STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PART I

CONSTRUCTION STORM WATER GENERAL NPDES PERMIT

FOR

Entergy Mississippi, Inc.
Snowden Park Transmission Line
Desoto County, Mississippi

June 2022

PREPARED BY:

Headwaters, Inc.
P. O. Box 2836
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HEADWATERS INC.
NATURAL RESOURCES CONSULTING

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I. INTRODUCTION

The purpose of the Storm Water Pollution Prevention Plan (SWPPP) is to provide a site-specific description of the best management practices to prevent contamination of the site storm water flows from potential pollutants associated with construction activities. The SWPPP has been prepared for Entergy, as required by the Mississippi Department of Environmental Quality (MDEQ) in compliance with the applicable regulations for coverage under the Construction Storm Water General NPDES Permit. Headwaters, Inc. has developed this SWPPP to be incorporated into the routine construction activities associated with the proposed project development plans. The plan also outlines implementation, inspection, and maintenance requirements. The erosion and sediment control practices should be monitored, and the plan should be revised if storm water compliance is not achieved.

II. SITE ASSESSMENT

A. **Location**: The site is an existing electrical transmission line between Hwy 302 and Church Road. The proposed ROW is located between Tchulahoma Road and Swinnea Road in Southaven in Desoto County, Mississippi. The following GPS coordinates can be used to locate the project area:

Northern Terminus: 34.964260N, -89.971484W
Southern Terminus: 34.932019N, -89.982130W

B. **Description of Work**: The project will involve the construction of approximately 0.80 miles of new transmission line and maintenance on 3.83 miles of existing transmission line. Roughly 11.29 acres of right-of-way (ROW) will be disturbed throughout the entire project. The proposed ROW is 120 feet wide and the existing ROW is 40 feet wide. The proposed ROW that is to be cleared will be mulched during the clearing process in order to stabilize those areas.

C. **Potential Pollution Sources**: The most significant potential pollutants are soil particles subject to removal by storm water. Other potential pollutants subject to removal by storm water are spilled fuel and lubricants. Material may also be inadvertently tracked off-site or blown off-site when distributed by hauling equipment. The storm water, which leaves the site, shall meet the non-numeric limitations of being free from oil, scum, debris, other floating materials, and eroded soils.

D. **Non-Storm Water Solid Materials**: The on-site generation of solid materials will be minimal, and its proper disposal will be closely monitored. All solid waste will be taken off-site for proper disposal.

E. **Drainage Patterns**: Most of the rainwater that falls on areas disturbed by construction activities will sheet flow off the ROW.

F. **Receiving Waters**: Unnamed tributaries to Horn Lake Creek will be the main receiving waters for this project. Horn Lake Creek is included on Mississippi's 303(d) list of impaired waterbodies. Extensive measures will be taken to prevent any silt and sediment contamination from entering this receiving stream.

G. **Wetlands:** The entire property has been delineated and the proposed project will be covered by a NWP 57 from the US Army Corps of Engineers (USACE) but no notification will be required.

III. BEST MANAGEMENT PRACTICES (BMPs)

A. **Erosion and Sediment Control:** Construction activities shall not cause more than minimal and temporal water quality degradation of any adjacent wetlands, stream, or water body. Appropriately chosen and installed erosion and sediment control BMPs will be used to prevent sediment from leaving the site or entering adjacent wetlands or other waters. All BMPs implemented for the site will be in accordance with the standards set forth in the most current edition of the MDEQ "Planning and Design Manual for the Control of Erosion, Sediment and Storm Water." The contractor will be responsible for installing, inspecting, and maintaining the erosion and sediment controls for the duration of the project until final stabilization of the site is achieved, and a Notice of Termination has been issued by MDEQ. The site plan found in Appendix II will detail where each BMP will be used. Additional control measures could include but are not limited to the use of secured hay bales, sediment/silt fencing, wooden or vinyl barriers and/or seeding or sodding of exposed or disturbed areas.

1. Structural Practices

- Construction Entrance/Exit (Rock) (Temporary Practice) – There are no plans for construction entrances to be installed since the work will take place along existing roads. However, should the plans change and the

need for construction entrances be required, aggregate would be at least six (6) inches thick and 50 feet long using DOT#1 coarse aggregate. The entrances would be inspected weekly and periodic top dressing with new gravel could be necessary when it becomes clogged with dirt and/or debris to prevent the tracking of mud and dirt onto the roadway. In addition, dirt and debris that accumulates on the roadway would be removed immediately.

