CLARKE COUNTY PLANNING COMMISSION
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December 2, 2022 Business Meeting Packet

Clarke County Planning Commission

AGENDA – Business Meeting
Friday, December 2, 2022 – 9:00AM
Berryville/Clarke County Government Center – Main Meeting Room

1. Approval of Agenda

2. Approval of Minutes
A. November 1, 2022 Work Session
B. November 4, 2022 Business Meeting

CONTINUED PUBLIC HEARING

3. SUP-22-03/SP-22-04, Hecate Energy Gun Barrel Road Solar, LLC; Hecate Energy, LLC (applicants)/Debra Diane Davis, Administrator of the Estate of Montie Wood Gibson, Jr. (owner-deceased). Request amendment of special use permit SUP-17-02 (approved by the Board of Supervisors on July 18, 2017) and approval of a new site development plan to construct a separate 10MW solar power plant as Phase 2 of a 20MW solar power plant previously approved under SUP-16-01. The purpose of the request is to assign the special use permit to a new permit holder ("Hecate Energy Gun Barrel Road Solar LLC") and to make substantive modifications to the site development plan including stormwater management modifications and reconfiguration of solar panel locations. The subject property is zoned Agricultural-Open Space-Conservation (AOC), identified as Tax Map #27-A-5, and is located on the north side of Lord Fairfax Highway (U.S. 340) with frontage on the west side of Gun Barrel Road (Rt. 644), north side of Double Tollgate Road (Rt. 670), north side of Highland Corners Road (Rt. 669), and east side of Stonewall Jackson Highway (U.S. 522) in the White Post Election District.

MINOR SUBDIVISION APPLICATION

4. MS-22-11, Donald & Dianna DeWitt. Request approval of a two-lot minor subdivision for the property identified as Tax Map #3-A-26, located on the east side of Wadesville Road (Route 661), extending to the B&O Railroad, Russell Election District, zoned Agricultural-Open Space-Conservation (AOC).

5. MS-22-12/MLSE-22-02, Timothy Tumblin, Sr., Successor Executor for Larrie P. McDonald Estate. Request approval of a two-lot minor subdivision and maximum lot size exception for the property identified as Tax Map #13-A-23, on the east side of Triple J Road, approximately 6/10 of a mile north of Senseny Road (Route 657), Russell Election District, zoned Agricultural-Open Space-Conservation (AOC).

BOARD AND COMMITTEE REPORTS

6. Board and Committee Reports
- Board of Supervisors (Matthew Bass)
- Board of Septic & Well Appeals (George Ohrstrom, II)
- Board of Zoning Appeals (Jeremy Camp)
- Historic Preservation Commission (Bob Glover)

- Conservation Easement Authority (George Ohrstrom, II)
- Broadband Implementation Committee (Brandon Stidham)

OTHER BUSINESS

~None scheduled

ADJOURN

UPCOMING MEETINGS:	
Ordinances Committee	No upcoming meetings
Comprehensive Plan Committee	Meeting to be scheduled early 2023
Policy & Transportation Committee	Friday, December 2 immediately following Commission Business Meeting
Commission Work Session	Tuesday, January 3 (3:00PM) -- Main Meeting Room
Commission Business Meeting	Friday, January 6 (9:00AM) -- Main Meeting Room

Clarke County Planning Commission

DRAFT MINUTES – Work Session
Tuesday, November 1, 2022 – 3:00PM
Berryville/Clarke County Government Center – Main Meeting Room

ATTENDANCE:			
George L. Ohrstrom, II (Chair/Russell)	X	Ronnie "Ron" King (Buckmarsh)	X
Randy Buckley (Vice-Chair/White Post)	✓	Scott Kreider (Buckmarsh)	✓
Matthew Bass (Board of Supervisors)	✓	Frank Lee (Berryville)	X
Buster Dunning (White Post)	X	Gwendolyn Malone (Berryville)	✓
Robert Glover (Millwood)	✓L	John Staelin (Millwood)	✓
Pearce Hunt (Russell)	✓	Doug Lawrence (BOS alternate)	X

L – Denotes a late arrival

NOTE: None.

STAFF PRESENT: Brandon Stidham (Director of Planning), Jeremy Camp (Senior Planner / Zoning Administrator), Kristina Maddox (Office Manager / Zoning Officer), Chris Boies (County Administrator)

OTHER PRESENT: None.

CALL TO ORDER: By Brandon Stidham at 3:02PM.

Approval of Agenda
Commissioners had no additions to the agenda.

Review of November 4 Business Meeting Agenda Items

Agenda Review
Mr. Stidham said there are two sets of meeting minutes to review and also several public hearings that have been scheduled for the upcoming business meeting.

Commissioner Glover arrived at 3:04PM.

Mr. Camp reviewed the special use permit (SUP-22-03) and site plan (SP-22-04) for Phase 2 of Hecate Energy Gun Barrel Road, LLC. Commissioner Staelin asked for confirmation regarding decommissioning. Mr. Camp replied that when they stop using the plant, the plan is to restore the property to agricultural use. Commissioner Staelin asked about updated equipment. Mr. Camp replied they are permitted to update the equipment as long as it is consistent with their site plan. He also commented that one concern is regarding the leaching of heavy metals and ensuring if there is damage, that the panels are repaired in a reasonable timeframe as they are more likely to cause contamination.

Mr. Camp said Staff recommends to defer action to the December Planning Commission meeting in order to provide additional time for the applicant to adequately address the review comments noted within the Staff memo.

Commissioner Glover asked when Phase 1 became operational to which Mr. Stidham replied the summer of 2017. Commissioner Glover then asked if there is a difference between the first decommissioning plan and the current one. Mr. Camp replied that it is a new State requirement and that there was not a decommissioning plan required before now.

Commissioner Glover asked if this requirement can be applied retroactively to ensure Phase I is decommissioned. Mr. Stidham replied not unless they propose changes to Phase 1.

Commissioner Staelin suggested the fences be located behind the trees instead of along the property line. Mr. Camp said it was a good suggestion and that he would consult with Greenway Engineering on any potential issues and that it would certainly be more appealing to the surrounding residents.

Commissioner Glover remarked that the thirty-year value on materials themselves and the recycling of the items is difficult to evaluate. Mr. Camp responded that was the concern with including salvage value in the cost estimate.

Commissioner Staelin asked for clarification regarding the cost of materials in the decommissioning plan. Mr. Camp explained that Staff recommends the applicant not include those details in the decommissioning plan due to such unknown factors. Commissioners had no further questions.

Mr. Stidham reviewed the draft 2022 Double Tollgate Area Plan. He noted minor changes including clarifying that state owned properties are exempt from local zoning regulations per the Code of Virginia. He added that state owned properties could have uses that are operated by other entities of local and federal government, nonprofit organizations, and even operations from private sector companies. He continued that if the Commission is comfortable with the language, he has included a draft motion to incorporate the changes into the draft for Board of Supervisors review. He noted that there may be property owners at the Public Hearing wanting their land to be added to the Plan Area. He said there is an emphasis on the five-year review cycle to see if there are other areas that should be reclassified or added to the plan area and to find out if there is the ability to serve those new areas with public infrastructure.

Mr. Stidham presented on and explained in detail TA-22-05, Waterworks and Sewerage System Regulations and TA-22-06, Structures Requiring Setback Areas which are both set for public hearings at the upcoming business meeting. There were no questions or comments from the Commission on either text amendment.

Mr. Camp reviewed minor subdivision MS-22-09 submitted by L Seven Farm, LC. He said Staff recommends approval as it complies with the current maximum lot size requirements and there are no issues from VDOT (VA Department of Transportation) or VDH (VA Department of Health). There were no questions or comments from Commission.

Minor Subdivision MS-22-10, submitted by 624 Old Waterloo Road, LLC, was also reviewed by Mr. Camp. Mr. Camp stated there are no issues from VDOT or VDH and that Staff recommends approval. There were no questions or comments from the Commission.

Mr. Stidham said the only remaining items for the upcoming business meeting are the board and committee reports in addition to an action item under "Other Business" regarding a review of the Capital Improvement Plan.

Status of Deferred Applications
Mr. Stidham said the only deferred application is the Carter Hall special use permit and that he has yet to hear if their stormwater plan has been approved by by DEQ (Department of Environmental Quality).

Old Business Items
None scheduled.

New Business Items

Discussion, 2023-2028 Capital Improvement Plan
Mr. Stidham said the Code of Virginia states the Planning Commission is responsible for preparing the county's Capital Improvement Plan (CIP). He said the four specific roles in the process are 1) to review the list of proposed projects that were provided by the various departments to determine conformance with the 2022 Comprehensive Plan, 2) to consider whether the project descriptions justify the need for the project, 3) to consider whether the project maximizes public convenience accessibility, and 4) to consider whether the project avoids extension of public infrastructure outside of designated growth which could cause new development pressures. Mr. Stidham noted the role of the Commission was not to evaluate the cost, phasing, or funding for the projects.

Mr. Stidham then reviewed the Staff memo regarding the Capital Improvement Plan.

Commissioner Staelin asked if the Commission would get involved in the planning of an improved intersection or if it was only included in the CIP because there is potential joint county funds listed. Mr. Stidham responded that there is potential for matching funds at some level but that it is still a capital project and should be included in the CIP.

Other Business
None.

ADJOURN: The November 1, 2022 Planning Commission Work Session adjourned by consensus at 3:46PM.

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George L. Ohrstrom, II (Chair) Kristina Maddox (Clerk)

Clarke County Planning Commission

DRAFT MINUTES – Business Meeting
Friday, November 4, 2022 – 9:00AM
Berryville/Clarke County Government Center – Main Meeting Room

ATTENDANCE:			
George L. Ohrstrom, II (Chair/Russell)	✓	Ronnie "Ron" King (Buckmarsh)	X
Randy Buckley (Vice-Chair/White Post)	✓	Scott Kreider (Buckmarsh)	✓
Matthew Bass (Board of Supervisors)	✓	Frank Lee (Berryville)	✓
Buster Dunning (White Post)	✓	Gwendolyn Malone (Berryville)	✓
Robert Glover (Millwood)	✓	John Staelin (Millwood)	✓
Pearce Hunt (Russell)	X	Doug Lawrence (BOS alternate)	X

STAFF PRESENT: Brandon Stidham (Director of Planning), Jeremy Camp (Senior Planner/Zoning Administrator), Kristina Maddox (Office Manager/Zoning Officer), Chris Boies (County Administrator)

OTHER PRESENT: None.

CALL TO ORDER: By Chair Ohrstrom at 9:00AM.

1. Approval of Agenda

The Commission voted 9-0-2 to approve the agenda as presented by Staff.

Motion to approve the November 4, 2022 Planning Commission Business Meeting agenda as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE (moved)**	Kreider	**AYE**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (seconded)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

2. Approval of Minutes

A. October 4, 2022 Work Session

The Commission voted 9-0-2 to approve the October 4, 2022 Work Session meeting minutes as presented by Staff.

Motion to approve the October 4, 2022 Planning Commission Work Session meeting minutes as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE (seconded)**	Kreider	**AYE**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (moved)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

B. October 7, 2022 Business Meeting

The Commission voted 9-0-2 to approve the October 7, 2022 Business Meeting minutes as presented by Staff.

Motion to approve the October 7, 2022 Planning Commission Business Meeting minutes as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE**
Bass	**AYE**	Lee	**AYE (moved)**
Dunning	**AYE**	Malone	**AYE (seconded)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

PUBLIC HEARING

3. SUP-22-03/SP-22-04, Hecate Energy Gun Barrel Road Solar, LLC; Hecate Energy, LLC (applicants)/Debra Diane Davis, Administrator of the Estate of Montie Wood Gibson, Jr. (owner-deceased)

Mr. Camp presented the staff report for the special use permit and site plan application. He said there are concerns regarding the decommissioning plan to protect the county and taxpayers interest in having to incur any cost associated with decommissioning. He added there is now a code requirement to include a landscape maintenance guarantee that the applicant needs to address in addition to providing more details surrounding the leaching of heavy metals. He noted the draft SUP condition changes including the more strict revocation requirements which include a shorter timeframe for the applicant to begin and complete construction, and the monitoring of stormwater. He concluded that Staff recommends deferral to the December meeting based on outstanding issues to be addressed by the applicant as presented.

As there were no questions or concerns from the Commission, Chair Ohrstrom opened the public hearing. There were no questions from the public.

The Commission voted 9-0-2 to continue the Public Hearing and defer SUP-22-03/SP-22-04, Hecate Energy Gun Barrel Road Solar, LLC; Hecate Energy, LLC (applicants)/Debra Diane Davis, Administrator of the Estate of Montie Wood Gibson, Jr. (owner-deceased) to the December 2 meeting.

Motion to continue the Public Hearing and defer SUP-22-03/SP-22-04, Hecate Energy Gun Barrel Road Solar, LLC; Hecate Energy, LLC (applicants)/Debra Diane Davis, Administrator of the Estate of Montie Wood Gibson, Jr. (owner-deceased) to the December 2 meeting:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE (moved)**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (seconded)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

4. 2022 Double Tollgate Area Plan

Mr. Stidham presented the proposed revision to the 2022 Double Tollgate Area Plan from the staff report.

Chair Ohrstrom asked for clarification on local zoning regulations in Sub Area B and C and asked if anyone could rent or lease from the state agency that owns them and do as they please. Mr. Stidham responded that as long as the property is under state ownership, the Code of Virginia preempts the County from applying local zoning regulations. However, it does not preempt the county from applying other types of pressures to ensure that objectionable uses or activities are not supported by the state on these properties. He said state agencies will often forward the county site plans for review and they generally do try to comply with our regulations within reason.

Commissioner Bass asked Mr. Stidham could tell the Commission what to expect in the next three to five years. Mr. Stidham replied that it will be heavily driven by the ability of all parties involved in the arrangement including Clarke, Frederick, landowners, developers to work together and reach an agreement as to how water and sewer will be extended from Frederick County. He said it will take an extensive amount of money to start the initial project but that there can be a number of different funding options. He continued that it is very important that the Commission review this plan every five years as required by the Code of Virginia to keep abreast of any changes. There were no further questions from the Commission.

Chair Ohrstrom opened then closed the public hearing as there were no questions from the public on this matter.

The Commission voted 9-0-2 to recommend adoption of the revised 2022 Double Tollgate Area Plan November 4, 2022 public hearing draft, subject to changes listed in the staff memo dated October 26, 2022.

Motion to recommend adoption of the revised 2022 Double Tollgate Area Plan November 4, 2022 public hearing draft, subject to changes listed in the staff memo dated October 26, 2022:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE (moved)**	Kreider	**AYE (seconded)**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

5. TA-22-05, Waterworks and Sewerage System and Treatment Works Regulations.

Mr. Stidham presented the staff report on this text amendment with no questions or comments from the Commission.

Chair Ohrstrom opened the public hearing and was closed shortly after as there were no questions or comments from the public.

The Commission voted 9-0-2 to recommend approval of TA-22-05, Waterworks and Sewerage System and Treatment Works Regulations as presented by Staff.

Motion to recommend approval of TA-22-05, Waterworks and Sewerage System and Treatment Works Regulations as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE (moved)**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (seconded)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

6. TA-22-06, Structures Permitted in Required Setback Areas

Mr. Stidham reviewed the text amendment changes that were discussed in the work session and provided within the staff report. There were no questions from the Commission.

Chair Ohrstrom opened the public hearing and then closed the public hearing as there were no questions or concerns from the public.

The Commission voted 9-0-2 to recommend adoption of Zoning Ordinance TA-22-06, Structures Permitted in Required Setback Areas as presented by Staff.

Motion to recommend adoption of TA-22-06, Structures Permitted in Required for 2022 Double Tollgate Area Plan as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE (moved)**	Kreider	**AYE**
Bass	**AYE**	Lee	**AYE (seconded)**
Dunning	**AYE**	Malone	**AYE**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

MINOR SUBDIVISION APPLICATIONS

7. MS-22-09, L Seven Farm L.C., c/o Thomas Moore Lawson, Manager.

Vice Chair Buckley read the conflict of interest statement, "I disqualify myself from participating in the matter of MS-22-09, L Seven Farm, L.C., c/o Thomas Moore Lawson, Manager before the Planning Commission as I have a personal interest in said matter by reason of my ownership interest in M.S. Buckley and Son, Inc., which company performs work for the applicant and the company may realize a reasonably foreseeable direct or indirect benefit or detriment as a result of the action taken by the Planning Commission on the application."

Mr. Camp reviewed the minor subdivision that was previously discussed in the Work Session and said Staff recommends approval.

The Commission voted 8-0-3 to approve MS-22-09, L Seven Farm L.C., c/o Thomas Moore Lawson, Manager as presented by Staff.

Motion to approve MS-22-09, L Seven Farm L.C., c/o Thomas Moore Lawson, Manager as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**ABSTAINED**	Kreider	**AYE (moved)**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (seconded)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

8. MS-22-10, 624 Old Waterloo Road, LLC

Mr. Camp reviewed the staff memo on this minor subdivision that was also previously discussed at the Work Session. He said Staff recommends approval of the application. There were no questions or concerns from the Commission.

The Commission voted 9-0-2 to approve MS-22-10, 624 Old Waterloo Road, LLC as presented by Staff.

Motion to approve MS-22-10, 624 Old Waterloo Road, LLC as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE (seconded)**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE**
Glover	**AYE**	Staelin	**AYE (moved)**
Hunt	**ABSENT**		

Board and Committee Reports

9. Board and Committee Reports

Board of Supervisors (Matthew Bass)
Commissioner Bass said the Board of Supervisors held a legislative lunch the week before where a few issues were discussed including limiting the spreading of fill dirt. He said mental health concerns were discussed as it pertains to both school context and to the broader context of law enforcement where they are

essentially acting as guardians having to transport and also watch over people undergoing mental health crisis in the emergency room. He said they encouraged the legislators to take action and put pressure on the necessary entities to change the course of action. He said they also discussed what they perceive to be inequities in nutrient credit trading and the composite index that unfavorably impacts smaller counties like Clarke and emphasized the ability for localities to maintain their own planning and zoning control.

Commissioner Bass said the Board had an open house for the courthouse landscape plan which was well attended and that they look forward to the redesign and renovation of the ground improvements.

Lastly, Commissioner Bass said they are taking up the Capital Improvement Plan at their next work session.

Board of Septic & Well Appeals (George L. Ohrstrom, II)
Nothing currently pending.

Board of Zoning Appeals (Jeremy Camp)
Nothing to report.

Historic Preservation Commission – HPC (Bob Glover)
Nothing to report.

Conservation Easement Authority - CEA (George L. Ohrstrom, II)
Chair Ohrstrom said the HPC has a couple of interesting easements that they are getting ready to approve. He also noted they had a very nice thank you party for easement and monetary donors.

Broadband Implementation Committee (Brandon Stidham)
Mr. Stidham said that while there is nothing new to report, All Points Broadband will be giving a presentation to the Board of Supervisors in person next month.

OTHER BUSINESS

10. 2023-2028 Capital Improvement Plan

Mr. Stidham noted there are no items to review on this particular agenda item and that all the projects were previously reviewed in the Work Session. Chair Ohrstrom commented that the Commission's purpose in reviewing the CIP is to ensure everything is in accordance to the Comprehensive Plan. There were no questions or comments from the Commission.

The Commission voted 9-0-2 to recommend adoption of the 2023-2028 Capital Improvement Plan as presented by Staff.

Motion to recommend adoption of the 2023-2028 Capital Improvement Plan as presented by Staff:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE (moved)**
Bass	**AYE**	Lee	**AYE (seconded)**
Dunning	**AYE**	Malone	**AYE**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

Mr. Stidham reviewed the agenda items for December and noted upcoming meetings.

Adjournment:

The Commission voted 9-0-2 to adjourn the November 4, 2022 Planning Commission Business Meeting at 10:05AM.

Move to adjourn the November 4, 2022 Planning Commission Business Meeting:			
Ohrstrom (Chair)	**AYE**	King	**ABSENT**
Buckley (Vice-Chair)	**AYE**	Kreider	**AYE**
Bass	**AYE**	Lee	**AYE**
Dunning	**AYE**	Malone	**AYE (moved)**
Glover	**AYE**	Staelin	**AYE**
Hunt	**ABSENT**		

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George L. Ohrstrom, II (Chair) Kristina Maddox (Clerk)

SPECIAL USE PERMIT & SITE DEVELOPMENT PLAN (SUP-22-03 / SP-22-04)
12/2/2022 Planning Commission Business Meeting – *Public Hearing* *(continued from 11/4/2022)*
STAFF REPORT– Department of Planning

The purpose of this staff report is to provide information to the Planning Commission & Board of Supervisors to assist them in reviewing this land use request. It may be useful to members of the general public interested in this request.

Case Summary

Applicants:
Hecate Energy Gun Barrel Road Solar LLC / Hecate Energy LLC

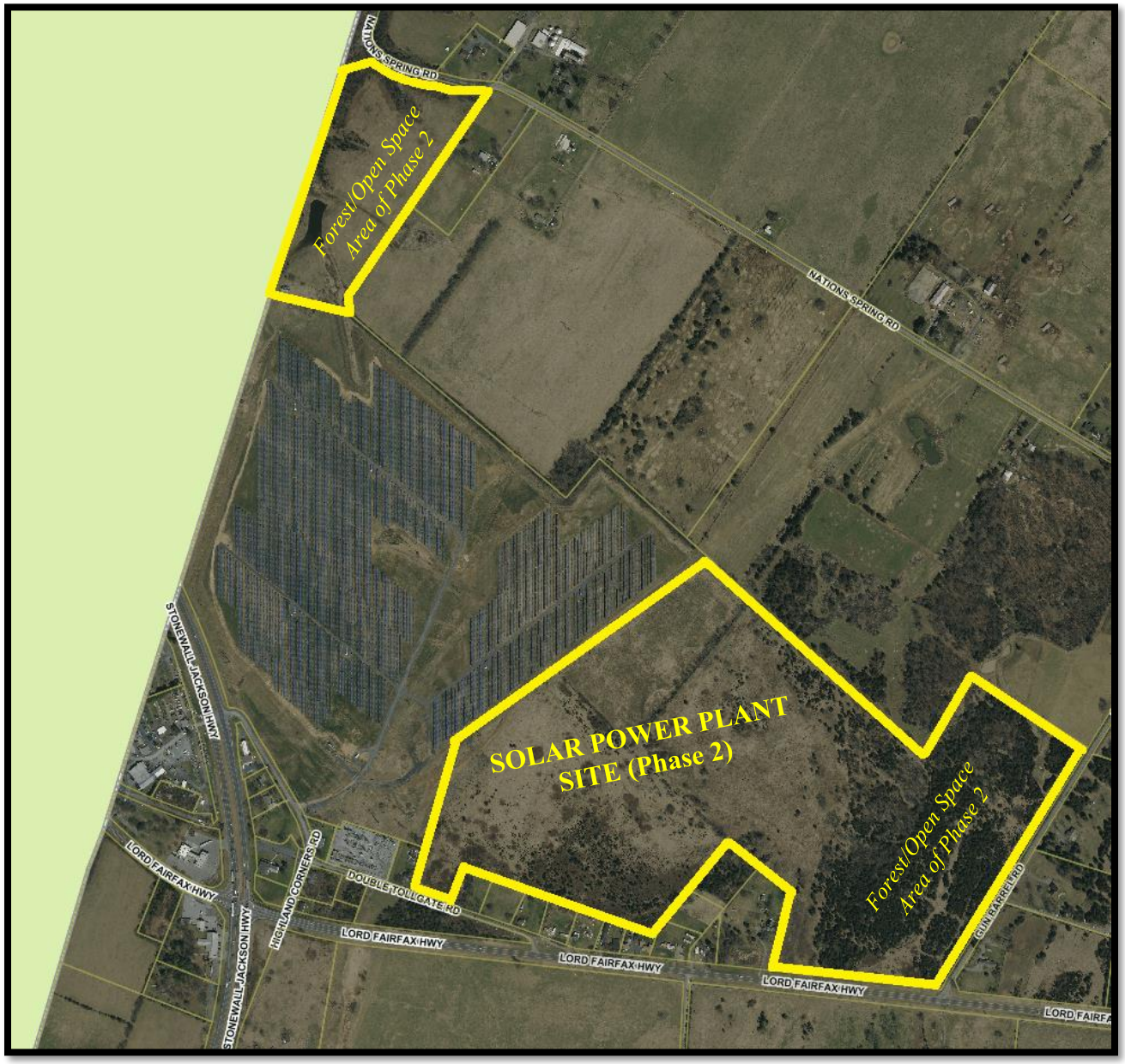
Property Owner:
Debra Diane Davis, Administrator of the Estate of Montie Wood Gibson, Jr. (deceased)

Location:
The site is located on the eastern portion of Tax Map # 27-A-5 where phase 1 of a solar power plant currently exists. The proposed phase 2 fronts on Lord Fairfax Highway (US Route 340), Gun Barrel Road (Route 644), Double Tollgate Road (Route 670), and Nations Spring Road (Route 646). The property is zoned AOC District, and is within the White Post Election District.[1]

Request:
The Applicant requests an amendment to the existing Special Use Permit (SUP-17-02) and approval of a new Site Plan (SP-16-01) for the Phase 2 (10MW) portion of the overall Hecate Energy project (20MW). Phase 1 was constructed under a separate SUP and SP. The original SUP & SP was approved in 2016 for a single 20MW facility, but was amended in 2017 to divide the project into two separate 10MW facilities. Phase 2 is currently not constructed. In summary, changes to Phase 2 include the concentration of the solar panels so they are further away from the easternmost portion of the property near Gun Barrel Road where a number of sinkholes exist. Other site improvements include the addition of access roads, skids for control equipment, perimeter landscaping, fencing, and stormwater improvements such as check dams, ditches and berms. The Special Use Permit holder would change from Hecate Energy LLC to Hecate Energy Gun Barrel Road Solar LLC.

