



TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
 Division of Water Resources
 William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor,
 Nashville, Tennessee, 37243
 1-888-891-8332 (TDEC)

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

OFFICIAL STATE USE ONLY	Site #:	Permit #:	NR2407.54
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Section 1. Applicant Information (individual responsible for site, signs certification below)

Applicant Name (company or individual):		SOS #:	Status:
Primary Contact/Signatory:		Signatory's Title or Position:	
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	

Section 2. Alternate Contact/Consultant Information (a consultant is not required)

Alternate Contact Name:			
Company:		Title or Position:	
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	

Section 3. Fee (application will be incomplete until fee is received)

No Fee	Fee Submitted with Application	Amount Submitted: \$ _____
Current application fee schedules can be found at the Division of Water Resources webpage at: https://www.tn.gov/environment/permit-permits/water-permits/1/aquatic-resource-alteration-permit--arap-.html or by calling (615) 532-0625. Please make checks payable to "Treasurer, State of Tennessee".		
Billing Contact (if different from Applicant):	Name:	Email:
Address:	Phone:	

Section 4. Project Details (fill in information and check appropriate boxes)

Site or Project Name:		Nearest City, Town or Major Landmark:	
Street Address or Location (include zip):			
County(ies):	MS4 Jurisdiction:	Latitude (dd.dddd):	
		Longitude (dd.dddd):	
Resources Proposed for Alteration:	Stream / River	Wetland	Reservoir
Name of Water Resource (for more information, access http://tdeconline.tn.gov/dwr):			
Brief Project Description (a more detailed description is required under Section 8):			
Does the proposed activity require approval from the U.S. Army Corps of Engineers, the Tennessee Valley Authority, or any other federal, state, or local government agency? Yes No If Yes, provide the permit reference numbers:			
Will the activity require a 401 Water Quality Certification : Yes No If Yes, attach any 401 WQC pre-filing meeting request documentation			
Is the proposed activity associated with a larger common plan of development: Yes No If Yes, submit site plans and identify the location and overall scope of the common plan of development.			
Plans attached? Yes No If applicable, indicate any other federal, state, or local permits that are associated with the overall project site (common plan of development) that have been obtained in the past (e.g., construction general permit and/or other ARAP):			

Application for Aquatic Resource Alteration Permit (ARAP) & State §401 Water Quality Certification

Section 5. Project Schedule (fill in information and check appropriate boxes)		
Proposed start date:		Estimated end date:
Is any portion of the activity complete now?	Yes	No
If yes, describe the extent of the completed portion:		

The required information in Sections 6-11 must be submitted on a separate sheet(s) and submitted in the same numbered format as presented below. If any question is not applicable, state the reason why it is not applicable.

Section 6. Description	Attached
	Yes No
6.1 A narrative description of the scope of the project	
6.2 USGS topographic map indicating the exact location of the project (can be a photographic copy)	
6.3 Photographs of the resource(s) proposed for alteration with location description (photo locations should be noted on map)	
6.4 A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	
6.5 A narrative description of the proposed stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate and riparian vegetation	
6.6 In the case of wetlands, include a wetland delineation with delineation forms and site map denoting location of data points	
6.7 A copy of all hydrologic or jurisdictional determination documents issued for water resources on the project site	

Section 7. Project Rationale	Attached
	Yes No
Describe the need for the proposed activity, including, but not limited to the purpose, alternatives considered and rationale for selection of least impactful alternative, and what will be done to avoid or minimize impacts to water resources	

Section 8. Technical Information	Attached
	Yes No
8.1 Detailed plans, specifications, blueprints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5.x 11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans should be superimposed on existing and new conditions (e.g., stream cross sections where road crossings are proposed)	
8.2 For the proposed activity and compensatory mitigation, provide a discussion regarding the sequencing of events and construction methods and any proposed monitoring	
8.3 Depiction and narrative on the location and type of erosion prevention and sediment control (EPSC) measures for the proposed alterations and any other measures to treat, control, or manage impacts to waters	

<p>Section 9. Water Resources Degradation (degree of proposed impact)</p> <p>Note that in most cases, activities that exceed the scope of the General Permit limitations are considered greater than <i>de minimis</i> degradation to water quality. Please provide your basis for concluding the proposed activity will cause one of the following levels of water quality degradation:</p> <ol style="list-style-type: none"> a. <i>De minimis</i> degradation, no appreciable permanent loss of resource values b. Greater than <i>de minimis</i> degradation (if greater than <i>de minimis</i> complete Sections 10-11) <p><i>For information and guidance on the definition of de minimis and degradation, refer to the Antidegradation Statement in Chapter 0400-40-03-.06 of the Tennessee Water Quality Criteria Rule:</i> https://publications.tnsosfiles.com/rules/0400/0400-40/0400-40.htm <i>For more information on specifics on what General Permits can cover, refer to the Natural Resources Unit webpage at:</i> https://www.tn.gov/environment/permit-permits/water-permits/1/aquatic-resource-alteration-permit--arap-.html</p>
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Section 10. Detailed Alternatives Analysis		Attached Yes No
10.1	Analyze all reasonable alternatives and describe the level of degradation and permanent loss of resource value caused by each alternative. Assessment must consider options other than the "Preferred" and "No Action" alternatives. Provide associated rationale for selecting or rejecting all alternatives considered and demonstration that the least impactful practicable alternative was selected.	
10.2	Discuss the social and economic consequences of each alternative	
10.3	Demonstrate that the degradation associated with the preferred alternative will not violate water quality criteria for uses designated in the receiving waters, and is necessary to accommodate important economic and social development in the area	

Section 11. Compensatory Mitigation		Attached Yes No
11.1	A detailed discussion of the proposed compensatory mitigation. Provide evidence of credit reservation if proposing to utilize a third-party provider.	
11.2	Analysis of any proposed appreciable loss of resource value using the TN Stream Mitigation Guidelines. Provide Stream Quantification Tool (SQT) results if applicable. Include Existing Condition Score (ECS) and debit/credit calculations.	
11.3	Describe how the compensatory mitigation would result in no net loss of resource value	
11.4	Provide a detailed monitoring plan for the compensatory mitigation site if permittee-responsible project is proposed	
11.5	Describe the long-term protection measures for the compensatory mitigation site if permittee-responsible project is proposed (e.g., deed restrictions, conservation easement)	

Certification and Signature

An application submitted by a corporation must be signed by a principal executive officer; from a partnership or proprietorship, by the partner or proprietor respectively; from a municipal, state, federal or other public agency or facility, the application must be signed by either a principal executive officer, ranking elected official, or other duly authorized employee. ***I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury. The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.***

Printed Name	Official Title	Signature	Date
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Note that this form must be signed by the principal executive officer, partner or proprietor, or a ranking elected official in the case of a municipality; for details see **Certification and Signature** statement above. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed ARAP Application form (keep a copy for your records) to the appropriate EFO for the county(ies) where the proposed activity is located, addressed to **Attention: ARAP Processing**. You may also electronically submit the complete application and all associated attachments to water.permits@tn.gov.

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	1301 Riverfront Pkwy., Ste. 206	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601





**Three Rivers Home Builders
Smithville Highway Project
Application for Aquatic Resource Alteration Permit
Warren County, Tennessee**

Additional Information

July 2, 2024

Prepared For:

TDEC Cookeville Environmental Field Office
1221 S Willow Ave
Cookeville, TN 38506

Prepared By:

MRW Environmental LLC
32 North Main
Sparta, Tennessee 38583

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6 Project Description

6.1 A narrative description of the scope of the project

This proposed project would include the construction of a private driveway resulting in unavoidable impacts to 0.007 acres of a wetland area. Location of the proposed project is adjacent to Smithville Highway in Warren County, Tennessee. The development will require vegetation clearing, earth-moving, and other associated alterations.

6.2 USGS topographic map indicating the exact location of the project

An 8.5 x 11 Topographic map can be found in Appendix A (Figure 1).