- Wet Crossings – No wet crossings are allowed. A wet crossing is defined as traversing down the bank, across the bottom, and up the other bank of the water body. No wet crossings of drainage swales, farmer drains (no matter how small), ditches, bayous or other flowing water bodies are permitted at any time, no matter the size. If a water body as described above must be traversed, it must be a controlled crossing. This means that appropriate measures (i.e., elevated matting or a culvert with crushed stone as specified in the attached drawings) must be installed to span the water body. The preconstruction drainage pattern, top of bank, slopes, and water bottom must not be disturbed.
- Controlled Water Crossings - All controlled water crossings must be crossed with mat (air bridges) and/or culverts with supporting material. Slopes shall not be disturbed. A fifty (50) feet wide vegetative buffer must remain in place along the top banks of any controlled water crossing. If this buffer cannot be maintained during the clearing portion of the project, silt fence or hay wattles will be utilized until the vegetative buffer can be re-established. Culverted crossings must be constructed by placing culverts and crushed stone on top of geofabric to allow for proper removal during the reclamation portion of the project. A minimum of 3 ft from the top of each bank must remain undisturbed. Crossing mats cannot be located within 3 ft of top of bank. Unless approved by the U.S. Army Corps of Engineers permit, all culverts and supporting material are considered temporary and must be removed prior to the completion of the project.
- Hay Wattles (Temporary Practice) – Wattles will be installed as shown on the site plan. They will be placed between the area to be disturbed, the wetland areas and stream crossings as needed and at any other locations deemed necessary once construction begins. Sediment will be removed when it reaches one third to one half the height of the barrier. Straw wattle must be at minimum eighteen (18) inches in diameter.
- Silt Fence (Temporary Practice) – Silt fence will be installed as shown on the site plan. It will be placed between the area to be disturbed and stream channels as needed and at any other locations deemed necessary once construction begins. Sediment will be removed when it reaches one

third to one half the height of the barrier.

- Sludge/Slurry Management – A Sludge Management Plan must be submitted and approved by Entergy Louisiana, LLC prior to commencement of the proposed project. The plan must include the management of displaced soil, sludge, and slurry.
- Fueling and Vehicle Maintenance Locations – Fueling and vehicle maintenance areas shall use BMPs for industrial activities to ensure that pollutants do not impact the storm water runoff. Impervious dikes and berms shall be used to contain potential spills. Drums and containers for holding and transporting contaminated materials should be on site.

2. Vegetative Practices

- Vegetated Buffers – A fifty (50) feet wide vegetative buffer must remain in place along each top bank of any stream. In areas where tree clearing is required adjacent to the top bank of a stream, stumps must remain in place and grading must be avoided to maintain a fifty (50) feet wide vegetative buffer. Stream buffers are required to avoid potential damage to stream bank slopes causing excessive sediment discharge throughout the life of the project. Additionally, a fifteen (15) feet wide vegetative buffer must remain in place along both sides of the proposed right of way. Construction traffic must avoid traversing across any vegetative buffers along streams and along the right of way edges. Immediately following clearing practices, the vegetated buffers must be seeded with a mixture of Bermuda, Bahia, and Rye Grass. No stockpiling of soil within the vegetative buffer areas or anywhere near a water body is permitted.
- Temporary Seeding (Temporary Practice) – When a disturbed area will be left undisturbed for fourteen (14) days or more, the appropriate temporary or permanent vegetative practices shall be implemented **immediately. MDEQ defines immediately to mean no later than the next workday.**
- Mulching (Temporary) – Mulch will be used whenever possible, excluding wetland areas, to aid in slope stabilization to hold moisture, dampen temperature extremes and retard erosion on steep slopes until temporary or permanent seeding can be implemented. Mulching in wetland areas is prohibited. Mulch in upland non-wetland areas must not exceed four (4) inches in depth.
- Permanent Seeding - Permanent stabilization measures shall be initiated in a project area as soon as construction activities have permanently ceased. When weather and/or logistical factors prevent immediate stabilization, measures should be initiated no later than 14 days after the construction activity in that portion of the site has permanently ceased.

B. **Spill Prevention and Response Procedures:** If single wall tanks are used, then secondary containment measures shall be implemented. Double-wall tanks do not require secondary containment measures. If on-site above ground oil storage (gasoline, diesel, hydraulic, transformer, etc.) exceeds either 660 gallons in a single container or exceeds 1,320 gallons in aggregate storage, a SPCC plan would be required. Entergy Environmental Management should be contacted immediately upon discovery of any releases, Robin Finkel 850-712-7687.

