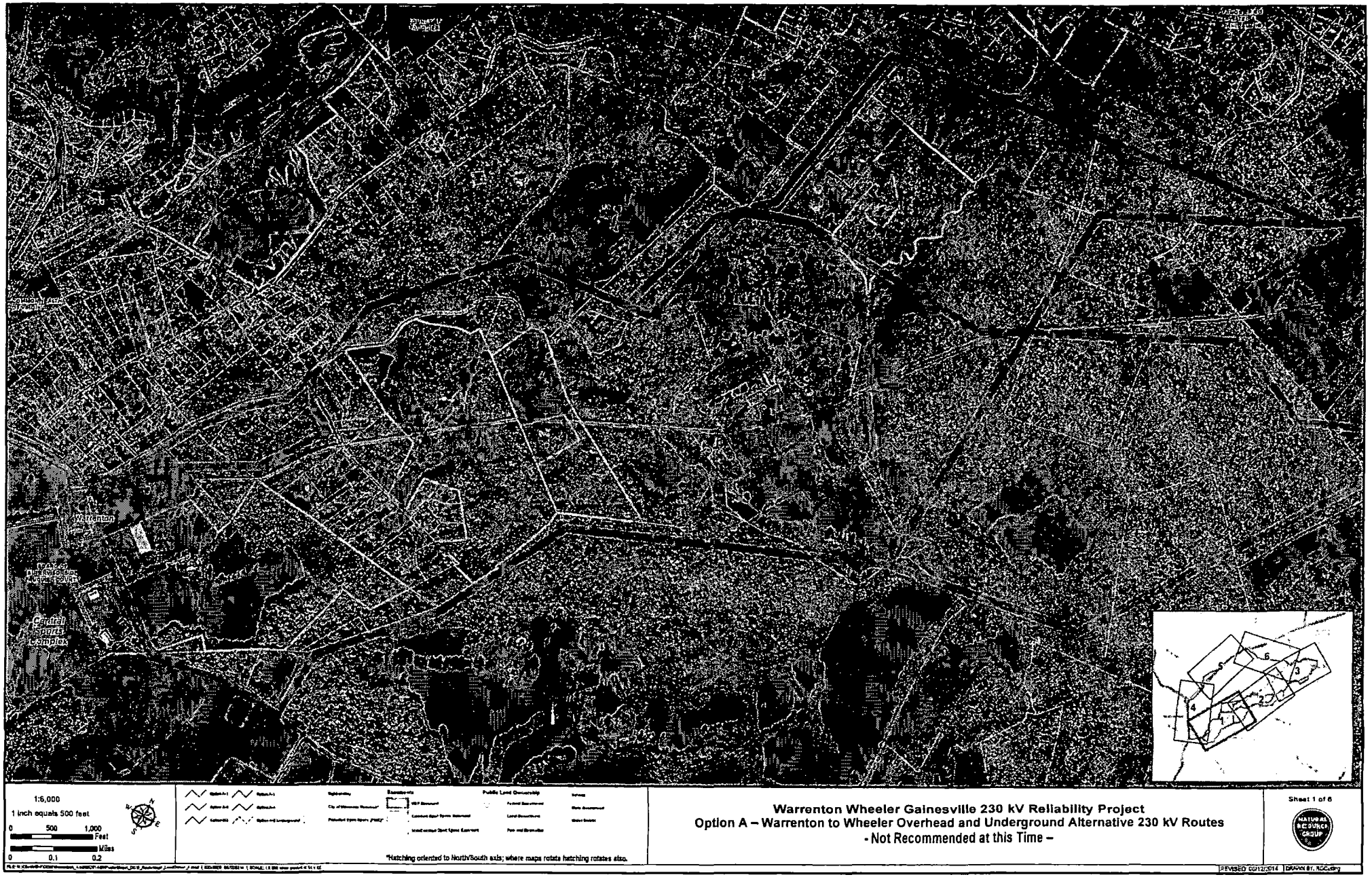
j Virginia Department of Historic Resources

k Prince William County

l National Park Service American Battlefield Protection Program

APPENDIX III

AERIALS



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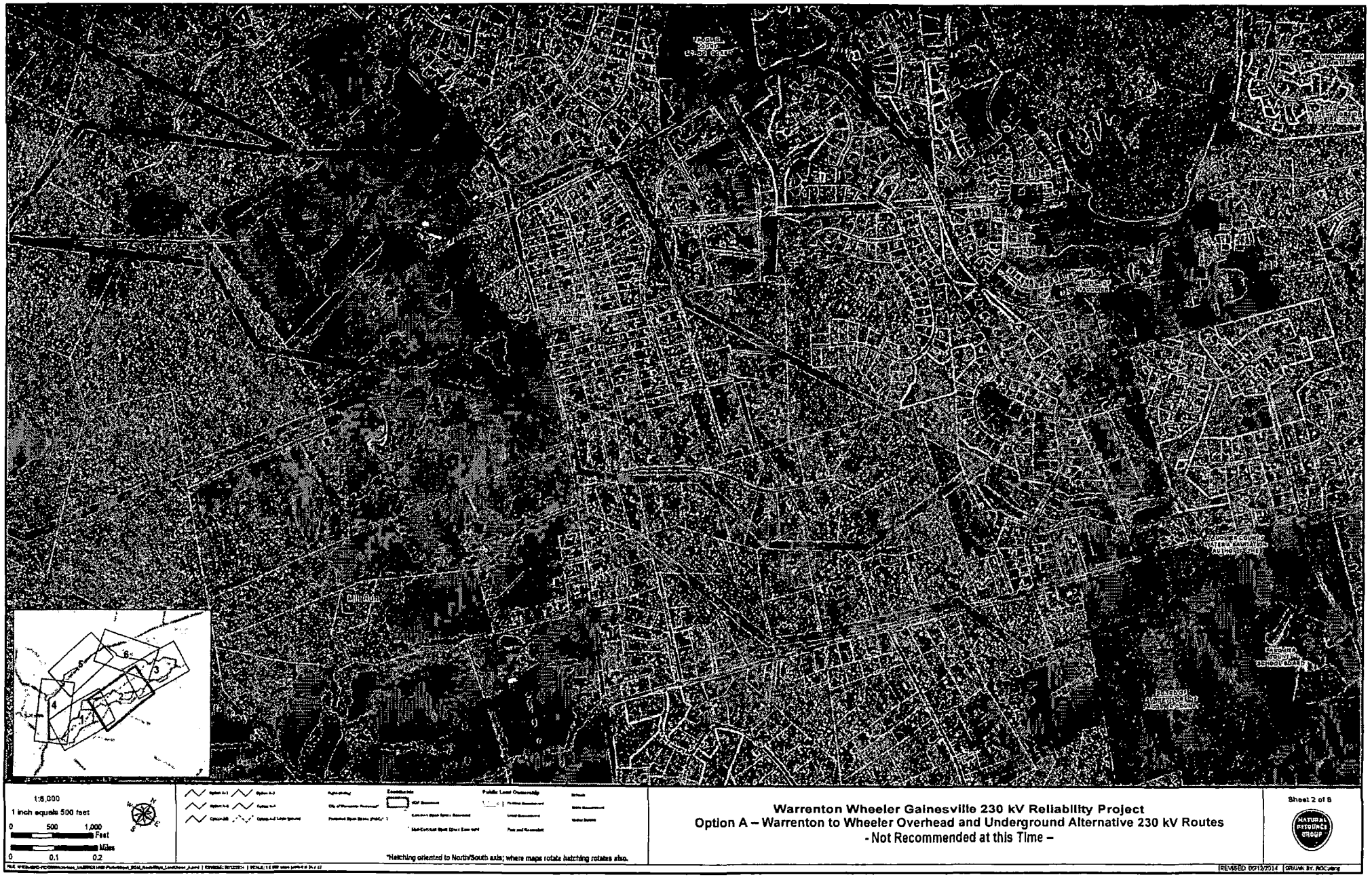
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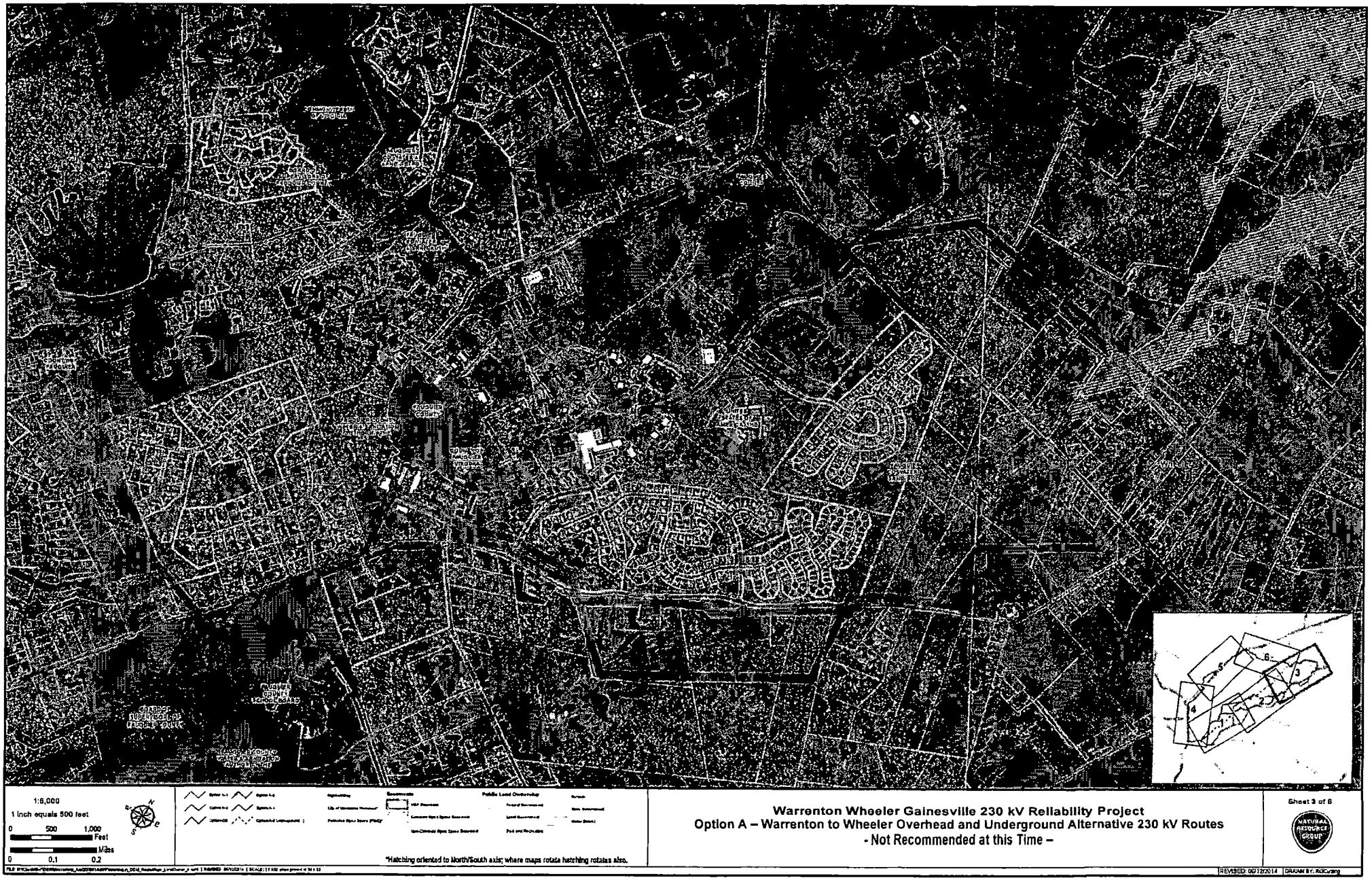
Feet
0 0.1 0.2
Miles
"Hatching oriented to North/South axis; where maps rotate hatching rotates also.
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –
Sheet 2 of 8
NATURAL RESOURCES GROUP
REVISED: 09/12/2014 | DRAWN BY: ROC/JMV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1 inch equals 500 feet
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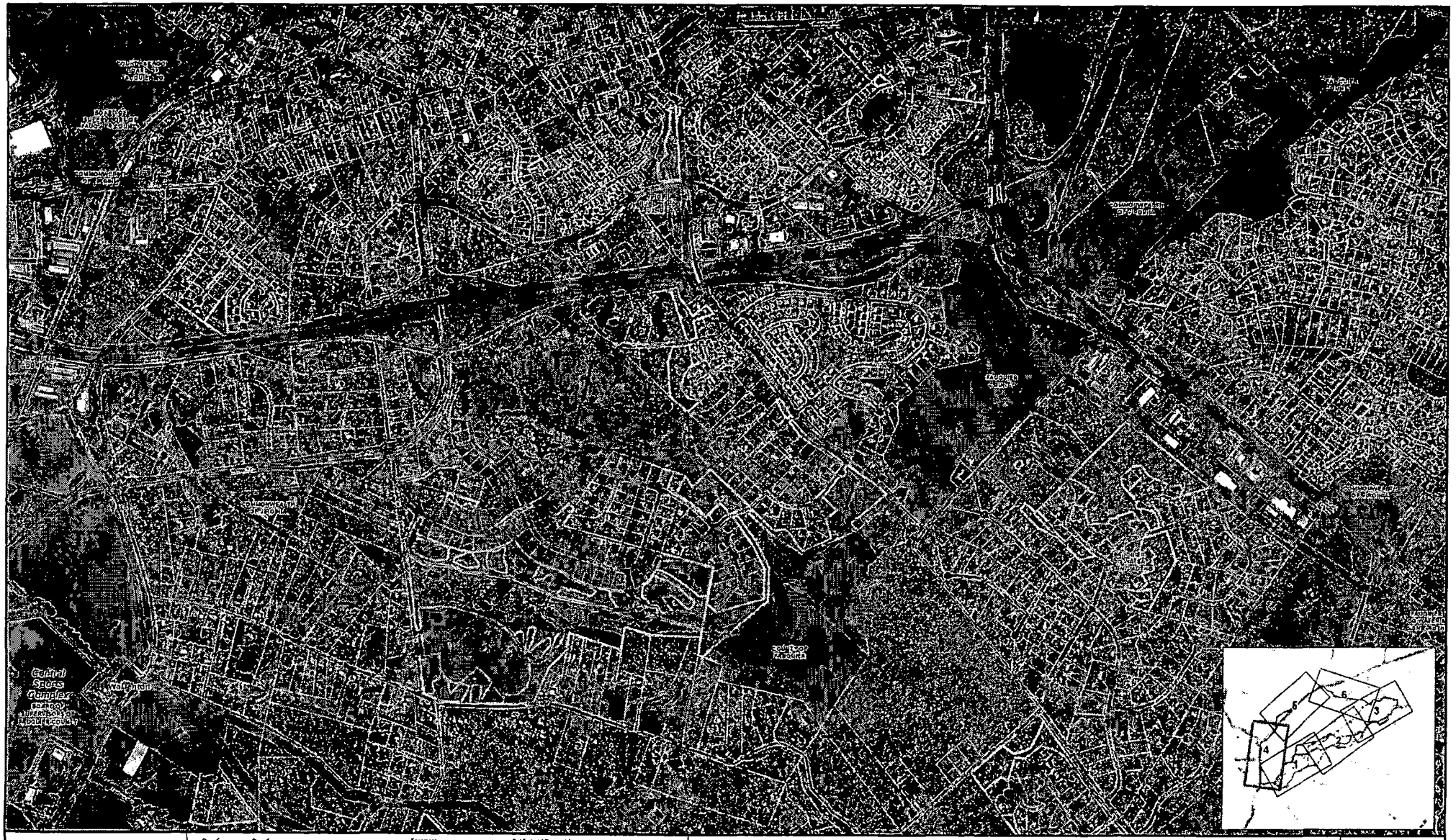
*Hatching oriented to North/South axis; where maps rotate hatching rotates also.
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –
Sheet 3 of 8
REVISED: 06/12/2014