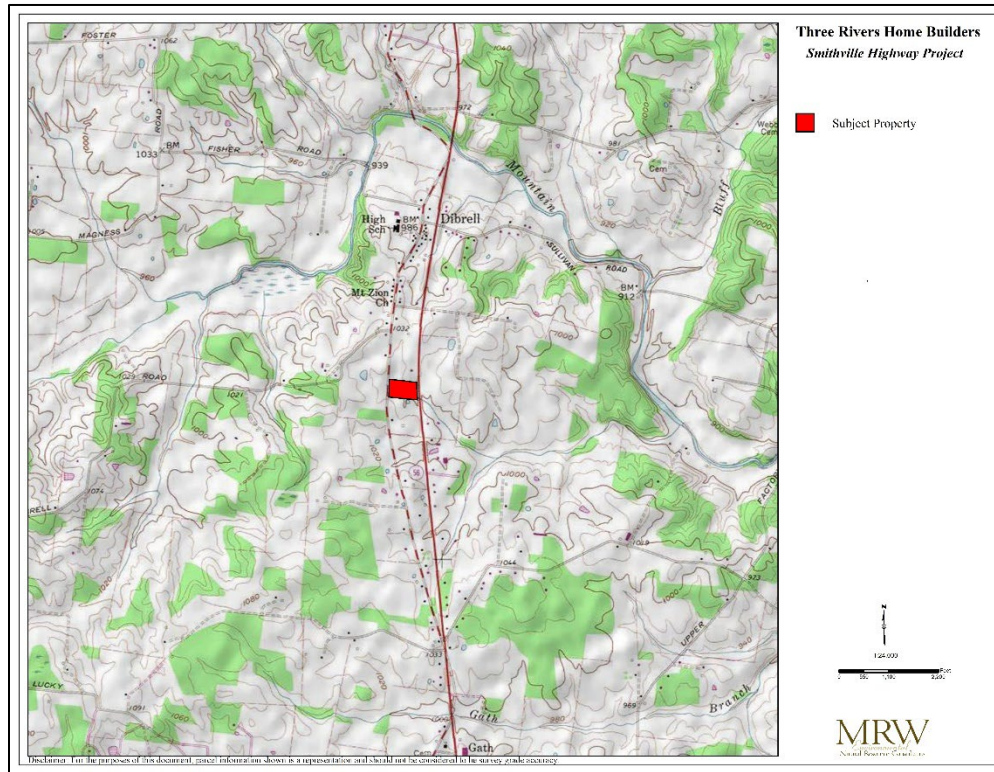


Figure 1. Topographic Map Showing Location of the Proposed Project Area.

6.3 Photographs of the resource(s) proposed for alteration with location description



Figure 2. Photograph of WET-A.

6.4 A narrative description of the existing stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate, and riparian vegetation

The on-site assessment performed by MRW Environmental LLC indicated one wetland (“WET-A”) within the Subject Property (Figure 3).

6.4.1 Wetlands

One wetland area was identified within the Subject Property. Table 1 depicts the acreage, HGM classification, and Cowardin classification of the wetland identified within the Subject Property. Sample locations, wetland delineation forms, and pictures are included in Appendix A.

Table 1. Characteristics of Identified Wetlands.

ID	Acreage	Cowardin Classification	HGM Classification	Latitude	Longitude
WET-A	0.52	PEM1A/C	Slope/Depression	35.801555	-85.793848



Figure 3. Topographic Map Showing Location of the Proposed Project Area.

Wetland-A

Wetland-A (“WET-A”) is a palustrine emergent slope/depression wetland. WET-A starts at a spring and spring box that appears to have been used as a water source in the past. In addition, a small pond has been excavated in the wetland area in the past. Hydrology indicators included saturated soils, surface water, and oxidized rhizospheres on living roots. Hydrophytic vegetation dominated the wetland area and included species such as; soft rush (*Juncus effusus*), shallow sedge (*Carex lurida*), spotted joe pye weed (*Eutrochium maculatum*), woolgrass (*Scirpus cyperinus*), broad-leaf cattail (*Typha latifolia*), duckweed (*Lemna sp.*), and green bulrush (*Scirpus atrovirens*). Hydric soils are present and meet the requirements of the F3 Indicator – Depleted Matrix.

6.4.2 Streams, WWC, and Upland Drainage Features

No streams, WWCs, and/or upland drainage features were identified within the Subject Property.

6.5 A narrative description of the proposed stream and/or wetland characteristics including, but not limited to, dimensions (e.g., depth, length, average width), substrate, and riparian vegetation.

Based on the project plans, approximately 0.007 acre of WET-A would be impacted as a result of this proposed project. The proposed project is located within the Collins

River (05130107) 8-digit Hydrologic Unit Code. Based on the small size of these proposed unavoidable impacts, no mitigation is being proposed.

6.6 In the case of wetlands include wetland delineation with delineation forms and site map denoting location of data points.

A Hydrologic Features Report was previously submitted by MRW Environmental LLC (“MRW”) to TDEC, Cookeville Environmental Field Office. Approval of this report was issued on May 30, 2024. A copy of the Hydrologic Features Report can be found in Appendix B.

6.7 A copy of all hydrologic or jurisdictional determination documents issued for water resources on the project site.

No streams and/or WWC were identified within the Subject Property.

7 Project Rationale

7.1 Describe the need for the proposed activity, including but not limited to, the purpose, alternatives considered, and what will be done to avoid or minimize impacts to streams or wetlands.

The purpose of the proposed project is to construct a private drive to access a future residential development on an approximately 1.6-acre parcel. Construction of the private drive will require the placement of fill material (i.e., large stone and/or riprap) into a wetland area resulting in 0.007 acres of unavoidable impacts. See the Alternatives below for further explanation.

7.1.1 Alternatives Considered

Two alternatives were considered with regard to feasibility in accomplishing the proposed project purpose. These alternatives are listed below.

Alternative 1 - No Action

The option to forego construction of a private drive would not achieve the project purpose of providing a path of ingress and egress to the proposed residence.

Alternative 2 – Development of the Proposed Project – Southern End of Parcel - (“Preferred Alternative”)

This preferred alternative would allow for the construction of the private drive. This alternative would result in unavoidable impacts to 0.007 acre of wetland (approximately 20 feet) within the Subject Property (Figure 4).

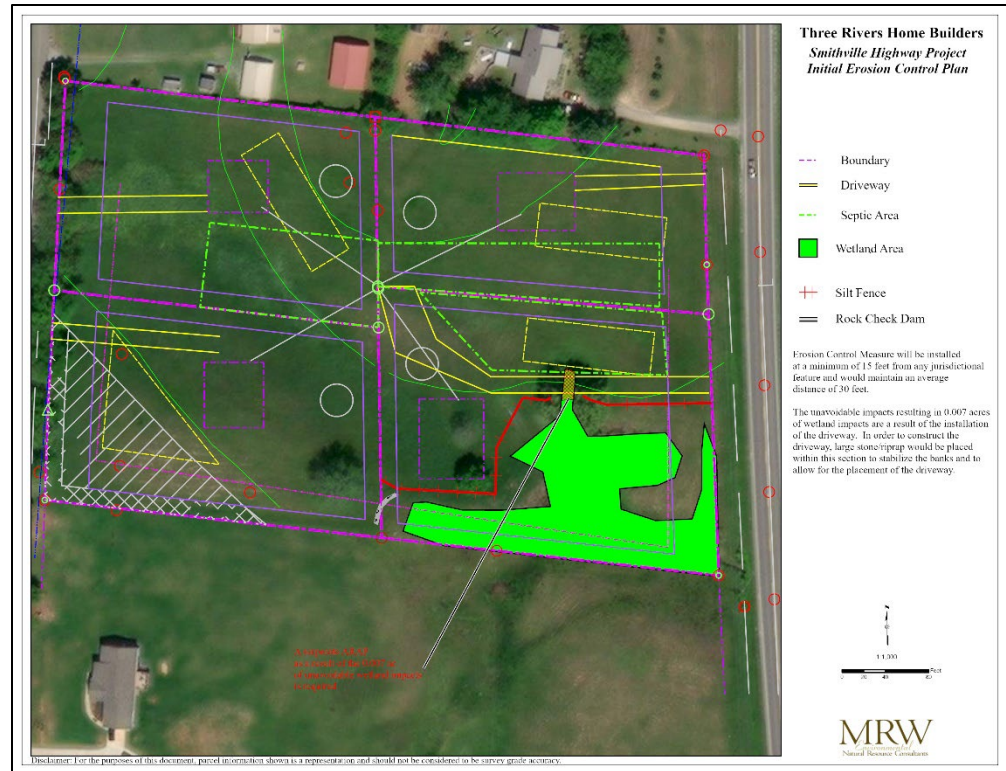


Figure 4. Conceptual Project Plans

Impacts to the wetland would be necessary in order to construct the driveway. Impacts to the wetland area are a result of the septic tank and field line placement requirements which have been approved by TDEC. Placement of the residence at the southern western end of the parcel is required because there is inadequate acreage for the placement of septic tank and field lines anywhere else on the property that is not considered wetland.