[1] Planning Commission Representatives: Randy Buckley & Buster Dunning
Board of Supervisors Representative: Bev McKay

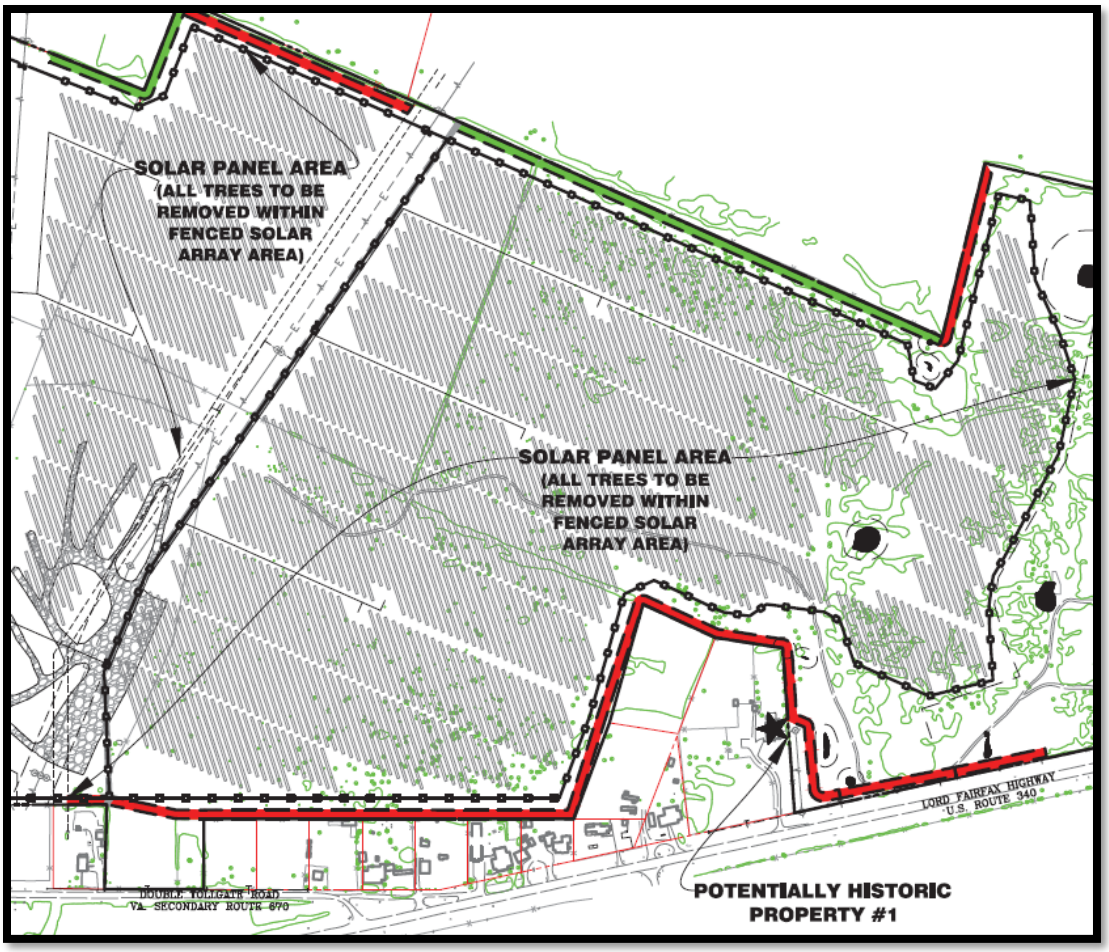
Illustrations:



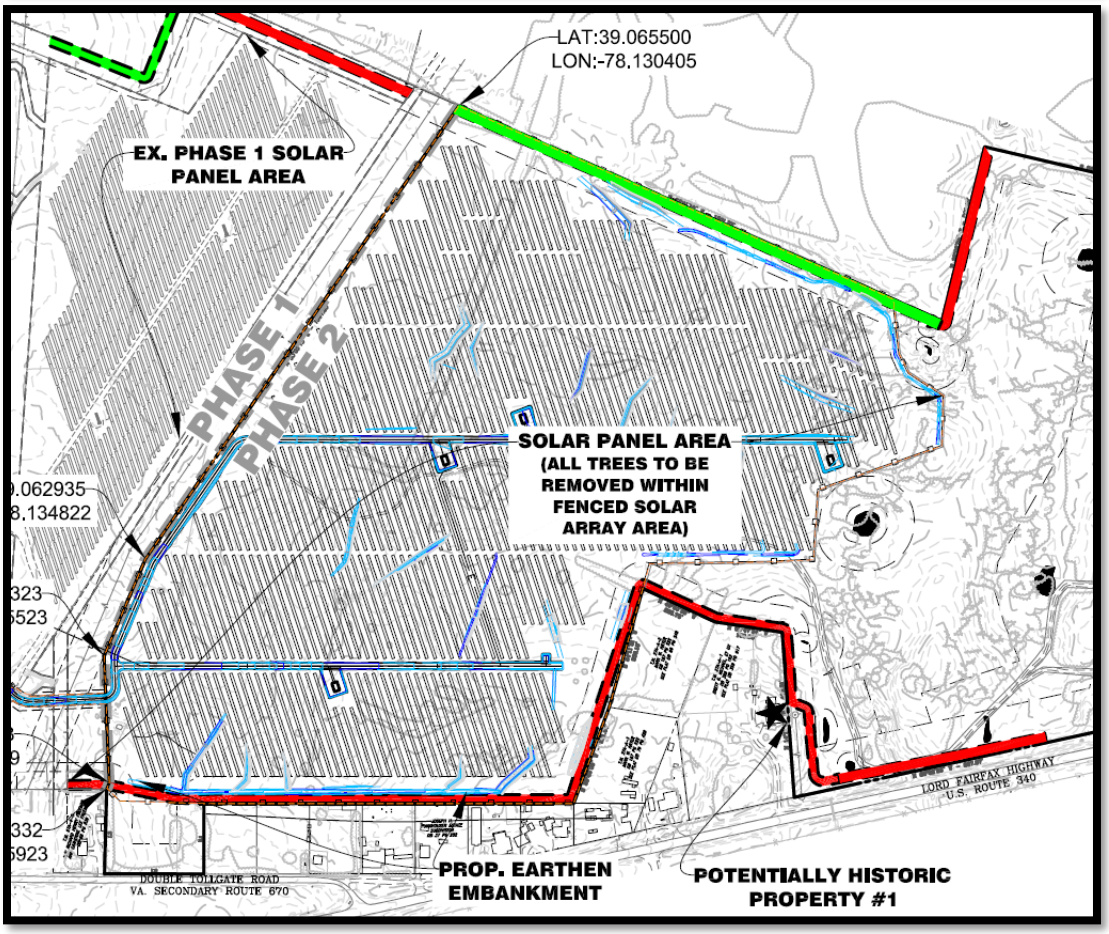
Phase 2 consists of approximately 118 acres of the total lot that is approximately 235 acres. The Phase 1 portion of the project that is already constructed is visible on the above illustration. Phase 2 includes a discontiguous area that fronts on Nations Spring Road. No solar panels are proposed in this area. It is designated as forest/open space. Similarly, the portion of the site near Gun Barrel Road is designated as forest/open space on the site plan, and includes no solar panels.

The two illustrations on the following page (copies of landscaping plan) show a layout of the phase 2 solar panels on the previously approved site plan and the proposed site plan. A copy of the Staff report from 2017 is attached for additional reference and comparison purposes.

Previously Approved Site Plan



Proposed Site Plan



Background:

The applicant met with staff in a pre-application meeting where it was discussed that there would be changes to the site. Staff understands that the reasons for these changes are primarily to address stormwater requirements of the Department of Environmental Quality (DEQ). These changes include the addition of check dams, berms and ditches to manage stormwater on the site. It also includes the concentration of the solar panels to the area shown above. The original site plan included solar panels further to the east where there are a number of sinkholes present (shown as black dots on the illustration above). Staff was also informed that the solar panels were a new design that are more efficient. While the total area of solar panels is smaller, the designed power generation would remain the same (10MW). These changes, along with the access roads, integration of a berm with the proposed landscaping, and fact that the solar panels are more concentrated adjacent to the neighboring homes are substantive changes to the site plan that require review by the Planning Commission and Board of Supervisors.

The applicant is also requesting that the Special Use Permit (SUP) be revised to a new permit holder, changing from Hecate Energy LLC to Hecate Energy Gun Barrel Road LLC. A revision of the SUP is necessary for this because condition #1 stipulates that the SUP is nontransferable to any other person or entity without prior approval of the Board of Supervisors. The current SUP also references the old site plan (SP-16-01) which would also need to be updated.

Staff would also identify that condition #15 of the current SUP stipulates that the SUP can be revoked if a land disturbance permit and building permit are not issued within two (2) years of the approval date (July 18, 2017). The delayed construction of phase 2 since 2017 has been discussed with the Board of Supervisors at various times in the past. At this time, no action has been initiated to revoke the SUP. The Applicant has submitted regular explanations regarding why the project has not progressed forward.

The previously approved site plan for Phase 2 expired on September 12, 2017, five (5) years from the date of approval. As such, review of the proposed site plan is for a new approval rather than an amendment of the expired site plan.

Application Documents:

The Applicant has provided a complete application for a Special Use Permit amendment and new Site Plan to be reviewed. This includes the required application form, review fees, and copies of the proposed site plan. It also includes the following other application documents:

- Revised Site Plan, received 10/3/2022, dated 10/15/2021, revised 9/30/2022.
- Justification Narrative, received 10/3/2022, dated 9/30/2022.
- Response Letter (overall) received 10/3/2022, dated 9/30/2022.
- Response Letter (earthen berm) received 10/18/2022, dated 10/18/2022.
- Response Letter (engineering certification) received 10/18/2022, dated 9/30/2022.
- Decommissioning Plan with cost estimate, received 10/4/2022 (updated 11/18/2022)

Copies of all application documents and the site plan were provided in the November 4, 2022 agenda package. Copies of documents from the 2017 application were also provided in that agenda package for comparison purposes. The November 4, 2022 agenda also included DEQ's approval letter and correspondence from Staff to the Applicant. For the December 2, 2022 agenda package, Staff has

only included the new documents submitted on November 18, 2022 with the Staff report. The application documents previously provided can be requested if additional copies are needed.

Review Comments:

Below are a list of Staff's comments presented in the November 4, 2022 Staff Report. These comments need to be addressed by the applicant before Staff can make a final recommendation. On November 18, 2022, the Applicant submitted responses to these comments, including an edited Decommissioning Plan. This is currently under review by Staff and the County Attorney.

1. **Decommissioning Plan.** Staff has multiple concerns with the drafted decommissioning plan. These are noted below:

    a. **The draft decommission plan does not appear to grant the County any authority to decommission the site if the applicant/owner defaults.** On page 4, the following language is provided: *"If the applicant fails to begin decommissioning with 18 months after abandoning the Facility, the locality may have the right to enter the Facility site to engage in decommissioning."*

    - The use of the word "may" in context with the rest of the sentence appears to only give the County the possibility of obtaining such a right to enter the facility.

    - What happens if the applicant begins the decommissioning process but does not finish? The draft language given does not appear to cover this scenario. Even if the "may" language is made more affirmative in the latter part of the sentence, the former part of the sentence does not appear to apply as long as the applicant simply begins decommissioning.

    - Should the County enter the site to engage in decommissioning upon default by the applicant, who will pay for it? If there is no financial guarantee does this mean that the County would have to pay for it?

    - What does abandonment mean? Without further clarification, or alternative language, this can be a point of debate. For example, if the applicant uses one solar panel to power a light at the entrance is that considered not abandoned? I would recommend abandonment be reworded or defined to include a voluntary notification by the applicant of abandonment and some quantifiable method to determine when abandonment applies regardless of the written notification.

    b. **Final walk-through inspection.** The decommissioning plan references that there will be a final walk-through inspection by the applicant and the contractor upon completion of decommissioning to identify a punch list of items that need to be addressed. Staff is of the opinion that the County should be included in this walk-through inspection, in addition to the applicant and contractor.

    c. **No performance guarantee.** The decommissioning plan emphasizes that the applicant's current estimates for the scrap value of materials would exceed the cost to

decommissioning. It also says that at the 20th year from facility operation the applicant will update the decommissioning plan estimate to reevaluate, and if appropriate the applicant will create a fund.

- Who will this fund be to the benefit for? Will it be funds that the County can use if the applicant defaults? What form of fund will be created?

- What happens if the applicant defaults before the 20th year?

- What if the value of salvage changes substantially after the 20th year?

- The Virginia Code requires a performance guarantee as part of a decommissioning plan. This decommissioning plan does not appear to comply with this provision. The final version of the decommissioning plan will be provided to the County Attorney for review.

2. **Decommissioning Plan - Salvage Value.** In Staff's opinion, the salvage cost should not be a factor in the decommissioning plan and the applicant should provide a performance guarantee for decommissioning of the site to ensure that funds exist for decommissioning if the applicant defaults to do so when the solar power plan ceases to operate.

3. **Decommissioning Plan - Administrative Costs.** Administrative costs should be included in a performance guarantee to cover costs the County could incur through the decommissioning process. Based on the County's performance guarantee standards under Section 8 of the Zoning Ordinance this should be an additional 25% of the total estimate value.

4. **Decommissioning Plan - Inflation Adjustment Factor.** The cost estimate does not appear to account for inflation of costs over the estimated life of the project. The cost estimate appears to give a current day estimate of the costs that would be associated with decommissioning the proposed site. However, the Virginia Code requires that the applicant provide financial assurance (performance guarantee) for the projected decommissioning cost. Therefore, what would the cost for decommission be at the end of the projected life of the project when decommissioning would most likely occur?

5. **Landscaping Maintenance Guarantee.** A maintenance guarantee is required pursuant to 8.2 of the Clarke County Zoning Ordinance. These are new requirements adopted with the update of the Zoning Ordinance in 2021.

6. **Leaching of Heavy Metals.** Could you provide more detail and supportive information to support your statement that the type of panels you will be using have the least impact in regards to leaching of metals.

7. **SUP Conditions**. As previously commented, conditions will be recommended by Staff to the Planning Commission. Attached is a working draft that is and update to the current

SUP conditions. Minor changes have been made to reflect the new applicant, site development plan, code requirements, and construction schedule.

8. **Economic Benefit Agreement.** Condition #14 of the draft conditions includes the continuation of the previous terms agreed in the Economic Benefit Agreement by Hecate Energy Gun Barrel Road Solar LLC. This change will need to be memorialized in an amendment with the Board of Supervisors.

9. **Hurt & Proffitt.** Hurt & Proffitt is current reviewing the pricing estimate provided with the decommissioning plan.

10. **CTL.** CTL is currently reviewing the recently resubmitted karst inspection report submitted by Dominion for the Phase 1 portion of the Solar Power Plant. They are also reviewing the geotechnical report submitted by the applicant in association with this application.

Solar Power Plant Use Regulations & Special Use Permit Review Criteria:

Section 5.2C of the Clarke County Zoning Ordinance includes various use regulations for power plants. The applicant has elaborated on these in detail within their Justification Statement.

Section 6.3.1C-2 of the Clarke County Zoning Ordinance specifies the following criteria for the Planning Commission and Board of Supervisors to consider when reviewing special use permit applications. Staff has provided preliminary comments on these review criteria below. Changes may be made after the applicant's recent resubmission documents are reviewed. A copy was sent to the County Attorney on November 22, 2022.

a. Consistency with the Clarke County Comprehensive Plan and any applicable implementing component plans.

Staff Comments:

In 2010 the Board of Supervisors adopted regulations to allow "Solar Power Plants" as a special use in the AOC District. These regulations were retained in later updates to the Zoning Ordinance, including the comprehensive re-write of the Zoning Ordinance that was adopted in 2021.

The following goals of the Comprehensive Plan were referenced in support of the original text amendment, as adopted in 2010. These goals were retained in the 2022 update of the Comprehensive Plan, although the wording of Goal 4 included a minor wording change, modifying "…to the greatest extent possible" to "whenever possible" when describing the utilization of renewable energy.

- ***Goal 3*** *– "Encourage and maintain a diverse and viable local economy compatible with the County's size and character." (page II-1)*

- ***Goal 4*** *– "Exercise stewardship over resources so as to reduce the consumption of nonrenewable resources, utilizing renewable energy whenever possible; and foster within the private sector of the County a culture of resource conservation." (page II-1)*

The Board's original resolution also stated that "with appropriate zoning regulation, Large Photovoltaic Solar Power Plants can be allowed in a manner that protects the agricultural character of the County and that protects the health, safety, and welfare of the general citizenry of the County as well as the residents adjacent to the site of such a power plant."

- ***Objective 7*** *– Resource Conservation and Sustainability*
  Encourage sustainable development by promoting renewable energy and resources, energy conservation, and preservation of natural resources within the context of the County's land use philosophy. Ensure that the needs of the present generation are met without compromising the ability of future generations to meet their own needs. (page II-13)

  Policy 2 *- Encourage the use of active and passive renewable energy systems. Develop policies that address potential impact of such systems on scenic viewsheds, agricultural and natural resources, and historic resources (e.g., windmills and solar panels). (page II-13)*

The County's Agricultural Land Plan was also reviewed for this item but no policies or recommendations were found that are applicable to this request. Additionally, the subject property is located adjacent to but outside of the boundaries of the Double Tollgate Business Intersection Area Plan. There are no policies or recommendations in the Double Tollgate Plan specific to this request.

In summary, the request is in general accord with the County's Comprehensive Plan and component plans subject to compliance with the Zoning Ordinance's regulations for the siting and construction of solar power plants.

b. Will not have an undue adverse impact on the short-term and long-term fiscal resources of the County for education, water, sewage, fire, police, rescue, solid waste disposal or other services, and will be compatible with the capital improvement goals and objectives of the Comprehensive Plan, to the end that growth of the community will be consonant with the efficient and economic use of public funds.

The proposed facility will not require public water or public sewer and will have no onsite private water or sewer facilities. There will be no impact to the school system and minimal if any impact on solid waste disposal after construction is complete. As such, there will be no impact to the County's capital improvement goals and objectives.

The applicant has committed to provide an emergency planning manual to be developed in conjunction with County fire and emergency services staff along with incident training. This commitment will be reflected in a recommended condition to the special use permit.

c. Will not cause an undue adverse impact that would reduce the conservation value of adjacent or nearby agricultural or forestal land or would impede the operations of an active agricultural or forestal operation.

Provided that the site is decommissioned after the life of the project has expired, and, properly maintained during its operation, Staff does not identify an issue associated with this request that would impact conservation values of adjacent or nearby agricultural or forestall land.

d. Compliance with Virginia Department of Transportation (VDOT) regulations and recommendations of VDOT deemed necessary for safe and efficient movement of traffic.

VDOT reviewed this application and reported no issues or additional requirements.

e. No destruction of or encroachment upon historic or archeological sites, particularly properties under historic easement.

No historic or archeological sites have been identified on the property. A Phase 1 ESA and Cultural Resource Reconnaissance Survey were completed with the original application in 2016.

f. Will not cause an undue adverse impact on the following important resources located on the subject property or surrounding properties:

- Surface or groundwater resources including but not limited to mitigation of pollution of such resources.

The Applicant's Karst plan has been reviewed and approved by the County's consultant and demonstrates no hazards to adjacent groundwater supplies. Our consultant has recommended ongoing monitoring of the site for increased solution activity over time and has agreed to a monitoring plan. This plan will be incorporated into a recommended condition of the special use permit.

- Natural areas such as unique geological features, rare plant habitats, or wildlife nesting areas.

The Applicant previously provided an Endangered or Threatened Species report with the original application. This report identified four threatened or endangered species listed within the project area, but did not specify any required mitigation measures to be undertaken. The report was reviewed by the Virginia Department of Conservation (DCR).

- Areas designated for conservation, recreation, or natural preservation including but not limited to properties under permanent conservation easement, State-designated scenic byways, scenic rivers, Blandy Experimental Farm, and the Appalachian National Scenic Trail corridor.

Staff has not identified any impacts to such special areas.

g. Will not cause undue noise, light or glare, dust, odor, fumes, or vibration.

The Applicant's submittal indicates that the facility will produce minimal noise levels when in operation, falling below the dBA thresholds in the Clarke County Code. Construction is estimated to take 4-6 months by the Applicant. A condition that limits the time of construction activities is recommended by Staff and included in the draft conditions at the end of this report. Problems associated with light, glare, dust, odor, fumes and vibrations are not anticipated for the proposed use after construction activities are completed.

h. Availability of sufficient water for foreseeable needs.

Regular usage of water is not proposed or required for the facility.

i. No unreasonable depletion of or other undue adverse effect on the water source(s) serving existing development(s) in adjacent areas.

Regular usage of water is not proposed or required for the facility.

j. Effective screening and buffering is provided, or the proposed development will be situated away from adjacent properties, in a manner to avoid causing detrimental visual impacts.

The same vegetative buffer design that was previously approved is being resubmitted with this application. Members of the Planning Commission recommended to the Applicant that the fencing and screening be modified adjacent to the houses that are along Double Tollgate Road so the property owners will view the trees instead of the fencing. The Applicant has not provided a response to this request at this time.

Staff Remarks & Recommendation:

6.3.1B-3f of the Clarke County Zoning Ordinance stipulates that formal action on a Special Use Permit Application shall be taken within 100 days of the date that the Planning Commission (advisory body) conducts the initial review of an application for a special use permit. January 15, 2023 would be this cut-off date.

A public hearing was previously held on this application during the November 4, 2022 Planning Commission Business Meeting. At that meeting, the Planning Commission continued the public hearing and agenda item until the December 2, 2022 Planning Commission Business Meeting. The Applicant was in agreement with this decision, as it would allow them time to address the review comments documented in the November 4, 2022 Staff Report.

The Applicant submitted responses to the comments noted in the November 4, 2022 Staff Report. This included a response letter and a revised decommissioning plan. Their submission was made on November 18, 2022. This was the deadline for new information to be submitted for the upcoming meeting, but did not allow adequate time for review by Staff, including review by the County Attorney.

Staff recommends that the Commission defer action for one month until the January Planning Commission meeting in order for Staff and the County Attorney to complete a thorough review of the recent resubmission documents, in particular, the decommission plan. The Applicant was previously informed that this would be the recommendation of Staff if the documents were not submitted with sufficient time to review prior to the December 2, 2022 Planning Commission Meeting.

A public hearing is scheduled for the December 2, 2022 Planning Commission Business Meeting. The adjoining property owners were re-notified with letters and a notice was published in the local newspaper. In addition, public hearing signs were posted at 4 locations on the property.

The Applicant has not provided a response to-date regarding the request made by Planning Commissioners that they consider placing the buffering trees on the side facing the neighboring houses, instead of having the fence facing the homes.

At such time that the Planning Commission takes action on this application, the draft conditions on the following pages are prepared for the Planning Commission's consideration for a recommendation to the Board of Supervisors. These recommended conditions are in draft form and may change after additional input is received during the review process.

The Applicant has requested that the draft condition #15 be revised to allow more time for them to start and finish construction. This is documented in the attached response letter. Instead of 6 months to obtain all permits, they have requested 12 months. Instead of 18 months to complete construction, they have requested 24.

SPECIAL USE PERMIT (SUP-22-03)
[A revision to SUP-17-02]
An application submitted by:
Hecate Energy, LLC &
Hecate Energy Gun Barrel Road LLC

DRAFT

1. **Special Use Permit purpose; nontransferable.** This Special Use Permit is issued for the operation of a "solar power plant" solely for the Applicant, Hecate Energy Gun Barrel Road LLC, on the portion of the subject property identified as "Phase 2" on the approved site development plan (SP-22-04). The Conditions set forth herein shall supersede the previously adopted conditions of SUP-17-02, issued to Hecate Energy LLC. The Special Use Permit shall not be transferable to any other person or entity without prior approval of the Board of Supervisors as an amendment to the approved Special Use Permit conditions, such approval not to be unreasonably withheld. Development pursuant to this Special Use Permit shall comply with the "Phase 2" of the development shown on the approved site development plan (SP-22-04).

2. **Applicant and Property Owner ("Owner") to sign list of adopted permit conditions; provision of revised site development plan.** The Applicant and the Owner, or authorized representative, shall sign the list of adopted conditions to indicate receipt of the conditions and the intention to comply fully with the conditions for the life of the special use permit. A signed copy of the conditions shall be provided to Planning Department Staff ("Staff") within thirty (30) days of the Applicant's and Owner's receipt of the adopted conditions. Copies of the final site development plan, as amended in accordance with this Special Use Permit amendment request (SUP-22-03), shall be provided to Staff for final signature within thirty (30) days of the date of the Board of Supervisors' approval of this Special Use Permit.

3. **Access for inspections required.** Staff and other County officials shall have access to the property with 24 hour notice to the Applicant in order to conduct periodic compliance inspections of the facility and the subject property throughout the life of the permit.

4. **Ongoing maintenance of site features.** The following site features applicable to "Phase 2" as depicted on the approved site development plan (SP-22-03) shall be properly maintained throughout the life of the permit:

   - Vegetated property buffer including existing trees and shrubs and supplemental plantings as depicted on the approved landscaping plan per Zoning Ordinance requirements.
   - Fences and gates.
   - Outdoor lighting fixtures to ensure compliance with Zoning Ordinance requirements.
   - Warning signage.
   - Knox box for fire, emergency services, and law enforcement access.
   - Check dams, earthen berms and ditches to ensure adequate drainage.

5. **Decommissioning of facility.** The attached decommissioning plan, herein referred to as Exhibit A, shall set forth the required provisions for decommissioning the facility either at the end of its lifespan or in the event of inactivity for more than two consecutive years.

6. **Removal of debris.** All trash and debris left over from the construction process, or other activities, shall be removed from the property and disposed of at an approved waste

management facility prior to issuance of a certificate of occupancy. No trash, debris, or construction materials shall be buried or burned on site.

7. Blasting prohibited. No blasting shall be allowed on the subject property.

8. Fire & EMS coordination and training. The Applicant will work proactively with the Director of Fire & Emergency Services to develop an agreed-upon set of procedures and protocols for managing risk of fire and for responding in the event of a fire or other emergency at the facility. These procedures and protocols shall be in the form of a Fire & Emergency Services Manual for Clarke County that shall be completed by the Applicant and accepted by the Director of Fire & Emergency Services or Staff prior to issuance of a certificate of occupancy to begin producing electric power. The Manual will specify the roles of responsible parties in the event of a fire or other emergency at the site. The plan will include at a minimum:

- Clear statements on the responsibility for fire response decision making.
- Related emergency communications direction as well as emergency phone numbers and key points of contact.
- Special training for fire and emergency services personnel and a tour of the site to ensure upfront awareness of the site and equipment as well as points of ingress/egress.
- Designated shutoff procedure and location for equipment shutoff.
- Maps outlining location of key equipment including:
    - Location of lock box
    - Inverters
    - Transformers
    - System/electrical cut-off switches
    - Points of ingress/egress at the facility
    - Cleared access around the site

9. Noise. The use of the property for a solar power plant shall comply with Chapter 120 of the Clarke County Code related to noise. In addition, the following conditions shall apply:

- **Construction noise.** All construction activities shall be limited to 7:00AM to 7:00PM in order to limit noise impacts on adjacent and nearby properties.

- **Facility equipment.** Prior to issuance of a building permit, the Applicant shall provide technical documentation for all facility equipment that may generate noise to verify that the manufacturer's noise specifications do not exceed Zoning Ordinance requirements.

10. Entrance requirements. The following conditions shall apply to the property entrance.

- **VDOT compliance.** The Applicant shall comply with all VDOT requirements for use of the property entrance throughout the operation of the solar power plant.

- **Potential damage to adjoining properties.** In the event that there is damage to adjoining properties as a result of ingress/egress of construction vehicles, the Applicant shall remedy all damage in full prior to issuance of a certificate of occupancy.

11. State and Federal permits. The Applicant shall provide copies of all applicable State and Federal permits to Staff prior to issuance of a building permit.

12. Karst monitoring. Ongoing inspections for Karst activity shall be conducted by the Applicant according to the following schedule and requirements:

- Initial Inspection Period. Site inspections shall be performed annually by the Applicant's engineer beginning one year from the completion of Phase **2**. This Initial Inspection Period shall continue until five years from the date of completion of Phase 2.
- Ten-Year Inspection Period. If no solution activity is identified during the Initial Inspection Period, then inspections shall be conducted once every two years for the next ten years.
- Ongoing Inspection Period. If no solution activity is identified during the Ten-Year inspection Period, then inspections shall be conducted once every five years for the remaining life of the project.

- Inspection dates shall coincide with the date of issuance of a certificate of occupancy allowing the facility or Phases of the facility to begin producing electric power.

- Written reports for each inspection shall be provided to the County Planning Department according to this schedule. Staff reserves the right to have the reports reviewed by the County's Karst engineer. The Applicant shall be responsible for reimbursing the County for the reasonable cost of engineering review of the report(s).

- The County reserves the right to request intermittent inspections as deemed necessary or if suspected solution activity is reported.

- In the event that an inspection reveals an issue that in the opinion of the County's Karst engineer requires specific remediation activities, the Applicant shall be responsible for completing such activities within a timeframe deemed acceptable buy the Zoning Administrator and the County's Karst engineer.