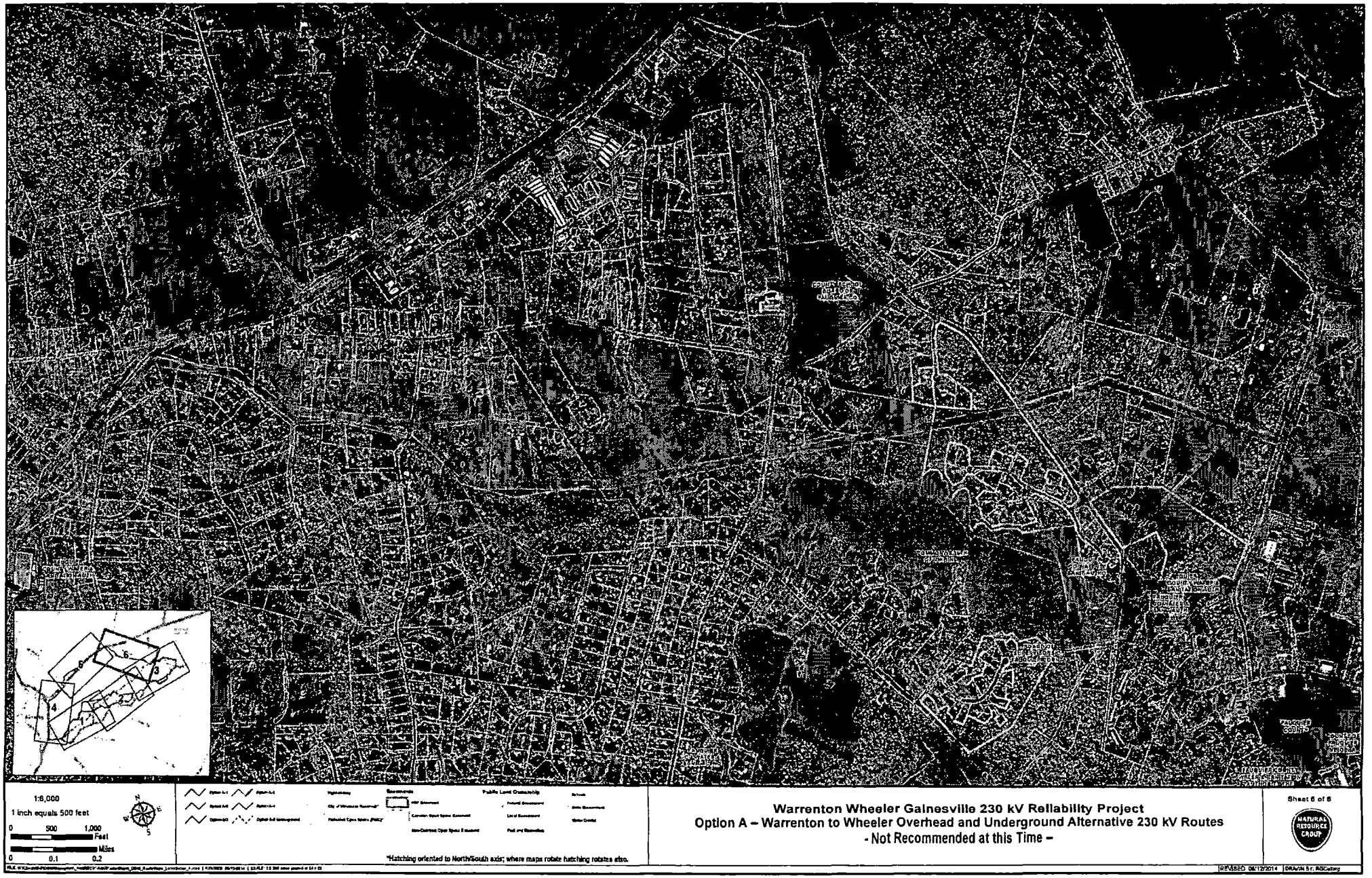


Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –

Sheet 4 of 5

REVISED: 06/12/2014 | DRAWN BY: RDC/HP


1:6,000
1 inch equals 500 feet
0 500 1,000
Feet
0 0.1 0.2
Miles
*Hatching oriented to North/South axis; where maps rotate hatching rotates also.
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –
Sheet 5 of 6
REVISED 05/12/2014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0 0.1 0.2 Miles
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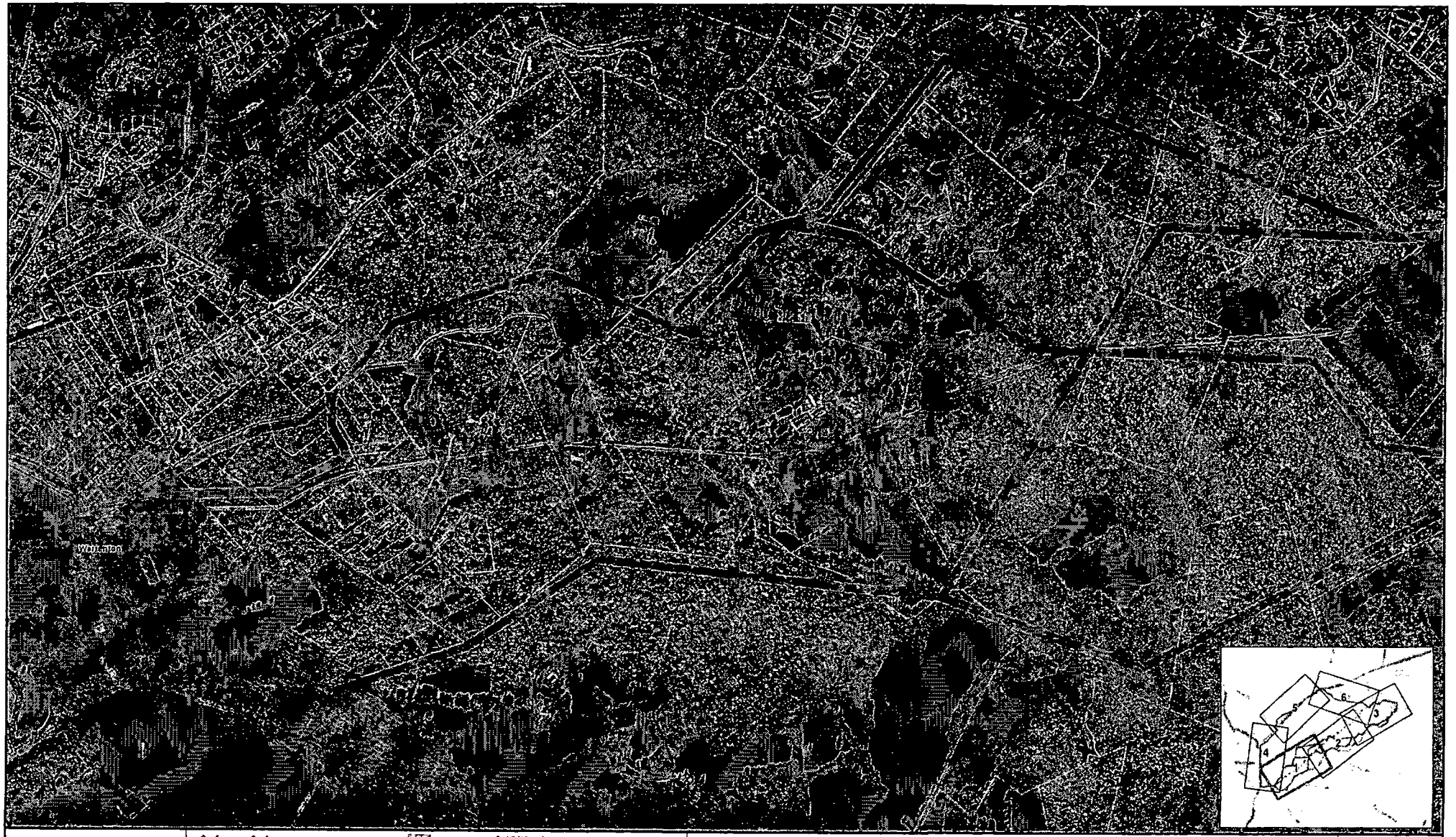
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –
Sheet 6 of 6
NATURAL RESOURCE GROUP
REVISED: 06/12/2014



*Hatching oriented to North/South axis; where maps rotate hatching rotates also.

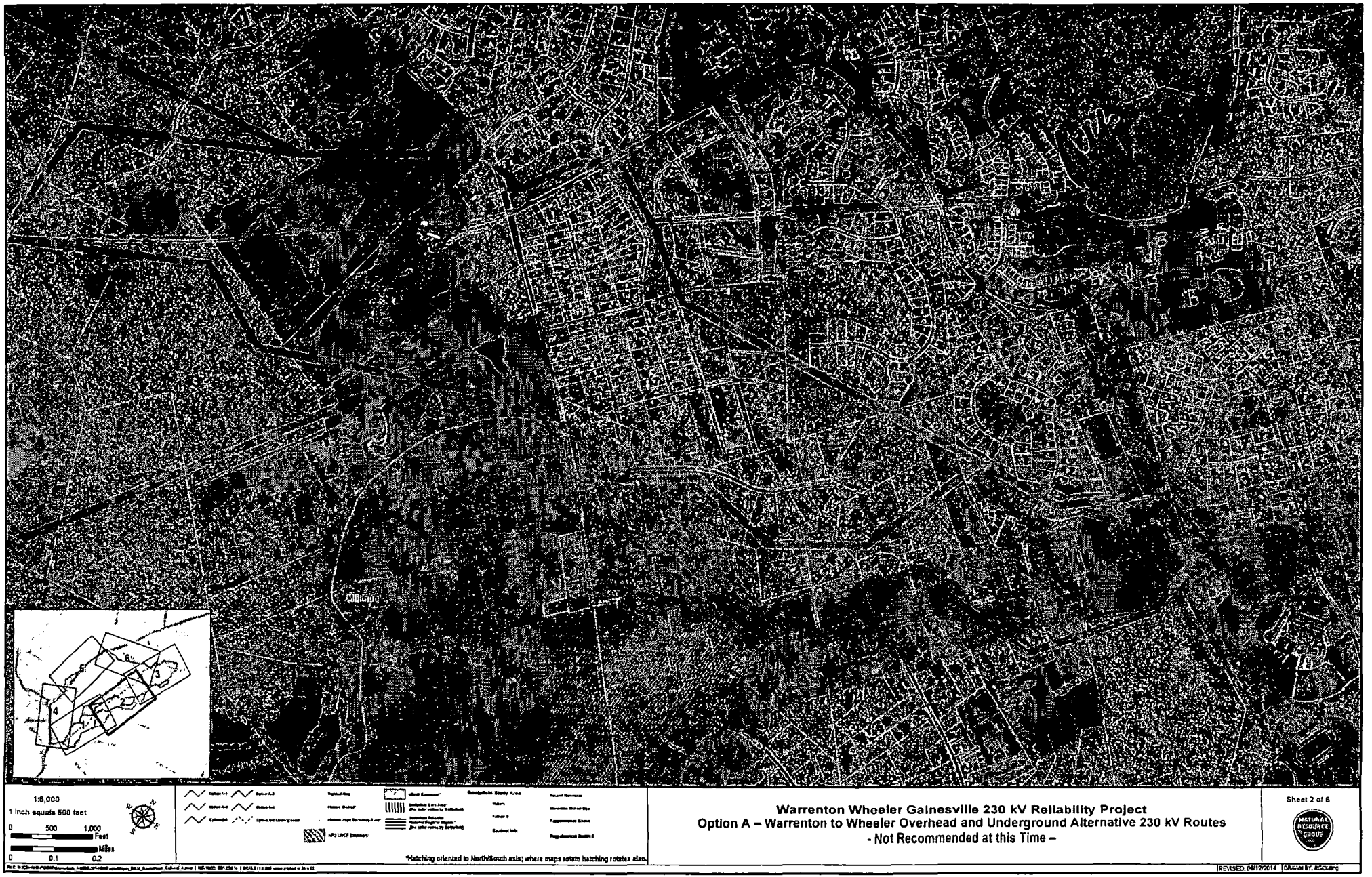
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –

Sheet 1 of 6

NATURAL RESOURCES GROUP

REVISED: 08/13/2014 | DRAWN BY: RDC

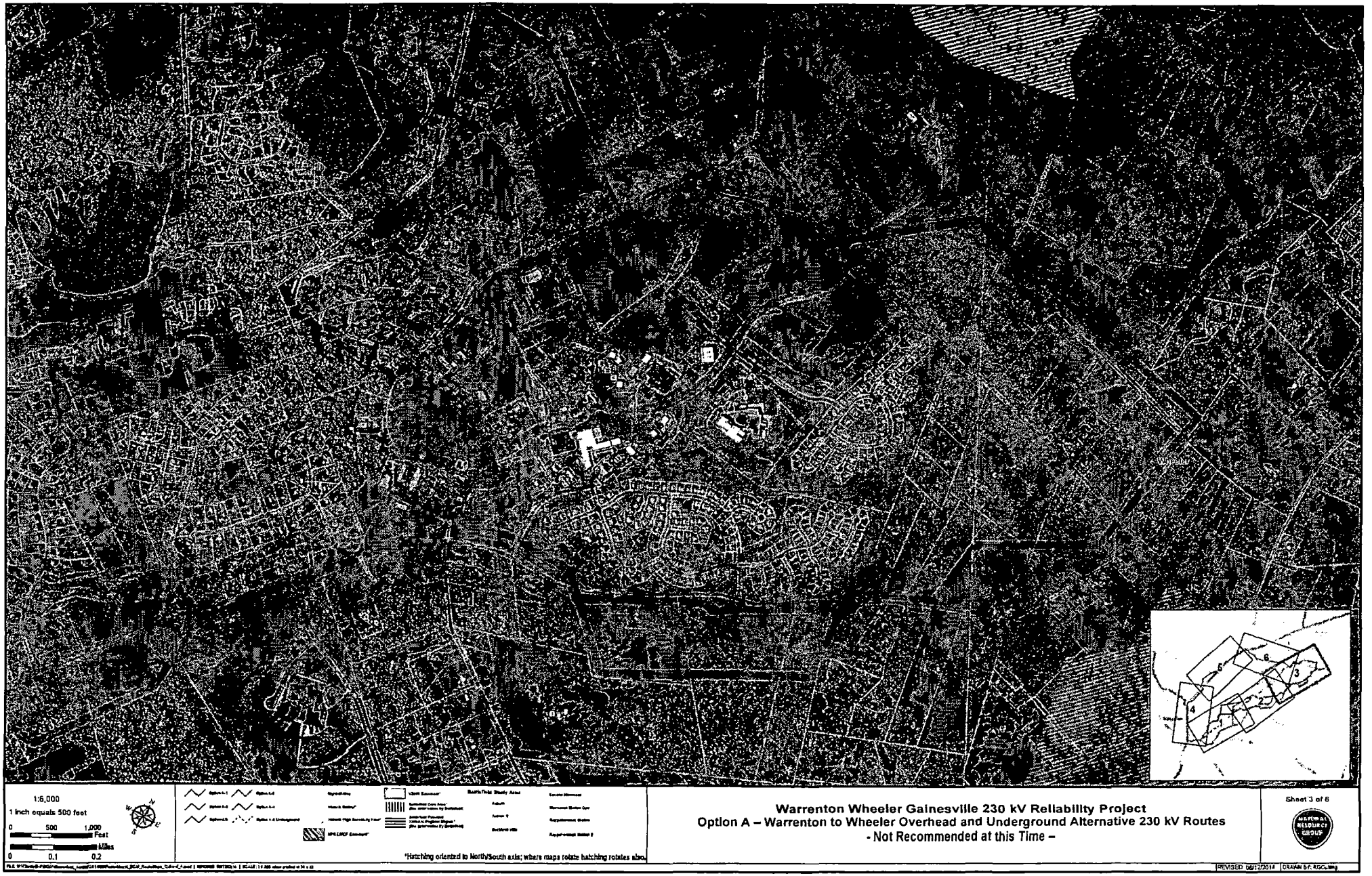
15042001J



Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –

Sheet 2 of 6

REVISED: 08/12/2014 | DRAWN BY: RSCOBB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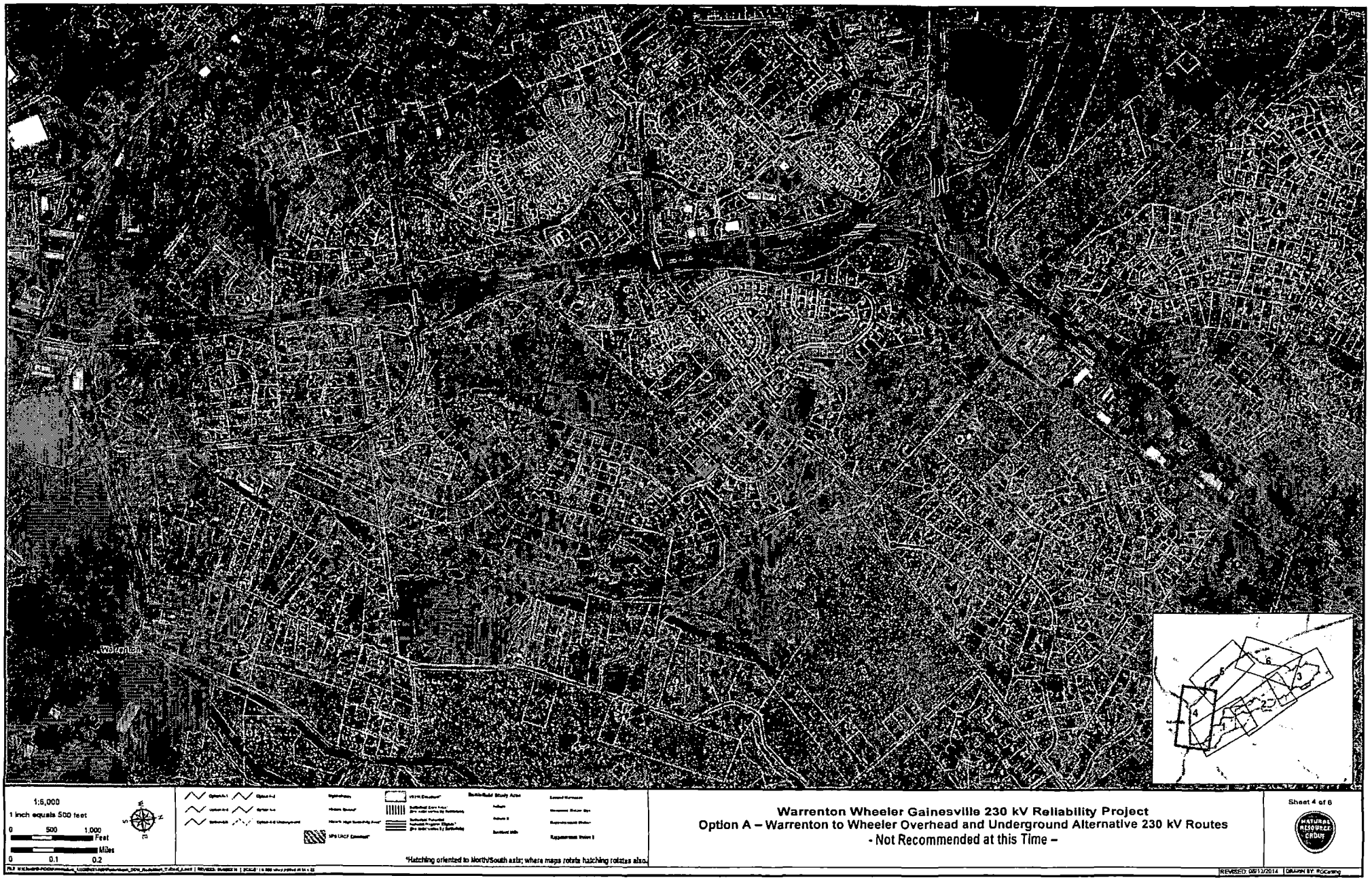
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –
Sheet 3 of 6
REVISED: 06/12/2014
DRAWN BY: RGC



*Hatching oriented to North/South axis; where maps rotate hatching rotates also.