The location of the driveway was placed along the northern section of the wetland area to reduce unavoidable impacts to the maximum extent. As discussed above, the driveway would be constructed by using large stone/rip rap to stabilize the banks and to allow for natural groundwater flow.

8 Technical Information

8.1 Detailed plans, specifications, blue prints, or legible sketches of present site conditions and the proposed activity. Plans must be 8.5x11 inches. Additional larger plans may also be submitted to aid in application review. The detailed plans should be superimposed on existing and new conditions. (e.g., stream cross sections where road crossings are proposed).

Project plan can be found in Appendix C of this document.

8.2 For both the proposed activity and compensatory mitigation, provide a discussion regarding the sequencing of events and construction method and any proposed monitoring

8.2.1 Proposed Project Sequence of Events and Construction Method(s)

The sequencing for the proposed activity is expected to be site clearing, Erosion Prevention Sediment Control (“EPSC”) installation, rough grading, final grading, building construction, and paving. The estimated start date would be approximately 1-3 months after permit approval. A full National Pollutant Discharge Elimination System (“NPDES”) to include a Stormwater Pollution Prevention Plan (“SWPPP”) would be submitted for approval prior to the start of construction activities. The following sequence details the general order of construction activities for the proposed culvert installation.

Prior to grading activities:

1. Post Notice of Coverage (“NOC”) in a prominent display near the entrance to the site (if not already posted).
2. Install rain gauge on site.
3. Install construction entrance and silt fence.
4. Construct sediment basins (if needed).
5. Construct diversion ditches to basin and install rock check dams (if needed).

After installation of erosion control features:

1. Clear and grub the site.
2. Strip topsoil and stockpile. Temporary seeding and silt fence shall be utilized on stockpile.
3. Begin excavation. Follow SWPPP Narrative and plans at all times.
4. Grading operations as outlined in the Project Plans.
5. Complete inspections and maintenance per plans. Retain all inspection records on site.
6. Spread mulch, temporary seeding or stone over all areas where grading has temporarily (more than 14 days) or permanently ceased.
7. Construct all pavement, buildings, and other ground cover as specified on civil design drawings after grading is complete.

After site is stabilized:

1. Remove erosion control measures. Seed and mulch all areas disturbed by these operations.
2. Convert sediment basins to detention basins.
3. Prepare and submit a Notice of Termination (“NOT”) once the construction activities are completed and the final stabilization of the site is in place.

8.2.2 Compensatory Mitigation Sequence of Events

Currently, there is no plan to provide compensatory mitigation for the proposed impacts since the impacts are below threshold required for mitigation.

8.3 Depiction and narrative on the location and type of erosion prevention and sediment control (EPSC) measures for the proposed alterations and any other measures to treat, control, or manage impacts to waters.

See attached plans for a depiction of the proposed erosion prevention and sediment control measures to be utilized on the project area.

The development of and activities on this site would include clearing and grading work necessary for the proposed project. Current versions of this NPDES plan and permit will be kept on the site for the duration of the project. These items would be available for the use of all operators and site personnel involved with the proposed development, erosion and sediment controls, etc., and would be available to anyone visiting the site. A notice would be posted near the entrance that includes a copy of the applicable permits, the TDEC Notice of Coverage, and tracking number assigned by TDEC.

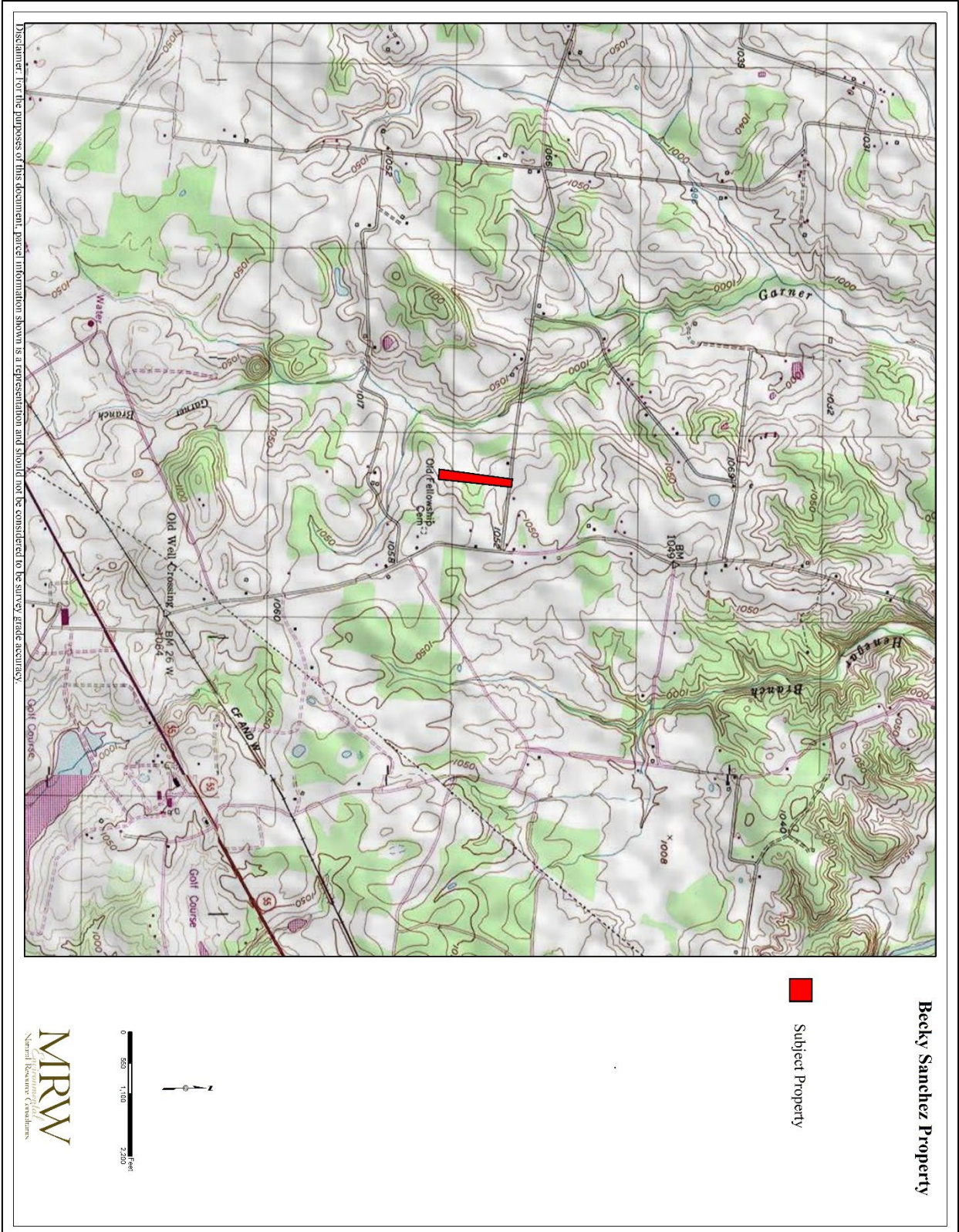
It is the intention and goal that any discharge from this development will have no impact to any adjacent water body or adjacent property. The activities would be carried out in such a manner to prevent any sediment or other discharge. These activities would not impact the usefulness of the waters on the property or downstream of the property for fish and aquatic life, livestock and wildlife watering, recreation, navigation, or industrial or domestic water supply. The construction of this site would be done in a manner to prevent erosion from leaving the site. Any project areas that are disturbed and are not to be used for construction or parking for the development will be stabilized with a full stand of grass as soon as possible.