13. Landscaping.

- **Compliance with Site Development Plan.** Prior to issuance of a certificate of occupancy, or operation of the solar power plant, the applicant is responsible to comply with Section 7.2.4B-3 of the Clarke County Zoning Ordinance. This includes having a professional landscape architect, or certain other designated landscaping professionals, to inspect and certify in writing that all plantings are planted in compliance with the approved site development plan. This certification shall be provided to the Department of Planning before issuance of a certificate of occupancy or operation of the solar power plant.

- **Maintenance Guarantee.** The Applicant shall provide a maintenance guarantee, and in doing so, shall comply with all provisions of Section 8.2 of the Clarke County Zoning Ordinance. Such maintenance guarantee is required prior to issuance of a certificate of occupancy or operation of the solar power plant.

- **Minor deviations from approved site development plan.** In the event that the Applicant requests a minor deviation from the approved landscaping, as shown on the approved site development plan, in order to avoid conflicts with the placement of

panels that would adversely impact their effectiveness, or to move plantings to more effective locations on the site, such deviation shall be provided on a revised plan sheet for review and approval by Staff. Additionally, Staff may request minor deviations from the approved landscaping plan, including provision of additional plantings, in order to ensure that supplemental landscaping provides effective screening of the facility from adjacent properties. Staff may consult with the Planning Commission's Plans Review Committee to determine whether such minor deviations, requested either by the Applicant or by Staff, is consistent with the special use permit and site development plan approvals.

14. Payment Agreement. Hecate Energy Clarke County LLC entered into an Economic Benefits Agreement with the Board of Supervisors of Clarke County dated September 29, 2016 (as amended 7/18/2017), providing for payments to the County in addition to real estate taxes. Such agreement is attached hereto, and referred to as Exhibit B. The Applicant, Hecate Energy Gun Barrel Road LLC, shall amend this Agreement with the Board of Supervisors of Clarke County and take responsibility for the payments specified under said Agreement for Phase 2. Compliance with said Agreement shall be a condition of this Special Use Permit.

15. Revocation of Special Use Permit. The Board of Supervisors may take action to revoke this Special Use Permit in accordance with the revocation procedures and any of the reasons for revocation listed under Section 6.3.1E of the Clarke County Zoning Ordinance. In addition, the Board of Supervisors may take action to revoke this Special Use Permit if the applicant does not comply with the following deadlines for construction and permitting.

- All permits for construction of the solar power plant shall be obtained by the Applicant within 6 months of approval of this Special Use Permit.

- Construction of the solar power plant shall be completed within 18 months of approval of this Special Use Permit (12 months from permitting deadline).

16. **Stormwater drainage monitoring.** Ongoing inspections of stormwater drainage facilities on the Applicant's property shall be conducted by the Applicant. The purpose of these inspections shall be to determine if stormwater drainage facilities on the property are functioning as intended and without negative impact to neighboring properties. Written reports of each inspection shall be provided to the County Planning Department at the same frequency and schedule as the Karst monitoring inspections (see condition #12). This includes, but is not limited to, the County reserving the right to request intermittent inspections as deemed necessary. Furthermore, the Applicant agrees to compensate the County for any reasonable costs that may be associated with engineering review of the written reports. The Applicant shall be responsible for remediation activities determined necessary to address any issues identified in the written reports, and shall complete such activities within a timeframe deemed acceptable by the Zoning Administrator.

Exhibit A: Decommissioning Plan
Exhibit B: Economic Benefits Agreement

History:

July 18, 2017	**Approval of SUP-17-02 by Board of Supervisors.**
September 12, 2017	**Final approval date of SP-16-01.**
June 9, 2022	**Pre-Application meeting held with Planning Staff.**
August 12, 2022	**Application submitted and accepted with ownership verification advised by County Attorney.**
September 9, 2022	**Landscaping Plan submitted by Applicant.**
September 19, 2022	**Review comment letter sent to applicant.**
October 3, 2022	**Site Plan Resubmission.**
October 4, 2022	**Decommissioning Plan submitted.**
October 4, 2022	**Scheduled Planning Commission Work Session**
October 7, 2022	**Scheduled Planning Commission Business Meeting (set public hearing)**
October 18, 2022	**Confirmation received that Hecate staked the proposed earthen berm.**
October 18, 2022	**Submission of response to earthen berm comments received with illustrative exhibits.**
October 25, 2022	**Site visit of 2 Planning Commissioners.**
October 27, 2022	**Site visit of 2 Planning Commissioners.**
November 1, 2022	**Planning Commission Work Session.**
November 4, 2022	**Planning Commission Business Meeting (public hearing)**
November 18, 2022	**Resubmission (decommission plan and letter responses)**
November 22, 2022	**Submission of decommissioning plan to County Attorney for review.**
November 29, 2022	**Scheduled Planning Commission Work Session.**
December 2, 2022	**Scheduled Planning Commission Business Meeting (public hearing)**

GREENWAY ENGINEERING
FND 1971
151 Windy Hill Lane
Winchester, VA 22602

November 18, 2022

Jeremy Camp, Senior Planner/Zoning Administrator
Clarke County Department of Planning
101 Chalmers Court, Suite B
Berryville, Virginia 22611

Re: Special Use Permit (SUP) 22-03
Hecate Energy, LLC & Hecate Energy Gun Barrel Road Solar, LLC
Responses to Review Comments and Draft Conditions from Public Hearing Staff Report

Dear Mr. Camp:

Hecate Energy (Hecate) has prepared responses to the new staff comments outlined in the Planning Commission Staff Report for the November 4, 2022, Public Hearing, which are provided below in **blue** font. An updated version of the decommissioning plan has been provided with this correspondence that reflects these responses. Comments regarding the proposed draft conditions of approval are also provided for Planning Commission consideration.

1. **Decommissioning Plan.** Staff has multiple concerns with the drafted decommissioning plan. These are noted below:
    a. **The draft decommission plan does not appear to grant the County any authority to decommission the site if the applicant/owner defaults.** On page 4, the following language is provided: *"If the applicant fails to begin decommissioning with 18 months after abandoning the Facility, the locality may have the right to enter the Facility site to engage in decommissioning*."
        i. The use of the word "may" in context with the rest of the sentence appears to only give the County the possibility of obtaining such a right to enter the facility.
        ii. What happens if the applicant begins the decommissioning process but does not finish? The draft language given does not appear to cover this scenario. Even if the "may" language is made more affirmative in the latter part of the sentence, the former part of the sentence does not appear to apply as long as the applicant simply begins decommissioning.
        iii. Should the County enter the site to engage in decommissioning upon default by the applicant, who will pay for it? If there is no financial guarantee does this mean that the County would have to pay for it?
        iv. What does abandonment mean? Without further clarification, or alternative language, this can be a point of debate. For example, if the applicant uses one solar panel to power a light at the entrance is that considered not abandoned? I would recommend abandonment be reworded or defined to include a voluntary notification by the applicant of abandonment and some quantifiable method to determine when abandonment applies regardless of the written notification.

The updated decommissioning plan includes language regarding abandonment, County access, and financial guarantees.

b. **Final walk-through inspection.** The decommissioning plan references that there will be a final walk-through inspection by the applicant and the contractor upon completion of decommissioning to identify a punch list of items that need to be addressed. Staff is of the opinion that the County should be included in this walk-through inspection, in addition to the applicant and contractor.

The updated decommissioning plan specifies that a Clarke County representative will be included in the final walk-through inspection.

c. **No performance guarantee.** The decommissioning plan emphasizes that the applicant's current estimates for the scrap value of materials would exceed the cost to decommissioning. It also says that at the 20th year from facility operation the applicant will update the decommissioning plan estimate to reevaluate, and if appropriate the applicant will create a fund. **The decommissioning plan has been updated to stipulate that Hecate will post a financial security with Clarke County to guarantee performance. Responses to questions regarding the referenced fund are as follows:**

i. Who will this fund be to the benefit for? **Clarke County**
Will it be funds that the County can use if the applicant defaults? **Yes**
What form of fund will be created? **The fund will be in form that is acceptable within Virginia (certified funds, cash escrow, bond, letter of credit, or parent guarantee)**

ii. What happens if the applicant defaults before the 20th year? **Clarke County can utilize financial security for decommissioning cost.**

iii. What if the value of salvage changes substantially after the 20th year? **The updated decommissioning plan stipulates that the decommissioning cost estimate will be evaluated every five years using the Consumer Price Index (CPI) to ensure the value of the financial security is sufficient. This evaluation will include the value of salvage and will occur over the life of the project. As such, any value changes occurring after the 20th year of operation will be identified and incorporated into the decommissioning cost estimate accordingly.**

iv. The Virginia Code requires a performance guarantee as part of a decommissioning plan. This decommissioning plan does not appear to comply with this provision. The final version of the decommissioning plan will be provided to the County Attorney for review. **As noted above, the decommissioning plan has been updated to stipulate that Hecate will issue a performance guarantee as per the Code of Virginia.**

2. **Decommissioning Plan - Salvage Value.** In Staff's opinion, the salvage cost should not be a factor in the decommissioning plan and the applicant should provide a performance guarantee for decommissioning of the site to ensure that funds exist for decommissioning if the applicant defaults to do so when the solar power plan ceases to operate.
As noted above, the decommissioning plan has been updated to stipulate that Hecate will issue a performance guarantee as per the Code of Virginia.

3. **Decommissioning Plan - Administrative Costs.** Administrative costs should be included in a performance guarantee to cover costs the County could incur through the decommissioning process.

Based on the County's performance guarantee standards under Section 8 of the Zoning Ordinance this should be an additional 25% of the total estimate value.
Hecate has addressed this standard in the updated decommissioning plan and administrative costs will be incorporated into the financial security accordingly.

4. **Decommissioning Plan - Inflation Adjustment Factor.** The cost estimate does not appear to account for inflation of costs over the estimated life of the project. The cost estimate appears to give a current day estimate of the costs that would be associated with decommissioning the proposed site. However, the Virginia Code requires that the applicant provide financial assurance (performance guarantee) for the projected decommissioning cost. Therefore, what would the cost for decommission be at the end of the projected life of the project when decommissioning would most likely occur?
Hecate has incorporated an inflation adjustment factor into the updated decommissioning plan. A review will be completed every 5 years with CPI for inflation adjustments.

5. **Landscaping Maintenance Guarantee.** A maintenance guarantee is required pursuant to 8.2 of the Clarke County Zoning Ordinance. These are new requirements adopted with the update of the Zoning Ordinance in 2021.
Hecate will provide a landscaping maintenance guarantee as required by ordinance.

6. **Leaching of Heavy Metals.** Could you provide more detail and supportive information to support your statement that the type of panels you will be using have the least impact in regards to leaching of metals?
The risk of heavy metal leaching is associated with the use of Cadmium Telluride in the composition of thin film PV modules. Thin film PV modules containing Cadmium Telluride will not be used in the project thereby ensuring that leaching of heavy metals will be avoided.

DRAFT CONDITIONS OF APPROVAL

In general, the proposed draft conditions of approval are acceptable and will not create unreasonable constraints on project operation. That said, Hecate respectfully requests refinement of proposed Condition #15 Revocation of Special Use Permit to increase the required timeframe for facility construction from 18 months to 24 months from SUP approval (e.g., an increase of 6 months). Specifically, Hecate proposes the permitting deadline be increased from 6 months to 12 months from the date of SUP approval. No change to the construction deadline is proposed. For ease of reference, the proposed revisions are as follows:

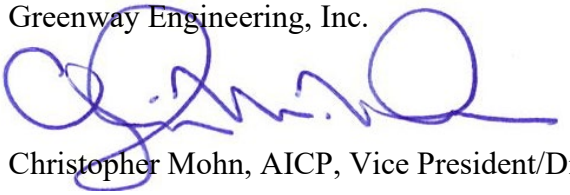
15. Revocation of Special Use Permit. The Board of Supervisors may take action to revoke this Special Use Permit in accordance with the revocation procedures and any of the reasons for revocation listed under Section 6.3.1E of the Clarke County Zoning Ordinance. In addition, the Board of Supervisors may take action to revoke this Special Use Permit if the applicant does not comply with the following deadlines for construction and permitting.

- All permits for construction of the solar power plant shall be obtained by the Applicant within 12 ~~6~~ months of approval of this Special Use Permit.

- Construction of the solar power plant shall be completed within 24 ~~18~~ months of approval of this Special Use Permit (12 months from permitting deadline).

We look forward to discussing these items with the Planning Commission at the November 29th work session. Please let us know of any additional questions or concerns.

Thank you,
Greenway Engineering, Inc.



Christopher Mohn, AICP, Vice President/Director of Planning

cc: Hecate Energy, LLC
Hecate Energy Gun Barrel Road Solar, LLC

Gun Barrel Road Solar Facility

Decommissioning Plan

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LIST OF TABLES

LIST OF APPENDICES

DECOMMISSIONING

This Exhibit addresses the requirements specified in Code of Virginia 15.2-2241.2.

(a) Statement of Performance Criteria for Site Restoration

The Gun Barrel Road Solar Facility (the Facility), located at 120 Highland Corners Rd, Winchester, VA 22602, is anticipated to reliably and safely operate for an excess of thirty years.

The land leasing arrangement for the approximately 117-acre property on which the Facility is proposed (the Facility Area) for up to 35 years of operation and could be extended further if the parties agree. Upon termination of the lease, it requires the Applicant to remove Facility components and return the land to substantially the same condition as currently exists. The performance criteria discussed below in are meant for Facility decommissioning/restoration, but also will apply in the event that the Facility cannot be completed.

(1) Safety and the Removal of Hazardous Conditions during Decommissioning

The contractor(s) engaged to commence the decommissioning process will be required to provide a safety plan prior to mobilizing that includes site safety orientation training for all on-site workers. The contractor(s) also will be required to establish a Spill Prevention Control and Countermeasure Plan.

The only hazardous material to be used by the Facility during operation will be the cooling oil contained in the transformers. That oil will be drained and recycled or disposed of in accordance with regulations. During the decommissioning work, some vehicle fuel and lubricating oils may be present on-site for the work tools and equipment. The storage and handling of the fuel and lube oil will be managed in accordance with the Spill Prevention Control and Countermeasure Plan.

(2) Environmental Impacts

During the decommissioning work, the contractor will be required to assign a Health, Safety and Environment Manager to monitor the work in compliance with the permits.

Prior to decommissioning, the Applicant will notify in writing Clarke County of their intention to begin decommissioning. The Applicant will engage an environmental consultant to monitor the decommissioning activities and potential environmental impacts. The decommissioning work is expected to have insignificant impacts on the environment. The decommissioning work will not involve any further clearing.

(3) Aesthetics

Landscaping will be left in place to continue its screening function and avoid changing the visual perspective.

(4) Salvage and Recycling

Most of the Facility systems and components are recyclable. Publicly available data shows a market price for scrap materials, indicating these can be profitably recycled by the Applicant or the decommissioning contractor. The major components and their expected scrap codes are outlined in Table 1.

Table 1. Major Components and Scrap Codes

Facility Component
Inverters - Chint CPS SCH125KTL or similar
Transformers - Cooper 3MVA and 2.5MVA
PV Modules
Racking Frame (Single Axis)
Racking Posts
Tracker Motors
LV Wiring - #10, 2/0, #2 bare, 500MCM
MV Wiring - 2/0 Bare, 500MCM
Chain Link Fence Fabric & posts
Disconnect Switches
Electronic Controls
Road Stone

The photovoltaic (PV) solar modules contain recyclable material (silicon, metal). PV manufacturers are establishing programs to receive recycled PV modules, however PV modules are anticipated to have residual value as a complete component.

The following general statements can be made about the present state of the salvage market with regards to crystalline silicon PV modules:

- The United States has a robust market for the salvage, recycling, and re-sale of industrial materials including the aluminum frame, glass fronts, and silicon which comprise the majority of a PV module.
- A number of websites post publicly available data on the scrap values of industrial materials in different regions of the United States. Example websites for pricing include: scrapmonster.com, rockawayrecycling.com, and recycleinme.com.
- Decommissioned PV modules from the Facility can be resold as industrial materials in the national salvage market. Possible salvage operations include: Cleanlites, ECS, Metal & Catalyst Resources, and Morgen Industries.
- PV modules also may be resold as functional modules for power production. PV Modules will continue to operate after years of use, though producing less power than their initial ratings. The industry has observed a degradation rate of 0.2–1% per year, with 0.7% used as an industry-wide assumption in the United States. Based on a 0.7% degradation rate, a 400-watt (W) PV module would be rated at 335-W after 25 years of operation. The module would need to be tested prior to re-sale to verify the new ratings.
- PV power plants may be re-powered at “end-of-life” with new inverter systems or may be decommissioned with PV modules re-sold for use at another plant.

The PV modules residual value is conservatively assumed to be priced at 5% of original value.

(5) Potential Future Uses for the Facility Area

The Applicant may consider extending the Facility life or repowering the Facility, subject to required regulatory approvals. The cabling systems and tracker structures may provide reuse in situ and allow replacement of PV modules and inverters thereby repowering as a refreshed solar project. The Applicant will obtain any required approvals for repowering.

Upon the Facility Area being restored after Facility operation is terminated, the land may be used for a variety of ways including farming, residential, or commercial use. The planned Facility implementation and decommissioning will not inhibit any of those possible uses.

(6) Decommissioning and Restoration Plan

The draft plan for decommissioning and restoration is provided below. The Facility decommissioning cost estimate is provided as Appendix A. It is expected that the salvage value of the components and material will far exceed the decommissioning and restoration costs. It is noted that even if the salvage value of PV modules is excluded from the decommissioning estimate, the remaining Facility salvage value is greater than the cost of Facility decommissioning and site restoration. However, with respect to Code of Virginia Title 15.2-2241.2, the Applicant shall provide financial assurance of such performance to the locality in the event the Applicant does not decommission the site after the project is considered inactive.

The financial assurance will be in the form acceptable to Clarke County per Title 15.2-2241. The costs will be allocated to Clarke County based on the estimated cost associated with removal of the facilities and restoration of the Project area identified in Exhibit A. The cost for security shall include 25% additional total estimate value to include Clarke County Administrative Costs per Section 8 of the Zoning Ordinance. Finally, the security shall include a Landscaping Maintenance Guarantee pursuant to 8.2 of the Clarke County Zoning Ordinance. The estimates shall be updated to reflect inflation and any other changes every fifth year after commercial operation. Inflationary adjustments to cost estimates will be evaluated using the Consumer Price Index (CPI). Updated estimates will be filed with Clarke County every fifth year after commercial operation.

Upon decommissioning the Facility, the Applicant will engage one or more reputable contractors to perform the Facility decommissioning. The decommissioning and restoration work will generally involve the following:

- Planning, permitting, and consultation;
- Disassemble and recycle PV panels;
- Remove and recycle inverter stations, combiner boxes, and switchboards;
- Remove transformers and transport to a licensed facility for draining, disassembly, and recycling;
- Remove circuit breakers and transport to a licensed facility for degassing, disassembly, and recycling;
- Disassemble and recycle tracker steel components;
- Disassemble and recycle substation steel and components;
- Remove and recycle tracker I-beam posts;
- Remove, crush and recycle concrete foundations (substation components and inverter skids);
- Remove and recycle selected stone roads;
- Remove and recycle perimeter fencing;

- Collect and dispose of non-recyclable materials (loose debris, road filter fabric, select substation components, above ground PVC conduits);
- Regrading and decompaction as needed; and
- Clean up and inspection.

The contractor will be required to properly manifest all material leaving the site and properly dispose to licensed recycling and disposal programs.

The decommissioning is anticipated to be completed over a 2-month period, most likely during a summer season that provides drier conditions. The workforce may consist of up to a peak of about 25 on-site workers sourced primarily locally. Restoration of the site will begin during the decommissioning process and monitored for a full year following completion of all decommissioning activities to ensure success of re-vegetated areas.

Project decommissioning is generally triggered only by an event such as when the Project components reach the end of their operational life (although components will likely be updated as technology improves over time). The Project will be considered to be inactive if the Project is not generating any electricity for a period of twelve (12) consecutive months unless the cause of the failure to generate electricity is (i) a repair, restoration or improvement to an integral part of the Project that affects the generation of electricity and that repair, restoration or improvement is being diligently pursued by the Owner; or (ii) an event of Force Majeure (each, a “Triggering Event”).

Force Majeure includes, but is not limited to, causes or events beyond the reasonable control of, and without the fault of negligence of the Company, including, without limitation, acts of God, sudden actions of the elements such as floods, earthquakes, hurricanes, or tornadoes; sabotage; terrorism; war; riots; explosion; blockades; pandemic; and insurrection. In the event that the Owner anticipates that corrective options (regarding energy output) will extend beyond the aforementioned 12-month period, it will file a notice to Clarke County, describing the circumstance and provide updates regarding the estimated amount of time required for those actions. If properly maintained, the expected lifetime of a utility-scale solar panel is approximately 30 years with an opportunity for a project lifetime of 50 years or more with equipment replacement and repowering. Depending on market conditions and project viability, solar arrays may be retrofitted with updated components (e.g., panels, frame, tracking system, etc.) to extend the life of a project. In the event that the modules are retrofitted, the original modules would be sold as resale or salvage, depending on the market at that time. At the end of the Project’s useful life, the panels and associated components will be decommissioned and removed from the Project.

In the event the Owner fails to perform necessary Decommissioning and/or Restoration activities (when required) and Clarke County has to carry out such Decommissioning and/or Restoration activities in accordance with the terms herewith, the Applicant hereby acknowledges and agrees that it will use its commercially reasonable efforts to ensure Clarke County has the necessary access rights to carry out such Decommissioning and/or Restoration, including granting Clarke County the right to use the Company’s easements and access rights to carry out any Decommissioning and/or Restoration.

Preparation

Prior to the start of decommissioning work, the Facility Area will be assessed for existing conditions to ensure proper planning and management of the disassembly and movement of materials is done while protecting surrounding natural resources. Accordingly, erosion and sedimentation Best Management

Practices will be installed prior to the commencement of the decommissioning activities pursuant to any applicable permits.

The Applicant will make arrangements for the disposal and recycling programs that will receive the decommissioned materials. The Applicant will require the decommissioning contractor, its haulers, and the receiving facilities to maintain proper documentation in order to manifest and track the disposed materials.

(i) Site Mobilization

Existing access roads will be suitable for the decommissioning work. The site perimeter fencing will be maintained until the last stages of the work. If desired by the landowner, the site fencing may be left in place. During the active on-site decommissioning activity, the main gate entrance will be secured at night. If theft events occur, the Applicant may establish nighttime security presence, patrols, or other measures.

Prior to decommissioning, the Applicant will coordinate with the electric utility to de-energize the Facility and process the substation disconnection and closure. The main electric disconnect switches will be verified and secured open with lock-out / tag-out procedures. The contractor will lock-out and tag all the Facility inverter stations and combiner boxes, thereby de-energizing the entire Facility alternating current (AC) power system. Work will mainly occur during daytime hours

(ii) System Removal

The contractor will first systematically disconnect all PV modules, thereby disassembling the direct current collection system and rendering the entire Facility safely de-energized. As portions of the Facility Area are fully de-energized, the work crews will begin disassembly of the Facility infrastructure. The contractor will systematically disassemble the PV panels, tracker components, inverter stations, and substation equipment.

The demolition debris and removed equipment may be cut or dismantled into smaller pieces that can be safely lifted or carried by the deconstruction equipment being used. The majority of glass and steel and aluminum will be processed for transportation and delivery to an off-site recycling center. Minimal non-recyclable materials are anticipated; these will be properly disposed of at a qualified disposal facility. Demolition debris will be placed in temporary on-site storage areas until final transportation and disposal/recycling. PV modules will be packaged and resold in the secondary market for reuse.

The direct current/alternating current power collection system will be dismantled and removed. All cables and conduits that are removed will be recycled. All aboveground cables and electrical interconnections will be disconnected. The low voltage underground cables planned at a depth of about 36 inches will be easily pulled out and removed while the deeper medium voltage cables planned at about 48 inches depth will be abandoned in place. Cable and conduit stub ups will be cut at least 30 inches below ground.

The overhead feeder line that leads into the Facility's offsite interconnection will be removed unless the landowner determines that the electrical service line will be beneficial for future use of the site, in which case, after notification to the Utility, the line may remain after decommissioning.

There will be very few concrete foundations on-site, primarily for the small number of transformers. The concrete foundations will be removed and disposed in a licensed landfill. Steel I-beam type posts or piles that support the trackers will be mechanically removed and salvaged. The area will be lightly graded to match preexisting site soil conditions.

(iii) Transport

The Applicant will require the contractor to organize the decommissioning work in a staged and systematic fashion providing tracking of the material leaving the Facility Area. Designated material collection areas will be established on-site where the material will be collected and packaged as needed for truck transport off-site. The material shipped off-site will be firmly secured to comply with the State's Department of Motor Vehicles regulations. Any loose material loads must be covered. The contractor will ensure all trucks and trailers are safe, road worthy, and meet all Department of Motor Vehicles permit requirements, including current valid registration and inspection requirements.

All material leaving the Facility Area will be manifested to identify the destination disposal or recycling center to which the material is delivered.

(iv) Site Restoration

The facility area will be restored as set forth in the Code of Virginia 15.2-2241.2. The owner will stabilize the soil and revegetate the ground cover of the real property disturbed by the installation of such equipment, facilities, or devices.

(v) Facility Closeout

Upon completion of the decommissioning and site restoration, the Applicant, the contractor, and a Clarke County representative will conduct a final walk-through inspection and the contractor will correct any remaining punch list items. Unless otherwise agreed with the landowner, all permits required for the decommissioning will be closed out, and all temporary erosion and sediment control measures (silt fence, etc.) will be removed.

Upon final completion, the Applicant will provide the landowner with a completion letter including as-built drawings of any facility features left in place such as roads and deep underground cables. No live circuits will exist after Facility is de-energized.

Upon final completion, the Applicant will send a notice of Facility Closeout to Clarke County and DEQ.

(b) Subsurface Drainage Improvement Accounting

There no active subsurface drainage tile in the agricultural fields. As the Facility Area is generally open and flat, relatively limited grading is planned for the Facility. Therefore, the Facility drainage design established for the solar Facility will be generally maintained after decommissioning to continue stable site conditions. After decommissioning and site restoration, the site drainage patterns should remain as is. Prior to decommissioning, the Applicant will evaluate the site drainage design and update it if needed for the Facility Area after restoration.

(c) Planned Notifications Regarding Decommissioning

The Applicant will continue their coordination and communication with the landowner and formally provide the landowner with advanced notice of the planned decommissioning in accordance with the lease agreements.

At least 120 days prior to beginning the decommissioning work, the Applicant will consult with local County representatives to discuss the planned decommissioning and possible reuses of the Facility Area. Consideration may be given to preserving select Facility components that may be reused for future development at the Facility Area. The Applicant will review the decommissioning plans and schedule with local officials and incorporate applicable feedback from them.

The notification will include an updated Decommissioning Plan, discussion of schedule, planned activities, where and how the material will be recycled and disposed of, estimated workforce. The Applicant will consult with the state and local authorities having jurisdiction regarding the planned decommissioning activities and possible uses of the Facility Area after decommissioning.