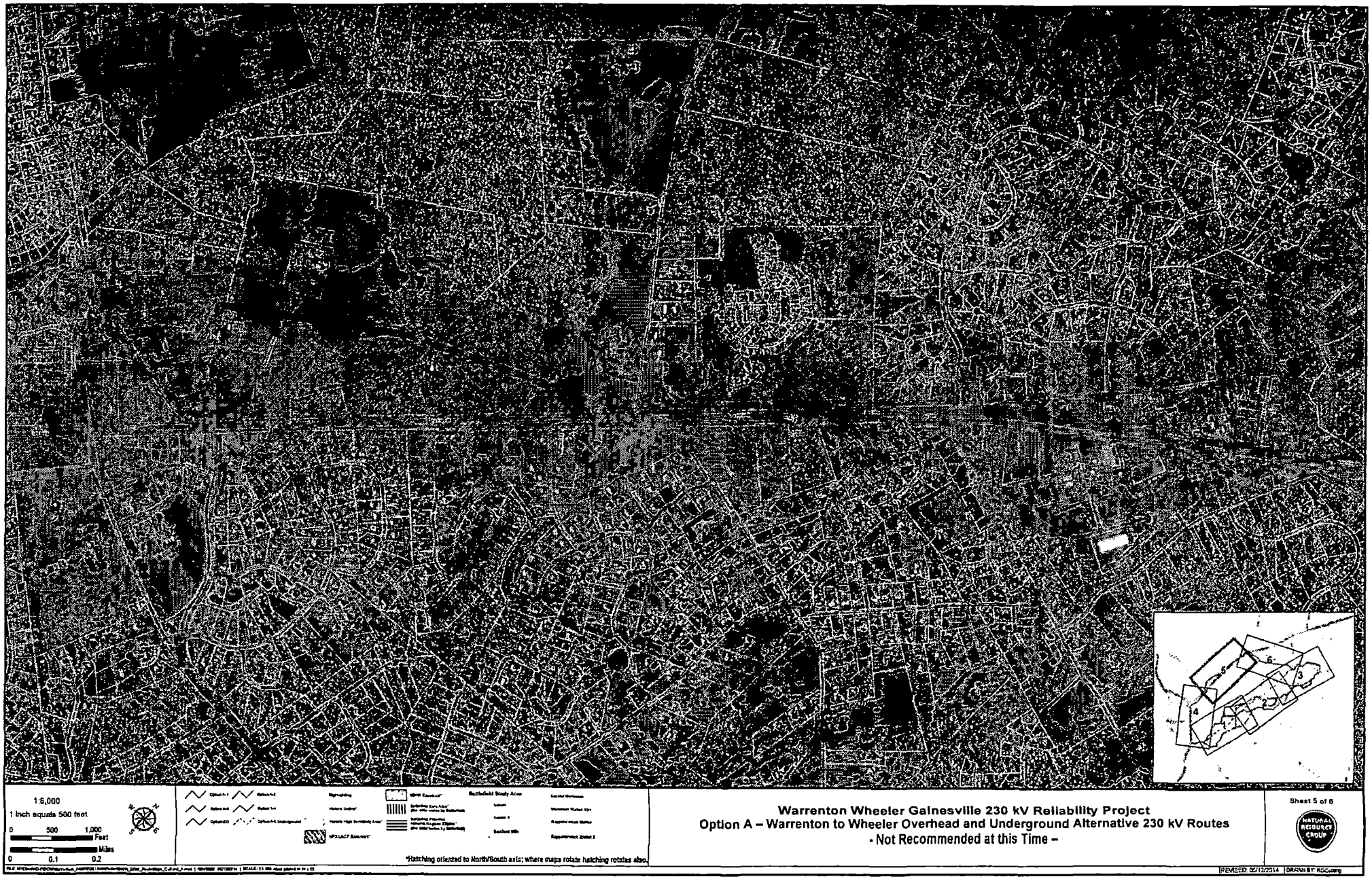
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –

Sheet 4 of 6

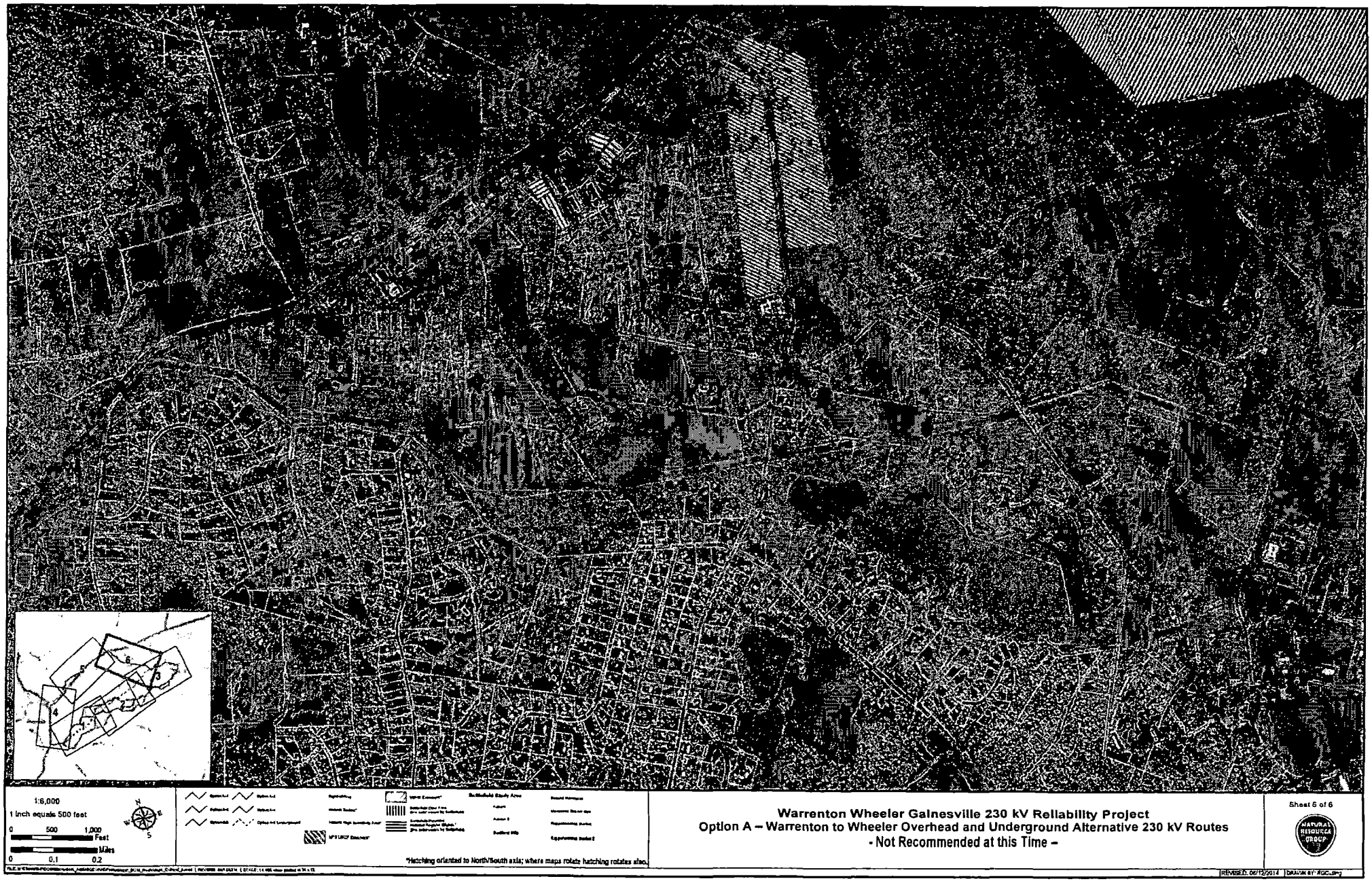
NATURAL RESOURCES GROUP

REVISED: 05/12/2014 | DRAWN BY: RGCarling

15042001S



15042001213



Warrenton Wheeler Gainesville 230 kV Reliability Project
Option A – Warrenton to Wheeler Overhead and Underground Alternative 230 kV Routes
- Not Recommended at this Time –

Sheet 6 of 6

NATURAL RESOURCE GROUP

REVISED: 06/12/2014 | DRAWN BY: RGC

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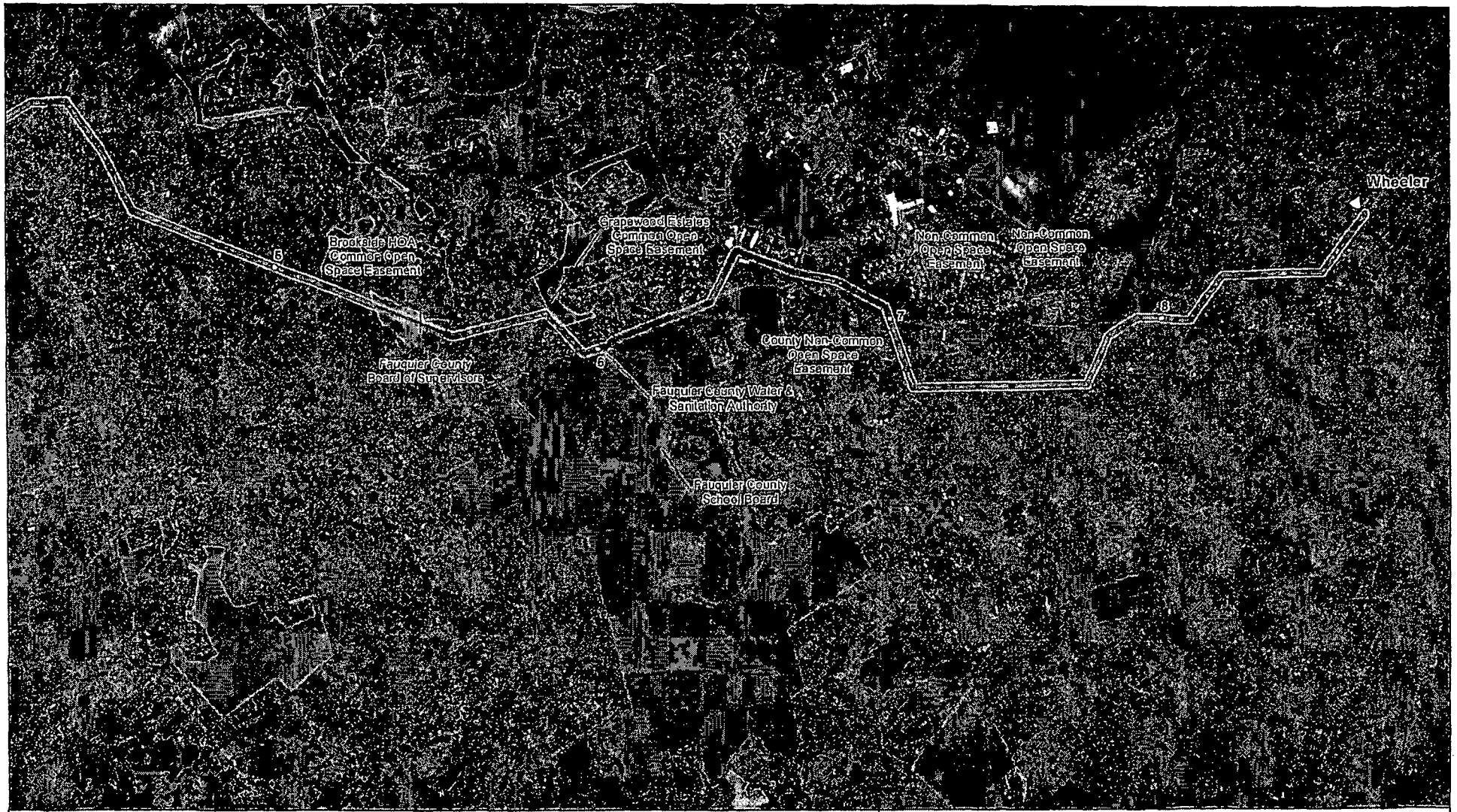

Figure 2b
Warrenton - Wheeler 230 kV
Transmission Line Project
Public Lands and Conservation Easements
Alternative A-2/3

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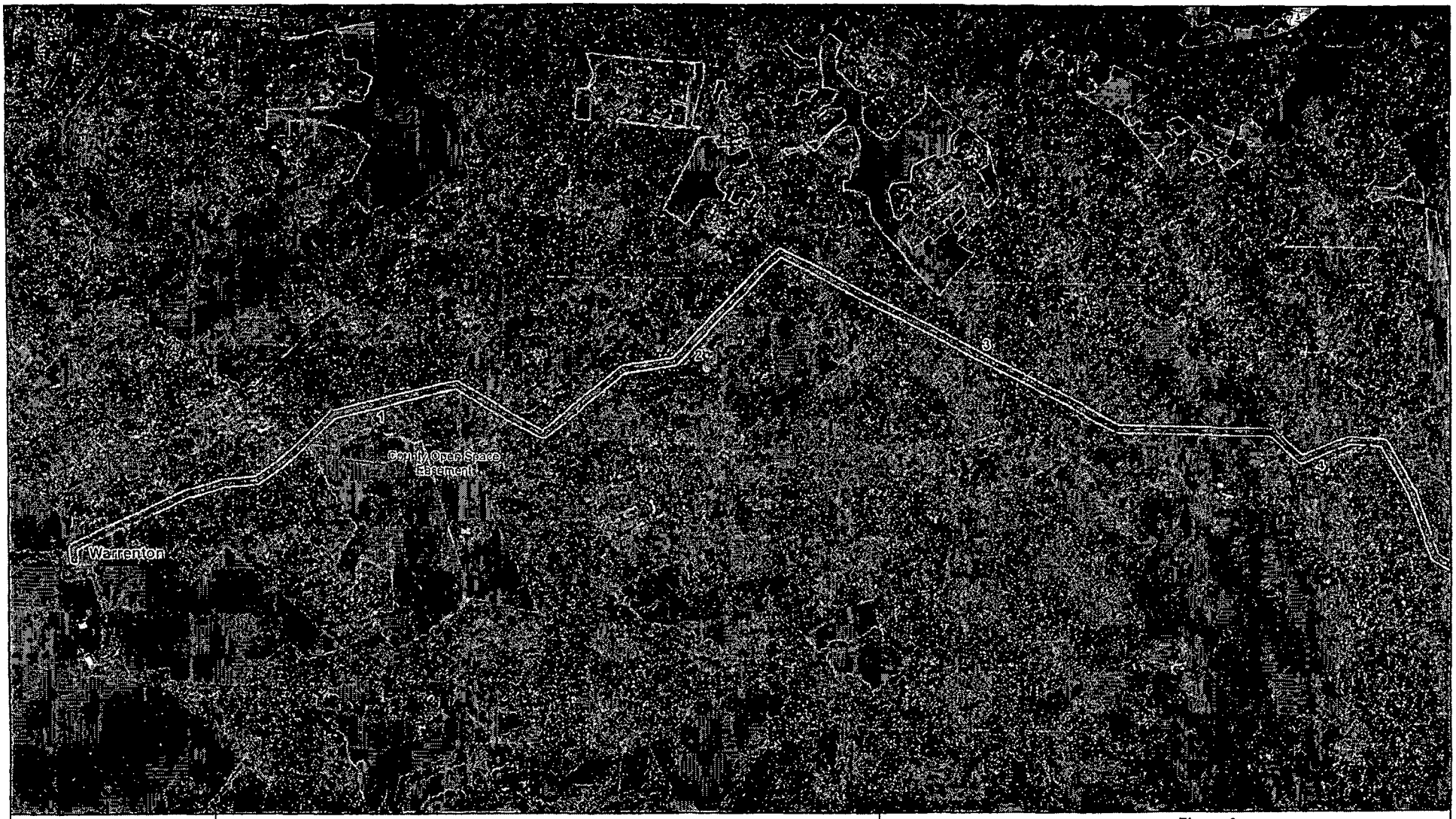
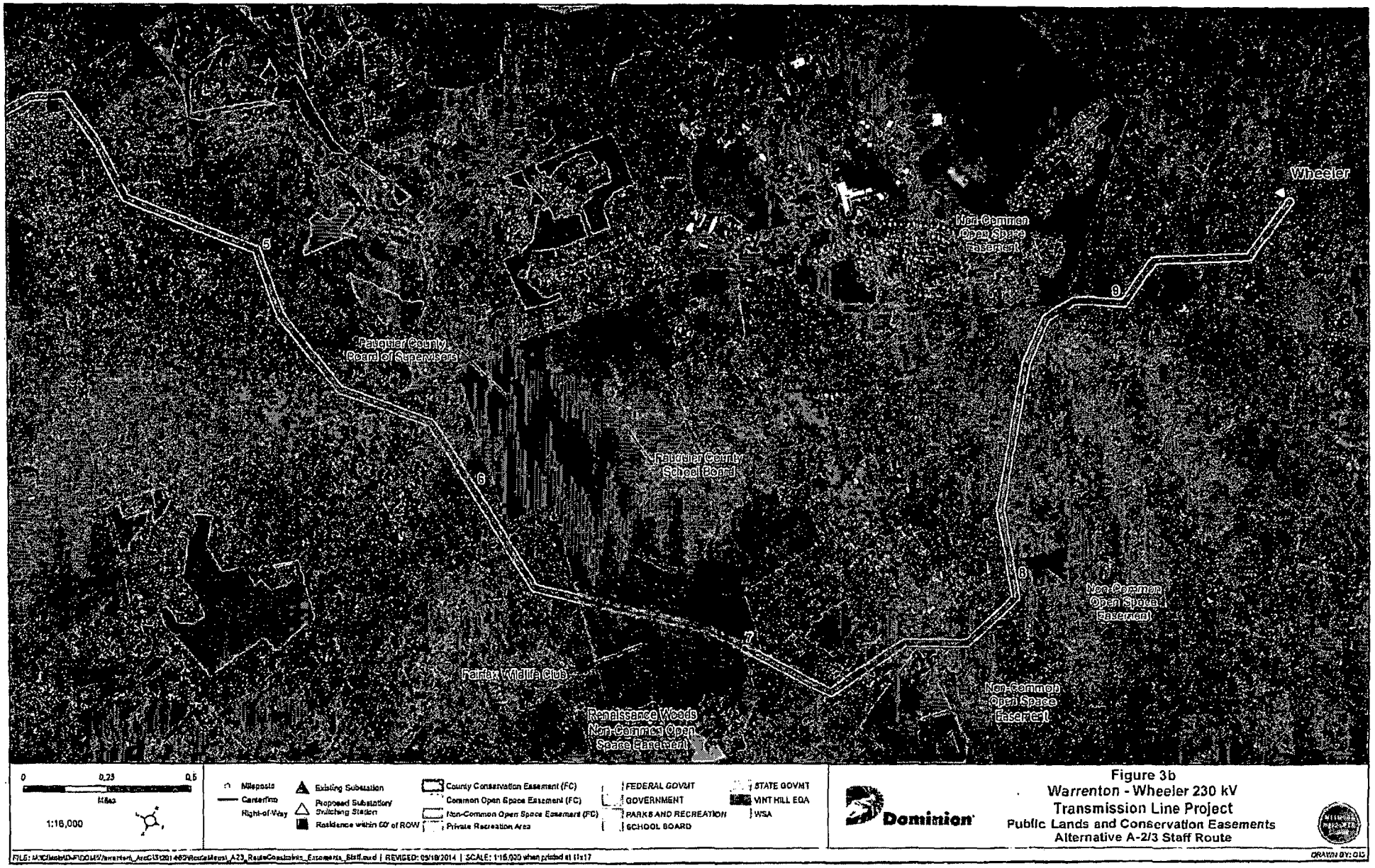