The potential for pollution from the construction activities taking place on the property primarily are concerned with the possibility for sedimentation due to clearing and grading and general construction activities. Construction start-up erosion control measures also would be implemented by the contractor prior to any work beginning. The contractor shall use temporary silt fence, erosion control log eels, construction entrance / exit, and any other erosion control measures necessary to prevent any sediment from leaving the site at all times until the project site is completely stabilized and controlled.

9 Water Resources Degradation (degree of proposed impact)

My activity, as proposed will cause de minimis degradation to water quality.

**Appendix A
USGS Topographical Map**



APPENDIX B
**Hydrologic Determinations, Jurisdictional Determinations, and 401 Water Quality
Certification Pre-Filing**

COPY of Applicant TDEC 401 Water Quality Certification Pre-Filing Meeting Request Confirmation

TDEC Division of Water Resources <noreply+ebb28c58202d19b9@formstack.com>
Reply-To: Regan.McGahan@tn.gov
To: MGranstaff@mrwenvironmental.com

Tue, Jul 2, 2024 at 10:43 AM

Dear Applicant,

Thank you for your request for a pre-filing meeting related to an anticipated filing of a Section 401 Water Quality Certification request with the Tennessee Department of Environment and Conservation (TDEC). Due to a recent change in the federal 401 Certification Rules, a pre-filing meeting request is now required at least 30 days before submittal of a 401 Certification request for a federal permitting agency (such as the U.S. Army Corps of Engineers) to consider it to be valid (see 40 CFR § 121.4).

This automated response confirms TDEC's receipt of your request and fulfills your compliance with the federal rule 40 CFR § 121.4.

Please be sure to include this confirmation receipt in your 401 Certification request to the U.S. Army Corps of Engineers when applying for a 404 or Section 10 federal permit (see 40 CFR § 121.5).

Note that this pre-filing meeting request provision is a federal requirement and is not a part of TDEC's Aquatic Resource Alteration Permitting (ARAP) process. No further action is necessary at this time related to any ARAP application with TDEC. You do not have to wait 30 days to apply for an ARAP permit, and ARAP applications will continue to be processed by TDEC according to state rules and regulations.

Please also note that this online meeting request form that you just filled out, does not serve as an application for any state or federal permit. The Aquatic Resource Alteration Permit forms from TDEC can be found [HERE](#).

Requiring pre-filing meetings to be held for 401 Certification requests is optional for the certifying agency (TDEC). At this time TDEC has chosen not to hold routine pre-application in-person meetings. However, if your project is large, complex, includes on-site mitigation, or otherwise has the potential to significantly impact water resources and you believe that it would be beneficial to schedule a meeting prior to applying for an ARAP permit, please visit our [Regulatory Coordination Web Page for more information](#).

Thank you.

TDEC Division of Water Resources

FORM INFORMATION SUBMITTED:

Name: Three Rivers Home Builders

E-Mail: james@trchb.com

Phone: (817) 925-2085

Project Name: Three Rivers Home Builders - Smithville Highway Project

Project Location: Smithville Highway

County: Warren

Waterbody: unnamed feature to Oakland Branch

Project Description: Construction of a Driveway resulting in unavoidable impacts to 0.007 acres of a wetland. Impacts to the wetland area are a result of the location (approved by TDEC) of the field lines required for the residential development. The placement of the driveway was selected to reduce the unavoidable impacts as much as possible. Large stone/riprap would be used to stabilize the banks in order to construct the driveway.

Date/Time Submitted: Jul 2, 2024 11:43 AM



**TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
COOKEVILLE ENVIRONMENTAL FIELD OFFICE**

1221 SOUTH WILLOW AVENUE
COOKEVILLE, TENNESSEE 38506

PHONE (931) 432-4015

STATEWIDE 1-888-891-8332

FAX (931) 432-6952

May 30, 2024

Mr. James Dixon
Three River Home Builders
4073 New Highway 96W
Franklin, Tennessee 37064

Re: **Inventoried Water Resources (Determination ID No. 33201)**
Smithville Hwy
Warren County

Dear Mr. Dixon:

The Division of Water Resources has reviewed the Hydrologic Determination report prepared by MRW Environmental, LLC on May 23, 2024, and other subsequent dates. This information was submitted in support of determinations of waters of the state made by MRW Environmental, LLC at the above referenced site. A review of the water resources was performed by Matthew Harris of this office on May 29, 2024. Results of the onsite review are as follows:

The Division provisionally agrees with the findings of the waters of the state in the submitted information. These findings as determined by MRW Environmental, LLC are summarized and displayed in the table below and the attached map from the jurisdictional waters report and addendum (Figure 1). Please note that once fill material is removed from the southwestern side of the wetland, the size of the wetland may change.

<i>Location¹</i>	<i>Determination and Comments</i>
WET-A General Location (N35.801555°, W-85.793848 °)	Wetland – This feature was determined to meet the criteria to be classified as a wetland by MRW Environmental, LLC. The delineation of boundaries as presented of .52 acre and marked in the field approved. Coverage under an ARAP is needed for any alterations to this wetland.

¹See marked locations on the enclosed area map.

Streams, lakes, reservoirs, groundwater, and wetlands of any size are considered waters of the State pursuant to the Tennessee Water Quality Control Act. Alterations to waters of the State require permit coverage under an *Aquatic Resources Alteration Permit* (ARAP). Information

Inventoried Water Resources (Determination ID No. 33201)

Smithville Hwy

Warren County

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regarding the ARAP program can be found at <http://www.tn.gov/environment/article/permit-water-aquatic-resource-alteration-permit>.

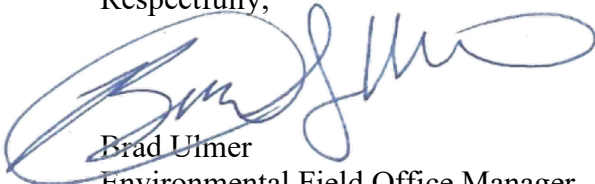
Please note that a *Tennessee General Construction Permit* will be needed if future land disturbance activity for this project is one acre or more in size. Information regarding the construction storm water program can be found at <http://www.tn.gov/environment/article/permit-water-npdes-stormwater-construction-permit>. A completed Notice of Intent form, an application fee, and a storm water pollution prevention plan should be submitted to the above address for review and coverage under this permit.

Hydrologic determinations and wetland delineations are advised and governed by Tennessee Department of Environment and Conservation (TDEC) rules and regulations, and therefore only apply to the State's permitting process. Because these and other various water features on-site may potentially also be considered jurisdictional Waters of the United States, any alterations to them should only be performed after consultation with the U.S. Army Corps of Engineers.

The Division of Water Resources appreciates the opportunity to assess the site. Because natural variation and human activities can alter hydrologic conditions, the division reserves the right to reassess the status of the water features in the future.

Thank you for your interest in water quality in Tennessee. Please contact Matthew Harris at 931-520-6679 or by email at Matthew.harris@tn.gov if you have any questions.

Respectfully,



Brad Ulmer
Environmental Field Office Manager
Division of Water Resources
Cookeville Environmental Field Office

Enclosures: Scotts Auto Salvage Water Resources Inventory Area Map

Cc: File
Matthew Granstaff mgranstaff@mrwenvironmental.com





HYDROLOGIC FEATURES REPORT
For
Three Rivers Home Builders
Smithville Highway Property
Warren County, Tennessee



23 May 2024

Prepared For:

*Mr. James Dickson
Three Rivers Home Builders
4073 New Highway 96W
Franklin, Tennessee 37064*

Prepared By:

*MRW Environmental, LLC
32 North Main Street
Sparta, Tennessee 38583*

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1 INTRODUCTION

During May 2024, MRW Environmental LLC (“MRW”) was contacted by Three Rivers Home Builders, Mr. James Dickson (“Client”), to assess an approximately five and one half (5.56) +/- acre property (“Subject Property”) for potential jurisdictional waters (i.e., streams, wet weather conveyances (“WWC”), and wetlands). The following hydrologic features report identifies and assesses only aquatic features such as streams, wetlands, and WWCs identified by MRW within the Subject Property. The primary objective of this inventory was to identify and delineate waters within the Subject Property subject to jurisdiction under Sections 404 and/or 401 of the Clean Water Act, and any Tennessee legislation such as the Tennessee Water Control Act of 1977. Both acts prohibit the destruction or degradation of Waters of the U.S. (“WOUS”) and/or Waters of the State (“WOS”), respectively.