APPENDIX A - PLANT DECOMISSIONING COST

Project:	**Clarke Phase 2 (Gun Barrel Solar)**	AC Capacity (kW)	10,000
Location:	Clarke County, VA	DC Capacity (kW)	12,380

DISASSEMBLY & DISPOSAL					**Dollars**
ITEM	DESCRIPTION		QUANTITY	UNIT PRICE	TOTAL
1.00	PV Modules (650 W)	#	19,046	1.20	22,855
1.01	PV Inverter(s) (125kW)	#	80	60.00	4,800
1.02	PV Transformer(s) (2.5 MVA)	#	4	255.00	1,020
1.03	Racking Frame (Single Axis)	#	212	103.46	21,895
1.04	Racking Posts	#	3,960	9.75	38,610
1.05	Tracker Motors	#	24	13.71	329
1.06	Racking Wiring	LF	385,040	0.06	21,598
1.07	Underground Cable (LV, MV, Comm)	LF	63,224	0.50	31,524
1.08	PV Plant Fence	LF	3,850	1.74	6,695
1.09	Electrical recloser, metering, poles	LS	3	1,250.00	3,750
1.10	Concrete	cy	67	64.20	4,280
1.11	Gravel	cy	6,600	5.00	33,000
1.12	General Conditions	LS	1	2,500.00	2,500
				SUBTOTAL	**192,856**
SITE RESTORATION					
ITEM	DESCRIPTION			UNIT PRICE	TOTAL
2.00	Re-Seeding	ac	50	86.63	4,332
2.01	Re-Grading	cy	-	16.20	-
2.02	Erosion and Sediment Control	ls	1	3,000.00	3,000
				SUBTOTAL	**7,332**
SALVAGE					
ITEM	DESCRIPTION			UNIT PRICE	TOTAL
3.00	PV Modules (5%)	#	18,094	16.25	(294,025)
3.01	PV Inverter(s) (125kW)	#	80	250.00	(20,000)
3.02	PV Transformer(s) (2.5 MVA)	#	4	3,629.86	(14,519)
3.03	Racking Frame (Single Axis)	lb	1,235,896	0.16	(192,571)
3.04	Racking Posts	lb	201,960	0.16	(31,468)
3.05	Tracker Motors	lb	92,070	0.37	(33,856)
3.06	Electrical interconnect gear, recloser, meters, CTs/PTs	lb	1,000	0.41	(410)
3.07	Interconnection Disconnect Switches (1 & 3-Phase)	lb	9,869	0.41	(3,998)
3.08	Control Panels	lb	1,400	0.09	(122)
3.09	Electronic Controls	lb	536	0.16	(84)
3.10	LV Wiring (PV Plant & Interconnection)	lb	35,174	2.42	(85,059)
3.11	MV Wiring	lb	58,639	1.47	(86,252)
3.12	Chain Link Fence (PV Plant & Interconnection)	lb	58,407	0.16	(9,101)
				SUBTOTAL	**(771,465)**
				TOTAL NET TOTAL	**(571,278)**

MINOR SUBDIVISION (MS-22-11)
December 2, 2022 Planning Commission Meeting
STAFF REPORT -- Department of Planning

The purpose of this staff report is to provide information to the Planning Commission to assist them in reviewing this proposed minor subdivision. It may also be useful to members of the general public.

CASE SUMMARY:

Applicant:
Dianna DeWitt

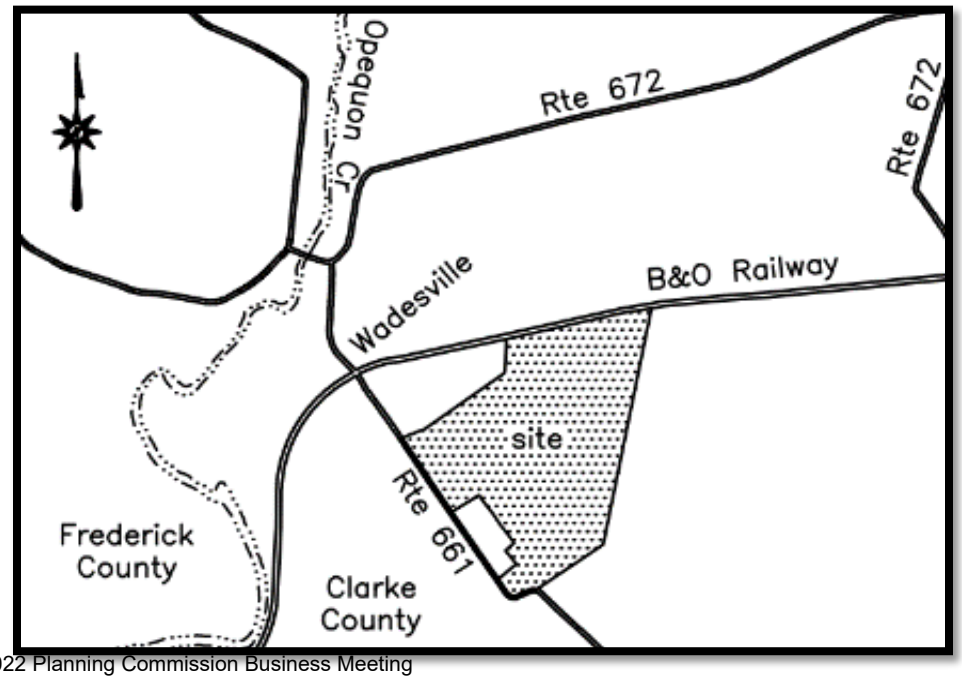
Applicant(s):
Donald DeWitt & Dianna DeWitt

Location:
- Tax Map Parcels #3-A-26
- The property is located on the east side of Wadesville Road (Route 661), extending to the B&O Railroad. The point of proposed access for the proposed new lot is approximately 2/3 of a mile south of Opequon Creek.
- Russell Election District (George L. Ohrstrom, II & Pearce Hunt)
- AOC (Agricultural-Open Space-Conservation) Zoning District

Request:
The application proposes to create 1 new lot from the existing parcel, resulting in 2 lots.

Original Lot:	**Proposed Lots:**
60.00 acres (13-A-23) – 0 dwellings, 3 DURs	57.00 (3-A-26) – 0 dwelling, 2 DUR 3.00 acres (New Lot 1) – 0 dwelling, 1 DUR
60.00 acres	*60.00 acres*

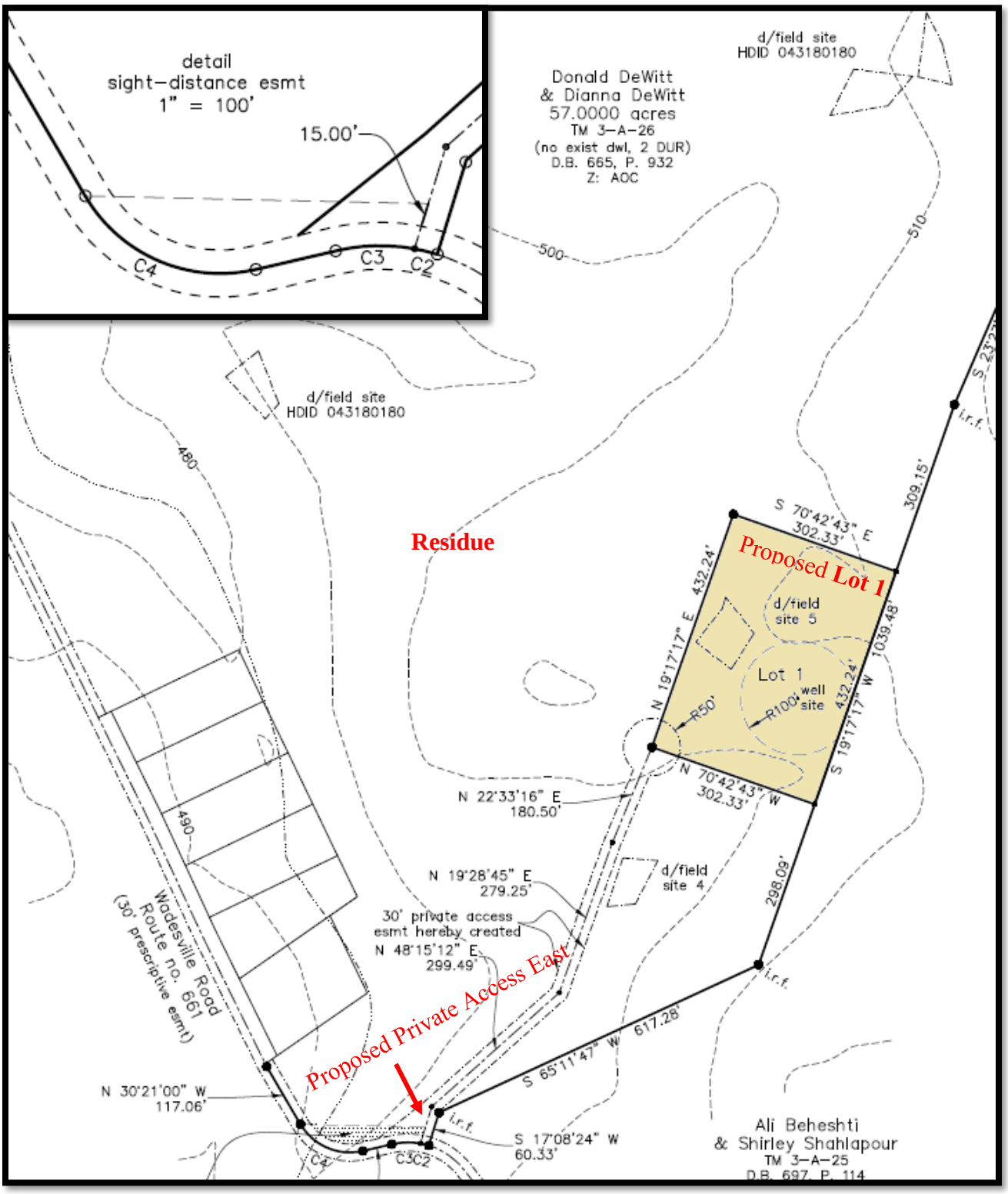
Vicinity Map:



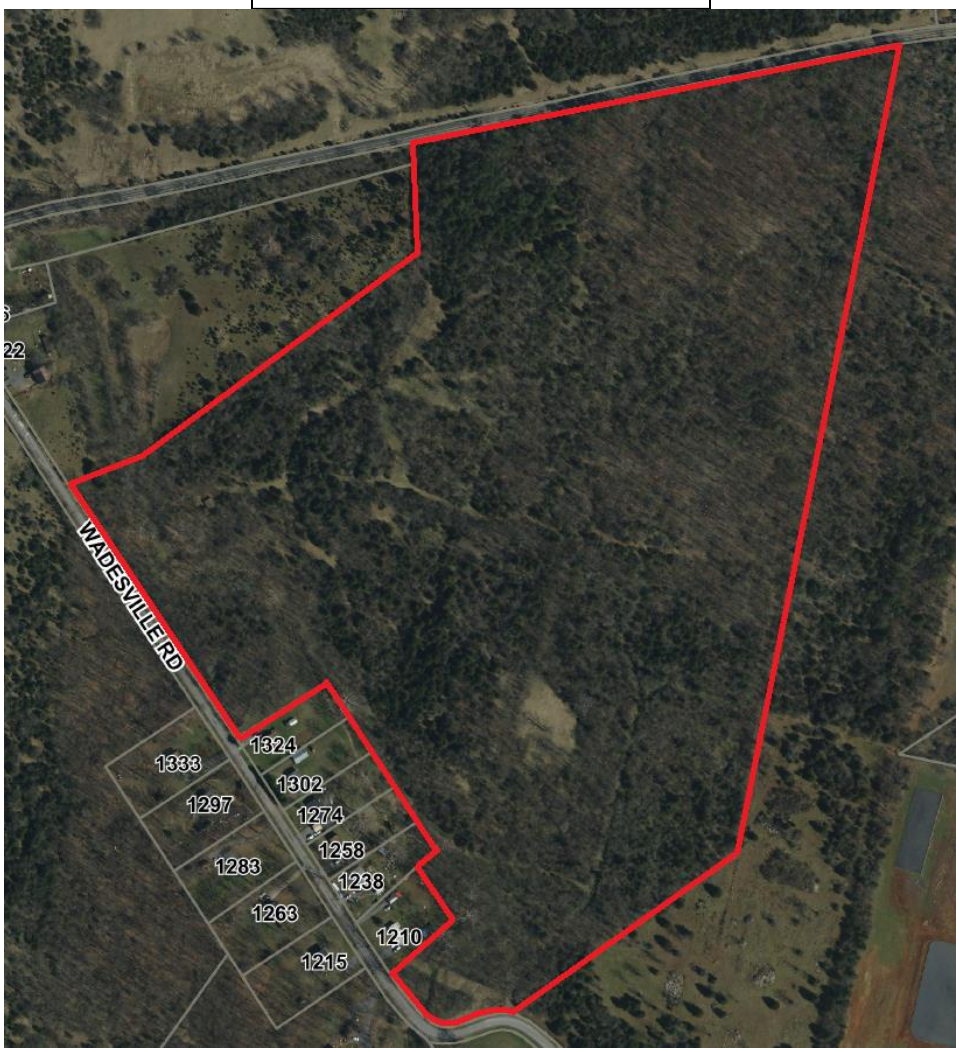
Staff Discussion/Analysis:

Access:

The subdivision proposes a 30' wide private access easement off of Wadesville Road (Route 661). The entrance is located at the furthest point south and includes a site distance easement required by the Virginia Department of Transportation (VDOT). Below is an illustration of the subdivision and sight distance easement taken from the submitted plat.



AERIAL OF PROPERTY



VDOT was forwarded the application on November 7, 2022. VDOT contacted Staff by phone on November 21, 2022 and reported that the proposed private access easement and sight distance easement is acceptable, except that the plat should be modified to include language that more clearly describes what the easement is for and who is responsible for maintenance of it. A revised plat was submitted later the same day.

Water and Sewage Disposal:

The Residue Lot has three drainfield sites on it. Site 1 was issued a Certification Letter on November 28, 2018 for a conventional onsite sewage system with an alternative 100% reserve area. This site can accommodate up to 4 bedrooms, 600 gallons per day, and 8 maximum occupants. Site 2 was issued a Construction Permit on August 5, 2022. It is for an alternative drip dispersal system with a 100% reserve area for up to 3 bedrooms, 450 gallons per day, and 6 maximum occupants. A well was drilled on the property on March 2, 2021. The OSE has also identified Site 4 that could accommodate an Alternative Onsite Sewage system for up to 3 bedrooms, 450 gallons per day, and 6 maximum occupants. VDOT field reviewed this site on March 30, 2022.

The proposed new Lot 1 has one site identified on it (Site 5). It can accommodate an Alternative Onsite Sewage System for 3-bedroom, 450 gallon, 6 maximum occupants and a 100% alternative drip dispersal reserve area. VDH field reviewed this site recently and confirmed that the site appeared to be suitable for the designed system.

Karst Plan / Resistivity Test:
A resistivity report and resistivity review fee was submitted for review on October 27, 2022 by the applicants and was approved on November 17, 2022.

Staff Review Comments:
The applicant's surveyor revised the plat to correct errors identified by Staff. This was submitted on November 16, 2022. A second revision of the plat was submitted on November 21, 2022 to address VDOT's review comment.

The residue parcel will retain 2 DURs. This allows for the possibility that it could be subdivided again in the future. Based on the requirements of the Clarke County Subdivision ordinance, further review by VDOT and construction plans would be required for the private access easement if more than 2 lots are ever proposed to have access to it.

Recommendation:
Staff recommends approval of the minor subdivision application (MS-22-11) for the division of Tax Map #3-A-26 into two lots.

History:

October 27, 2022	Resistivity application submitted and fee paid.
November 4, 2022	Subdivision application submitted and fee paid.
November 7, 2022	Submitted to VDOT and VDH for review.
November 15, 2022	VDH comments received. Reported issues.
November 16, 2022	Plat resubmitted with edits.
November 17, 2022	Resistivity approval issued.
November 18, 2022	VDH comments received. No issues reported.
November 21, 2022	Plat resubmitted with edit.
November 29, 2022	Scheduled date for Planning Commission Worksession.
December 2, 2022	Scheduled date for Planning Commission Business Meeting.

LAND DEVELOPMENT APPLICATION

General Information

Date: 25 October 2022	Tax Map #: 3-A-26
Zoning District: AOC	Lot Size: 60 acres +/-
Site Address: East side of Wadesville Road, Route no. 661, South of B&O RR	
Property Owner's Name: Donald DeWitt & Dianna DeWitt	
Property Owner's Mailing Address: PO Box 397, Stephenson, VA 22656	
Applicant's Name: *(if different than owner)* Dianna DeWitt	
Applicant's Mailing Address: *(if different than owner)*	
Phone: 540-974-7653	Email: naturalcreationsva@gmail.com

Application Type

Site Plan	○	Major Subdivision	○
Administrative Site Plan	○	Minor Subdivision	◉
Rezoning	○	Boundary Line Adjustment	○
Special Use Permit	○	Lot Consolidation / Merger	○
Karst Plan	○	Administrative Subdivision (>100 acre parcels)	○
Zoning Ordinance Text Amendment	○	Subdivision Ordinance Text Amendment	○

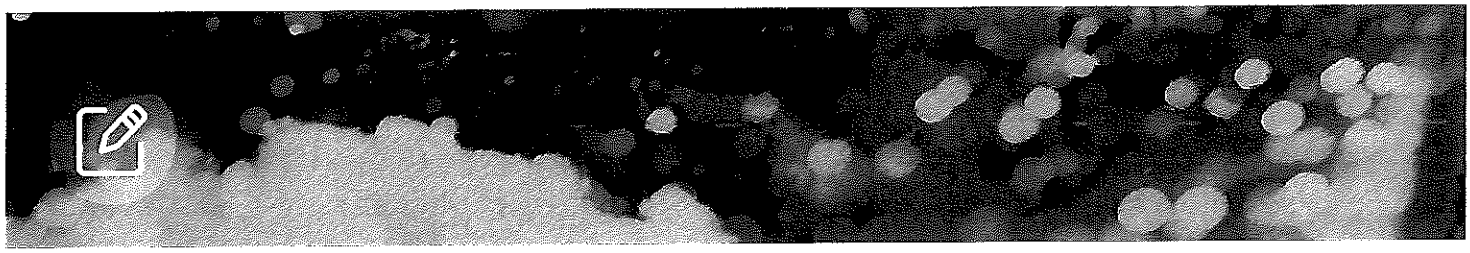
Other: ○

Application Details

Name of Project or Subdivision: DeWitt Minor Subdivision

Existing Use(s): vacant/agricultural

Proposed Use(s): residential & agricultural



Additional Details

Description of the proposed development or subdivision:

Creating one 3.0000 acre parcel out of a 60 acre parent tract

Number of Existing Lots: 1

Number of Proposed Lots (proposed and residual): 2

Are you requesting any exemptions, such to the maximum average lot size?

If yes, describe the justification for such request.

Check all that apply:

Conservation Easement	◯	Floodplain	◯
Historic Overlay District	◯	Public Water	◯
Historic Accessory Corridor	◯	Public Sewer	◯
Spring Conservation Overlay District	◯	Karst Soils	◯

Diana L. DeWitt

Signature of Applicant

25 October 2022

Date

Office Use Only

ACTION TAKEN: _____ ***FEE:*** _____

COMMENTS: _____

_____

_____ _____ _____

Zoning Administrator Date GIS Acct #

Clarke County Government
TREASURERS OFFICE
101 Chalmers Ct
Berryville, VA 22611
(540) 955-5160
Welcome

005286-0002 Tracy W. 11/02/2022 02:56PM

PERMITS / INSPECTIONS
Minor Subdivision - FEE
2022 Item: MS-22-111MS
Balance due: 0.00
Balance unpaid: 0.00 4,000.00

4,000.00

Subtotal 4,000.00
Total 4,000.00

4,000.00

CHECK
Check Number237

Change due 0.00

Paid by: DEWITT DONALD

Thank you for your payment

CUSTOMER COPY

Geophysical Survey
Proposed Septic Fields
Tax Map Number 3 A 26
Wadesville Road
Berryville, Virginia

Prepared For:

Ms. Dianna DeWitt

PO Box 396

Stephenson, Virginia 22656

Prepared By:

Forrest Environmental Services, Inc.

3057 Crosen Court

Oak Hill, Virginia 20171

(703) 648-9090

September 2022

FES Project No. 22169

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1.0 Introduction

Forrest Environmental Services, Inc. (FES) performed a geophysical survey for the proposed septic fields (Tax Map Number 3-A-26) located on Wadesville Road in Berryville, Virginia on the 5th and 6th May 2022. The survey consisted of an electric resistivity (ER) survey to locate potential voids and caverns that may develop into sinkholes at the septic fields.

Four east-west electric resistivity lines were conducted at two proposed septic fields (Figure 1). The ER survey covered approximately 1,340 linear feet and approximately 2,800 soundings were collected.

The electrode spacing (dipole size) was 3 meters (10 feet) for ER lines 1 through 4. ER lines 1 through 4 used 35 electrodes for a total distance of 335 feet during collection.

The Wadesville Road site is located within the Valley and Ridge Province of Virginia. The site geology includes the Rockdale Run Formation which is a predominately an interbedded bluish gray limestone with distinctive chert zones.

No sinkholes or depressions were observed during the geophysical survey. Bedrock/rock float were observed approximately 35 feet East of the proposed septic field. The closest water body is a pond located approximately 400 feet west of the proposed septic fields. The closest geologic feature is an anticline located 500 feet east and west of the proposed septic fields. These features appear not to influence the proposed septic fields.

Topographically, the site slopes downhill to the south. The site generally consisted of a cleared wooded area. Survey locations and physical features are shown in Figure 2.

Details of the geophysical survey are described in the following sections.

2.0 Equipment and Procedures

The geophysical survey instrument used during this survey was an earth resistivity meter that maps the resistivity changes in the earth. Resistivity is a fundamental parameter of the material that describes how easily the material can transmit electrical current. High values of resistivity imply that the material is very resistant to the flow of electricity, and low values of resistivity imply that the material transmits electrical current very easily.

The primary factors affecting the resistivity of earth materials are porosity, water saturation, clay content, and ionic strength of the pore water. The minerals making up soil and rock generally do not readily conduct electric current. Most of the current flow takes place through the material's pore water in which the resistivity decreases with increasing porosity and water saturation. Clay minerals are conductive because of the availability of free ions in the sheet structure of the clay particles in which resistivity decreases with increasing clay content. Similarly, higher salinity in groundwater makes the water more conductive to electrical current and resistivity decreases. Hard competent bedrock, such as limestone or granite, generally has a high resistivity in the absence of fracture or other permeable features.

The geophysical survey instrument used during this survey was a Sting R8 earth resistivity meter (Sting) connected to a Swift automatic electrode system (Swift). The Sting measures the electrical resistivity of the earth and the Swift automates the resistivity measurement process using the multi-electrode system.

The Swift was connected to the Sting and SMART electrodes to optimize survey efficiency by gathering maximum information with a minimum of electrodes. Each SMART electrode is numbered by a computer chip located within the electrode. The Swift selects which electrodes to employ as the current and receiver. For example for this ER survey, the first sounding uses electrodes 1 and 2 as the transmitter and electrodes 3 and 4 as the receiver. The next sounding uses electrodes 2 and 3 as the transmitter and electrodes 4 and 5 as the receiver. The Swift also uses redundancies in the data set to reduce the effects of lateral heterogeneities in the earth and to calculate uncertainties in the data. The survey was conducted automatically using the Sting/Swift dipole-dipole array system.

The earth resistivity meter works by introducing a measured current into the earth through two electrodes; the resultant voltage is then measured across two different electrodes. At the low currents used, the voltage is proportional to the current. The resistivity meter calculates the voltage/current ratio or resistance in ohms. The resistance is then converted to resistivity using an algorithm which is a function of the electrode array configuration. Measured differences in the electrical resistivity of various earth materials are then used to map the geology and character of the soil and rock materials. For example, clays generally have low resistivities and limestones have high resistivities.

A contact resistance test was conducted before the Sting/Swift dipole-dipole survey commenced. The contact resistance test ensures the stake has good contact with the ground. The Sting produces a current between the first two stakes and measures the voltage. The instrument measures the resistance between the first and second stakes and the ground. The contact resistance is also checked for the measurements consistent for all of the 35 electrodes.

The Swift cable resistance checks the voltage difference signal between two electrodes. Four leads of the Swift cable using two electrodes send a current through a 1 ohm resistor in the Swift box. The test is checked before the first ER survey and after the last ER line for each day.

The Swift switch relays test is performed to check the Swift cable is continuous and the relays in the electrodes are working properly. A current is sent through each lead in the Swift cable to make sure the relays are functioning properly and there is no leakage between leads, and to test the relays for sticking. The test is checked before the first ER survey and after the last ER line for each day.

The depth of investigation by Sting is a function of the total distance of the electrode layout was 335 feet. The Sting has an effective analysis depth of approximately 60 feet using a 3-meter (10 foot) electrode spacing. This depth is considered sufficient to locate voids and caverns at the proposed septic fields at the Wadesville Road site.

3.0 Interpretation Methods

The ER data was converted into a resistivity depth model using Rapid 2D resistivity inversion model and the least-squares method (RES2DINV). Soundings from each line were modeled to produce the measured apparent resistivity pseudo-sections. The model calculated the apparent resistivity pseudo-sections using finite-difference forward modeling. The least-squares optimization technique was used for the inversion routine that calculated the modeled resistivity section. The profiles include cross-sections that consist of the inverse model resistivity cross-section. The horizontal and vertical scales are in feet.

The cross-section is the inverse model resistivity pseudo-section. The ER data was converted into a resistivity depth model (RES2DINV) using a resistivity inversion model by the least-squares method and is topographically corrected. The ground surface elevations were determined by interpolating between contours interpreting contours from a Marsh and Legge plat. RES2DINV confirms the model reliability by calculating the modeled data into empirical data or the calculated resistivity pseudo-section. The difference between the measured and calculated data is the root mean square percent error. The modeled calculated mean root square error was approximately 10 rms error which is considered accurate.

Low resistive materials can be caused by certain conductive soils such as clay. High resistive materials are caused generally by bedrock, sand, wood, and air. Low ER values represent the thickening overburden. Lower ER anomalies are generally found at saturated or semi-saturated sinkholes, or fractures in the rock.

Typical resistivities of the overburden (clay) are approximately 100 ohm meters (blue). Limestone resistivities typically range from 200 (green) to 5,000 (red) ohm meters. Saturated zone/mud-filled void resistivities typically measure approximately less than 50 ohm meters (dark blue), and less dense or soft zone areas that can cause lower blow counts during split-spoon sampling typically measure approximately 1,000 ohm meters (yellow). Air-filled voids typically measure greater than 3,500 ohm meters (red).

4.0 Survey Results

The objective of the ER survey was to locate suspected voids and caverns that may develop into sinkholes. ER cross-sections are provided in Appendix A. The horizontal scale is in feet. The vertical scale is in feet above sea level.

Septic Field Number 401

ER Line 1 indicates one conductive anomaly centered approximately 55 feet West about 20 feet below ground surface. The conductive anomaly appears to be a mud seam. Depth to bedrock appears to be about near ground surface at approximately 60 feet West to about 20 feet below ground surface at approximately 140 feet East.

ER Line 2 indicates depth to bedrock appears to be about near ground surface at approximately 15 feet West to about 10 feet below ground surface at approximately 160 feet West.

Septic Field Number 501

ER Line 3 indicates one resistive anomaly centered approximately 150 feet West about near ground surface. The anomaly appears to be limestone float. Depth to bedrock appears to be about near ground surface at approximately 205 feet West to about 40 feet below ground surface at approximately 60 feet West.

ER Line 4 indicates one conductive anomaly centered approximately 50 feet West about 15 feet below ground surface. The conductive anomaly appears to be a mud seam. Depth to bedrock appears to be about near ground surface at approximately 50 feet East to about 10 feet below ground surface at approximately 120 feet West.

The geophysical survey indicated one major karst feature approximately 40 feet west of Septic Field number 1. The major karst feature appears to be a solution channel.