1
2
3
4
5
County Open Space Easement
Warrenton
0
0.25
0.5
Miles
1:16,000
Milposts
Centerline
Right-of-Way
Existing Substation
Proposed Substation/ Switching Station
Residence within 60' of ROW
County Conservation Easement (FC)
Common Open Space Easement (FC)
Non-Common Open Space Easement (FC)
GOVERNMENT
SCHOOL BOARD
STATE GOVMT
CITY
WSA
Dominion
Figure 3a
Warrenton - Wheeler 230 kV
Transmission Line Project
Public Lands and Conservation Easements
Alternative A-2/3 Staff Route
DRAWN BY: GIS

150420013


Wheeler
Non-Common Open Space Easement
Fauquier County Board of Supervisors
Fauquier County School Board
Non-Common Open Space Easement
Fairfax Wildlife Club
Renaissance Woods Non-Common Open Space Easement
Non-Common Open Space Easement
5
6
7
8
9
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Miles
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Mileposts
Centerline
Right-of-Way
Existing Substation
Proposed Substation/ Switching Station
Residence within 60' of ROW
County Conservation Easement (FC)
Common Open Space Easement (FC)
Non-Common Open Space Easement (FC)
Private Recreation Area
FEDERAL GOVMT
GOVERNMENT
PARKS AND RECREATION
SCHOOL BOARD
STATE GOVMT
VINT HILL EQA
WSA
Dominion
Figure 3b
Warrenton - Wheeler 230 kV
Transmission Line Project
Public Lands and Conservation Easements
Alternative A-2/3 Staff Route
DRAWN BY: GIS

1504200013

Figure 4b
Warrenton - Wheeler 230 kV
Transmission Line Project
Architectural Resources and Battlefields
Alternative A-2/3

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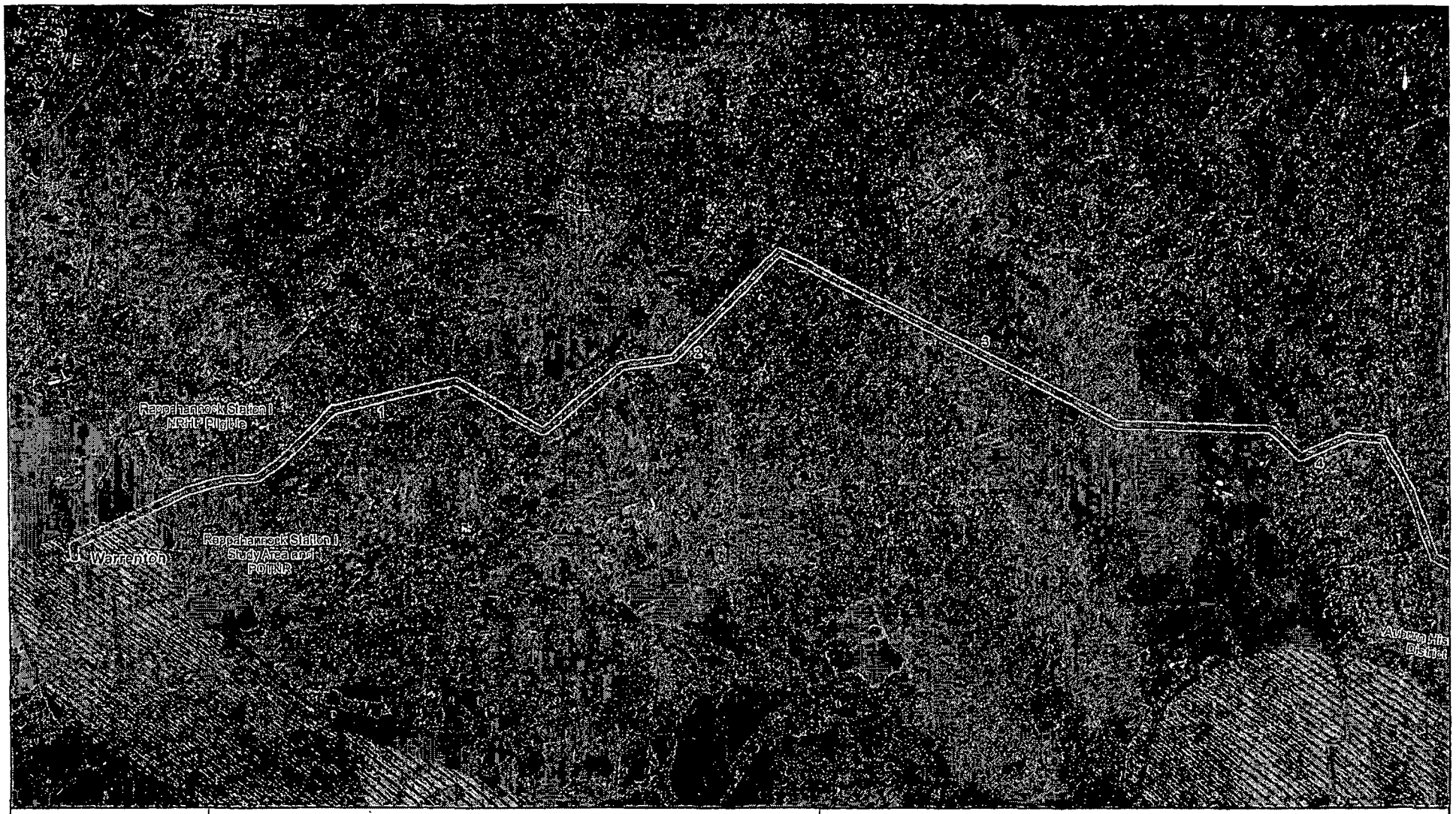

Figure 5a
Warrenton - Wheeler 230 kV
Transmission Line Project
Architectural Resources and Battlefields
Alternative A-2/3 Staff Route

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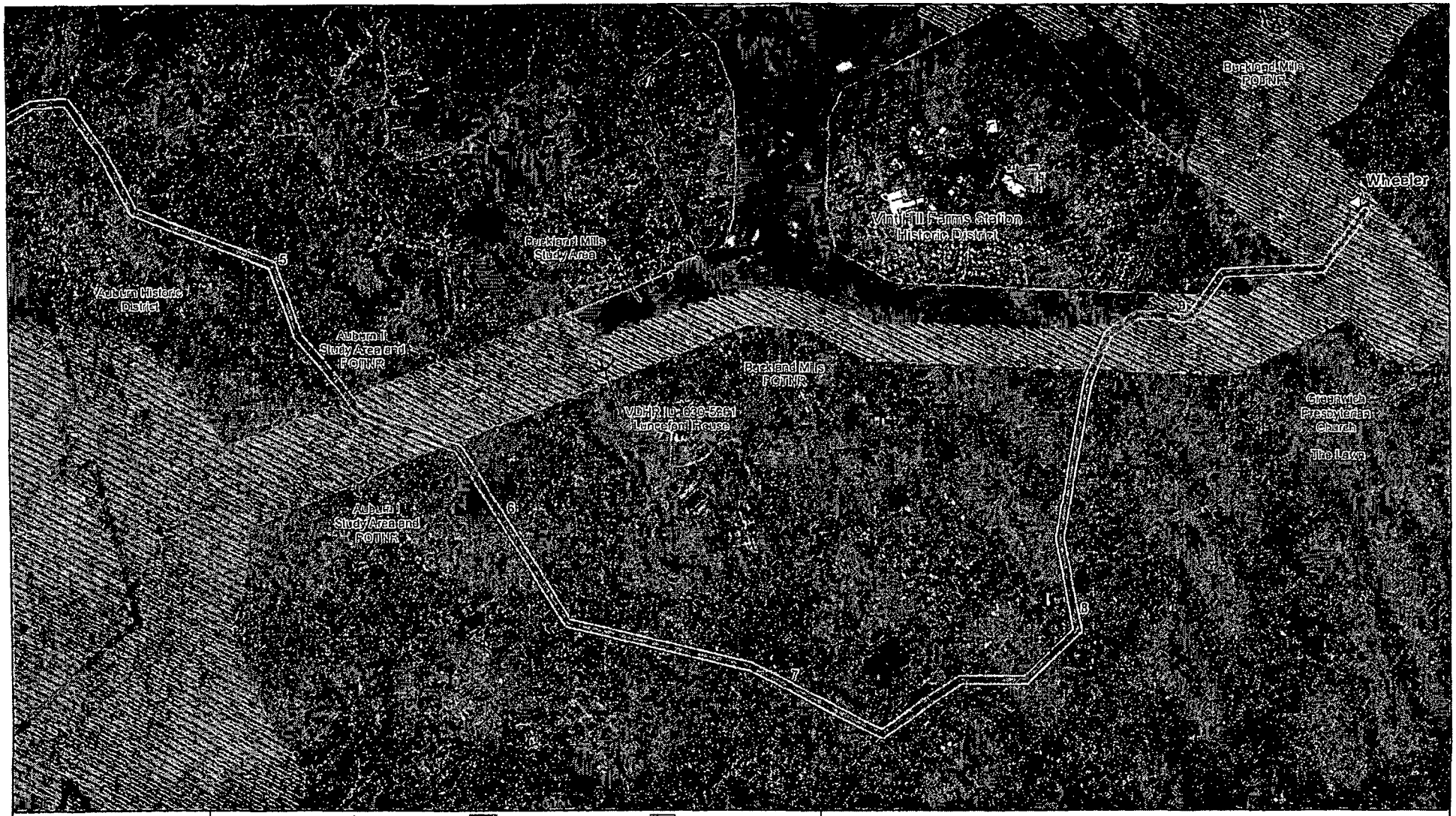
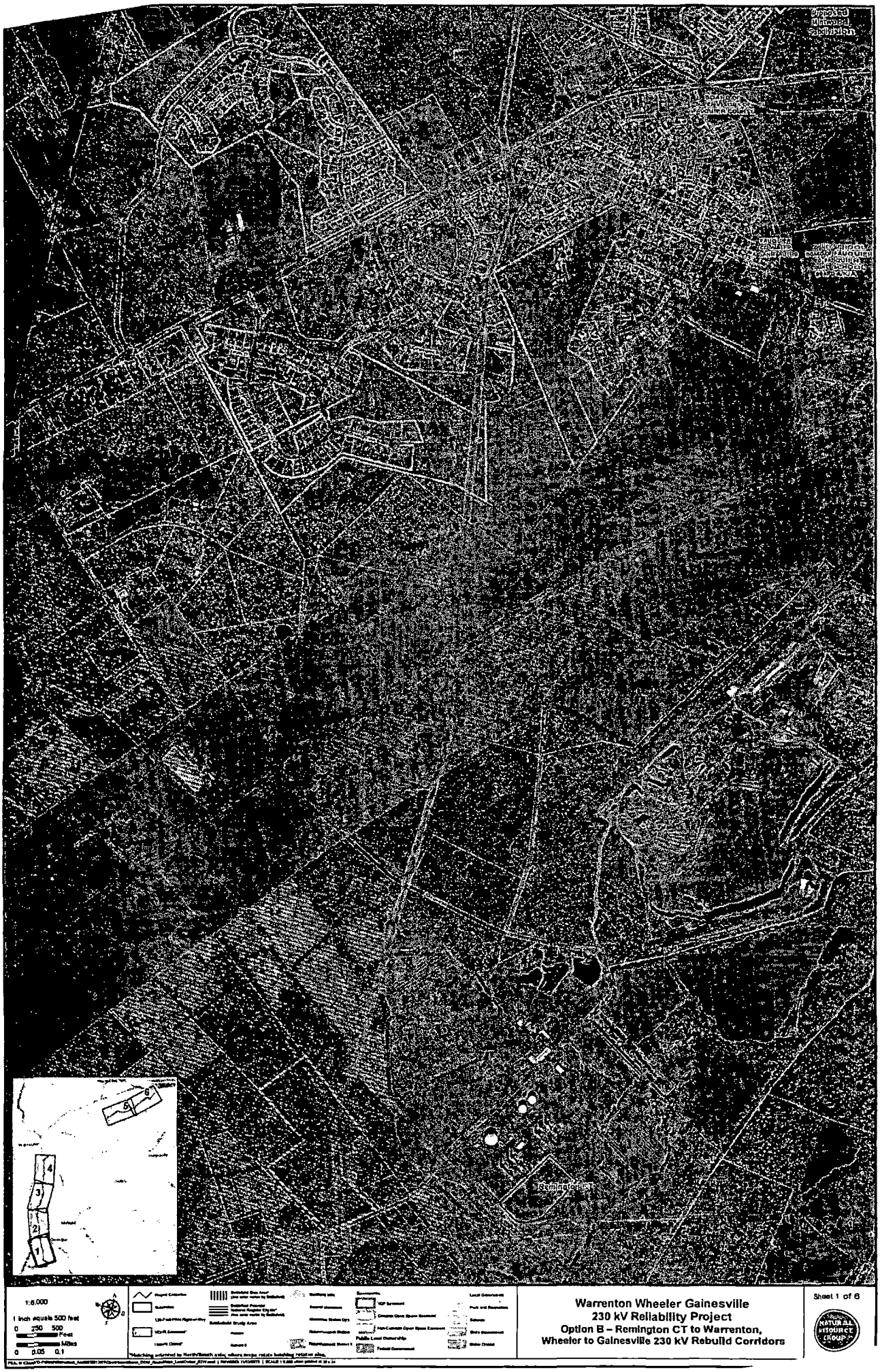
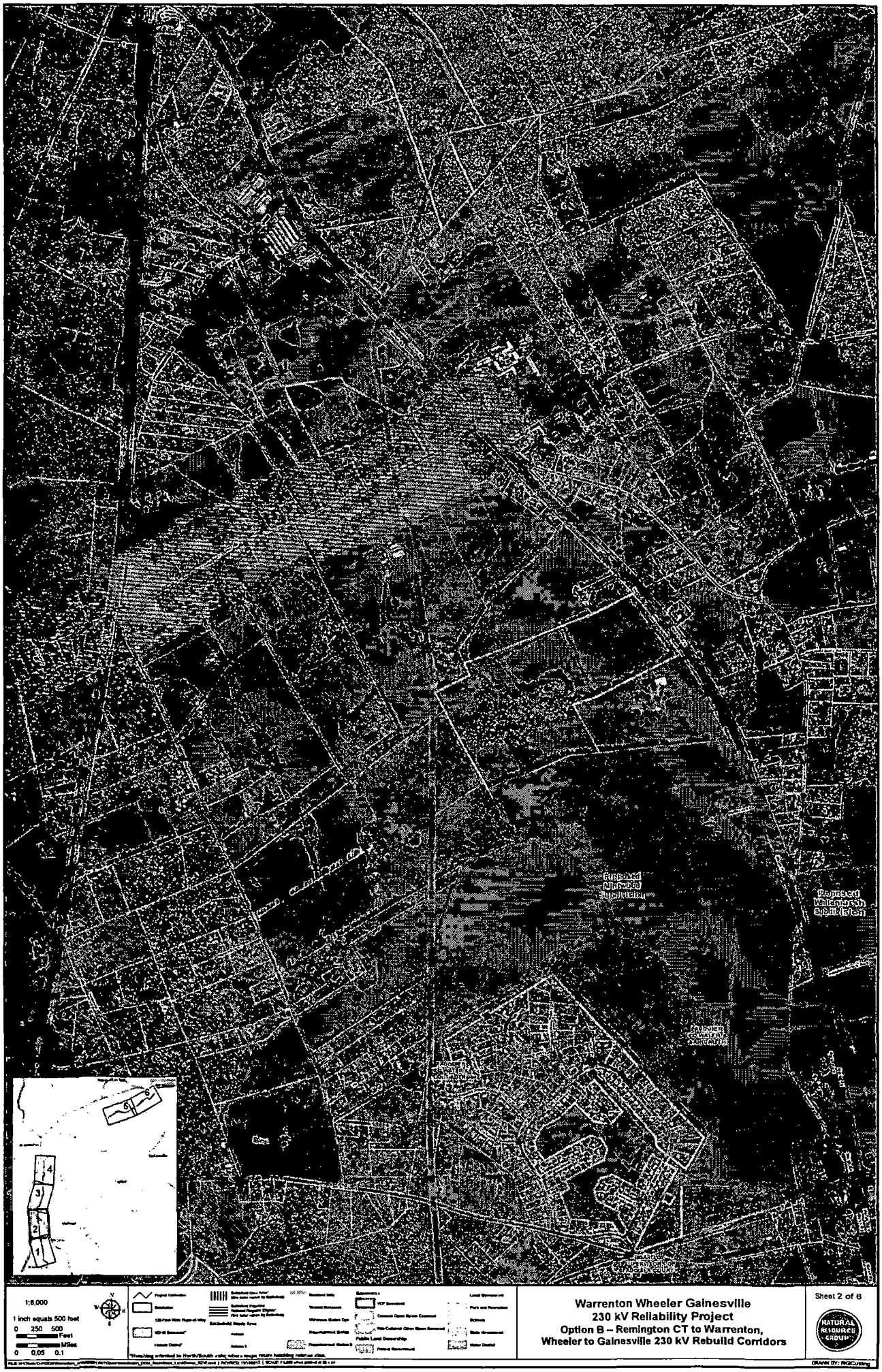
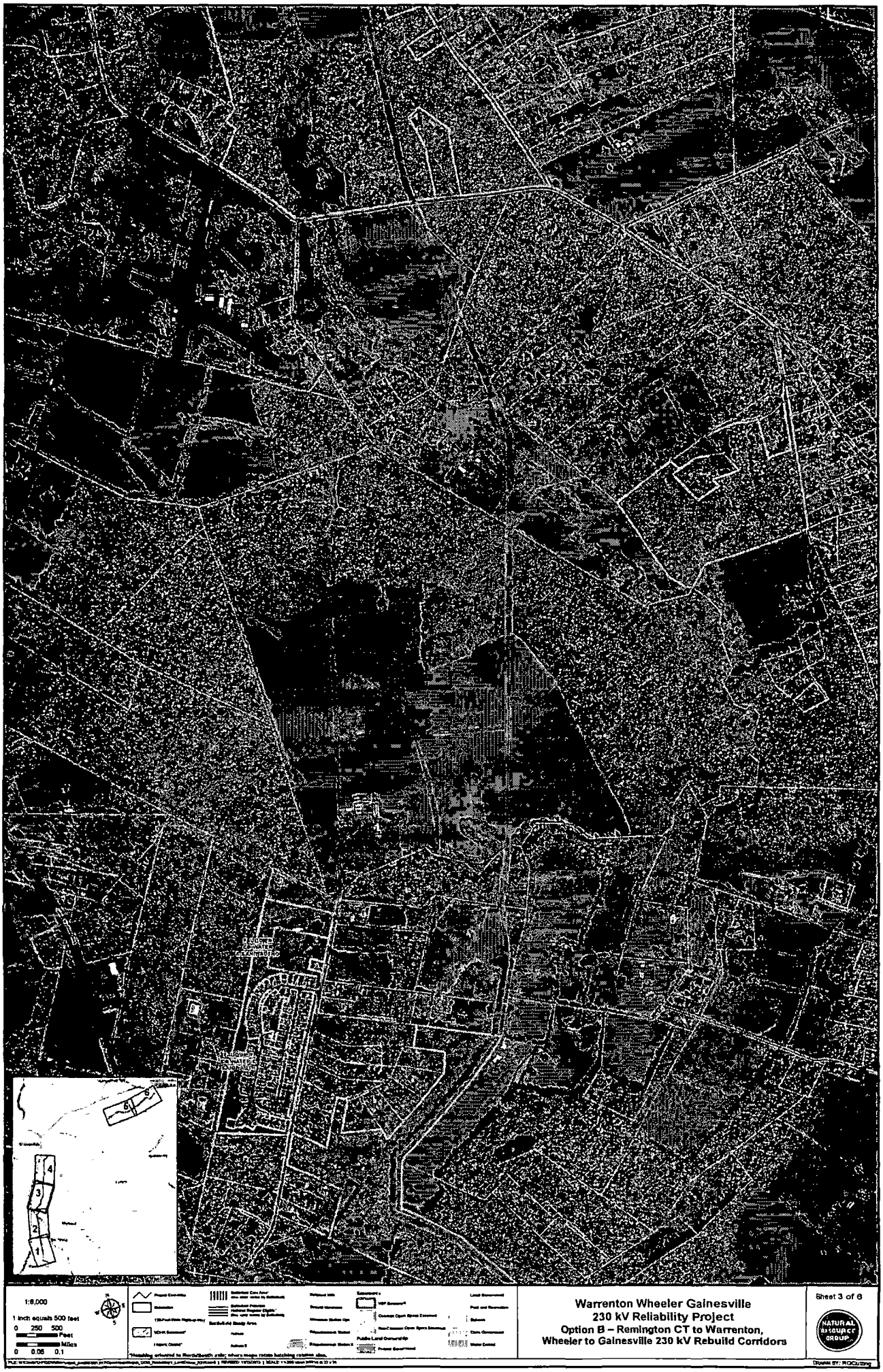