2 LOCATION

The Subject Property is located adjacent to Smithville Highway, Warren County, Tennessee (Figure 1). Approximate coordinates of the property are 35.801999 ° N / 85.79451 ° W.

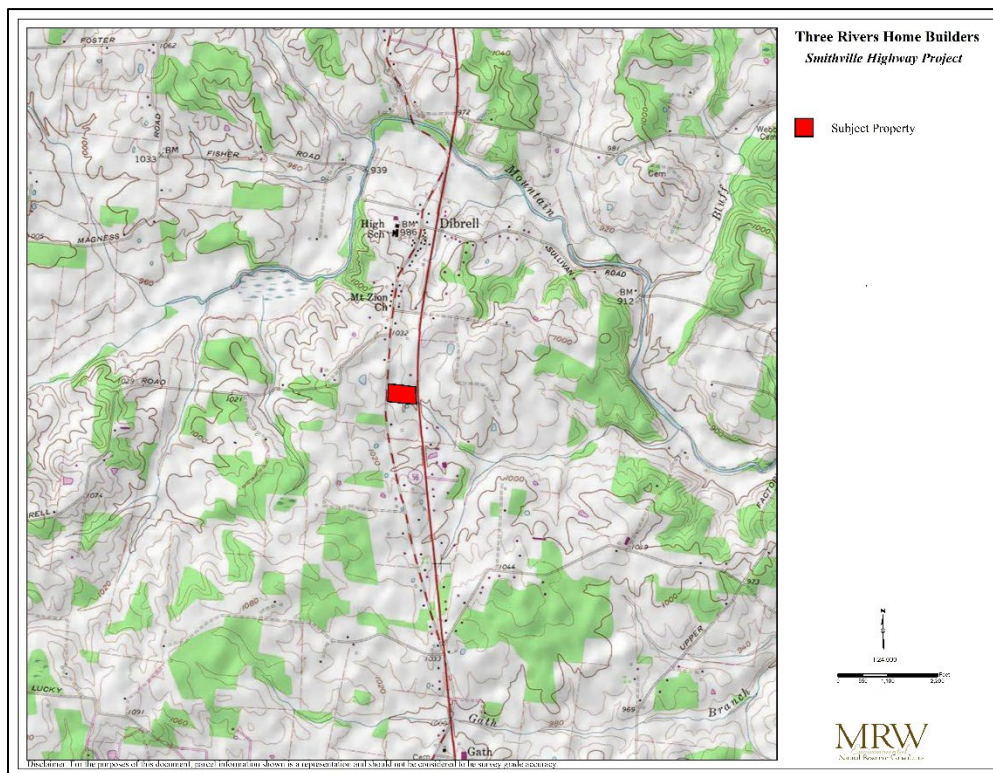


Figure 1. Vicinity map outlining the location of the Subject Property.

3 METHODS

3.1 Literature Review

3.1.1 Aquatic Features

Prior to conducting the field investigation, available datasets were examined that might provide information regarding potential jurisdictional waters on the property. The principal databases used included National Wetland Inventory (“NWI”) data, National Hydrography Dataset (“NHD”), and local soil surveys for the area. NWI and the NHD datasets indicated the presence of one wetland and one stream within the Subject Property (Figure 2).



Figure 2. NHD and NWI dataset identified features within the Subject Property.

Soils data for the Subject Property indicated multiple soil series present with the Subject Property. However, each soil series listed would be considered an upland soil in Warren County, Tennessee (Figure 3). Following this “office” investigation, the project site was assessed by systematically transecting it on foot to determine if jurisdictional waters were present.



Figure 3. Soil series listed within the Subject Property.

4 ON-SITE DATA RECORDING

4.1 Aquatic Features

4.1.1 Wetlands

Wetlands typically are defined as “areas *inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*” (33 CFR328.3(b);1984.).

Whenever potential wetland areas were located, procedures described in the U.S. Army Corps of Engineers (“Corps”) Wetland Delineation Manual (“WDM”) (Corps 1987) and Regional Supplement to the Corps WDM: Eastern Mountain and Piedmont (“EMP”) (Corps 2012), were employed to: (1) determine if the area was a wetland, and if so, (2) delineate the boundary of the wetland. This process involved documenting the dominant plant species and carefully examining potential indicators of soils and hydrology. The dominant plants (i.e., tree, shrub, ground, and woody vine) were identified to species if possible, using Radford et al. (1968) and Godfrey and Wooten (1979) and their indicator status (obligate, facultative wetland, etc.) (Table 1) was determined from Lichvar (2016). If more than 50% of the dominant species were facultative, facultative wetland, or obligate, the site was considered dominated by hydrophytic vegetation.

Soils were exposed by extracting samples with a soil probe or digging soil pits to a depth of approximately 12-18 inches. Color of the soil matrix (the primary color) and of the redoximorphic

Table 1. Wetland indicator definitions according to Reed (1988) used to determine the status of plant species documented at the site.

Category	Abbreviation	Definition
Obligate Wetland	OBL	Occur almost always (estimated probability >99%) in wetlands under natural conditions
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability 67-99%), but occasionally found in non-wetlands
Facultative	FAC	Equally likely to occur in wetlands or non-wetlands (estimated probability 33-66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67-99%), but occasionally found in wetlands
Upland	UPL	Occur almost always (estimated probability >99%) in non-wetlands under natural conditions

features (color within the matrix, if present) were described using standard Munsell color notation. Other indicators of hydric soil also were noted if present (U.S. Dept. of Agriculture 2010).

A determination of whether the site had a hydroperiod prolonged enough to be considered “wetland hydrology” was made based on field indicators described in the EMP supplement. Additional information regarding each of the indicators/parameters of wetland hydrology can be found in the WDM and EMP supplement.

Once an area was determined to be a wetland, its boundaries were delineated based on the presence or absence of each of the wetland parameters. A flag or other marker was placed in the ground to indicate the point at which one or more of the parameters ceased to be present, thus denoting the edge of the wetland. Each wetland then was assigned to the most detailed Cowardin and hydrogeomorphic class (“HGM”) possible.

4.1.2 Deepwater Aquatic Habitat

Deepwater Aquatic Habitat is defined in the WDM as any open water area that has a mean annual water depth >6.6ft, lacks soil, and is either unvegetated or supports only floating or submersed macrophytes.

4.1.3 Drainage Features, Streams, and/or Wet Weather Conveyances

All other aquatic features, (other than wetlands), were documented utilizing Tennessee Department of Environment and Conservation’s (“TDEC”) Division of Water Pollution Control *Guidance for Making Hydrologic Determinations, Version 1.5* (“Guidance”) (TDEC 2020).

Prior to conducting a field evaluation, MRW reviewed the recent precipitation patterns for the local area, and the long-term seasonal precipitation trends. Local weather conditions over the previous one week, one month, and three-month intervals, prior to the field investigation date were

assessed. This information was utilized to determine if “Normal Weather Conditions” existed in the area. In addition, MRW considered other available information such as historic land-use, regional geology and soil types, or previous hydrologic determinations near the site. All hydrologic determinations were made by a Qualified Hydrologic Professional (1105-TN11).

5 RESULTS

5.1 Aquatic Features

According to local weather data, Climatological Data for the McMinnville, Tennessee (Station ID: McMinnville (USC00405882 (GHCN)));

- No precipitation had fallen within 48 hours of the assessment and a total of 5.90 inches of precipitation had fallen seven days prior to the assessment completed on May 13, 2024.

Following the review of the weather data, MRW determined that the weather conditions based on the Hydrologic Determination Guidance were “average” (Table 2).