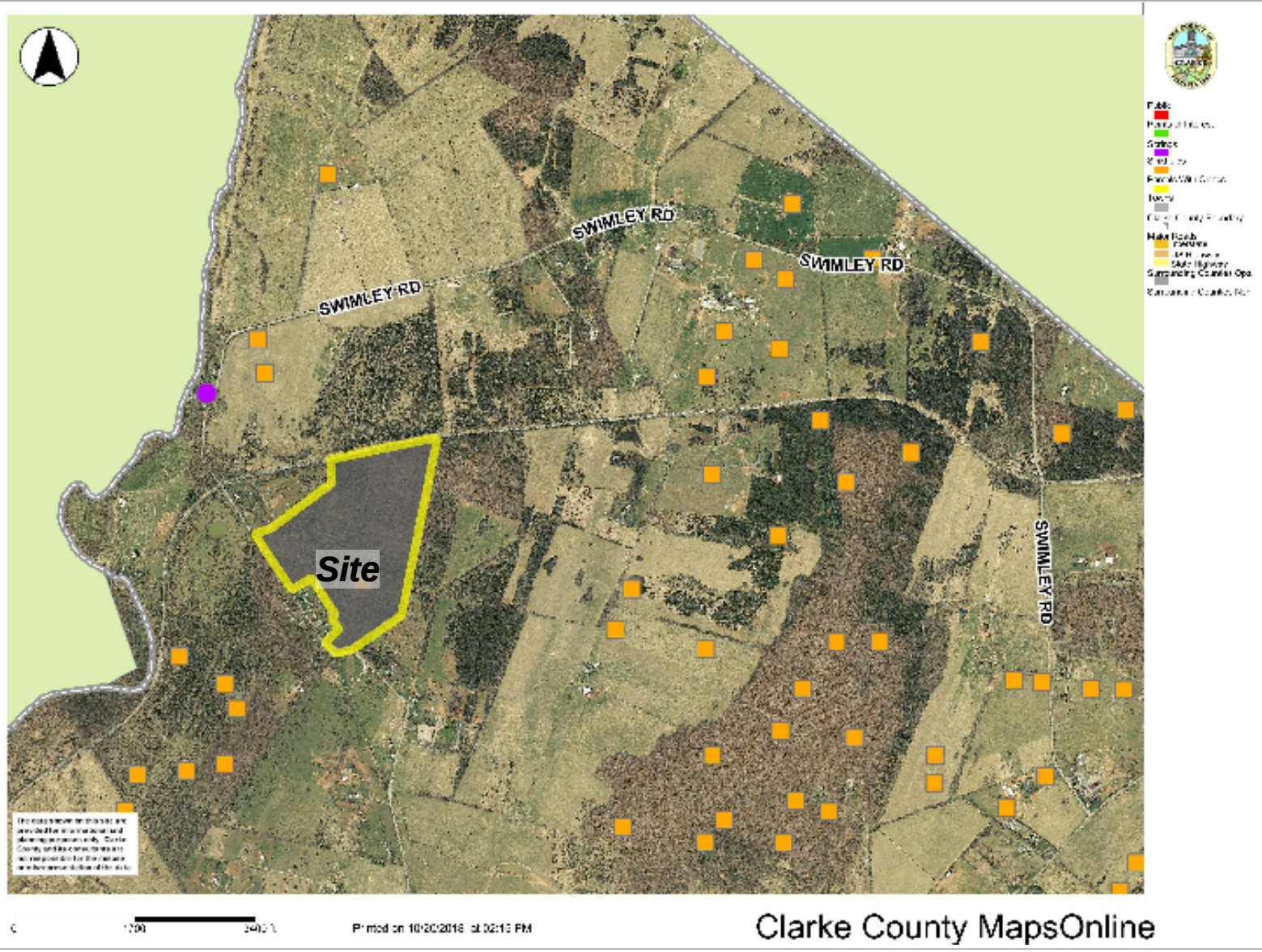
The geophysical survey indicated minor karst features within the western section of septic field 501. The minor karst feature appears to be limestone float.

The geophysical survey indicated one major karst feature about 60 feet east of septic field 401 and 60 feet east of septic field 501. The major karst features appear to be mud seams.

The ER survey indicated depth to bedrock is approximately 10 feet to 20 feet below ground surface within the proposed septic field.

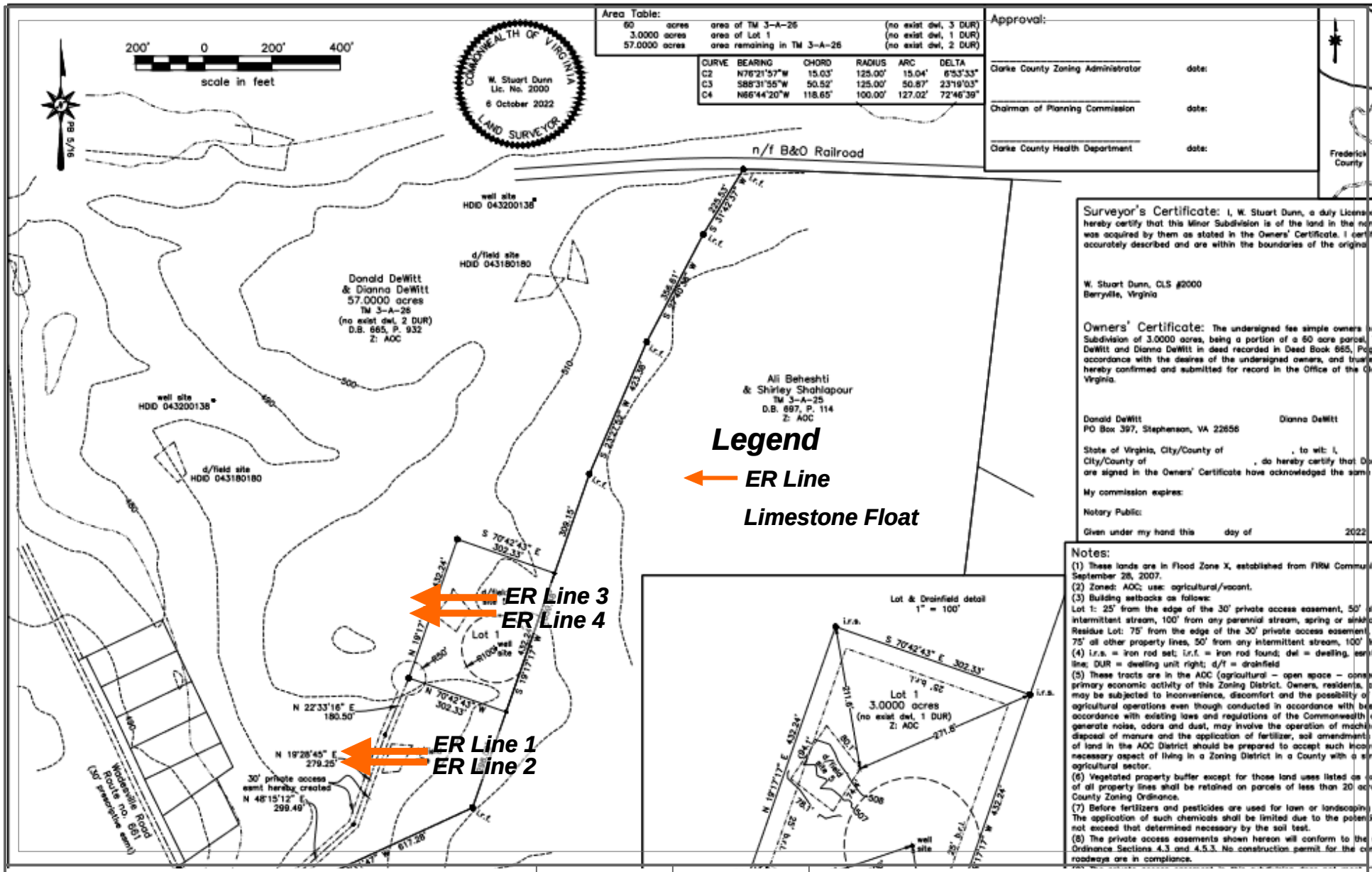
The geophysical survey indicated no groundwater-threatening karst-related structures beneath and 50 feet from the proposed septic fields and has a low risk in collapse or groundwater contamination.

Photo 1 - ER Line 1



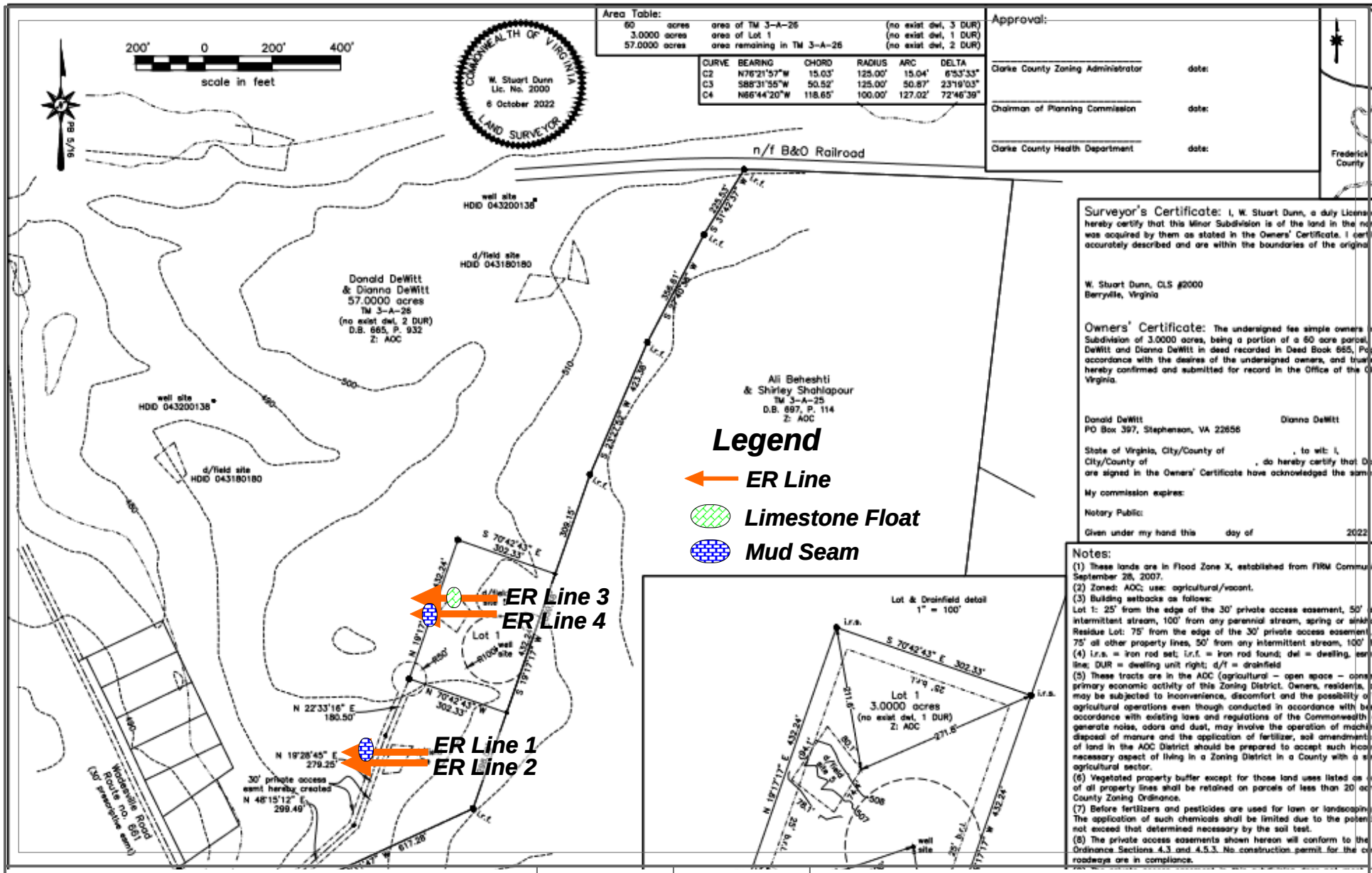
Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: October 2022	SCALE: shown	TITLE: ***Geophysical Area Map***	
DRAWN BY:	APPROVED BY:	***Tax Map 3 A 26***	
JOB NO.: 22169	DWG. NO./ REV. NO.: D3A26F1	***Wadesville Road***	
CLIENT: DeWitt		***Berryville, Virginia***	FIGURE: **1**



Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: June 2022	SCALE: 1 inch ~ 200 ft.	TITLE: **Geophysical Site Map** **Tax Map 3 A 26** **Wadesville Road** **Berryville, Virginia**	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22169	DWG. NO./ REV. NO.: D3A26F2	CLIENT: DeWitt	FIGURE: **2**



Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

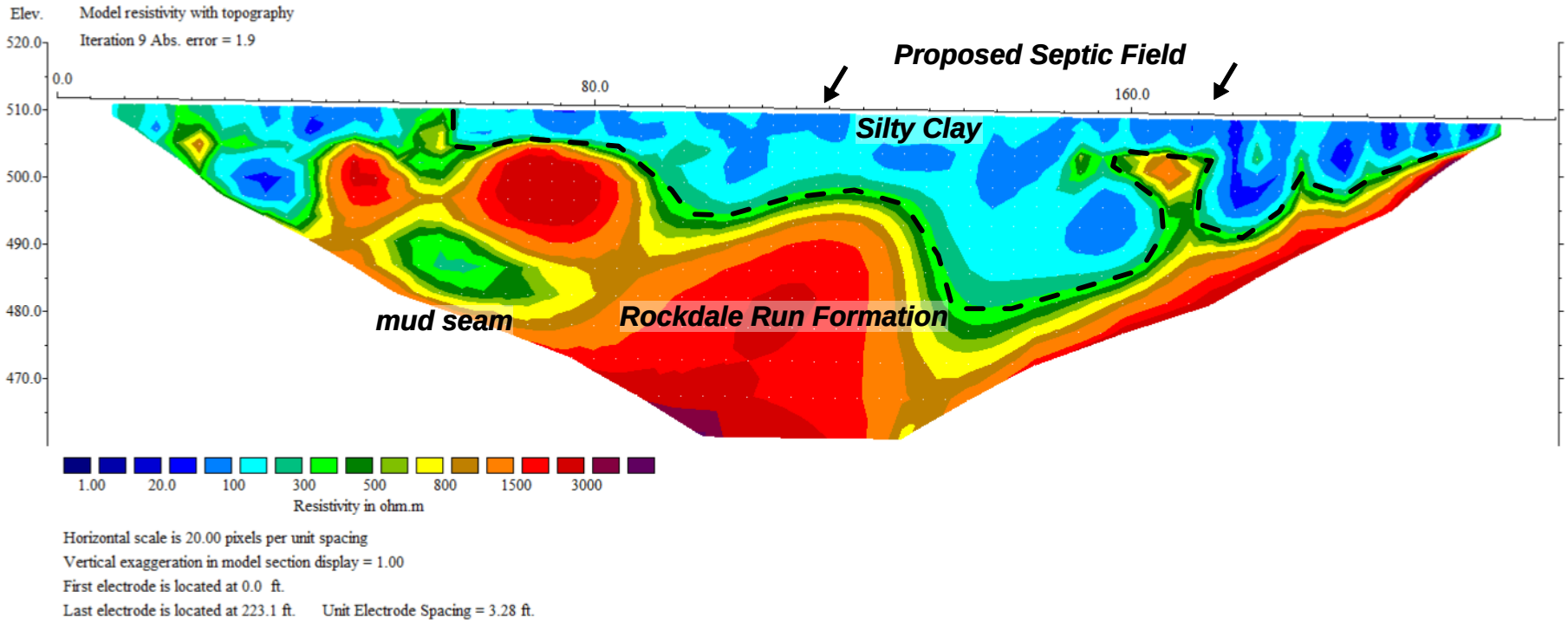
DATE	SCALE	TITLE
June 2022	1 inch ~ 200 ft.	**Geophysical Anomaly Map** **Tax Map 3 A 26** **Wadesville Road** **Berryville, Virginia**
DRAWN BY	APPROVED BY	
JOB NO. 22169	DWG. NO./ REV. NO. D3A26-2	CLIENT DeWitt
		FIGURE **3**

Appendix A

ER Cross-Sections
1 through 4

East **West**

Sting/Swift prg: D3A26E



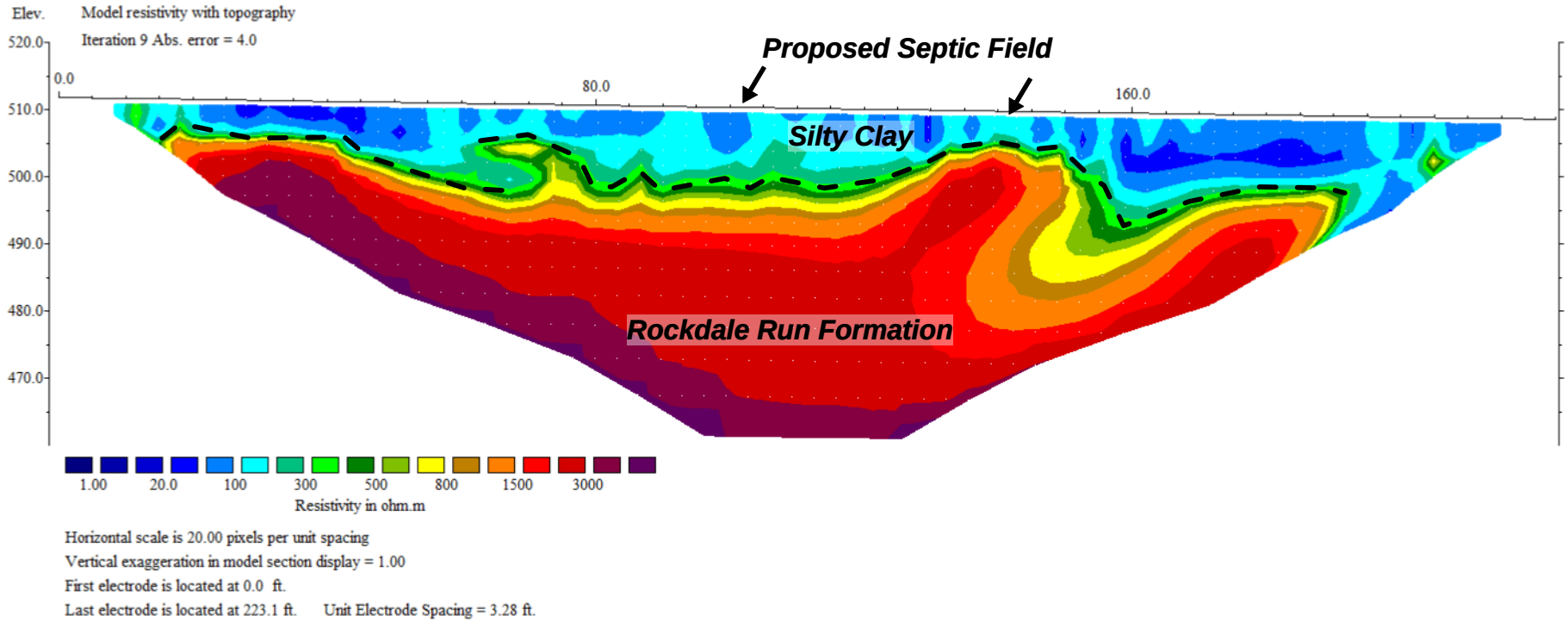
Horizontal scale is 20.00 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 0.0 ft.
Last electrode is located at 223.1 ft. Unit Electrode Spacing = 3.28 ft.

Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: June 2022	SCALE: shown	TITLE: ***ER Line 1 - Site 401 Tax Map 3 A 26 Wadesville Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22169	DWG. NO./ REV. NO.: D3A26-1	CLIENT: DeWitt	FIGURE:

East **West**

Sting/Swift prg: D3A26F

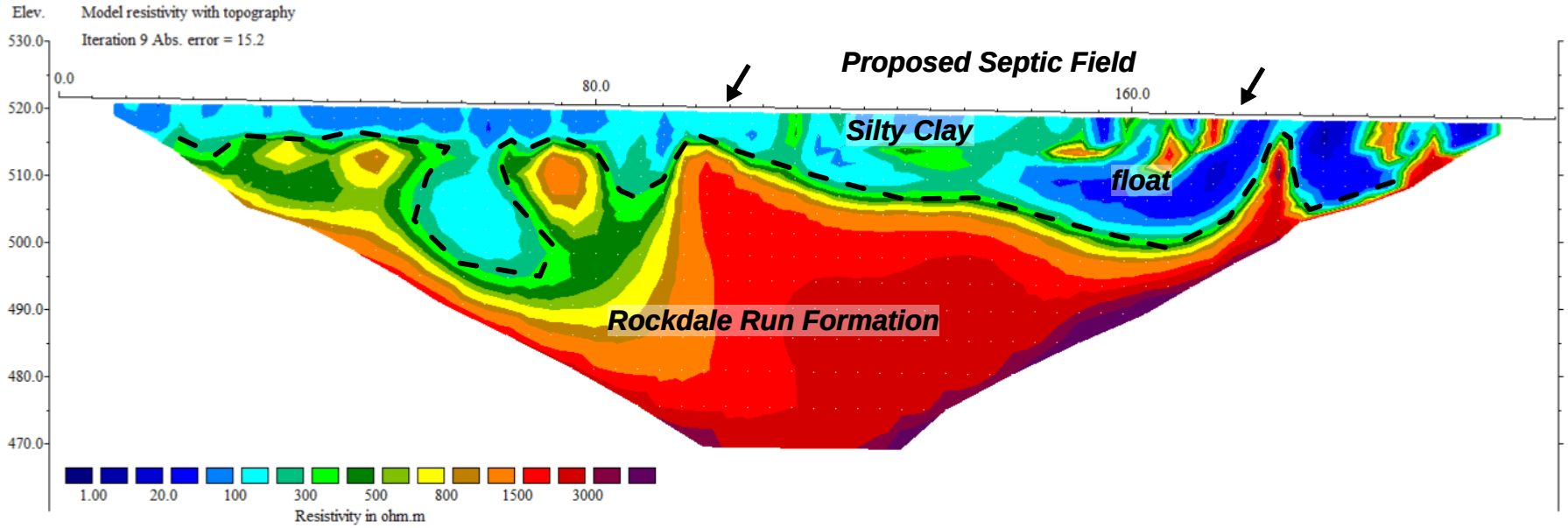


Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: June 2022	SCALE: shown	TITLE: ***ER Line 2 - Site 401 Tax Map 3 A 26 Wadesville Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22169	DWG. NO./ REV. NO.: D3A26-2	CLIENT: DeWitt	FIGURE:

East **West**

Sting/Swift prg: D3A26C



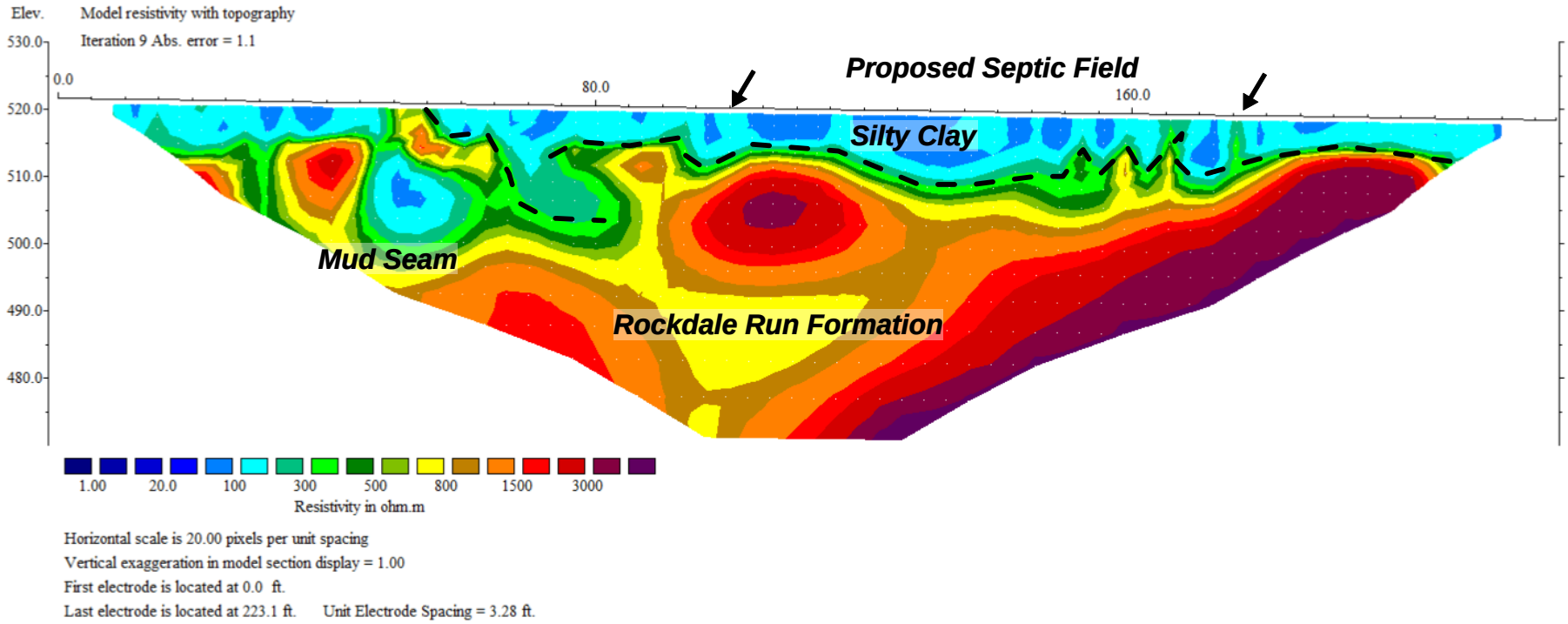
Horizontal scale is 20.00 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 0.0 ft.
Last electrode is located at 223.1 ft. Unit Electrode Spacing = 3.28 ft.

Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: June 2022	SCALE: shown	TITLE: ***ER Line 3 - Site 501 Tax Map 3 A 26 Wadesville Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22169	DWG. NO./ REV. NO.: D3A26-3	CLIENT: DeWitt	FIGURE:

East **West**

Sting/Swift prg: D3A26D



Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE	SCALE	TITLE
June 2022	shown	***ER Line 4 - Site 501***
DRAWN BY	APPROVED BY	***Tax Map 3 A 26***
		Wadesville Road
JOB NO.	DWG. NO./ REV. NO.	***Berryville, Virginia***
22169	D3A26-4	CLIENT: DeWitt

FIGURE

CTL Engineering of WV, Inc.
1091 Chaplin Rd., Morgantown, WV 26508
Phone: 304-292-1135
www.ctleng.com

November 11, 2022

Brandon Stidham, Director of Planning
Clarke County Va.
101 Chalmers Court, Suite B
Berryville, VA 22611

Re: Review of Geophysical Survey Report, Dewitt Property
Tax Map Number 3 A 26, Wadesville Road
Berryville, Virginia
CTL Project No. 22050035MORR

Dear Mr. Stidham,

This letter report is in response to your request for CTL to review the above referenced Geophysical Report submitted to your office to determine if it meets the intent of the recently updated and adopted Clarke County Septic Ordinance (Ordinance) dated December 21, 2021. Please note that CTL did not perform any field verification of the data in the provided report.