Warrenton Wheeler Gainesville
230 kV Reliability Project
Option B – Remington CT to Warrenton,
Wheeler to Gainesville 230 kV Rebuild Corridors

Sheet 1 of 6


Proposed Alderaan Subdivision
Proposed Whitemarsh Split (Lot 5)
Proposed Whitemarsh Split (Lot 6)
Proposed Whitemarsh Split (Lot 7)
Proposed Whitemarsh Split (Lot 8)
Proposed Whitemarsh Split (Lot 9)
Proposed Whitemarsh Split (Lot 10)
Proposed Whitemarsh Split (Lot 11)
Proposed Whitemarsh Split (Lot 12)
Proposed Whitemarsh Split (Lot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1 inch equals 500 feet
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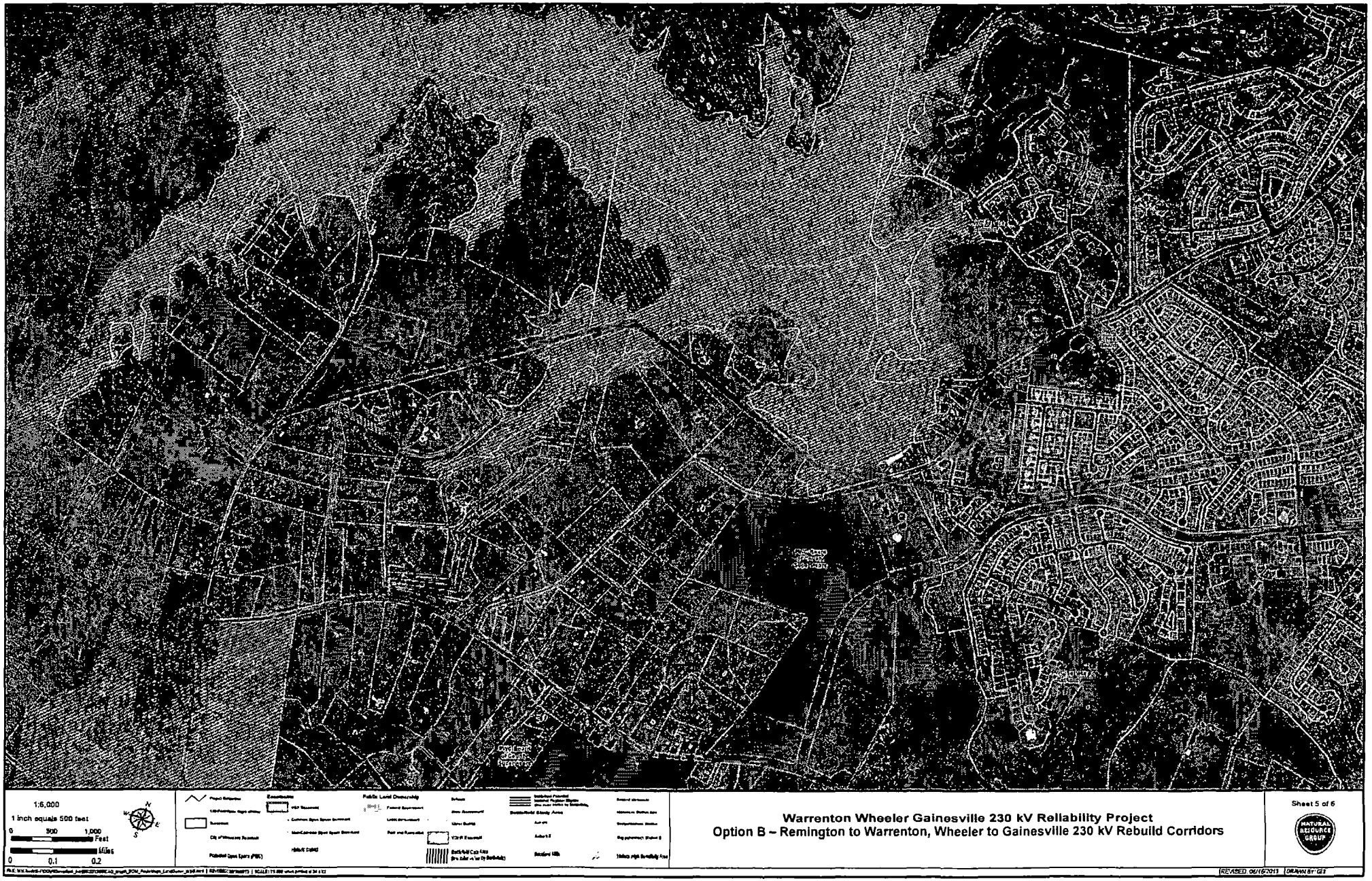
Feet
0 0.05 0.1
Miles
Warrenton Wheeler Gainesville
230 kV Reliability Project
Option B – Remington CT to Warrenton,
Wheeler to Gainesville 230 kV Rebuild Corridors
Sheet 3 of 6
NATURAL RESOURCE GROUP


Warrenton
Central Sports Complex
Fauquier County Fairgrounds
1:6,000
1 inch equals 500 feet
0 250 500
Feet
Meters
0 0.05 0.1
Warrenton Wheeler Gainesville
230 kV Reliability Project
Option B – Remington CT to Warrenton,
Wheeler to Gainesville 230 kV Rebuild Corridors
Sheet 4 of 8
NATURAL RESOURCE GROUP