Table 2. “Normal Weather Conditions” Chart

	Long-term rainfall records					Actual Rainfall	Condition	Condition value	Month weight value	Product of previous two columns
	Month	Standard Deviation	Minus One Standard Deviation	Normal (Mean inches)	Plus One Standard Deviation					
1st prior Month	April	2.07	2.26	4.33	6.4	5.03	Average	2	X 3	6
2nd prior Month	March	2.70	2.85	5.55	8.25	7.12	Average	2	X 2	4
3rd prior Month	February	1.89	2.82	4.71	6.60	4.59	Average	2	X 1	2
									Sum =	12

Based on the on-site review, one wetland area was identified within the Subject Property (Figure 4).



Figure 4. Hydrologic features identified within the Subject Property.

5.1.1 Wetlands

Table 3 depicts the acreage, HGM classification, and Cowardin classification of the wetland areas identified within the Subject Property. Sample locations, wetland delineation forms, and pictures are included in Appendix A.

Table 3. Characteristics of Identified Wetlands.

ID	Acreage	Cowardin Classification	HGM Classification	Latitude	Longitude
WET-A	0.52	PEM1A/C	Slope/Depression	35.801555	-85.793848

Wetland-A

Wetland-A (“WET-A”) is a palustrine emergent wetland. WET-A starts at a spring and spring box that appears to have been used as a water source in the past. In addition, a small pond has been excavated in the wetland area in the past. Hydrology indicators included saturated soils, surface water, and oxidized rhizospheres on living roots. Hydrophytic vegetation dominated the wetland area and included species such as; soft rush (*Juncus effusus*), shallow sedge (*Carex lurida*), spotted Joe pye weed (*Eutrochium maculatum*), woolgrass (*Scirpus cyperinus*), broad-leaf cattail (*Typha latifolia*), duckweed (*Lemna* sp.) and green bulrush (*Scirpus atrovirens*). Hydric soils are present and meet the requirements of the F3 Indicator – Depleted Matrix.

5.1.2 Deepwater Aquatic Habitat

No deepwater aquatic habitat was identified within the Subject Property.

5.1.3 Streams, WWC, and Upland Drainage Features

No streams, WWCs, and/or upland drainage features were identified within the Subject Property.

6 CONCLUSIONS

6.1 Aquatic Features

MRW identified one wetland area within the Subject Property. The wetland area identified within the Subject Property totaled approximately 0.52 acres.

Prior to any construction, MRW strongly recommends consultation with appropriate regulatory personnel before any alteration to these aquatic features is undertaken. This includes but is not limited to the placement of fill material into these features or the alteration of hydrology across the site.

7 LITERATURE CITED

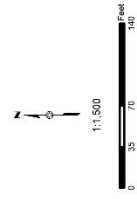
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APPENDIX A

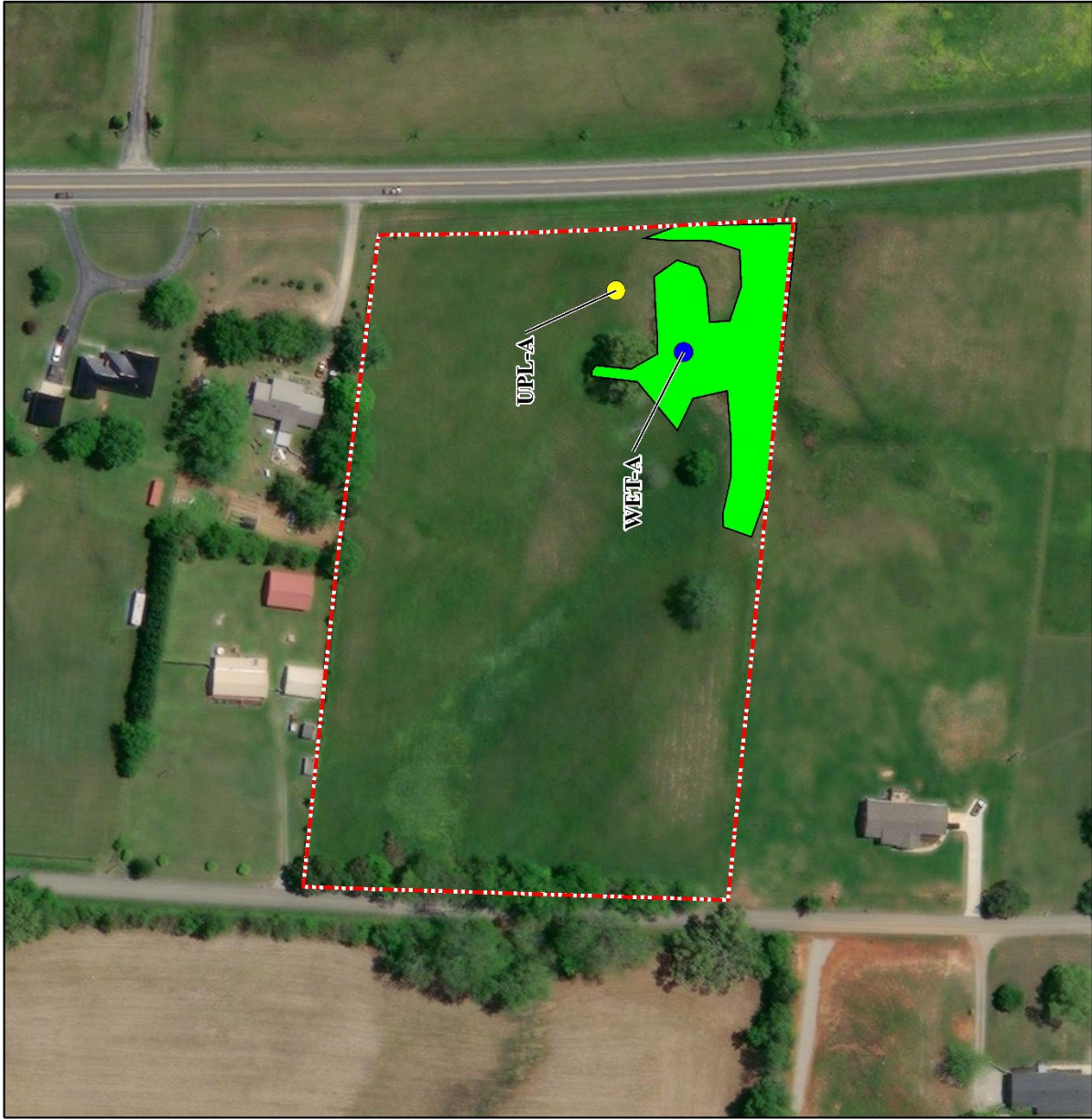
Additional Information

**Three Rivers Home Builders
Smithville Highway Project**

- Subject Property
- Wetland Area



MIRW
Missouri River
Natural Resource Consultants



Disclaimer: For the purposes of this document, parcel information shown is a representation and should not be considered to be survey grade accuracy.

Aerial photo of the Subject Property depicting the location of each aquatic feature.



Picture 1. Photograph of WET-A



Picture 2. Photograph of WET-A



Picture 3. Photograph of UPL-A

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Three Rivers Home Builders City/County: Warren Sampling Date: May 17, 2024
 Applicant/Owner: James Dickson State: TN Sampling Point: WET - A
 Investigator(s): Ken Morgan and Matt Granstaff Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR or MLRA): LRR Lat: 35.801454 Long: -85.793493 Datum: NAD83

Soil Map Unit Name: Christian, Dickson, Huntington, Lindside, Waynesboro NWI Classification: PSS/PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply): <input checked="" type="checkbox"/> Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Drift Deposits (B3) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Algal mat or Crust (B4) _____ Thin Muck Surface (C7) _____ Iron Deposits (B5) _____ Other (Explain in Remarks) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required): _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
--	--

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (Inches): <u>1-2</u> Water Table Present? Yes <u>X</u> No _____ Depth (Inches): <u>3-4</u> Saturation Present? Yes <u>X</u> No _____ Depth (Inches): <u><1</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
---	---

Describe Recorded Data (stream gauge, aerial photos, previous inspections), if available:

Remarks: Surface water depth is for areas outside the excavated pond. Pond is 3-4 feet deep.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: WET - A