Report Reviewed: *Geophysical Survey, Proposed Septic Fields, Dewitt Property*
Tax Map Number 3 A 26, Wadesville Road, Berryville, Virginia

The Ordinance requires that the geophysical survey report include requirements that are listed below. In addition, we have provided our professional opinion whether the report meets these requirements:

Dipole-dipole electrical resistivity survey	***Minimum Requirement Compliance***
• Two lines each area	Yes
• Perpendicular to strike	Yes
• Minimum depth of 20 feet at edges	Yes
• Minimum 200 soundings	Yes
• Minimum 40 feet depth	Yes

Report	***Minimum Requirement Compliance***
• Directional orientation and plan maps	Yes
• Color profiles identifying hazards, consistent color scale, treatment area indicated	Yes
• Amount of Overburden	Yes
• Elevations	Yes

Report	***Minimum Requirement Compliance***
• Geologic structure	Yes
• Low, moderate, high risk	Yes, Low
• Other	N/A

The geophysical survey report included four electrical resistivity lines across the 2 proposed septic fields:

Septic field 401encountered depths to bedrock appear to be 20 feet below the ground surface to approximately 60 feet below the ground surface. Resistive anomalies within the drain field were interpreted as mud seams below ground surface and presents no potential for impact.

Septic field 501 encountered depths to bedrock appear to be 10 feet below the ground surface to approximately 50 feet below the ground surface. Resistive anomalies within the drain field were interpreted as limestone float and mud seams below ground surface and presents no potential for impact.

The geophysical survey indicated one major karst feature about 60 feet east of septic field 401 and 60 feet east of septic field 501. The major karst features appear to be mud seams. Based on the limestone geology and our experience in the area, the interpretation is credible. Also, in accordance with the County Ordinance, the report indicated no limestone outcrops were observed within 10 feet horizontal distance from the proposed fields. There is no presence of open channels or conduits into the deeper deposits. The mud seams contain high density clays and will prevent the intrusion of flows. **The geophysical survey report reviewed meets the intent of the County Ordinance and general industry practice.**

We hold our opinions to a reasonable degree of scientific certainty and/or probability, and we also reserve the right to modify this report based upon receipt of new information that differs from that used in preparing this report. We appreciate the opportunity to be of service and if you have any questions, please contact us.

Respectfully submitted,

Patrick E. Gallagher, PE, PS, CPGS
Project Consultant

CK Satyapriya, PE
Technical Reviewer

Clarke County Planning Department
101 Chalmers Court, Suite B
Berryville, Virginia 22611
(540) 955-5132
www.clarkecounty.gov

November 17, 2022

Ms. Dianna DeWitt
PO Box 396
Stephenson, VA 22656

RE: Resistivity Test
Tax Map# 3-A-26; Wadesville Road in Berryville, VA

A resistivity test was conducted on the property described above, and a report generated by Forrest Environmental Services, Inc. in September 2022 defined as Project Number 22169. The test results were sent to CTL Engineering, Inc. for review.

Based on the engineer's report and CTL Engineering's review (Project 22050035MORR) dated November 11, 2022, this site passes the resistivity test, and if all other requirements are met, may be issued a permit by the Health Department.

If you have any questions or concerns regarding this information, please call the Planning Department at (540) 955-5132.

Sincerely,

Kristina Maddox
Clarke County Office Manager / Zoning Officer

c. Clarke County Health Department

LORD FAIRFAX HEALTH DISTRICT

Lord Fairfax Health District

Clarke County Health Department
100 North Buckmarsh Street
Berryville, Virginia 22611
Tel. (540) 955-1033 ~ Fax (540) 955-4094
www.vdh.virginia.gov

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

November 18, 222

Jeremy F. Camp
Senior Planner / Zoning Administrator
101 Chalmers Ct
Berryville, Virginia 22611

RE: MINOR SUBDIVISION PRELIMINARY REVIEW COMMENTS

Applicant Name:	Dianna DeWitt
Health Department I.D. #:	043-22-194
Subdivision Name:	DeWitt Minor Subdivision
Tax Map #:	3-A-26
Proposed Lots:	2

Dear Mr. Camp,

Pursuant to your request, we have evaluated the aforementioned minor subdivision proposal, and offer the following comments at this point in the review process.

OWNER/APPLICANT ITEMS:

1. The proposed Residue Lot (57.0000 acres) has 3 drainfield sites.

    a. A Certification Letter for "Site 1" was issued on November 28, 2018. "Site 1" was approved for a Conventional Onsite Sewage System (COSS) with an alternative drip 100% reserve area for a 4 bedroom dwelling, 600 gallons per day, and 8 maximum occupants.

    b. A Construction Permit for "Site 2" was issued on August 5, 2022. "Site 2" is approved for an alternative drip dispersal system with a 100% reserve area for a 3-bedroom dwelling, 450 gallons per day, 6 maximum occupants. A well was drilled on March 2, 2021 near "Site 2".

    c. The project OSE located proposed "Site 4" that could accommodate an Alternative Onsite Sewage System (AOSS) for a 3-bedroom dwelling, 450 gallons per day, 6 maximum occupants. This department field reviewed the site and soils on March 30, 2022 and it appeared to be suitable for an alternative shallow trench. The applicant has not yet applied for a Certification Letter for "Site 4". A

geophysical survey of "Site 4" was completed and approved by the county.

2. Proposed Lot 1 (3.0000 acres) is vacant. The project OSE has located an area ("Site 5") that could accommodate an Alternative Onsite Sewage System (AOSS) for a three bedroom dwelling, 450 gallons per day, 6 maximum occupants and a 100% alternative drip dispersal reserve area. Site and soils were field reviewed by this department and appeared to be suitable for an alternative shallow trench system. A geophysical survey of "Site 5" has been completed and approved by the county. The applicant has not yet applied for a certification letter for "Site 5".

This letter does not serve as an approval of the proposed subdivision, or its parts. If you have any questions, please contact me at 540.955.1033

Sincerely,

Carter L. Neiswander

Carter Neiswander, EHS

200' 0 200' 400'

scale in feet

PB 5/16

COMMONWEALTH OF VIRGINIA
W. Stuart Dunn
Lic. No. 2000
21 November 2022
LAND SURVEYOR

Area Table:

60 acres	area of TM 3–A–26	(no exist dwl, 3 DUR)
3.0000 acres	area of Lot 1	(no exist dwl, 1 DUR)
57.0000 acres	area remaining in TM 3–A–26	(no exist dwl, 2 DUR)

CURVE	BEARING	CHORD	RADIUS	ARC	DELTA
C2	N76°21'57"W	15.03'	125.00'	15.04'	6°53'33"
C3	S88°31'55"W	50.52'	125.00'	50.87'	23°19'03"
C4	N66°44'20"W	118.65'	100.00'	127.02'	72°46'39"

n/f B&O Railroad

well site HDID 043200138

d/field site HDID 043180180

Donald DeWitt
& Dianna DeWitt
57.0000 acres
TM 3–A–26
(no exist dwl, 2 DUR)
D.B. 665, P. 932
Z: AOC

Ali Beheshti
& Shirley Shahlapour
TM 3–A–25
D.B. 697, P. 114
Z: AOC

S 31°42'37" W 225.53' i.r.f.
S 27°40'58" W 356.61' i.r.f.
S 23°27'52" W 423.38' i.r.f.
309.15'
S 70°42'43" E 302.33'
1039.48'
S 19°17'17" W 432.24'
N 19°17'17" E 432.24'
R50'
R100'
well site
d/field site 5
Lot 1
N 70°42'43" W 302.33'
298.09'
i.r.f.
S 65°11'47" W 617.28'
N 22°33'16" E 180.50'
N 19°28'45" E 279.25'
d/field site 4
30' private access esmt hereby created
N 48°15'12" E 299.49'
Wadesville Road
Route no. 661
(30' prescriptive esmt)
N 30°21'00" W 117.06'
i.r.f.
S 17°08'24" W 60.33'
C4
C3
C2
sight–distance esmt hereby created
S 76°52'21" W 52.34'

490
500
510
480

detail
sight–distance esmt
1" = 100'
15.00'
C4
C3
C2

Lot & Drainfield detail
1" = 100'

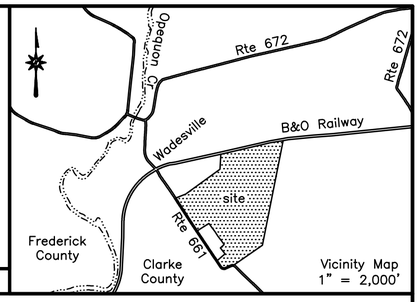
i.r.s.
S 70°42'43" E 302.33'
i.r.s.
211.6'
25' b.r.l.
Lot 1
3.0000 acres
(no exist dwl, 1 DUR)
Z: AOC
271.8'
94.1'
80.1'
d/field site 5
78.1'
508
507
N 19°17'17" E 432.24'
25' b.r.l.
25' b.r.l.
well site
i.r.s.
269.5'
R100'
188.5'
i.r.s.
N 70°42'43" W 302.33'
i.r.s.
168.9'
292.2'
61.4'
494
496
493
89.6'
85.8'
49.8'
d/field site

Approval:

_____
Clarke County Zoning Administrator date:

_____
Chairman of Planning Commission date:

_____
Clarke County Health Department date:



Surveyor's Certificate: I, W. Stuart Dunn, a duly Licensed Land Surveyor in the State of Virginia, do hereby certify that this Minor Subdivision is of the land in the name of Donald DeWitt and Dianna DeWitt, and was acquired by them as stated in the Owners' Certificate. I certify that these parcels of land are properly and accurately described and are within the boundaries of the original tracts.

W. Stuart Dunn, CLS #2000
Berryville, Virginia

Owners' Certificate: The undersigned fee simple owners hereby certify that the foregoing Minor Subdivision of 3.0000 acres, being a portion of a 60 acre parcel, TM 3–A–26, recorded in the name of Donald DeWitt and Dianna DeWitt in deed recorded in Deed Book 665, Page 932, is made with the free consent and in accordance with the desires of the undersigned owners, and trustees, if any, of said land and the same is hereby confirmed and submitted for record in the Office of the Clerk of the Circuit Court of Clarke County, Virginia.

Donald DeWitt Dianna DeWitt
PO Box 397, Stephenson, VA 22656

State of Virginia, City/County of , to wit: I, , a Notary Public for said City/County of , do hereby certify that Donald DeWitt and Dianna DeWitt, whose names are signed in the Owners' Certificate have acknowledged the same before me.

My commission expires:

Notary Public:

Given under my hand this day of 2022

Notes:

(1) These lands are in Flood Zone X, established from FIRM Community Panels no. 51043C0035D, effective September 28, 2007.
(2) Zoned: AOC; use: agricultural/vacant.
(3) Building setbacks as follows:
Lot 1: 25' from the edge of the 30' private access easement, 50' all other property lines, 50' from any intermittent stream, 100' from any perennial stream, spring or sinkhole
Residue Lot: 75' from the edge of the 30' private access easement, 100' from the centerline of Route no. 661, 75' all other property lines, 50' from any intermittent stream, 100' from any perennial stream, spring or sinkhole
(4) i.r.s. = iron rod set; i.r.f. = iron rod found; dwl = dwelling, esmt = easement; b.r.l. = building restriction line; DUR = dwelling unit right; d/f = drainfield
(5) These tracts are in the AOC (agricultural – open space – conservation) zoning district. Agriculture is the primary economic activity of this Zoning District. Owners, residents, other users of property in the AOC district may be subjected to inconvenience, discomfort and the possibility of injury to property and health arising from agricultural operations even though conducted in accordance with best management practices and/or in accordance with existing laws and regulations of the Commonwealth and County. Such agricultural operations may generate noise, odors and dust, may involve the operation of machinery, including aircraft, the storage and disposal of manure and the application of fertilizer, soil amendments and pesticides. Owners, occupants and users of land in the AOC District should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in a Zoning District in a County with a strong rural character and an active agricultural sector.
(6) Vegetated property buffer except for those land uses listed as exempt, existing woody vegetation within 25' of all property lines shall be retained on parcels of less than 20 acres, as per Section 4–1–1 of the Clarke County Zoning Ordinance.
(7) Before fertilizers and pesticides are used for lawn or landscaping purposes, a soil test should be conducted. The application of such chemicals shall be limited due to the potential for groundwater contamination and should not exceed that determined necessary by the soil test.
(8) The private access easements shown hereon will conform to the requirements of the Clarke County Subdivision Ordinance Sections 4.3 and 4.5.3. No construction permit for the construction of dwellings will be issued until the roadways are in compliance.
(9) The private access easement in this subdivision does not meet the standards necessary for inclusion in the system of State highways and will not be maintained by VDOT or Clarke County and is not eligible for rural addition funds appropriated by the Virginia General Assembly and allocated by the Commonwealth Transportation Board.
(10) The drainfield site for Lot 1 has been approved by the Clarke County Health Department for a 4 bedroom Alternative Onsite Sewage System with a maximum capacity of 8 people and 600 gpd.
(11) This plat of Minor Subdivision shall be recorded within 6 months of date of approval or it shall become null and void.
(12) The construction and maintenance of the sight–distance easement shown hereon will not be the responsibility of the Virginia Department of Transportation or of County of Clarke, Virginia. The owners/developers must record a Deed of Easement concurrently with this Subdivision plat. Said deed will establish the responsibility of maintenance of both the Private Access Easement and the Sight–Distance Easement.

Minor Subdivision of the Land of
Donald DeWitt and Dianna DeWitt

Deed Book 665, Page 932
Tax Map 3–A–26
Longmarsh Magisterial District, Clarke County, Virginia

Dunn Land Surveys, Inc.
106 North Church Street
Berryville, Virginia 22611
Tel: 540–955–3388

6 October 2022
rev 16 November 2022
rev 21 November 2022

survey no. 1064_26

MINOR SUBDIVISION & MAXIMUM LOT SIZE EXCEPTION (MS-22-10/MLSE-22-02)
December 2, 2022 Planning Commission Meeting
STAFF REPORT -- Department of Planning

The purpose of this staff report is to provide information to the Planning Commission to assist them in reviewing this proposed minor subdivision and maximum lot size exception. It may also be useful to members of the general public.

CASE SUMMARY:

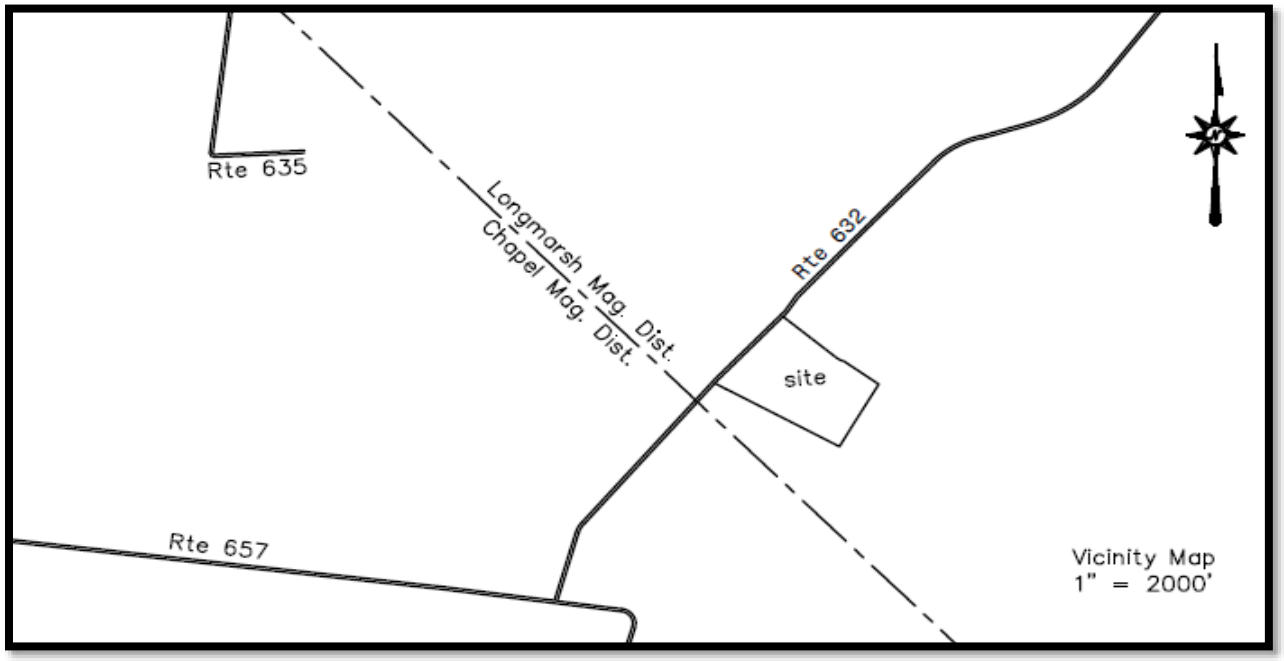
Applicant(s)
Timothy Tumblin, Sr., Successor Executor for Larrie P. McDonald Estate

Location:
- Tax Map Parcels #13-A-23
- The existing site is located on the east side of Triple J Road, approximately 6/10 of a mile north of Senseny Road (Route 657). The existing houses on the property are addressed as 1745 and 1691 Triple J Road.
- Russell Election District (George L. Ohrstrom, II & Pearce Hunt)
- AOC (Agricultural-Open Space-Conservation) Zoning District

Request:
The application proposes to create 1 new lot from the existing parcel, resulting in 2 lots. The subdivision would place each of the existing two dwellings on a separate lot. The application includes a request for an exception to the maximum lot size, based on the criteria that a pre-1980 dwelling is located on the property.

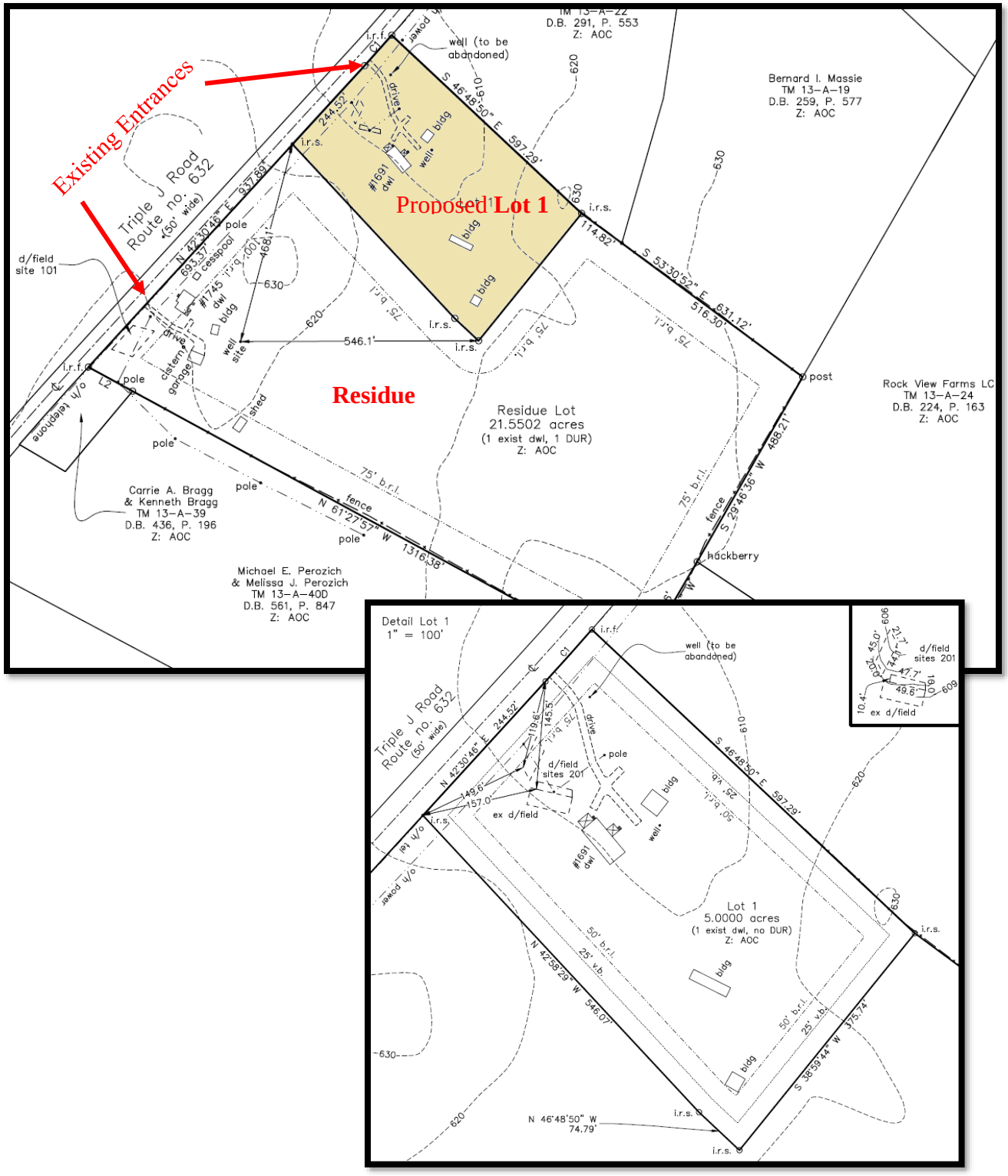
Original Lot:	**Proposed Lots:**
26.5502 acres (13-A-23) – 2 dwellings, 1 DUR	21.5502 acres (13-A-23) – 1 dwelling, 1 DUR 5.0000 acres (New Lot 1) – 1 dwelling, 0 DUR
---	---
26.5502 acres	*26.5502 acres*

Vicinity Map:



Staff Discussion/Analysis:

Access:
The subdivision does not propose any new access to the property. The two existing driveways used for the two existing dwellings would remain as they are.



AERIAL OF PROPERTY

VDOT was forwarded the application on November 7, 2022. VDOT contacted Staff by phone on November 21, 2022 and reported no issues with it.

Water and Sewage Disposal:
Currently, the existing house on the Residue Lot (1745 Triple J Road, cerca 1960) is served by a cesspool and cistern. The applicant's OSE has located a new drainfield site with a 100% reserve area to accommodate up to 3-bedrooms, 450 gallons per day, and 6 full time occupants. The system would be a shallow drip dispersal system. The County's real estate data indicates that the current dwelling has 2 bedrooms. The new site was field reviewed by VDH on July 6, 2022. A new well site was also identified by the OSE.

The existing house on Lot 1 (1691 Triple J Road, cerca 1998) is served with a conventional onsite sewage disposal system that was permitted and installed in 1965. It was designed to accommodate a 2-bedroom dwelling. No reserve was required at the time the dwelling was constructed. The applicant's OSE has located a 100% reserve area that would accommodate the existing 2-bedroom dwelling with up to 4 full time occupants. The site and soils were evaluated in the field by VDH on July 6, 2022.

VDH was forwarded the application on November 7, 2022 and provided comments on November 15, 2022. No issues were reported in their comments. It was recommended to the applicants that they properly abandon the existing cesspool and cistern. The applicant will need to follow-up with VDH to obtain permits prior to construction of the onsite septic disposal systems or wells.

Karst Plan / Resistivity Test:
A resistivity report and resistivity review fee was submitted for review on November 9, 2022 by the applicants. Approval was granted on November 21, 2022.

Staff Review Comments:
The applicant's surveyor revised the plat to correct an error identified by Staff. The revised plat was submitted on November 16, 2022.

The applicant paid the MLSE application fee of $1,500 on November 21, 2022 since it was not submitted with the initial application.

The proposed maximum lot size exception appears to qualify for approval based on the pre-1980 dwelling criteria found under Section 6.2.6C-1a of the Clarke County Zoning Ordinance. The house addressed as 1745 Triple J Road is listed by County records as a dwelling constructed in 1960.

Subject to approval of the MLSE, this proposed minor subdivision meets the AOC district requirements of Section 4.1.1 of the Zoning Ordinance, and the minor subdivision/plat requirements of Sections 3.2 and 4.1 of the Subdivision Ordinance.

Recommendation:
Staff recommends approval of the minor subdivision application (MS-22-12), and the maximum lot size exception (MLSE-22-02), for the division of Tax Map #13-A-23 into two lots.

History:

November 4, 2022	Subdivision application fee paid.
November 7, 2022	Submitted to VDOT and VDH for review.
November 9, 2022	Resistivity application submitted and fee paid.
November 15, 2022	VDH comments received.
November 16, 2022	Revised plat submitted.
November 29, 2022	Scheduled date for Planning Commission Worksession.
December 2, 2022	Scheduled date for Planning Commission Business Meeting.

LAND DEVELOPMENT APPLICATION

General Information

Date: 1 November 2022	Tax Map #: 13-A-23
Zoning District: AOC	Lot Size: 26.5502 acres
Site Address: 1691 & 1745 Triple J Road, Berryville VA 22611	
Property Owner's Name: Timothy Tumblin, Sr, Successor Executor for Iarrie P. McDonald Estate	
Property Owner's Mailing Address: 4624 Summit Point Road, Charles Town WV 25414	
Applicant's Name: *(if different than owner)* same	
Applicant's Mailing Address: *(if different than owner)*	
Phone: 571-233-0932	Email: tumblins@frontier.net.net

Application Type

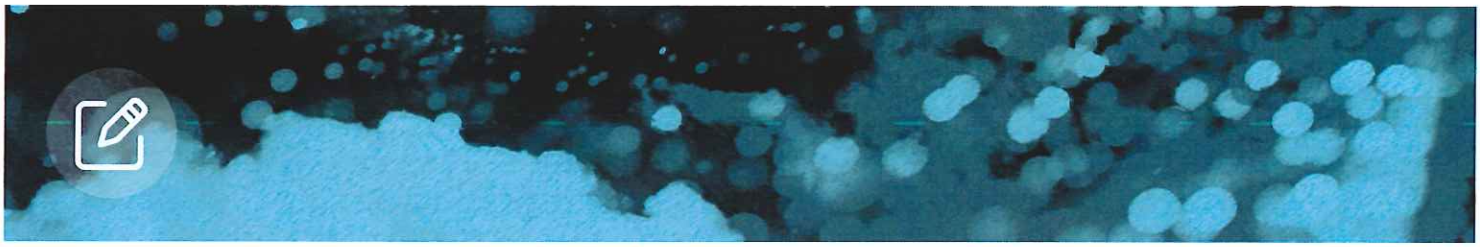
Site Plan	○	Major Subdivision	○
Administrative Site Plan	○	Minor Subdivision	◉
Rezoning	○	Boundary Line Adjustment	○
Special Use Permit	○	Lot Consolidation / Merger	○
Karst Plan	○	Administrative Subdivision (>100 acre parcels)	○
Zoning Ordinance Text Amendment	○	Subdivision Ordinance Text Amendment	○
Other: ○			

Application Details

Name of Project or Subdivision: Iarrie P McDonald Estate Division

Existing Use(s): residential/agricultural

Proposed Use(s): residential/agricultural



Additional Details

Description of the proposed development or subdivision:

Creating a new parcel of 5.0000 acres through the Minor Subdivision and Maximum Lot Size process

Number of Existing Lots: 1

Number of Proposed Lots (proposed and residual): 2

Are you requesting any exemptions, such to the maximum average lot size?

If yes, describe the justification for such request.

One pre-1980 dwelling exists on site

Check all that apply:

Conservation Easement	○	Floodplain	○
Historic Overlay District	○	Public Water	○
Historic Accessory Corridor	○	Public Sewer	○
Spring Conservation Overlay District	○	Karst Soils	○

Timothy Trimble

Signature of Applicant

4 November 2022

Date

Office Use Only

ACTION TAKEN: _____ ***FEE:*** _____

COMMENTS: _____

_____

_____ _____ _____

Zoning Administrator Date GIS Acct #

Clarke County Government
TREASURERS OFFICE
101 Chalmers Ct
Berryville, VA 22611
(540) 955-5160
Welcome

005297-0015 Juilee C. 11/09/2022 10:52AM

PERMITS / INSPECTIONS	
Minor Subdivision - FEE	
2022 Item: MS-22-12|MS	
Balance due: 0.00	
Balance unpaid: 0.00	4,000.00
Resistivity Test - FEE	
2022 Item: RSTV-1017|RSTV	
Balance due: 0.00	
Balance unpaid: 0.00	275.00
	4,275.00
Subtotal	**4,275.00**
Total	**4,275.00**
CHECK	4,275.00
Check Number8917	
Change due	**0.00**

Paid by: TUMBLIN TIMOTHY W AND TERESA L

Thank you for your payment

CUSTOMER COPY

Geophysical Survey
Proposed Septic Fields
1691 and 1745 Triple J Road
Tax Map 13 A 23
Berryville, Virginia

Prepared For:

Mr. Tim Tumblin

4624 Summit Point Road

Charles Town, West Virginia 25414

Prepared By:

Forrest Environmental Services, Inc.