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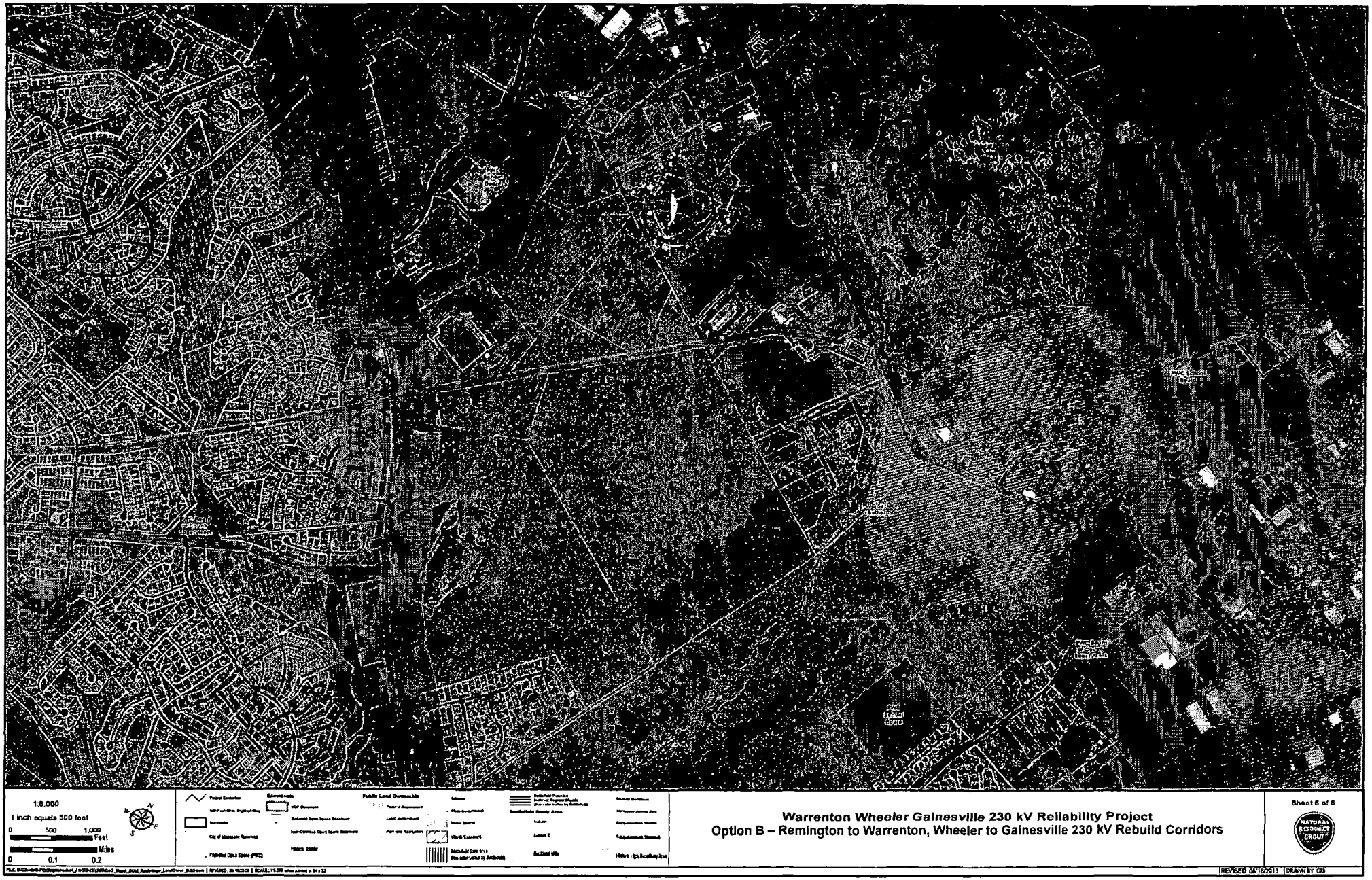
1:6,000
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Feet
Miles
0 0.1 0.2
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option B – Remington to Warrenton, Wheeler to Gainesville 230 kV Rebuild Corridors
Sheet 6 of 6
REVISED 08/16/2013
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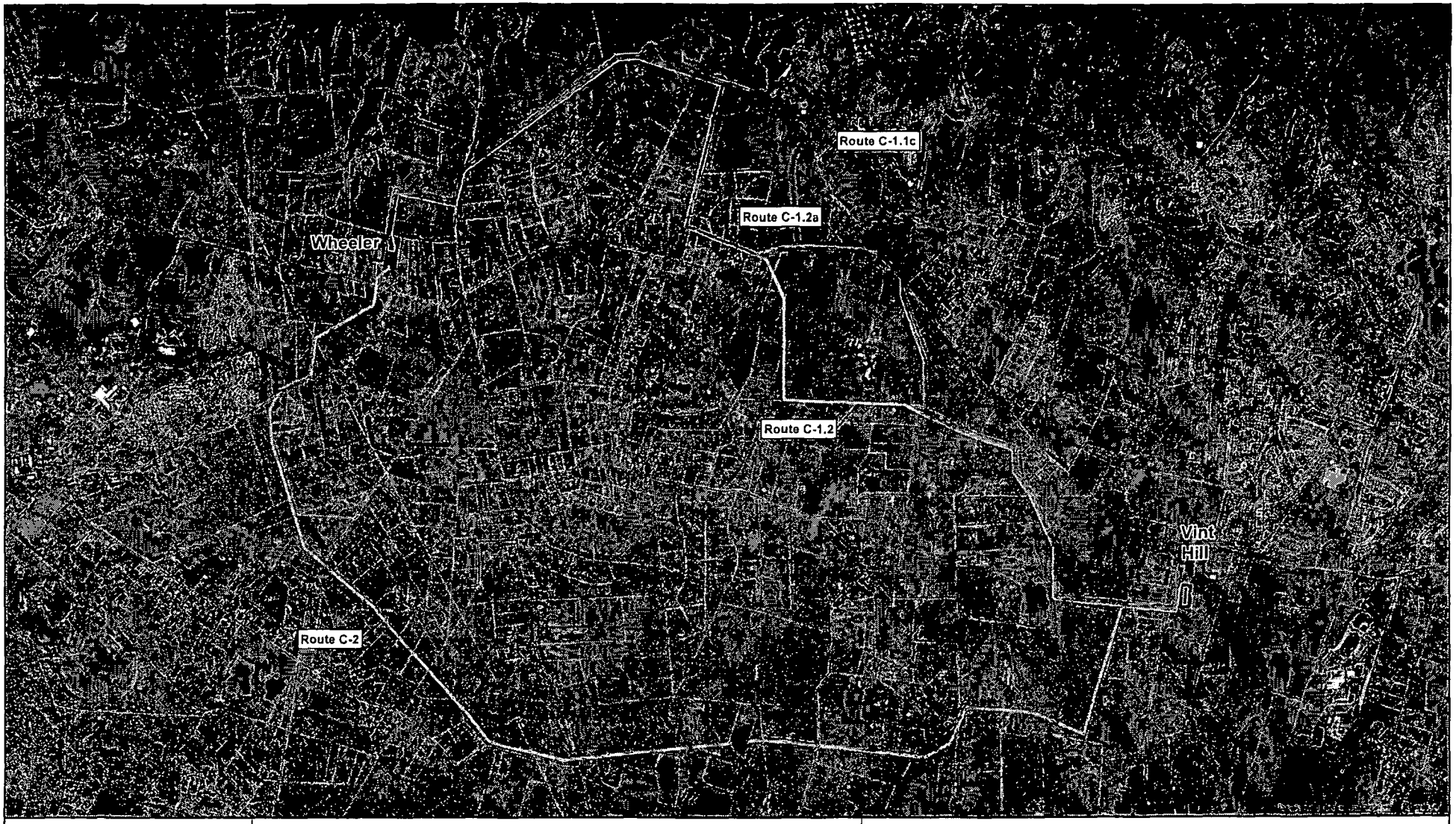
Route C-1.1c
Route C-1.2a
Wheeler
Route C-1.2
Vint Hill
Route C-2
1:24,000
1 inch equals 2,000 feet
0 1,000 2,000
Feet
0 0.2 0.4
Miles
N
Route C-1.1c
Route C-1.2a
Substation
Route C-1.2
Route C-2
Parcel Boundary
Dominion
Proposed Vint Hill - Wheeler
230 kV Transmission Line
Constructible C Routes
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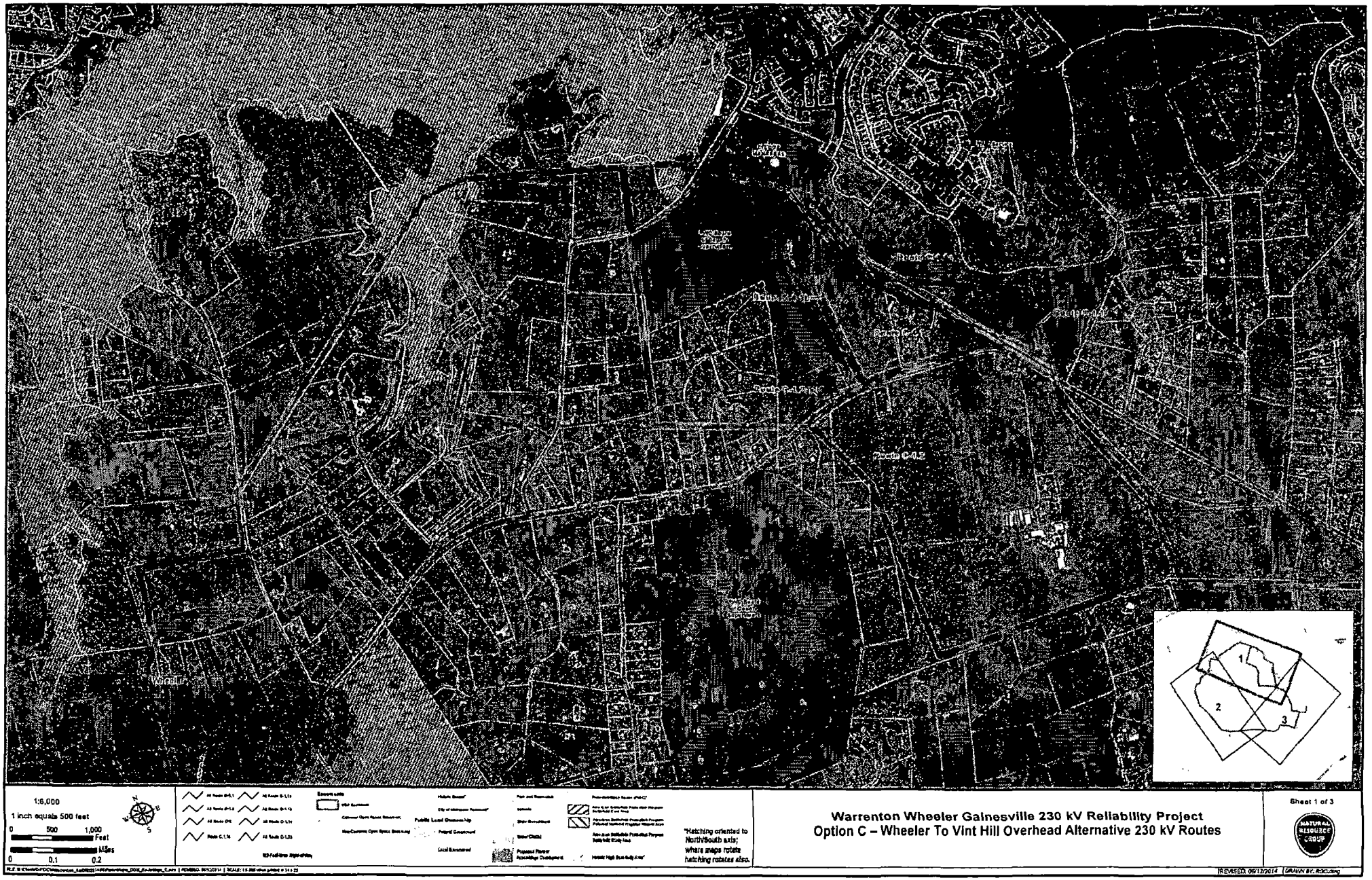

Warrenton Wheeler Gainesville 230 kV Reliability Project
Option C – Wheeler To Vint Hill Overhead Alternative 230 kV Routes

Sheet 1 of 3

*Hatching oriented to North/South axis; where maps rotate hatching rotates also.

REVISED: 05/12/2014 | DRAWN BY: RDC/dmg

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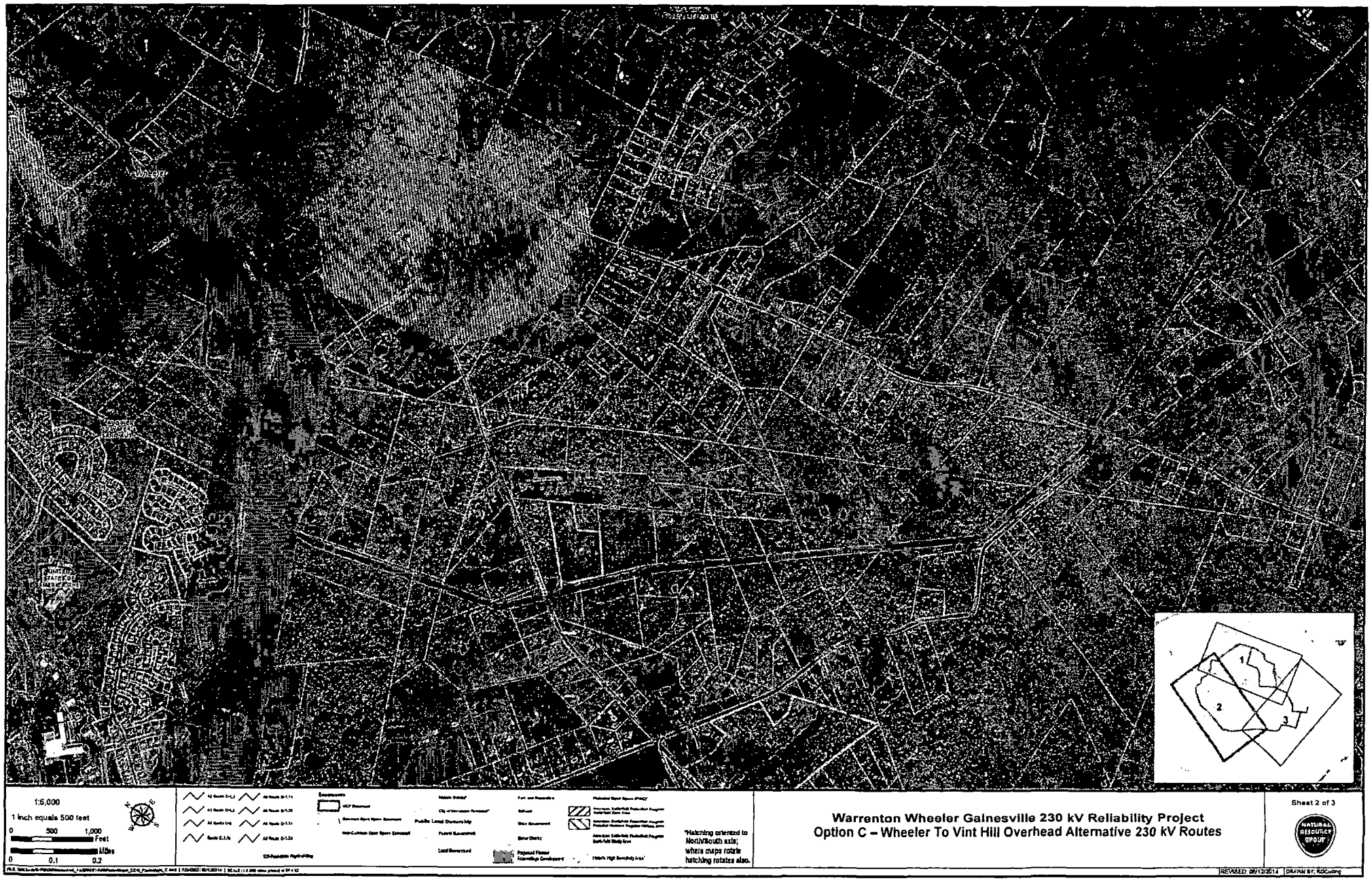
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1 inch equals 500 feet
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*Hatching oriented to North/South axis; when maps rotate hatching rotates also.
Warrenton Wheeler Gainesville 230 kV Reliability Project
Option C – Wheeler To Vint Hill Overhead Alternative 230 kV Routes
Sheet 2 of 3
REVISED: 09/12/2014
DRAWN BY: RDC

15042001E

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1 inch equals 500 feet

0 500 1,000 Feet

0 0.1 0.2 Miles

*Hatching oriented to North/South axis; where maps rotate hatching rotates also.

Warrenton Wheeler Gainesville 230 kV Reliability Project
Option C – Wheeler To Vint Hill Overhead Alternative 230 kV Routes

Sheet 3 of 3

REVISED OCT/2014

15042001J

APPENDIX IV

LETTER FROM FAUQUIER COUNTY

BOARD OF SUPERVISORS OF FAUQUIER COUNTY

WARREN GREEN BUILDING
10 HOTEL STREET
WARRENTON, VIRGINIA 20186
PH (540) 422-8020
FX (540) 422-8022
BOS@fauquiercounty.gov

September 8, 2014

Mr. Joel H. Peck, Clerk
Document Control Center
State Corporation Commission
1300 E. Main Street, Tyler Bldg., 1st Floor
Richmond, VA 23219

RE: Application of Virginia Electric and Power Company (Dominion) for a Certificate of Public Convenience and Necessity: Remington CT-Warrenton, 230 kV Double Circuit Transmission Line, Vint Hill-Wheeler and Wheeler-Loudoun 230 kV Transmission Lines, 230 kV Vint Hill Switching Station and 230 kV Wheeler Switching Station Case No. PUE-2014-00025

Dear Mr. Peck:

This letter is on behalf of the Board of Supervisors of Fauquier County regarding the above referenced proposed project. This project, as filed with the State Corporation Commission, includes three route options:

- Option A: Wheeler to Warrenton (new line);
- Option B: Remington to Warrenton (wreck and rebuild);
- Option C: Wheeler to Vint Hill (new) & Remington to Warrenton (wreck and rebuild)

While the Board of Supervisors does not desire to comment on which route is preferable to it, it does wish to provide comment on the nature of construction for Options A & C should either of those options be chosen.

Options A & C, if chosen, would involve the construction of new lines through heavily populated areas of the County. Construction of new overhead lines in populated areas could

negatively affect the quality of life for a large number of county citizens. Additionally, above ground lines would negatively affect the value of the property within the view-shed of the new transmission line.

Based upon the forgoing the Board of Supervisors of Fauquier County states it preference that if either Options A or C are chosen by the State Corporation Commission as the approved route that transmission line should be installed underground to minimize the visual and monetary impacts of the project on the community.

Sincerely,

Paul S. McCulla
County Administrator

Cc: Board of Supervisors
Dominion Virginia Power

APPENDIX V

RESUME OF WAYNE D. McCOY

WAYNE D. MCCOY, C.E.S.
RESUME

QUALIFICATIONS

PROFESSIONAL REGISTRATION

Certified Environmental Specialist (#10119), 1993

EDUCATION

B.S., Biology, Heidelberg University, 1973
Graduate Studies Old Dominion University

PUBLICATIONS AND PRESENTATIONS

Biotransformation and Distribution of Pentachloronitrobenzene (PCNB), Society of Toxicology
An Alternative Method for Offshore Revetments, Society of Ecological Restoration

PROFESSIONAL MEMBERSHIPS

- Environmental Assessment Association
- National Association of Environmental Professionals
- Professional Ethics Committee: Member
- Society of Wetland Scientists
- Virginia Association of Wetland Professionals

EXPERIENCE SUMMARY

Mr. McCoy's work experience has been concentrated in the areas of wetland delineation and mitigation, environmental site assessments, and underground storage tanks. He has analyzed and developed regulatory permit application strategies and has worked with local wetland boards and other regulatory authorities:

- U.S. Army Corps of Engineers,
- Virginia Institute of Marine Science,
- U.S. Environmental Protection Agency,
- U.S. Fish & Wildlife Service,
- Virginia Department of Environmental Quality,
- Virginia Game & Inland Fisheries Commission,
- Federal Communications Commission,
- North Carolina Department of Environment,
- Health & Natural Resources,
- CAMA
- and many others at the local, state and federal level.

Mr. McCoy founded Mid Atlantic Environmental L.L.C. (MAE), an environmental consulting firm. The focus of this company is in two major areas, wetlands/waterfront consulting and environmental assessment analysis. Prior to MAE, he was a partner at MSA P.C., where he founded the Environmental Sciences Division in 1990. At MSA, Mr. McCoy consulted on all projects, which involved environmental issues. He conducted site evaluations/assessments and evaluated prior usage of properties. He assisted in the identification of possible geologic and hydrologic hazards and has experience with groundwater monitoring wells and underground storage tanks. He has performed or overseen in excess of three hundred Phase I Environment Site Assessments, during his environmental career.

Mr. McCoy has also provided expert witness testimony in litigation involving dispute of delineated wetland/upland areas. This testimony was often influential in facilitating higher sales prices and increased development for lands under dispute. He has assisted clients in maximizing their "developable" land through off-site mitigation strategies, including wetland banking. In addition, has designed and permitted on-site tidal mitigation to offset project impacts.

Mr. McCoy was the Project Manager for three separate 2-year "Indefinite Quantity" (IQ) contracts with the U.S. Coast Guard Facilities Design and Construction Center (Atlantic) in Norfolk, VA. These contracts involved a variety of environmental services for assessment, permitting, design, compliance and construction of Coast Guard facilities east of the Mississippi River from Maine to Florida and in Puerto Rico. He also managed a similar indefinite quantity contract for services at the U.S. Coast Guard Reserve Training Center, Yorktown, VA.