Tree Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	
Sapling Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____		20% of total cover: _____	
Shrub Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>	
Herb Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
2. <u>Juncus effusus</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Carex lurida</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>
4. <u>Eutrochium maculatum</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
5. <u>Scirpus cyperinus</u>	<u>15</u>	<u>No</u>	<u>OBL</u>
6. <u>Scirpus atrovirens</u>	<u>10</u>	<u>No</u>	<u>OBL</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>55</u>		20% of total cover: <u>22</u>	
Woody Vine Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Rubus sp.</u>	<u>15</u>	<u>No</u>	<u>UNK</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (C)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL Species <u>55</u>	X 1 = <u>55</u>
FACW Species <u>45</u>	X 2 = <u>90</u>
FAC Species <u>70</u>	X 3 = <u>210</u>
FACU Species _____	X 4 = _____
UPL species _____	X 5 = _____
Column Totals: <u>170</u> (A)	<u>355</u> (B)
Prevalence Index = B/A = <u>2.0</u>	

Hydrophytic Vegetation Indicators:

_____ - Rapid Test for Hydrophytic Vegetation

X - Dominance Test is > 50%

X - Prevalence Index is ≤ 3.0¹

_____ - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)

_____ - Problematic Hydrophytic Vegetation (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes	<u>X</u>	No
-----	----------	----

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR5/1	80	5Y6/8	20	C	M		
6-9	10YR5/2	95	5Y6/8	5	C	M		
+9	10YR5/1	100						

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils : ³	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Statified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> IronManganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soils Present? Yes <input checked="" type="checkbox"/> No _____</p>
--	---

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Three Rivers Home Builders City/County: Warren Sampling Date: May 17, 2024
 Applicant/Owner: James Dickson State: TN Sampling Point: UPL - A
 Investigator(s): Ken Morgan and Matt Granstaff Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%): 4
 Subregion (LRR or MLRA): LRR Lat: 35.801454 Long: -85.793656 Datum: NAD83

Soil Map Unit Name: Christian, Dickson, Huntington, Lindside, Waynesboro NWI Classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply): <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required): <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
---	--

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (Inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (Inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (Inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
--	---

Describe Recorded Data (stream gauge, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: UPL - A

Tree Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Sapling Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Shrub Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Herb Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Schedonorus arundinaceus</u>	<u>85</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot Size: <u>30 meters</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
_____ = Total Cover			
50% of total cover: _____ 20% of total cover: _____			

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

 Total Number of Dominant Species Across All Strata: 1 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (C)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL Species _____ X 1 = _____
 FACW Species _____ X 2 = _____
 FAC Species _____ X 3 = _____
 FACU Species 85 X 4 = 340
 UPL species _____ X 5 = _____
 Column Totals: 85 (A) 340 (B)

 Prevalence Index = B/A = 4.0

Hydrophytic Vegetation Indicators:
 _____ - Rapid Test for Hydrophytic Vegetation
 _____ - Dominance Test is > 50%
 _____ - Prevalence Index is ≤ 3.0¹
 _____ - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
 _____ - Problematic Hydrophytic Vegetation (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:
 Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
 Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

 Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

 Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

 Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹				
0-6	10YR5/3	100							
+7	10YR5/4	100							

¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=masked Sand Grains. Location: ² PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils : ³
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Statified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> IronManganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	


³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<p>Restrictive Layer (if observed):</p> <p>Type: _____</p> <p>Depth (inches): _____</p>	<p>Hydric Soils Present? Yes _____ No <u> X </u></p>
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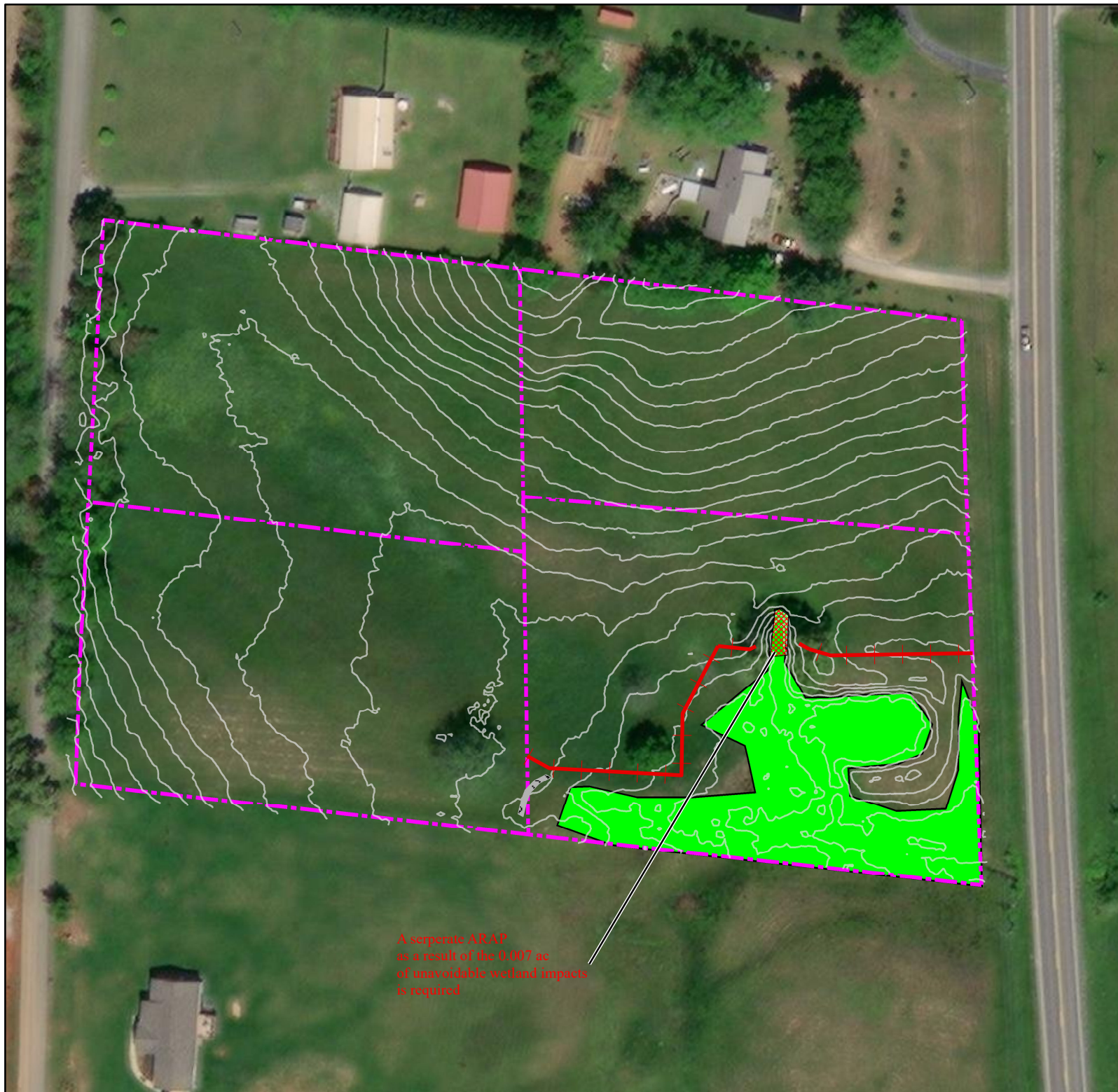
Remarks:

**APPENDIX C
Project Plan**

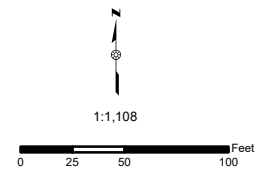
**Three Rivers Home Builders
Smithville Highway Project
Initial Erosion Control Plan**

-  Boundary
-  Driveway
-  Septic Area
-  Wetland Area
-  Silt Fence
-  Rock Check Dam