3057 Crosen Court

Oak Hill, Virginia 20171

(703) 648-9090

November 2022

FES Project No. 22197

Table of Contents

List of Figures

List of Appendices

1.0 Introduction

Forrest Environmental Services, Inc. (FES) performed a geophysical survey for the proposed septic fields (Tax Map Number 13-A-23) located on 1691 and 1745 Triple J Road in Berryville, Virginia on the 4th August 2022 (Figure 1). The survey consisted of an electric resistivity (ER) survey to locate potential voids that may develop into sinkholes.

Four electric resistivity lines (ER lines 1 through 4) were conducted at the proposed septic field (Figure 2). The ER survey covered approximately 940 linear feet and approximately 2,800 soundings were collected. The electrode spacing (dipole size) was 2 meters (6.6 feet) and used 35 electrodes for ER lines 1 through 4 for a total distance of 235 feet.

The 1691 and 1745 Triple J Road site is located within the Valley and Ridge Province of Virginia. The site geology includes the Rockdale Run Formation which is a predominately a bluish gray limestone with several distinctive chert zones and algal structures common.

No sinkholes were observed during the survey. Limestone outcrops were observed approximately 35 feet east of the proposed septic field. One stream is located approximately 300 feet east of the proposed septic fields. The closest geologic feature is the Waterloo Syncline located approximately 300 feet west of the proposed septic fields. These features appear not to influence the proposed septic field.

Topographically, the site slopes downhill to the west at the site. The site generally consisted of a grass field. Survey locations and physical features are shown in Figure 2. Details of the geophysical survey are described in the following sections.

2.0 Equipment and Procedures

The geophysical survey instrument used during this survey was an earth resistivity meter that maps the resistivity changes in the earth. Resistivity is a fundamental parameter of the material that describes how easily the material can transmit electrical current. High values of resistivity imply that the material is very resistant to the flow of electricity, and low values of resistivity imply that the material transmits electrical current very easily.

The primary factors affecting the resistivity of earth materials are porosity, water saturation, clay content, and ionic strength of the pore water. The minerals making up soil and rock generally do not readily conduct electric current. Most of the current flow takes place through the material's pore water in which the resistivity decreases with increasing porosity and water saturation. Clay minerals are conductive because of the availability of free ions in the sheet structure of the clay particles in which resistivity decreases with increasing clay content. Similarly, higher salinity in groundwater makes the water more conductive to electrical current and resistivity decreases. Hard competent bedrock, such as limestone or granite, generally has a high resistivity in the absence of fracture or other permeable features.

The geophysical survey instrument used during this survey was a Sting R8 earth resistivity meter (Sting) connected to a Swift automatic electrode system (Swift). The Sting measures the electrical resistivity of the earth and the Swift automates the resistivity measurement process using the multi-electrode system.

The Swift was connected to the Sting and SMART electrodes to optimize survey efficiency by gathering maximum information with a minimum of electrodes. Each SMART electrode is numbered by a computer chip located within the electrode. The Swift selects which electrodes to employ as the current and receiver. For example for this ER survey, the first sounding uses electrodes 1 and 2 as the transmitter and electrodes 3 and 4 as the receiver. The next sounding uses electrodes 2 and 3 as the transmitter and electrodes 4 and 5 as the receiver. The Swift also uses redundancies in the data set to reduce the effects of lateral heterogeneities in the earth and to calculate uncertainties in the data. The survey was conducted automatically using the Sting/Swift dipole-dipole array system.

The earth resistivity meter works by introducing a measured current into the earth through two electrodes; the resultant voltage is then measured across two different electrodes. At the low currents used, the voltage is proportional to the current. The resistivity meter calculates the voltage/current ratio or resistance in ohms. The resistance is then converted to resistivity using an algorithm which is a function of the electrode array configuration. Measured differences in the electrical resistivity of various earth materials are then used to map the geology and character of the soil and rock materials. For example, clays generally have low resistivities and limestones have high resistivities.

A contact resistance test was conducted before the Sting/Swift dipole-dipole survey commenced. The contact resistance test ensures the stake has good contact with the ground. The Sting produces a current between the first two stakes and measures the voltage. The instrument measures the resistance between the first and second stakes and the ground. The contact resistance is also checked for the measurements consistent for all of the 35 electrodes.

The Swift cable resistance checks the voltage difference signal between two electrodes. Four leads of the Swift cable using two electrodes send a current through a 1 ohm resistor in the Swift box. The test is checked before the first ER survey and after the last ER line for each day.

The Swift switch relays test is performed to check the Swift cable is continuous and the relays in the electrodes are working properly. A current is sent through each lead in the Swift cable to make sure the relays are functioning properly and there is no leakage between leads, and to test the relays for sticking. The test is checked before the first ER survey and after the last ER line for each day.

The depth of investigation by Sting is a function of the total distance of the electrode layout was 235 feet. The Sting has an effective analysis depth of approximately 50 feet using a 2-meter (6.6 feet) electrode spacing. This depth is considered sufficient to locate voids and caverns at the proposed septic fields at the 1691 and 1745 Triple J Road site.

3.0 Interpretation Methods

The ER data was converted into a resistivity depth model using Rapid 2D resistivity inversion model and the least-squares method (RES2DINV). Soundings from each line were modeled to produce the measured apparent resistivity pseudo-sections. The model calculated the apparent resistivity pseudo-sections using finite-difference forward modeling. The least-squares optimization technique was used for the inversion routine that calculated the modeled resistivity section. The profiles include cross-sections that consist of the inverse model resistivity cross-section. The horizontal and vertical scales are in feet.

The cross-section is the inverse model resistivity pseudo-section. The ER data was converted into a resistivity depth model (RES2DINV) using a resistivity inversion model by the least-squares method and is topographically corrected. The ground surface elevations were determined by interpolating between contours interpreting contours from a USGS topographic quandrangle map. RES2DINV confirms the model reliability by calculating the modeled data into empirical data or the calculated resistivity pseudo-section. The difference between the measured and calculated data is the root mean square percent error. The modeled calculated mean root square error was approximately less than 10 rms error which is considered accurate.

Low resistive materials can be caused by certain conductive soils such as clay. High resistive materials are caused generally by bedrock, sand, wood, and air. Low ER values represent the thickening overburden. Lower ER anomalies are generally found at saturated or semi-saturated sinkholes, or fractures in the rock.

Typical resistivities of the overburden (clay) are approximately 100 ohm meters (blue). Limestone resistivities typically range from 200 (green) to 5,000 (red) ohm meters. Saturated zone/mud-filled void resistivities typically measure approximately less than 50 ohm meters (dark blue), and less dense or soft zone areas that can cause lower blow counts during split-spoon sampling typically measure approximately 1,000 ohm meters (yellow). Air-filled voids typically measure greater than 3,500 ohm meters (red).

4.0 Survey Results

The objective of the ER survey was to locate suspected voids and caverns that may develop into sinkholes. ER cross-sections are provided in Appendix A. The horizontal scale is in feet. The vertical scale is in feet above sea level.

ER Line 1 indicated one conductive anomaly centered at approximately 30 feet East about 10 feet below ground surface. The conductive anomaly appears to be a mud seam. Depth to bedrock appears to be about near ground surface at approximately 30 feet East to about 30 feet below ground surface at approximately 70 feet East.

ER Line 2 indicated two conductive anomalies centered at approximately 45 feet East and 155 feet East about 10 feet to 15 feet below ground surface. The conductive anomalies appear to be a mud seam and a solution channel, respectively. Depth to bedrock appears to be about near ground surface at approximately 30 feet East to about 20 feet below ground surface at approximately 75 feet East.

ER Line 3 indicated depth to bedrock appears to be about near ground surface at approximately 195 feet East to about 20 feet below ground surface at approximately 70 feet East.

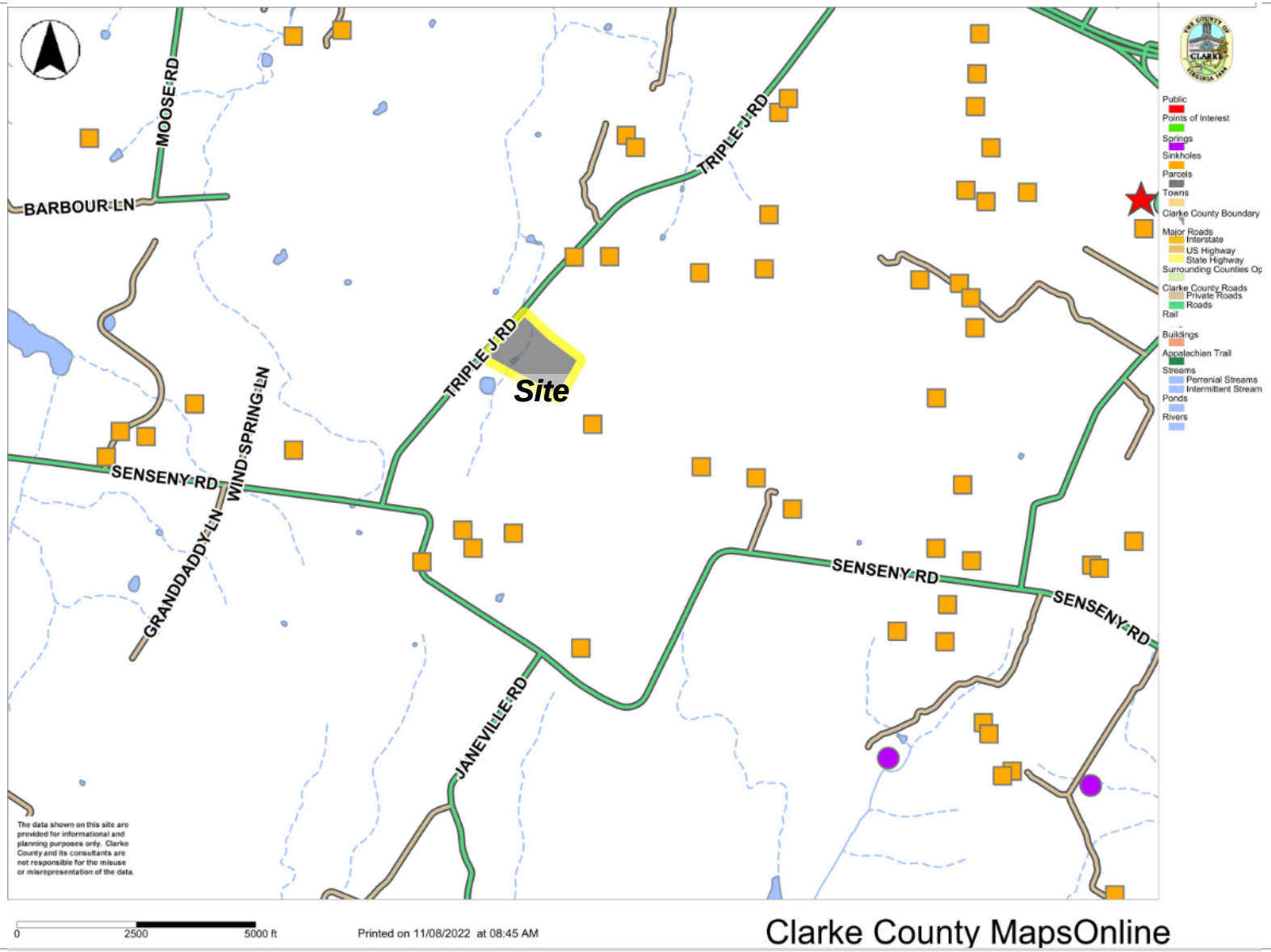
ER Line 4 indicated two resistive anomalies centered at approximately 110 feet East and 115 feet East about near surface and 15 feet below ground surface. The resistive anomalies appear to be limestone float. One conductive anomaly centered at approximately 170 feet East about 20 feet below ground surface. The conductive anomaly appears to be a solution channel. Depth to bedrock appears to be about near ground surface at approximately 150 feet East to about 30 feet below ground surface at approximately 60 feet East.

The geophysical survey indicated one minor karst feature within the proposed septic field at 1745 Triple J Road (Figure 3). The minor karst feature appears to be limestone float.

The geophysical survey indicated one major karst feature at 1745 Triple J Road about 50 feet west of the proposed septic field. The major karst feature appears to be a solution channel.

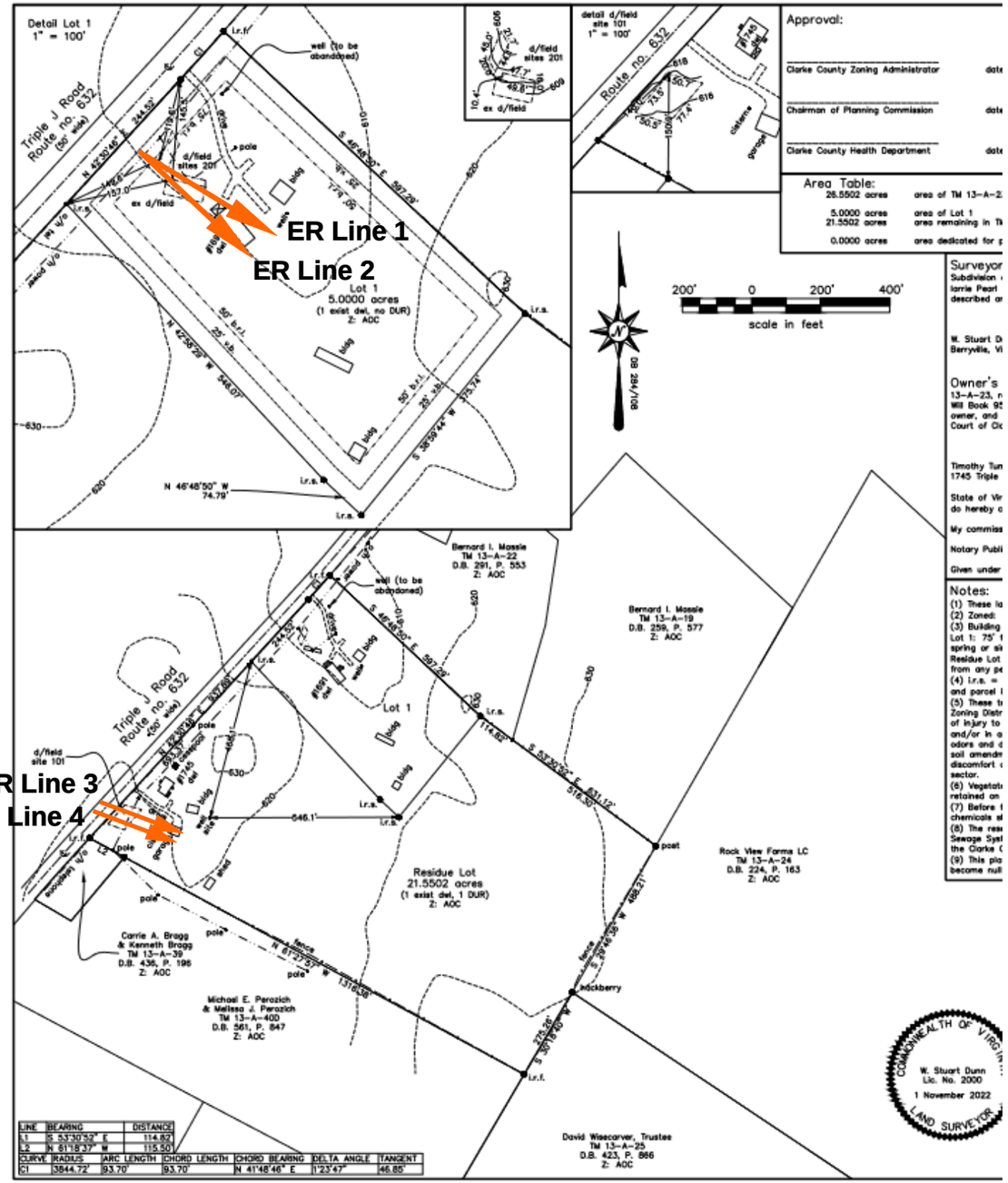
The geophysical survey indicated two major karst features at 1691 Triple J Road about 50 feet east and west of the proposed septic field. The major karst features appear to be a mud seam and a solution channel.

The geophysical survey indicated no major karst features within and/or 50 feet from the proposed septic fields. ER lines 1 through 4 indicate depth to bedrock appears to be approximately 10 feet to 20 feet ground surface within the proposed septic fields. The geophysical survey indicated no groundwater-threatening karst-related structures beneath the proposed septic field and has a low risk in collapse or groundwater contamination.



Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: October 2022	SCALE: shown	TITLE: ***Geophysical Area Map***	
DRAWN BY:	APPROVED BY:	***Tax Map 13 A 23***	
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A32F1	***1745 Triple J Road***	
CLIENT: Tumblin		***Berryville, Virginia***	FIGURE: **1**

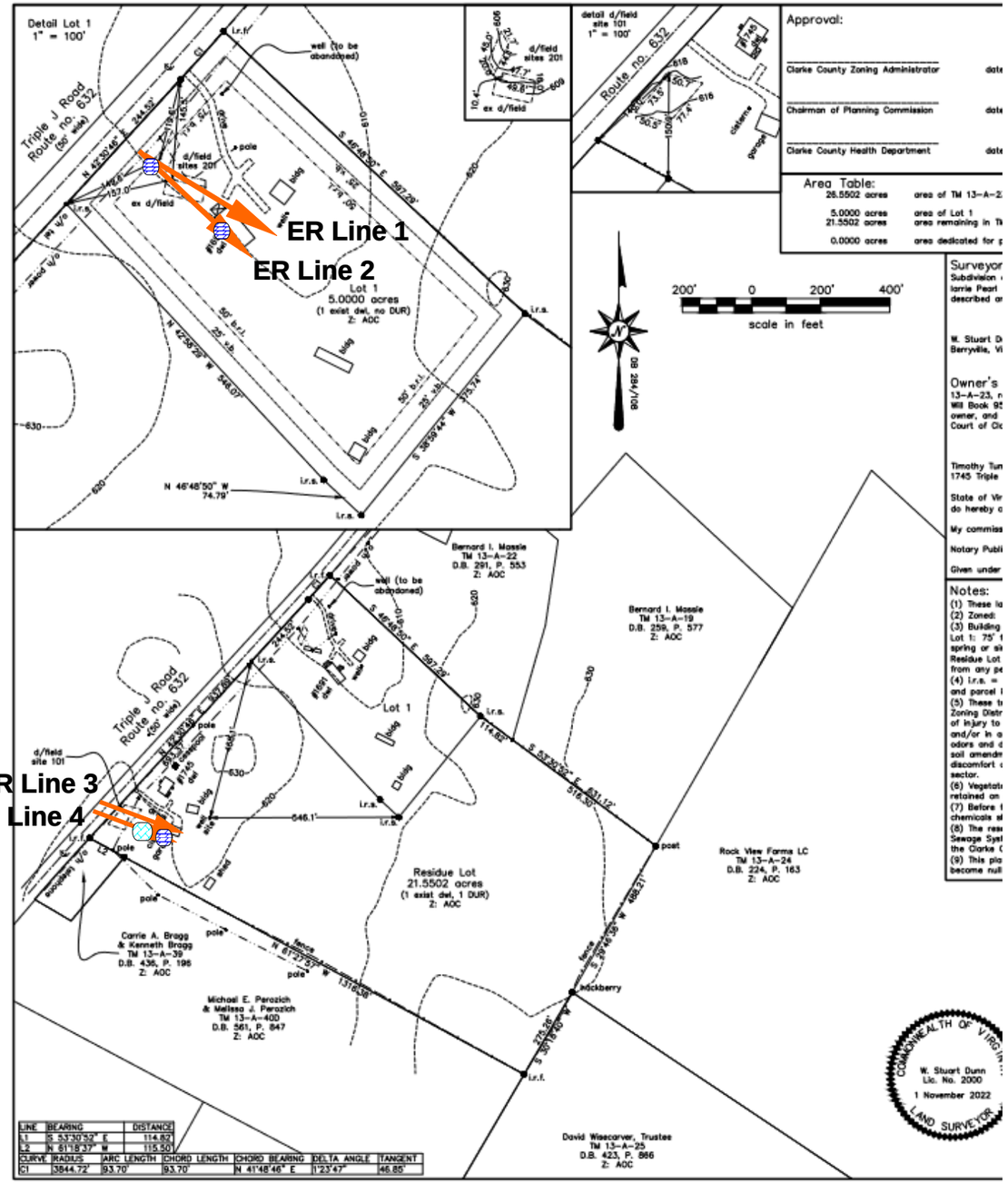


Legend

← **ER Line**

Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: November 2022	SCALE: shown	TITLE: ***Geophysical Site Map***	
DRAWN BY:	APPROVED BY:	***Tax Map 13 A 23***	
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A23F2	***1745 Triple J Road***	
CLIENT: Tumblin	FIGURE: **2**	***Berryville, Virginia***	



Legend

- **ER Line**
- **Limestone Float**
- **Mud Seam/Solution Channel**

Forrest Environmental Services, Inc. Oak Hill, Virginia (703) 648-9090 www.fesinc.net	DATE November 2022	SCALE shown	TITLE ***Geophysical Anomaly Map Tax Map 13 A 23 1745 Triple J Road Berryville, Virginia***	
	DRAWN BY	APPROVED BY		
	JOB NO. 22197	DWG. NO./ REV. NO. T13A23F3	CLIENT Tumblin	FIGURE 3

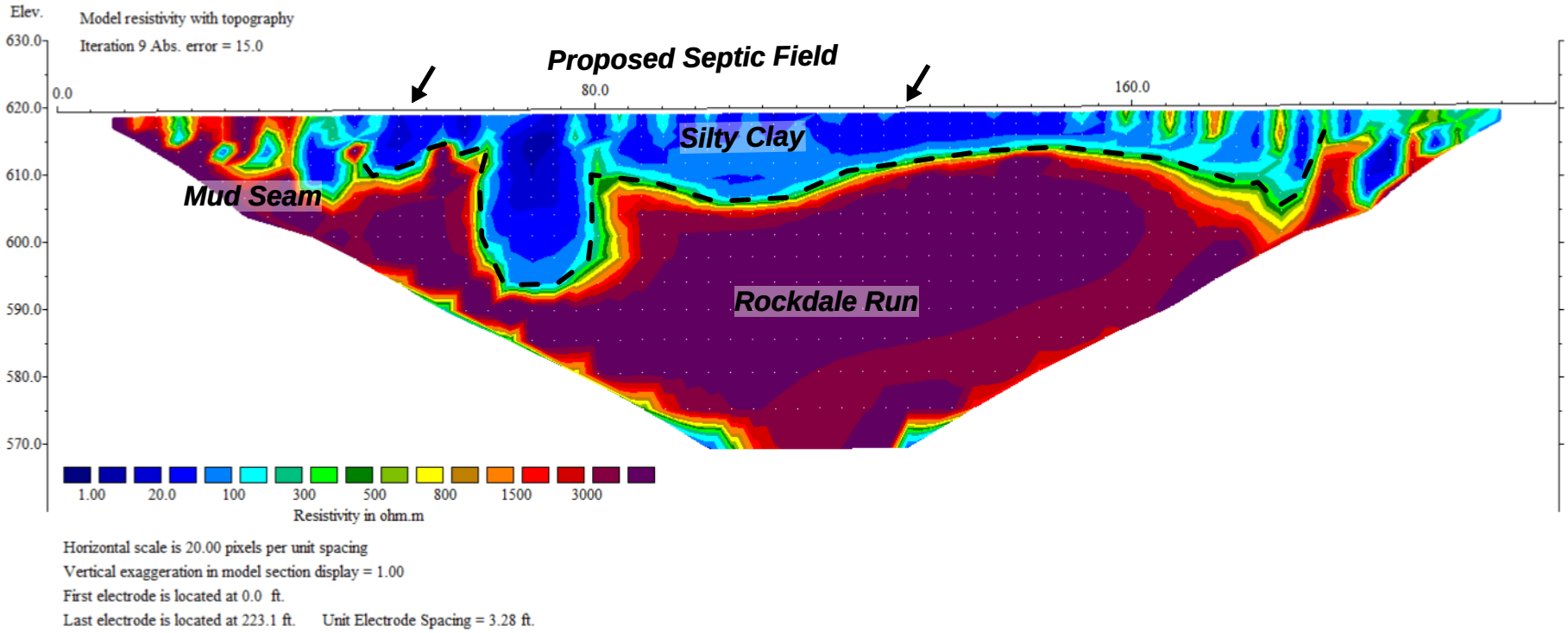
Appendix A

ER Cross-Sections

1 through 4

West **East**

Sting/Swift prg: T13A23A



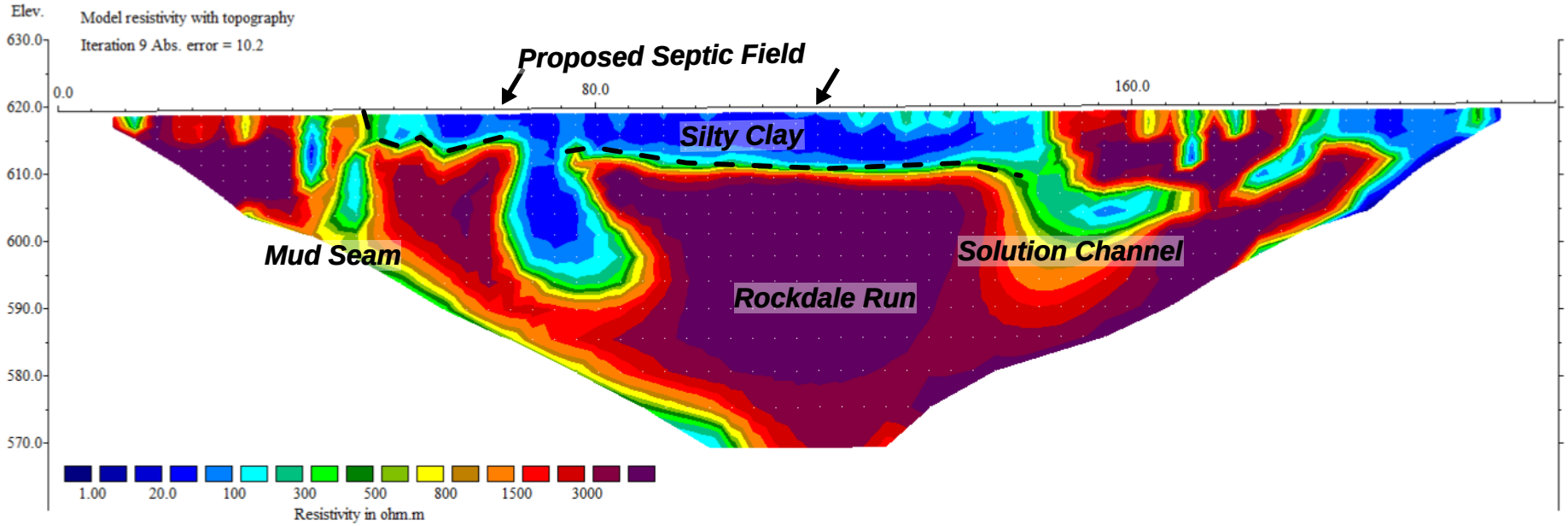
Horizontal scale is 20.00 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 0.0 ft.
Last electrode is located at 223.1 ft. Unit Electrode Spacing = 3.28 ft.

Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: August 2022	SCALE: shown	TITLE: ***ER Line 1 Tax Map 13 A 23 1691 Triple J Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A23-1	CLIENT: Tumblin	FIGURE:

West **East**

Sting/Swift prg: T13A23B



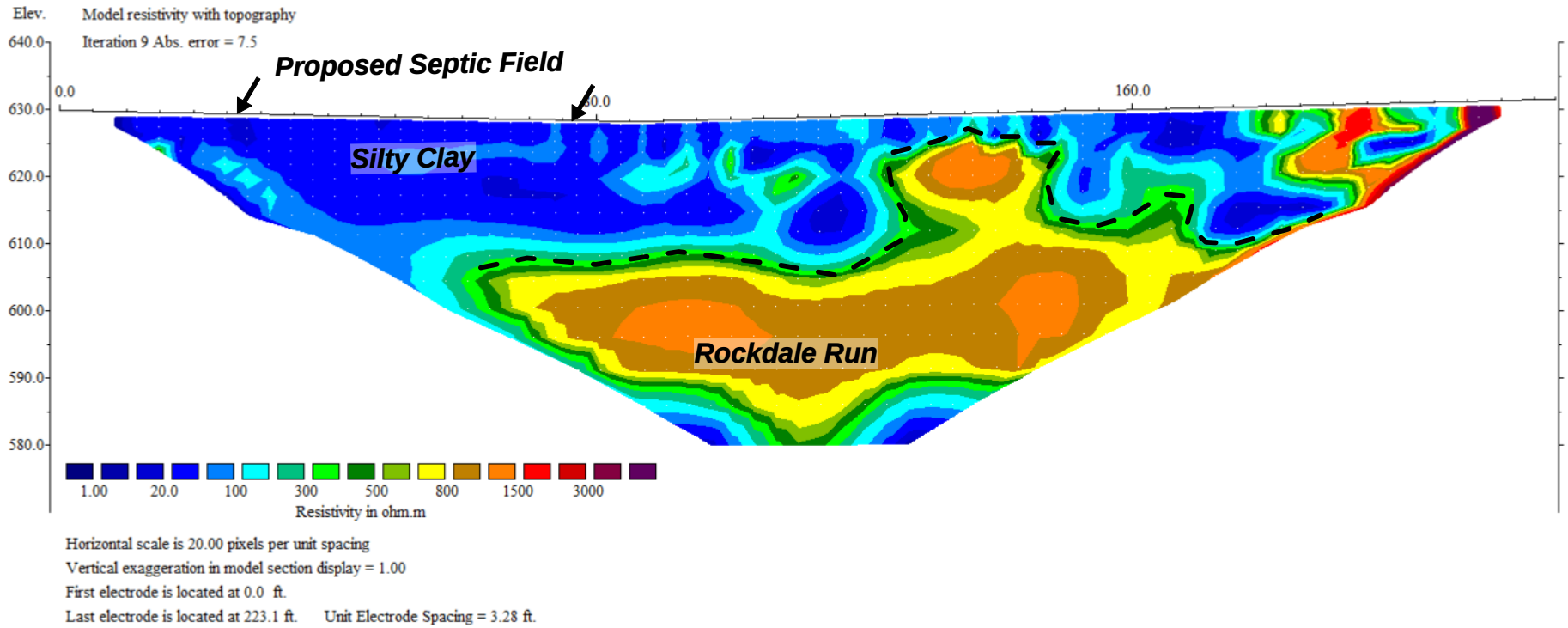
Horizontal scale is 20.00 pixels per unit spacing
Vertical exaggeration in model section display = 1.00
First electrode is located at 0.0 ft.
Last electrode is located at 223.1 ft. Unit Electrode Spacing = 3.28 ft.

Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: August 2022	SCALE: shown	TITLE: ***ER Line 2***	
DRAWN BY:	APPROVED BY:	***Tax Map 13 A 23***	
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A23-2	***1691 Triple J Road***	
CLIENT: Tumblin		***Berryville, Virginia***	FIGURE:

West **East**

Sting/Swift prg: T13A23C

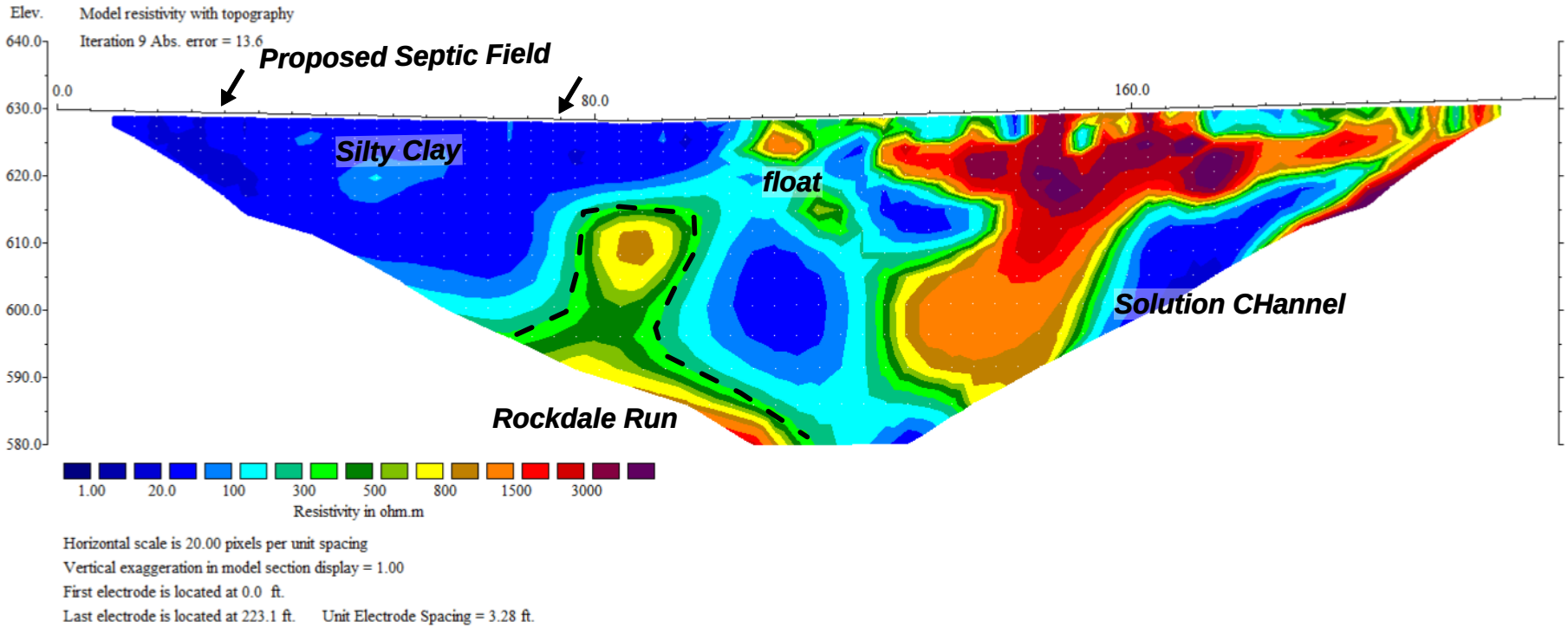


Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: August 2022	SCALE: shown	TITLE: ***ER Line 3 Tax Map 13 A 23 1745 Triple J Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A23-3	CLIENT: Tumblin	FIGURE:

West **East**

Sting/Swift prg: T13A23D



Forrest Environmental Services, Inc.
Oak Hill, Virginia
(703) 648-9090
www.fesinc.net

DATE: August 2022	SCALE: shown	TITLE: ***ER Line 4 Tax Map 13 A 23 1745 Triple J Road Berryville, Virginia***	
DRAWN BY:	APPROVED BY:		
JOB NO.: 22197	DWG. NO./ REV. NO.: T13A23-4	CLIENT: Tumblin	FIGURE:

November 21, 2022

Brandon Stidham
Director of Planning
Clarke County
101 Chalmers Court, Suite B
Berryville, VA 22611

Re: Review of Geophysical Survey Report, Tumblin Property
Tax Map Number 13 A 23, 1691 and 1745 Triple J Rd.
Berryville, Virginia
CTL Project No. 22050035MORT

Dear Mr. Stidham,

This letter report is in response to your request for CTL to review the above referenced Geophysical Report submitted to your office to determine if it meets the intent of the recently updated and adopted Clarke County Septic Ordinance (Ordinance) dated December 21, 2021. Please note that CTL did not perform any field verification of the data in the provided report.

Report Reviewed: *Geophysical Survey, Proposed Septic Field, Tax Map Number 13 A 23 1691 and 1745 Triple J Rd., Berryville, Virginia*

The Ordinance requires that the geophysical survey report include requirements that are listed below. In addition, we have provided our professional opinion whether the report meets these requirements:

Dipole-dipole electrical resistivity survey	***Minimum Requirement Compliance***
• Two lines each area	Yes
• Perpendicular to strike	Yes
• Minimum depth of 20 feet at edges	Yes
• Minimum 200 soundings	Yes
• Minimum 40 feet depth	Yes

Report	***Minimum Requirement Compliance***
• Directional orientation and plan maps	Yes
• Color profiles identifying hazards, consistent color scale, treatment area indicated	Yes
• Amount of Overburden	Yes
• Elevations	Yes

Report	***Minimum Requirement Compliance***
• Geologic structure	Yes
• Low, moderate, high risk	Yes, Low
• Other	N/A

The geophysical survey report included four electrical resistivity lines across the 2 proposed septic fields. Depths to bedrock appear to be at ground surface to approximately 30 feet below the ground surface within the proposed septic fields. Resistive anomalies within the drain fields were interpreted as limestone float below ground surface and presents no potential for impact. In addition, the geophysical survey identified with ER lines 1 & 2, indicated two major karst features within about 70 feet east and 30 feet west of the first proposed septic field. The major karst features appear to be a very limited solution channel and a mud seam respectively. Neither anomaly present any potential impacts to the groundwater resources beneath this site.

The geophysical survey identified with ER lines 3 & 4, indicated two major karst features within about 170 feet east of the second proposed septic field. The major karst features appear to be a solution channel and limestone float. Neither anomaly present any potential impacts to the groundwater resources beneath this site. Based upon the limestone geology and our experience of in the area, the interpretation is credible. Also, in accordance with the County Ordinance, the report indicated no limestone outcrops were observed within 10 feet horizontal distance from the proposed fields. **The geophysical survey report reviewed meets the intent of the County Ordinance and general industry practice.**

We hold our opinions to a reasonable degree of scientific certainty and/or probability, and we also reserve the right to modify this report based upon receipt of new information that differs from that used in preparing this report. We appreciate the opportunity to be of service and if you have any questions, please contact us.

Respectfully submitted,

CTL ENGINEERING, INC.

Patrick E. Gallagher, PE, PS, CPGS
Project Consultant

CK Satyapriya, PE
Technical Reviewer

Zimbra **jcamp@clarkecounty.gov**

Resistivity Report - Tumblin Property (TM #13-A-23 -1691 and 1745 Triple J Road)

From : Jeffrey Feaga <jfeaga@clarkecounty.gov> Mon, Nov 21, 2022 10:50 AM

Subject : Resistivity Report - Tumblin Property (TM #13-A-23 -1691 and 1745 Triple J Road)

To : Jeremy Camp <jcamp@clarkecounty.gov>, kmaddox <kmaddox@clarkecounty.gov>

The Tumblin Property (TM #13-A-23 -1691 and 1745 Triple J Road) resistivity work and associated CTL report have been reviewed. The septic zoning permit is ready to approve. There are no concerns warranting further investigation.

Jeff Feaga
Preservation Planner / GIS Coordinator
Clarke County Planning Department
101 Chalmers Court, Suite B
Berryville, VA 22611
(540) 955-5134

LORD FAIRFAX HEALTH DISTRICT

Lord Fairfax Health District

Clarke County Health Department
100 North Buckmarsh Street
Berryville, Virginia 22611
Tel. (540) 955-1033 ~ Fax (540) 955-4094
www.vdh.virginia.gov

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

November 15, 222

Jeremy F. Camp
Senior Planner / Zoning Administrator
101 Chalmers Ct
Berryville, Virginia 22611

RE: MINOR SUBDIVISION PRELIMINARY REVIEW COMMENTS

Applicant Name:	Timothy Tumblin, Sr
Health Department I.D. #:	043-22-193
Subdivision Name:	Iarrie P McDonald Estate Division
Section or Phase:	
Tax Map #:	~~21-A-56 & 51~~ 13-A-23
Proposed Lots:	2

Dear Mr. Camp,

Pursuant to your request, we have evaluated the aforementioned minor subdivision proposal, and offer the following comments at this point in the review process.

OWNER/APPLICANT ITEMS:

1. The applicant has not yet applied for a Certification Letter for the proposed lots as required.

2. Proposed Lot 1 has an existing dwelling (house #1691) with a conventional onsite sewage disposal system (COSS) that was permitted and installed in 1965. The sewage disposal system was designed for 300 gallon per day; by today's standards 300 gallons per day would accommodate a 2-bedroom dwelling. A reserve area was not required at the time.

    a. The project OSE has located a proposed 100% reserve area that would accommodate a 2-bedroom dwelling with 4 full time occupants. The site and soils were field reviewed by this department on July 6, 2022 and appear to be suitable for a shallow placed drip dispersal system.

    b. The proposed reserve drainfield is less than 100 feet from an existing dry well on the property. This well will need to be properly abandoned before final approval for the reserve area can be given.

3. The Residue Lot has an existing dwelling (house #1745) that was served by a cesspool and cistern. The project OSE has located a new drainfield site with a 100% reserve area to accommodate a 3-bedroom dwelling, 450 gallons per day, with 6 full time occupants. The site and soils were filed reviewed by this department on July 6, 2022 and appeared to be suitable for a shallow placed drip dispersal system. The project OSE located a well site for the Residue Lot that is 150 feet away from the existing cesspool. It is recommended that the cesspool and cistern be properly abandoned.

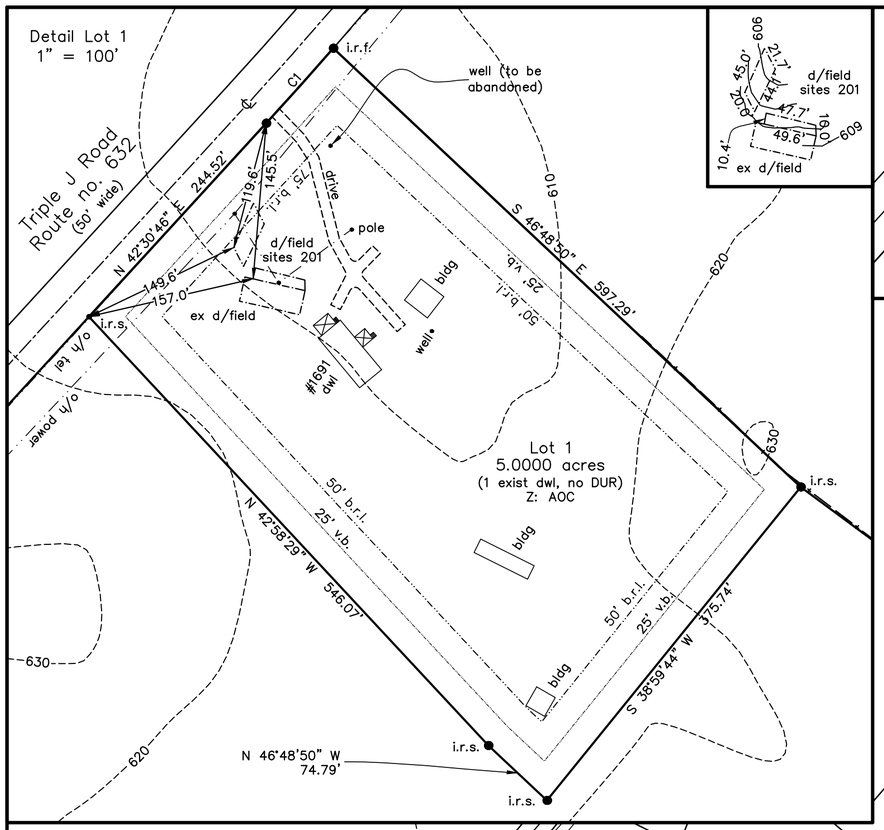
4. This office received a geophysical survey report over the proposed drip field on the residue lot and the proposed reserve on proposed Lot 1. Final approval from the county is pending.

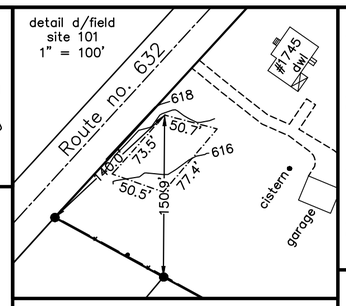
This letter does not serve as an approval of the proposed subdivision, or its parts. If you have any questions, please contact me at 540.955.1033

Sincerely,

Carter L. Neiswander

Carter Neiswander, EHS





Approval:

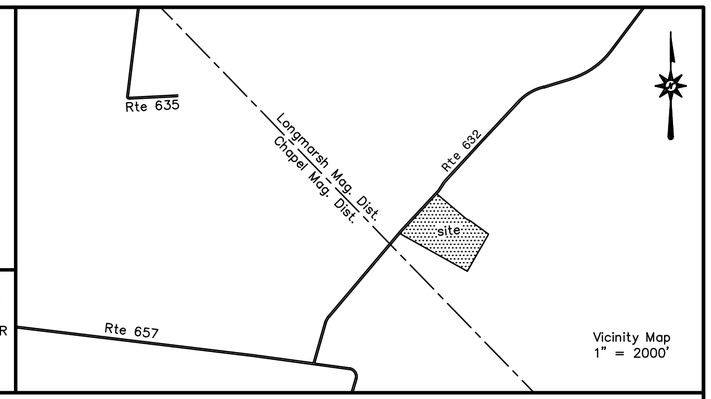
Clarke County Zoning Administrator date:

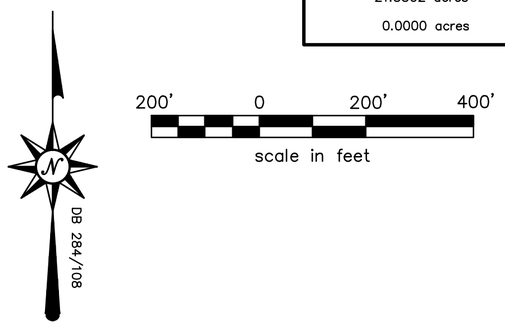
Chairman of Planning Commission date:

Clarke County Health Department date:

Area Table:

26.5502 acres	area of TM 13–A–23	2 exist dwl, 1 DUR
5.0000 acres	area of Lot 1	1 exist dwl, no DUR
21.5502 acres	area remaining in TM 13–A–23	1 exist dwl, 1 DUR
0.0000 acres	area dedicated for public use	





Surveyor's Certificate:

I, W. Stuart Dunn, a duly authorized Land Surveyor in the State of Virginia, do hereby certify that this Minor Subdivision and Maximum Lot Size Exception is of the land standing in the name of Timothy Tumblin, Sr, Successor Executor of the Estate of Iarrie Pearl McDonald and was acquired as stated in the Owner's Certificate. I certify that these parcels of land are properly and accurately described and are within the boundaries of the original tracts.

W. Stuart Dunn, CLS #2000
Berryville, Virginia

Owner's Certificate:

The undersigned fee simple owner hereby certifies that the foregoing Minor Subdivision of 26.5502 acres, being TM 13–A–23, recorded in the name of Timothy Tumblin, Sr, Successor Trustee of the Estate of Iarrie Pearl McDonald by instruments recorded as Will Book 95, Page 556, and Will Book 105, Page 679, is made with the free consent and in accordance with the desires of the undersigned owner, and trustees, if any, of said land and the same is hereby confirmed and submitted for record in the Office of the Clerk of the Circuit Court of Clarke County, Virginia.

Timothy Tumblin, Sr
4624 Summit Point Road, Charles Town, WV 25414

State of Virginia, City/County of , to wit: I, , a Notary Public for said City/County of , do hereby certify that Timothy Tumblin, Sr, whose name is signed in the Owner's Certificate has acknowledged the same before me.

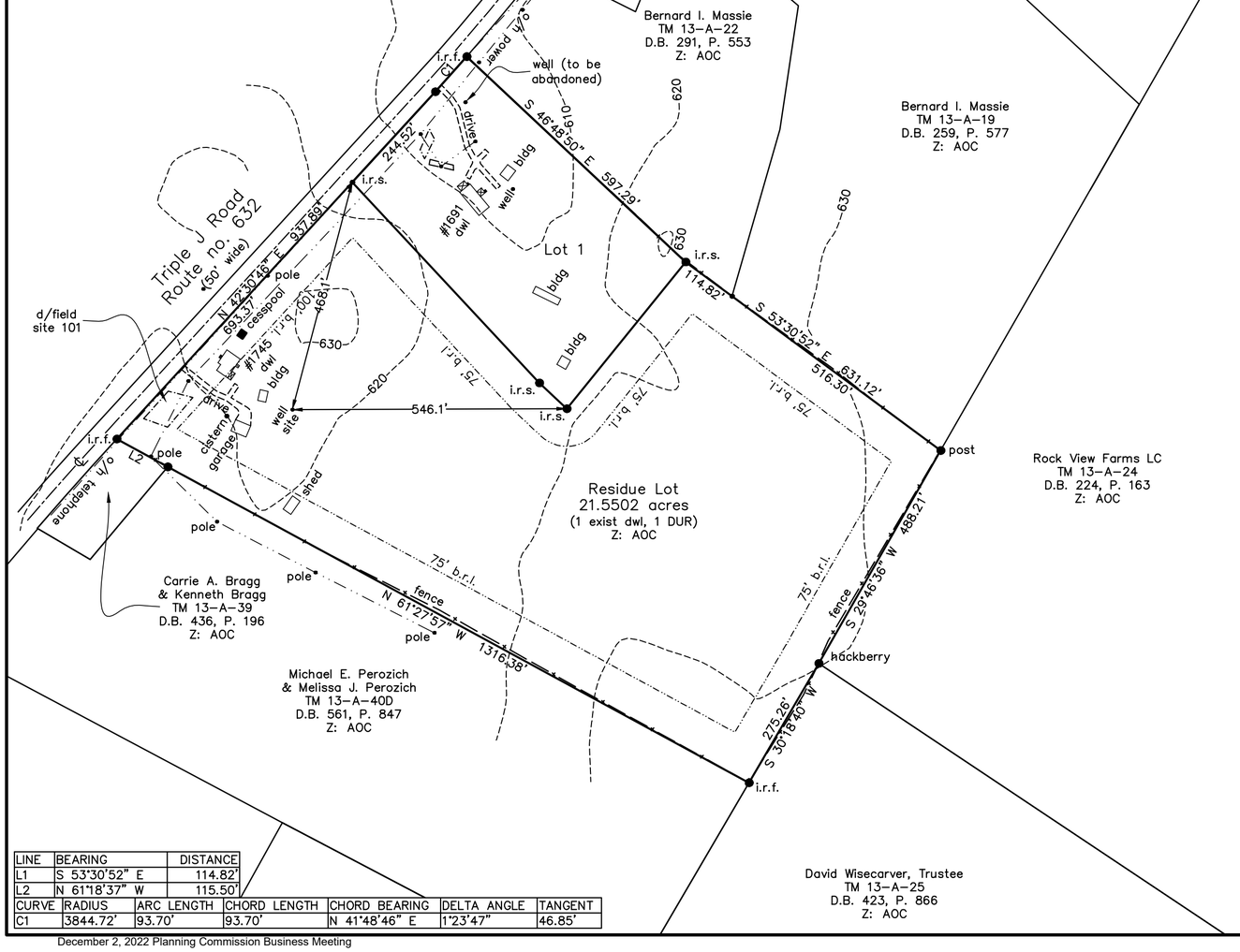
My commission expires:

Notary Public:

Given under my hand this day of 202 .

Notes:

(1) These lands are in Flood Zone X, established from FIRM Community Panel no. 51043C0045D, effective September 28, 2007.
(2) Zoned: AOC; use: residential/agricultural.
(3) Building setbacks as follows:
Lot 1: 75' from the centerline of Route no. 632, 50' all other property lines, 50' from any intermittent stream, 100' from any perennial stream, spring or sinkhole
Residue Lot of TM 13–A–23: 100' from the centerline of Route no. 632, 75' all other property lines, 50' from any intermittent stream, 100' from any perennial stream, spring or sinkhole
(4) i.r.s. = iron rod set; i.r.f. = iron rod found; i.p.f. = iron pipe found; dwl = dwelling, bldg = building; d/field = drainfield; TM = tax map and parcel identification; b.r.l. = building restriction line; v.b. = vegetated buffer; DUR = dwelling unit right; o/h = overhead
(5) These tracts are in the AOC (agricultural – open space – conservation) zoning district. Agriculture is the primary economic activity of this Zoning District. Owners, residents, other users of property in the AOC district may be subjected to inconvenience, discomfort and the possibility of injury to property and health arising from agricultural operations even though conducted in accordance with best management practices and/or in accordance with existing laws and regulations of the Commonwealth and County. Such agricultural operations may generate noise, odors and dust, may involve the operation of machinery, including aircraft, the storage and disposal of manure and the application of fertilizer, soil amendments and pesticides. Owners, occupants and users of land in the AOC District should be prepared to accept such inconveniences or discomfort as a normal and necessary aspect of living in a Zoning District in a County with a strong rural character and an active agricultural sector.
(6) Vegetated property buffer except for those land uses listed as exempt, existing woody vegetation within 25' of all property lines shall be retained on parcels of less than 20 acres, as per Section 4–1–1 of the Clarke County Zoning Ordinance.
(7) Before fertilizers and pesticides are used for lawn or landscaping purposes, a soil test should be conducted. The application of such chemicals shall be limited due to the potential for groundwater contamination and should not exceed that determined necessary by the soil test.
(8) The reserve drainfield site on Lot 1 is has been approved by the Clarke County Health Department for a 2 bedroom Alternative Onsite Sewage System with a maximum capacity of 4 people and 300 gpd. The 200% reserve drainfield site for the Residue Lot has been approved by the Clarke County Health Department for a 3 bedroom Alternative Onsite Sewage System with a maximum capacity of 6 people and 450 gpd.
(9) This plat of Minor Subdivision and Maximum Lot Size Exception is to be recorded within six months of the date of approval. Else it shall become null and void.



LINE	BEARING	DISTANCE
L1	S 53°30'52" E	114.82'
L2	N 61°18'37" W	115.50'

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	3844.72'	93.70'	93.70'	N 41°48'46" E	1°23'47"	46.85'

COMMONWEALTH OF VIRGINIA
W. Stuart Dunn
Lic. No. 2000
16 November 2022
LAND SURVEYOR

Minor Subdivision and Maximum Lot Size Exception of the Land of

Timothy Tumblin, Sr,

(also known as Timothy W. Tumblin, Sr)

Successor Executor of the Estate of Iarrie Pearl McDonald

Will Book 95, Page 556 Will Book 105, Page 679 Tax Map 13–A–23
Longmarsh Magisterial District, Clarke County, Virginia

Dunn Land Surveys, Inc
106 North Church Street
Berryville, Virginia 22611
Tel: 540–955–3388

1 November 2022
rev 16 November 2022

survey no. 2918