Further, Wayne has managed four indefinite quantity contracts for the Virginia Department of Transportation. Over a period of 10 years, these VDOT contracts have encompassed environmental site assessments, Phase II Investigations, Environmental Impact Reports (more than 50 reports), wetlands delineations and Chesapeake Bay Preservation Act consulting for a variety of VDOT facilities throughout the State. Mr. McCoy coordinated with the appropriate regulatory authorities, when a project was identified as having a possible environmental impact.

Mr. McCoy has served the Virginia State Corporation Commission (SCC) as the environmental consultant on several transmission line projects. His charge as the environmental reviewer was to review all environmental documentation, perform field analysis, attend all the public hearings, prepare a report to Commission Staff and testify at the Final Evidentiary Hearing. He then made himself available for cross examination by counsel for the interveners in the case. Most recently, he served the Virginia SCC in the environmental review of the original Potomac Appalachian Transmission Highline Case and its resubmission, known as PATH II. The proposed project cost was in excess of 2.1 billion dollars. These projects involve alignment of 765kV transmission lines from St. Albans, West Virginia to Kemptown, Maryland. Previously, he reviewed the Meadowbrook – Loudon 500kV Transmission Line Application for the Commission. He was the environmental consultant to the Virginia SCC on an application to install a 765 kV transmission line from Wyoming, WV to Cloverdale, VA. His review was instrumental in reducing the environmental impact of the line on lands situated in Virginia, removing approximately 30 miles of transmission area and right-of-way. More than 200 transmission towers were involved in this $260 million dollar project. Endangered species, wetlands, cultural and historical assets, karst, and other impacts were examined. The alternate alignment that he proposed was Certificated by the Commission and extended from Wyoming, West Virginia to Jackson's Ferry, Virginia. Most recently, he reviewed the Surry-Skiffes Creek 500kV Transmission Line and associated facilities and the Skiffes Creek-Whealton 230kV Transmission Line. This project included potential crossings of the James and Chickahominy Rivers, along with the evaluation of potential impacts to significant historical, architectural and cultural assets.

Over a period of several years, Mr. McCoy also served Virginia Natural Gas as the environmental consultant for five separate natural gas pipeline construction projects. He assisted in selecting an alignment that minimized or avoided impact to wetlands and other natural resources and monitored construction activities for compliance with environmental regulations. He then filed the appropriate permit applications.

Additional experience encompasses overseeing FCC Submissions for communications towers throughout Virginia and North Carolina. In excess of 150 towers sites were reviewed, submitted and approved, under his guidance. Tasking included field work, identification of environmental issues on the regulatory databases and submission of NEPA findings.

Mr. McCoy has maintained a strong commitment to serving his community, throughout his years. He has served on national, state and local board of directors. In the City of Virginia Beach, he has volunteered in environmental areas and through his work with the Police Aviation Unit. He received the Department's Meritorious Public Safety Award in 2003 for his work in the helicopter to save the life of a young drowning victim. He has served the City in the Chesapeake Bay Preservation Board, both as a member and as Chairman. Additionally, he was appointed to the Green Ribbon Committee by the City Council. This Committee reviewed ways to make the City's Ordinances more environmentally friendly and advise the City on ways to improve its commitment to being a "Green" city. He was the Natural Resources Sub Committee Chair on the original Committee. He was appointed to the Green Ribbon Implementation Committee by City Council. He is currently the Co-Chair of the Green Ribbon Committee. He has continued his service to his fellow man through Rotary, as the President of the Virginia Beach Rotary and as an Assistant District Governor. Most important to him, is his involvement with Special Olympics. 2015 marks his 30th year as a volunteer, as he continues to Coach and is the State Games Director for Tennis.

COMMUNITY SERVICE

Virginia Special Olympics
- Chair, Area 2, 1983-94
- Area Leadership Committee, Southeast Section Representative, 1990-93
- Area Leadership Committee-Chair, 1992-94 (elected by Area Leadership to represent 25 Areas in Virginia)
- State Board of Directors, Member, 1992-94
- Coach/ State Games Tennis Director

USTA/Virginia Tennis Association
- President 2009 - 2012
- Delegate to Mid-Atlantic 2007-2008
- Member BOD 1994-2000

USTA/National Association
- USTA/Adaptive Tennis Committee (Chairman, Two Terms)
- Tennis Innovations Committee- Member
- League Coordinator-Virginia Beach, 1996-1998
- Special Populations/ Adaptive Tennis- National Trainer

District 7600 Rotary
- District Conference Chairman
- Past Assistant Governor
- Paul Harris Fellow

Virginia Beach Rotary
- Club President, 2007-2008
- Secretary, 2005-2006
- Rotarian of the Year-2006
- Community Development Committee-Chairman
- Brickell Scholarship Committee-Chairman
- Member, Board of Directors, 1998-2009

Virginia Beach Police Department
- Senior Tactical Flight Officer
- Special Operations Helicopter Unit

City Of Virginia Beach
- Chesapeake Bay Preservation Area Board
- Member 2001 – 2011
- Chairman -2008
- Green Ribbon Committee I
- Member/ Chair of the Natural Resources Sub Committee
- Green Ribbon Implementation Committee
- Green Ribbon Committee II Co-Chairman

OTHER ACTIVITIES

Coaching Certifications in Tennis, Soccer and Coach Training

Special Olympics International Games- USA/Virginia; 1999- Head Coach, Soccer

Founding Member of the Northampton County Education Foundation

DETAILED PROJECT EXPERIENCE LIST -Attached

- ✓ *EXPERT WITNESS TESTIMONY*
- ✓ *WETLAND INVESTIGATION/DELINEATION/MITIGATION AND/OR CHESAPEAKE BAY PRESERVATION ACT*
- ✓ *ENVIRONMENTAL SITE ASSESSMENTS (ESA)*

EXPERT WITNESS TESTIMONY

- Margaret Johnson v. City of Virginia Beach, VA (dispute over delineated jurisdictional wetlands and Chesapeake Bay Preservation Act areas)
- Giovanni Mortarino, et al., v. Engineering Services, Inc., et al. (dispute over delineated jurisdictional wetlands)
- Eastern Holding Corporation v. Breezy Point Apartments Limited Partnership, et al. (dispute over earth berm construction and related wetlands/Chesapeake Bay Preservation Act areas)
- James Flengas, et al., v. Virginia Natural Gas, et al. (dispute over topographic restoration of properties in the post-construction phase of a natural gas line installation project)
- City of Virginia Beach v. Shelburne Woods, LLC (dispute over delineated jurisdictional wetlands)
- Mundy v. Pritchard Dozier (dispute over alleged creation of wetlands)
- Munden Borrow Pit, Lord-Delong Partnership v. E.V. Williams (dispute over alleged creation of wetlands)
- King v. U.S. Army Corps of Engineers (dispute over regulatory authority of a previously delineated property)
- East Beach Properties LLC v. Espejo Family Trust (dispute on the status of regulatory permits)
- Fly Fisher Court, Warner Construction (DEQ Notice of Violation)
- Wyoming – Cloverdale (Jacksons Ferry) Transmission Line (Represented the Staff of the Virginia SCC on the Environmental Review and Testimony)
- Meadowbrook – Loudon Transmission Line (Represented the Staff of the Virginia SCC on the Environmental Review and Testimony)
- Potomac Allegheny Transmission High Line I&II (Represented the Staff of the Virginia SCC on the Environmental Review and Testimony)
- Surry – Skiffes Creek Transmission Line (Represented the Staff of the Virginia SCC on the Environmental Review and Testimony)

- Northampton County v. Elliott (Alleged Wetland Violation)
- City of Norfolk v. Barr (Alleged Wetland Violation)
- Northampton County v. Durmick (Alleged Wetland Violation)
- Lady Ginger Lane (Expert Testimony regarding the restoration of impacted vegetation in the RPA)
- Kern Property, Virginia Beach (Expert Testimony regarding Primary Dune Delineation)
- Lenard Property, Suffolk Va. (Confirm NRCS Soils Delineation)

WETLAND INVESTIGATION/DELINEATION/MITIGATION AND/OR CHESAPEAKE BAY PRESERVATION ACT

- Wetland Delineation, Mitigation and Permitting for Commonwealth Power Corporation's Chesapeake Energy Center, South Military Highway, Chesapeake, VA
- Wetland Delineation and Chesapeake Bay Preservation Act Compliance for Barberton Drive Property off Laskin Road at S. Oriole Drive, Virginia Beach, VA
- Chesapeake Bay Preservation Act Compliance for Lot E, Kline Farms Subdivision, Lyndale Road, Virginia Beach, VA
- Wetland Delineation for Martin Bruce Property, Virginia Beach Blvd., Virginia Beach, VA
- Wetland Delineation and Permitting for Nimmo Property, General Booth Blvd., at Princess Anne Road, Virginia Beach, VA
- Wetland Delineation for Overholt Property, Southeast Corner of Salem Road at Lynnhaven Parkway, Virginia Beach, VA
- Wetland Delineation and CAMA Permitting for Currituck Marina , Sea to Sound Development, Currituck County, North Carolina
- Wetland Delineation and Permitting for Kempsville Presbyterian Church, at Princess Anne Road, Virginia Beach, VA
- Wetland Delineation, Permitting and Monitoring, Graystone Reserve, Suffolk, VA
- Wetland Delineation, Permitting, Perenniality Study for Clubhouse Estates, Accomack County, VA
- Wetland Delineation and Perenniality Study for the Scott Property, Northampton County, VA
- Wetland Delineation, Permitting and Perenniality Study for Waterside Subdivision, Accomack County, VA
- Wetland Delineation, Permitting and Perenniality Study for Jacobia Lane Subdivision, Northampton County, VA
- Wetland Delineation and Chesapeake Bay Preservation Act Compliance for Thumel Property, Potters Road at Lynnhaven Parkway, Virginia Beach, VA

- Wetland Investigation for Page Property, Old Greenbrier Road, Chesapeake, VA
- Wetland Investigation and Delineation for Wheelgate Land Trust Property, West Neck Road at Indian River Road, Virginia Beach, VA
- Chesapeake Bay Preservation Act Compliance for Bay Island Quay Lots 4 and 6, Broad Bay Road, Virginia Beach, VA
- Wetland Delineation and Permitting for Taylor Farm Property, London Bridge Road at Pine Ridge Subdivision, Virginia Beach, VA
- Wetland Delineation and Permitting for Improvements to Centerville Turnpike, Phase II (from Butts Station Road to Virginia Beach/Chesapeake City Line), Chesapeake, VA
- Wetland Delineation and Permitting for Eva Gardens Subdivision, Campostella Road at Great Bridge Boulevard, Chesapeake, VA
- Wetland Delineation and Permitting for Fort Eustis Mini-Storage Expansion, Warwick Boulevard at Fort Eustis Boulevard, Newport News, VA
- Wetland Delineation and Permitting for Lakeview Medical Center, Route 17 at Chesapeake/Suffolk/Portsmouth City Line, Suffolk, VA
- Wetland Investigation and Chesapeake Bay Preservation Act Compliance for "The Egg" Property, Shore Drive at Dinwiddie Road and Dupont Circle, Virginia Beach, VA
- Chesapeake Bay Preservation Act Compliance for the Legum Property (Rivers Edge Subdivision), Petty Road at Old Ingram Road and Bray Road, Virginia Beach, VA
- Wetland Investigation and Chesapeake Bay Preservation Act Compliance for the Hall Property, Lynnhaven Acres Lots 1 and 2, Hall Haven Drive, Virginia Beach, VA
- Wetland Delineation and Permitting for Nansemond River Woods Subdivision, Sleepy Hole Road, Suffolk, VA
- Chesapeake Bay Preservation Act Compliance for Boys and Girls Club of Hampton Roads, Lishelle Place, Virginia Beach, VA
- Wetland Investigation for Delaware State Police Training Facility, Smyrna Road, Smyrna, DE
- Wetland Delineation and Permitting for Hampton Club Condominiums/The Lakes Apartments, Marcella Drive, Hampton, VA
- Wetland Delineation and Permitting for West Neck Meadows Subdivision, Holland Road, Virginia Beach, VA
- Wetland Delineation, Permitting, and Mitigation Design for Piney Island BT-11 Bombing Range, Marine Corps Air Station, Cherry Point, NC
- Wetland Delineation and Chesapeake Bay Preservation Act Compliance for Lynnhaven Acres, Site 14, Bray Road, Virginia Beach, VA
- Wetland Delineation and Permitting for Commerce Corporate Center, Cleveland Street from Witchduck Road to Clearfield Avenue, Virginia Beach, VA
- Wetland Delineation and Permitting for Litchfield Farms Subdivision, Lynnhaven Borough, Virginia Beach, VA

- Wetland Investigation for Riverside Estates Subdivision, Sac Point Road, Suffolk, VA
- Wetland Delineation and Permitting for Morton Realty (Wyoming Associates) Property, South Lynnhaven Road, Virginia Beach, VA
- Wetland Delineation, Permitting, and Mitigation Design for Pine Meadows Subdivision, Phase One, Dam Neck Road, Virginia Beach, VA
- Wetland Investigation for Rosemont Corporate Park, Rosemont Road at Sentara Way, Virginia Beach, VA
- Wetland Permitting and Coastal Zone Management for Lower Athletic Field Upgrade, U.S. Coast Guard Academy, New London, CT
- Wetland Permitting and Coastal Zone Management for New Transmitter Building, U.S. Coast Guard Communications Station, New Orleans, LA
- Wetland Delineation and Permitting for Virginia Natural Gas 25th Street Pipeline Crossing, Newport News, VA
- Wetland Delineation and Permitting for Virginia Natural Gas Queen's Creek Pipeline Crossing, Newport News, VA
- Wetland Delineation and Permitting for Atlantic Shores Retirement Community, Virginia Beach, VA
- Wetland Delineation and Permitting for Davenport Property, Virginia Beach, VA
- Wetland Delineation and Permitting for Shipp Property, Virginia Beach, VA
- Wetland Delineation and Permitting for TRC Center, Virginia Beach, VA
- Wetland Delineation and Permitting for Cavalier Investment Properties, Chesapeake, VA
- Wetland Delineation and Permitting for Morton Realty and Richard Tavss Property, Chesapeake, VA
- Chesapeake Bay Preservation Area Permitting for Collection Creek Way Medical Office Building, Virginia Beach, VA
- Wetland Bank Feasibility Study in Connection with Lands Proposed for Expansion of the Eva Gardens Subdivision, Chesapeake, VA
- Wetland Delineation and Permitting for Pughsville Road 80-acre Parcel, Suffolk, VA
- Wetland Delineation and Wetland Creation for Uppershire Farm Parcel, Northampton, VA
- Wetland Delineation and Offshore Revetment Design for Cassidy Property, Northampton, VA
- Wetland Delineation for Master Planning Purposes, Grandy Village Public Housing Revitalization, Norfolk, VA
- Wetland Delineation and Agency Coordination for King Property, Chesapeake, VA
- Wetland Permitting for Eberwine Property Pier Project, Suffolk, VA
- Wetland Delineation, CBPA Delineation and Permitting, Phelps Property, Accomack County, VA
- Wetland Permitting for Dredging Great Neck Cove, Virginia Beach, VA

- Wetland Permitting for Revetment, Megee Property, Virginia Beach, VA
- Wetland Delineation for Master Planning Purposes, Fisher Property, Accomack County, VA
- Living Shoreline Design for Bangel Property, Virginia Beach, VA
- Offshore Revetment Analysis for Bay Vista, Northampton, VA
- Wetland Permitting and Mitigation, University Square, Isle of Wight County, VA
- Chesapeake Bay Act Delineation and Landscape Plan, Location Mgr. LLC, Northampton, VA
- Pier Design and Permitting, Cutright Property, Suffolk, VA
- Offshore Revetment Design and Permitting, Point Farm, Northampton County, VA
- Pier Design, Living Shore Line Design and Permitting, Olson Property, Virginia Beach, VA.
- Pier Design and Permitting Lady Ginger Lane, Virginia Beach, VA
- Pier Design and Permitting, Lynnhaven Drive, Virginia Beach, VA
- Living Shoreline and Pier Design, Lynn Haberman Property, Northampton County, VA
- Living Shoreline Design and Permitting Hutson Property, Northampton County VA
- Living Shoreline Design and Permitting, Bangel Property, Virginia Beach, VA
- Offshore Revetment Design and Permitting, Aqua Restaurant, Cape Charles, VA
- Living Shoreline Design and Permitting, Atchison Property, Virginia Beach, VA
- Living Shoreline Design and Permitting, Kennedy Property, Virginia Beach, VA
- Living Shoreline Design and Permitting, Lucy Property, Virginia Beach, VA
- Living Shoreline Design and Permitting, Olson Property, Virginia Beach, VA
- Living Shoreline Design, Pier and Permitting, Gray Property, Virginia Beach, VA
- Living Shoreline Design and Shoreline Stabilization, Capps Property, Virginia Beach, VA
- Living Shoreline Design, Bulkheading and Pier, Bainbridge, Chesapeake, VA
- Living Shoreline Design and Permitting, Calcagni Property, Virginia Beach, VA
- Shoreline Hardening Project Seabreeze Apartments, Northampton County, VA
- Offshore Revetment Design and Permitting, Savage Neck, Northampton County, VA
- Pier Design and Permitting Bay Hill Lot 6, Virginia Beach, VA
- Wetland Delineation and Permitting Bojangles Restaurant, Accomack County, VA
- CBPA Delineation, Design and Permitting Kalfus Property, Virginia Beach, VA