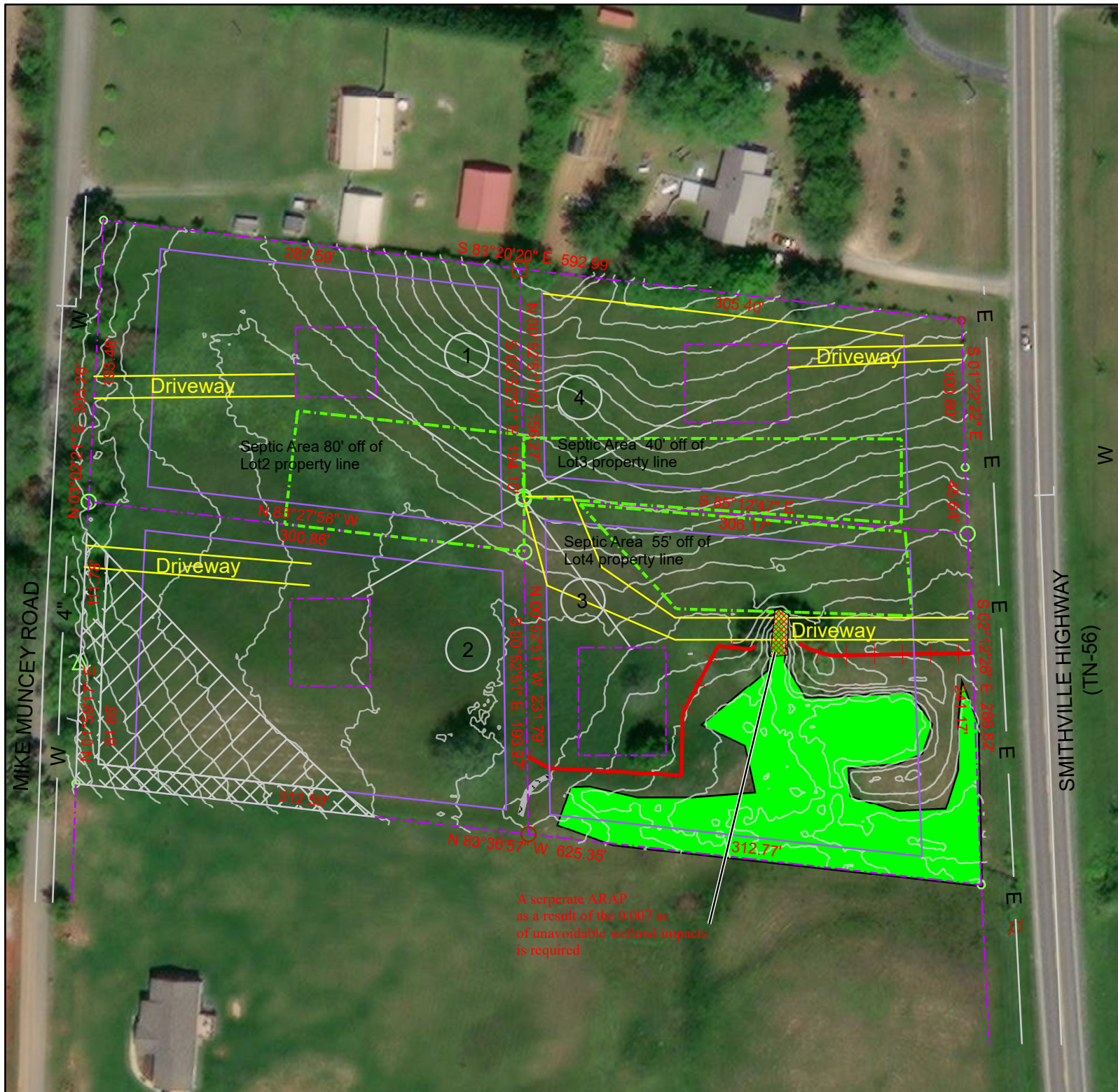
Erosion Control Measure will be installed at a minimum of 15 feet from any jurisdictional feature and would maintain an average distance of 30 feet.







A separate ARAP as a result of the 0.007 ac of unavoidable wetland impacts is required

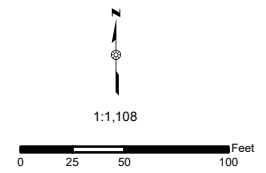


**Three Rivers Home Builders
Smithville Highway Project
Interim Erosion Control Plan**



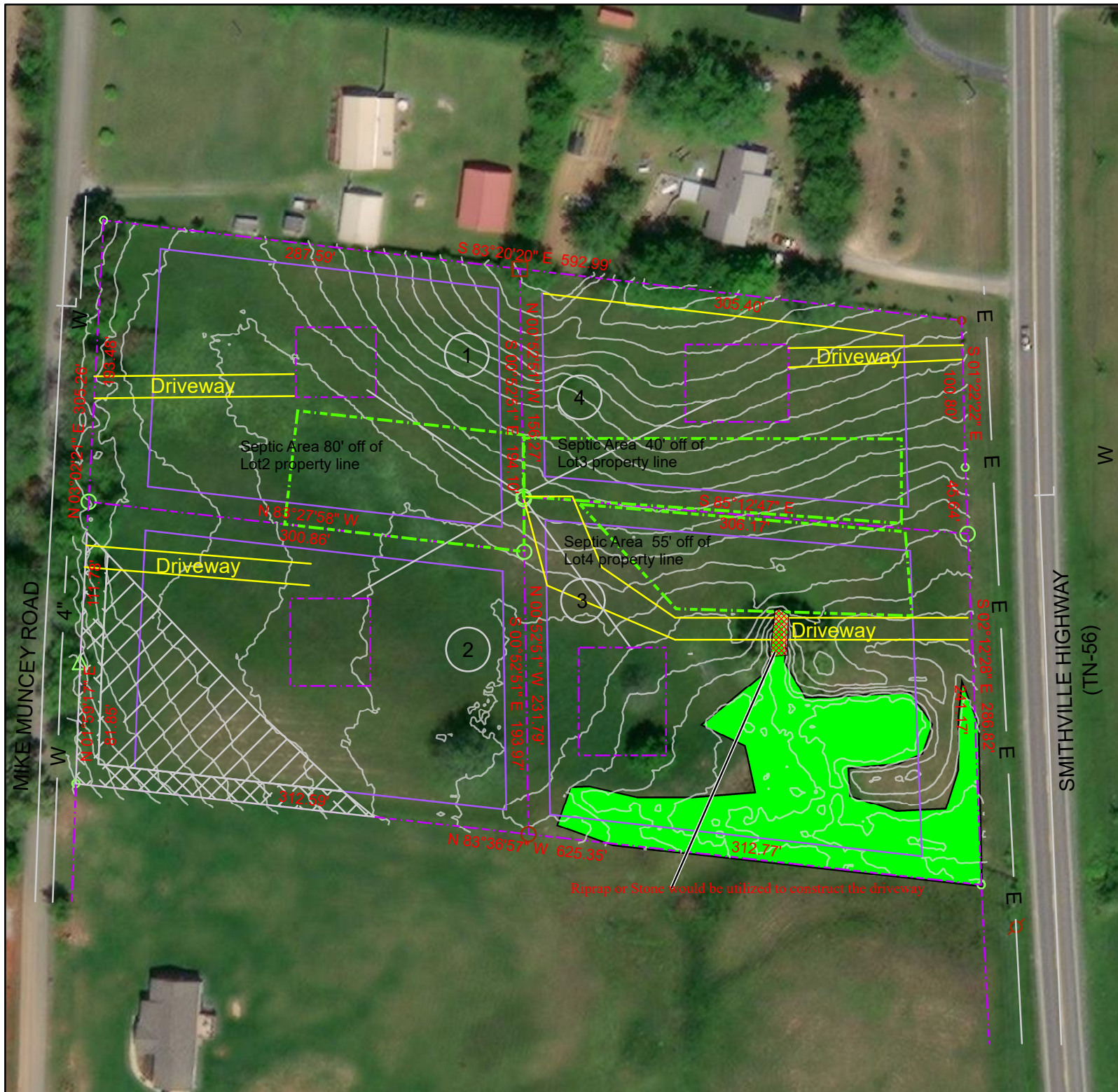
-  Boundary
-  Driveway
-  Septic Area
-  Wetland Area
-  Silt Fence
-  Rock Check Dam


Erosion Control Measure will be installed at a minimum of 15 feet from any jurisdictional feature and would maintain an average distance of 30 feet.



A separate ABAP as a result of the 0.087 ac of unavoidable wetland impacts is required

**Three Rivers Home Builders
Smithville Highway Project
Final Erosion Control Plan**



-  Boundary
-  Driveway
-  Septic Area
-  Wetland Area
-  Silt Fence
-  Rock Check Dam

Erosion Control Measure will be installed at a minimum of 15 feet from any jurisdictional feature and would maintain an average distance of 30 feet.