- Wetland Delineation and Permitting Burt Property, Northampton County, VA
- Boathouse Expansion, Olson Property, Virginia Beach, VA
- CBPA Delineation and Permitting, Cox Property, Virginia Beach, VA
- CBPA and Wetland Delineation, Carson Property, Suffolk, VA
- CBPA and Wetland Delineation, Wigneil Property, Suffolk, VA

PHASE I and II ENVIRONMENTAL SITE ASSESSMENTS (SELECTED)

- ESA Phase I and Water Quality Assessment for Bayville Assisted Living Facility, Shore Drive, Virginia Beach, VA
- ESA Phase I for Central Radio Company, Inc., 39th Street, Norfolk, VA
- ESA Phase I for Little Haven Pump Station Property, Little Haven Road, Virginia Beach, VA
- ESA Phase I for Martin Bruce Property, Virginia Beach Blvd., Virginia Beach, VA
- ESA Phase I for Ward Office Building, Rouse Drive, Virginia Beach, VA
- Contamination Assessment for Leaking Underground Storage Tank (UST), Chesapeake Bay Crab House, Campostella Road, Chesapeake, VA
- ESA Phase I for Chick's Beach Sailing Center Proposed New Location, Shore Drive, Virginia Beach, VA
- ESA Phase I for Children's World Day Care Center, Edwin Drive, Virginia Beach, VA
- ESA Phase I for Electronic Systems, Inc. Proposed New Location, Branksome Drive, Virginia Beach, VA
- Contamination Investigation for Evans Property at Thalia Wayside Townhomes, Wyckoff Drive, Virginia Beach, VA
- ESA Phase I for Fentress Residence/Salvation Army Property, Bridle Way, Norfolk, VA
- ESA Phase I for Tidewater Towing Service, Virginia Beach Blvd., Norfolk, VA
- ESA Phase I for Woody's Used Car Dealership, South Military Highway, Chesapeake, VA
- Lead Contamination Assessment at Firing Range Outfall, U.S. Coast Guard Reserve Training Center, Yorktown, VA
- Contamination Assessment at Hazardous Waste Site Area and Roads and Grounds Maintenance Area, U.S. Coast Guard Reserve Training Center, Yorktown, VA
- Contamination Assessment at Navy Oil Spill Site, U.S. Coast Guard Reserve Training Center, Yorktown, VA
- ESA Phase I for Insulation Service Co., Inc. Warehouse, Butternut Lane, Virginia Beach, VA
- ESA Phase I for Letton-Gooch Printers, Inc., Granby Street, Norfolk, VA
- ESA Phase I for Eastern Computers, Inc. Proposed New Location, Viking Drive, Virginia Beach, VA
- ESA Phase I for Serenity Lodge, South Military Highway, Chesapeake, VA

- Contamination Investigation for Equipment Room Drainage Study (60 boiler rooms) at Naval Weapons Station, Yorktown, VA
- Contamination Investigation for Explosive Ordnance Range at Naval Weapons Station, Yorktown, VA
- Contamination Assessment for Spill Prevention Control and Countermeasures Plan and UST Implementation Plan at Various Locations, Naval Weapons Station, Yorktown, VA
- ESA Phase I for Office Building at 100 Seventh Street, Portsmouth, VA
- ESA Phase I for 25th Street Municipal Parking Lot, Virginia Beach, VA
- ESA Phase I for Seaford Fish House (a.k.a. Well's Ice Cold Storage), Berkley Beach Area, Seaford, VA
- Contamination Assessment and Construction Supervision for Phase III Electrical Improvements at Fort Monroe, Hampton, VA
- ESA Phase I and Phase II for 344 Acres of Undeveloped Property in the Greenbrier Area, Chesapeake, VA
- ESA Phase I for Shore Plaza Shopping Center, Route 13, Exmore, VA
- Water Quality Assessment for Speed & Briscoe Auto/Truck Stop, I-95 and Lewiston Road, Ashland, VA
- ESA Phase I for West Neck Meadows Subdivision, Holland Road, Virginia Beach, VA
- ESA Phase I for Checkered Flag Nissan Auto Dealership, South Battlefield Blvd., Chesapeake, VA
- ESA Phase I and Phase II for Checkered Flag-Lynnhaven Auto Dealership, S. Lynnhaven Road, Virginia Beach, VA
- ESA Phase I for Checkered Flag Commercial Vehicles and Checkered Flag Suzuki Auto Dealerships, Virginia Beach Blvd., Virginia Beach, VA
- ESA Phase II for Checkered Flag Suzuki Auto Dealership, Virginia Beach Blvd., Virginia Beach, VA
- ESA Phase I and Phase II for Checkered Flag Toyota Auto Dealership, Virginia Beach Blvd., Virginia Beach, VA
- ESA Phase I for Checkered Flag Honda, Hundai and Mitsubishi Auto Dealerships, Virginia Beach Blvd., Norfolk and Virginia Beach, VA
- ESA Phase II for Checkered Flag Honda Auto Dealership, Virginia Beach Blvd., Virginia Beach, VA
- Contamination Investigation for UST's at Seven (7) Checkered Flag Auto Dealerships at Various Locations in Norfolk and Virginia Beach, VA
- ESA Phase I and Phase II for Murray Borrow Pit/Landfill, Military Highway, Virginia Beach, VA
- Contamination Assessment and Construction Supervision for Piers Electrical Distribution System Improvements, Naval Station, Norfolk, VA
- ESA Phase I and Phase II for Solar One Property, International Parkway, Virginia Beach, VA
- ESA Phase I for Cox Cable Hampton Roads Headquarters Building, Cleveland Street at Clearfield Avenue, Virginia Beach, VA

- ESA Phase I for Kirkwood Properties, Various Locations, Accomack and Northampton Counties, VA
- ESA Phase I for Former Norfolk Community Hospital Property/Norfolk State University, Norfolk, VA
- ESA Phase I for Hampton Coliseum Convention Center, Hampton, VA
- ESA Phase I for Town Center, Virginia Beach, VA.
- ESA Phase I for Grandy Village Public Housing Revitalization, Norfolk, VA
- ESA Phase I and II for Midas Muffler at 14798 Warwick Blvd., Newport News, VA
- ESA Phase II for Redgate Medical Office Building, Norfolk, VA
- ESA Phase I for Freedom Furniture & Electronics, Norfolk, VA
- ESA Phase I for Trade Street Parcel, Chesapeake, VA
- ESA Phase I of VT Milcom Facility for Stihl, Virginia Beach, VA
- ESA Phase I for Greenbrier West Office Park I, Chesapeake, VA
- ESA Phase I for Virginia Tech Extension Service, Wynn Property, Suffolk VA
- ESA Phase I for Virginia Tech Foundation, Longstreet Property, Suffolk, VA
- ESA Phase I and II Lillian Vernon Facility, Virginia Beach, VA
- ESA Phase I for Tomato Packing Facility, Northampton, VA
- ESA Phase I for Toll House Project, Chesapeake, VA
- ESA Phase I for Delia Drive, Chesapeake, VA
- Contamination Assessment for San Juan Coast Guard Base Reconstruction, U.S. Coast Guard Base, San Juan, Puerto Rico
- Contamination Assessment at Consolidated Maintenance Shops, Naval Supply Center, Fuel Annex Complex, U.S. Coast Guard Reserve Training Center, Yorktown, VA
- Contamination Assessment at Acid Cleaning Building, U.S. Coast Guard Yard, Curtis Bay, Baltimore, MD
- Contamination Investigation for Proposed Aircraft Ramp Expansion, U.S. Coast Guard Station, Elizabeth City, NC
- Contamination Investigation for Proposed Child Development Center and Support Administration Building, U.S. Coast Guard Yard, Curtis Bay, Baltimore, MD
- Contamination Assessment at Site of UST Release, SAR Building, U.S. Coast Guard Station, Chincoteague, VA
- Contamination Investigation for Proposed Child Development Center, U.S. Coast Guard Station, Cape May, NJ
- Contamination Investigation for Proposed Entrance and Tennis Court, U.S. Coast Guard Station, Chincoteague, VA
- Contamination Investigation for Proposed Family Housing Construction, U.S. Coast Guard Group, Sault Ste. Marie, MI

- Contamination Assessment at Abandoned Fuel Tank for Proposed Boat Ramp Construction, U.S. Coast Guard Station, Oak Island, NC
- Contamination Investigation for Proposed Air Station Facility, U.S. Coast Guard Station, Charleston, SC
- Contamination Investigation at Alternative Site for ANT Building, U.S. Coast Guard Group New York, Governor's Island, NY
- Contamination Investigation for Proposed ANT/ET Shops, U.S. Coast Guard Group New York, Governor's Island, NY
- Contamination Investigation for Proposed Boat Maintenance Facility, U.S. Coast Guard Station, St. Ignace, MI
- Contamination Investigation for Proposed Bulkhead Construction, U.S. Coast Guard Station, Sea Isle City, NJ
- Contamination Investigation for Proposed Buoy Storage Pad at New Station Site, U.S. Coast Guard Station, Oak Island, NC
- Contamination Investigation for Computer System Building Site 3, U.S. Coast Guard Station, Wildwood, NJ
- Contamination Assessment at Computer System Building, U.S. Coast Guard Station, Wildwood, NJ
- Contamination Investigation for Proposed Electronics Maintenance and Logistics Building, U.S. Coast Guard Station, Wildwood, NJ
- Contamination Investigation for Proposed Engineering Facility, U.S. Coast Guard Base, Woods Hole, MA
- Contamination Assessment at Fuel Tanks Site, Station Building, U.S. Coast Guard Station, Oak Island, NC
- Contamination Assessment for Hangar Rehabilitation, U.S. Coast Guard Air Station, Detroit, MI
- Contamination Assessment for Hangar Deluge Form-Water Sprinkler System, U.S. Coast Guard Air Station, Detroit, MI
- Contamination Assessment at Site of HH60-J Helicopter Maintenance Training Facility, U.S. Coast Guard Support Center, Elizabeth City, NC
- Contamination Investigation for Proposed Industrial/Administrative Building, U.S. Coast Guard Station, St. Louis, MO
- Contamination Investigation for Material and Logistics Building Addition, U.S. Coast Guard Station, Wildwood, NJ
- Contamination Investigation for Proposed Moorings, U.S. Coast Guard Station, Natchez, MS
- Contamination Investigation for Proposed NAFA Exchange Building, U.S. Coast Guard Group, Buffalo, NY
- Contamination Investigation for Proposed Operations Building Site, U.S. Coast Guard Station, South Portland, ME
- Contamination Investigation for Pier/Boathouse Replacement, U.S. Coast Guard Station, Pascagoula, MS
- Contamination Investigation for Proposed Ship Handling Facility, U.S. Coast Guard Yard, Baltimore, MD
- Contamination Investigation for Proposed Shops Building, U.S. Coast Guard Base, Detroit, MI

- Contamination Investigation at Piers, U.S. Coast Guard Station, South Portland, ME

REGULATORY COMPLIANCE AND/OR PERMITTING

- Environmental Permitting for Virginia Natural Gas South Battlefield Boulevard Distribution Line, Chesapeake, VA
- Environmental Permitting for Virginia Natural Gas Dam Neck Road Distribution Line, Virginia Beach, VA
- Environmental Permitting for Virginia Natural Gas Gilmerton/Courthouse Distribution Line (Phase I and Phase II), Chesapeake and Virginia Beach, VA
- Regulatory Compliance for Warren Landfill, Armistead Avenue, Hampton, VA
- Regulatory Compliance and Water Quality Assessment for Murray Landfill, South Military Highway, Virginia Beach, VA
- Corrective Action Plan for Fire Fighting School, U.S. Coast Guard Reserve Training Center, Yorktown, VA
- Corrective Action Plan for Equipment Room Drainage (60 boiler rooms), Naval Weapons Station, Yorktown, VA
- Army Corps of Engineers Permitting and Coastal Zone Management for Waterfront Renovation, U.S. Coast Guard Group, Long Island Sound, New Haven, CT
- Army Corps of Engineers Permitting and Coastal Zone Management for Mooring Improvements, U.S. Coast Guard Station, Provincetown, MA
- Army Corps of Engineers Permitting and Coastal Zone Management for WLM (R) Homeport Improvements, U.S. Coast Guard ANT Facility, Bristol, RI
- Army Corps of Engineers Permitting and Coastal Zone Management for WLB (R) Homeport Improvements, U.S. Coast Guard Buoy Depot, New London, CT
- Regulatory Compliance for High Voltage Feeder Lines, Northwest Section of U.S. Coast Guard Support Center, Governor's Island, NY
- Regulatory Compliance for Electrical Distribution System Upgrade, Phase IV, U.S. Coast Guard Support Center, Governor's Island, NY
- Army Corps of Engineers Permitting and Coastal Zone Management for Waterfront/Station Reconstruction, U.S. Coast Guard Station, Sabine, TX
- Regulatory Compliance for Spill Prevention Control and Countermeasures Plan and AST Inventory, Naval Station, Norfolk, VA
- Regulatory Compliance for Fuel Management Site Identification Survey, Various Locations at Naval Amphibious Base, Little Creek, Virginia Beach, VA
- Regulatory Compliance for UST Inventory and Management Plan, Naval Station, Norfolk, VA
- Regulatory Compliance for UST Replacement, Naval Security Group Activity Northwest, Chesapeake, VA
- Regulatory Compliance for Gas Station Upgrades, Buildings CEP-66 and P-64, Naval Station, Norfolk, VA

- Regulatory Compliance for Gas Station Upgrade, Marine Corps Exchange, Camp Elmore, Naval Station, Norfolk, VA
- Regulatory Compliance for AST Inventory, Fleet Training Center Norfolk (fire fighting school only), Camp Elmore, Camp Allen, and Armed Forces Staff College, Naval Station, Norfolk, VA
- Regulatory Compliance for Update and Implementation of FY94 Spill Prevention Control and Countermeasures Plan, Naval Weapons Station, Yorktown, VA
- Regulatory Compliance for Update and Implementation of FY95 Spill Prevention Control and Countermeasures Plan, Naval Weapons Station, Yorktown, VA
- Regulatory Compliance for UST Testing at Seven Checkered Flag Auto Dealerships in Norfolk and Virginia Beach, VA
- Site Characterization for Regulatory Compliance at Jack N. Powell Co., Widgeon Road, Norfolk, VA
- Regulatory Compliance for Closure of 10 UST's at Naval Supply Center, Cheatham Annex, Williamsburg, VA
- Regulatory Compliance for Closure of 6 UST's at Naval Supply Center, Cheatham Annex, Williamsburg, VA and 12 UST's at Naval Weapons Station, Yorktown, VA
- Regulatory Compliance for Accomack County Landfill at Temperanceville, VA
- Regulatory Compliance for Accomack County Landfill at Bobtown, VA
- Regulatory Compliance for Munden Borrow Pit, Virginia Beach, VA
- Regulatory Compliance for Bainbridge Recycling, Chesapeake, VA
- Regulatory Compliance for Scrap 58, Chesapeake, VA

ASBESTOS AND LEAD INVESTIGATIONS

- Asbestos and Lead Containing Materials Investigation, Chesapeake Circuit and District Court Buildings, Cedar Road, Chesapeake, VA
- Asbestos Containing Materials Investigation, Farm Fresh #326, Jefferson Davis Highway, Richmond, VA
- Asbestos Containing Materials Investigation, Farm Fresh #351, Williamsburg Road, Richmond, VA
- Asbestos Containing Materials Investigation, Farm Fresh #794, Hull Street, Chesterfield County, VA
- Contamination Assessment and Lead Waste Disposal and Cleaning Document for Outdoor Small Arms Range, U.S. Coast Guard Communication Station, New Orleans, LA
- Asbestos and Lead Containing Materials Investigation, Building 152 Penthouse, Marine Corps Air Station, Cherry Point, NC
- Asbestos and Lead Containing Materials Investigation, Trailways Bus Station, Main Street, Norfolk, VA
- Asbestos Containing Materials Investigation for Collier Properties, Various Locations in Virginia Beach, VA

- Asbestos Containing Materials Investigation for Farm Fresh-Wards Corner, Little Creek Road at Taussig Blvd., Norfolk, VA

- Asbestos Containing Materials Investigation for Farm Fresh-Oyster Point, Oyster Point Road at Denbigh Blvd., Newport News, VA

- Contamination Assessment and Lead Waste Disposal and Cleaning Document for Indoor Small Arms Range, U.S. Coast Guard Training Center, Cape May, NJ

- Asbestos Containing Materials Identification Survey, CAMSLANT Transmitter Building, U.S. Coast Guard Station, Princess Anne Road and Indian River Road, Virginia Beach, VA

- Asbestos Containing Materials Identification Survey for Unaccompanied Personnel Housing Addition, U.S. Coast Guard Station, Ocean City, MD

- Asbestos Containing Materials Identification Survey for U.S. Coast Guard CAMSLANT Receiver/Operations Building Addition, Naval Security Group Activity Northwest, Chesapeake, VA

- Asbestos and Lead Containing Materials Identification Survey for 56 Family Housing Units, U.S. Coast Guard Stations in Beverly, Wakefield, Nahant, and Bedford, MA