C. **Operation and Maintenance**: The best management practices must be properly installed and maintained as designed and inspected weekly. Any poorly functioning erosion or sediment controls, non-compliant discharges, or any other deficiencies observed during the inspections shall be corrected as soon as possible, but not to exceed 24 hours of the inspection unless prevented by unsafe weather conditions as documented on the inspection form.

D. **Record Keeping:** Records shall be retained for three years of all maintenance activities, spills, and inspections, including a description of the quality and quantity of storm water.

E. **Employee Training:** Headwaters, as a representative of Entergy, understands the requirements of the GP as it pertains to installation, maintenance, inspections and corrective action and will be the responsible party for these activities. Pre-construction training with all on-site workers is required to discuss the requirements and responsibilities of all environmental permitting required by the project. A training roster must be signed and maintained on site. All employees joining the project after the initial meeting must receive the environmental training and sign the roster.

F. **Housekeeping Practices:** Pollutants that may enter storm water from construction sites because of poor housekeeping include oils, grease, paints, gasoline, solvents, litter, debris, and sanitary waste. During construction activities, the contractor is required to:

1. designate areas for equipment maintenance and repair
2. provide waste receptacles at convenient locations and provide regular collection of waste
3. provide protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials

4. provide adequately maintained sanitary facilities
5. designate an area for concrete truck wash off
6. streets will be swept as needed to remove sediment or other debris that has been tracked from construction site
7. sediment or other pollutants will be periodically removed from control measures, conveyance channels, or storm drain inlets.

IV. CONSTRUCTION SEQUENCE

Below is the construction sequence for this project. This sequence could change depending on the sequence of letting bids, contracting, etc. An updated construction sequence will be submitted to MDEQ if changes occur.

1. Obtain plan approval and all other permits as needed.
2. Have a pre-construction conference to review all needed BMPs.
3. Install the construction entrances as shown on the plans.
4. Install all erosion and sediment controls as indicated on the site plan.
5. Begin site work.
6. Perform weekly reviews of site conditions along with erosion and sediment practices to ensure compliance with the SWPPP. Inspection reports will be kept on site with an updated SWPPP.
7. As site is cleared, maintain BMPs as needed to ensure minimal erosion and sedimentation problems.
8. Perform any temporary seeding as needed and instructed throughout the construction process.
9. Final grading, seeding, sodding, mulching, and fertilizing.
10. Ensure final stabilization is achieved within the project site.
11. Removal of any temporary measures.

V. IMPLEMENTATION SCHEDULE

A. **Structural Measures**: The non-existing structural measures shall be installed as the weather permits, and the existing measures shall be re-conditioned as well. General implementation principles are:

1. install down-slope and perimeter controls before other site work
2. divert upslope water around area before major site grading
3. do not disturb an area until it is necessary
4. time construction activities to limit impact from seasonal weather
5. cover or stabilize disturbed area as soon as possible
6. do not remove temporary controls until after site stabilization

7. The permittee shall limit clearing, excavation, and the placement of fill materials to areas essential to the project. The remainder of the property shall be left in its natural state.

B. **Proof of Coverage**: A copy of the Large Construction Storm Water General Permit certificate and a copy of the Storm Water Pollution Prevention Plan should be kept onsite or locally available. Copies of these documents are provided in the Appendix.

VI. INSPECTIONS AND REPORTING

A. Inspections: Inspections of the best management practices and other storm water pollution prevention plan requirements shall be performed as follows:

1. At least weekly for a minimum of four inspections per month.

2. After a rainfall event that produces a discharge and as often as necessary to ensure that appropriate erosion and sediment controls have been properly implemented and maintained.

The minimum inspection requirement in no way relieves the permittee of performing whatever inspections are needed to ensure safe and pollution free facility operation.

B. Reporting: The owner and/or contractor must inspect, as described in the section above, and maintain controls and prepare weekly reports noting damages or deficiencies and corrective measures. These inspection reports are kept on-site until the Request for Termination (RFT) form is submitted.

As previously stated, all records, reports, and information resulting from activities required by this plan and the issued permit shall be retained for at least three years from the date of the CNOI, inspection, or report.

A rain gauge shall be placed in a central location on the site and used to obtain rainfall amounts. This information will be needed for proper completion of the inspection report.

VII. REVISIONS

The storm water pollution prevention plan will be kept current by the company

representative and will be revised as changes in site conditions warrant. The company representative may notify the SWPPP developer for assistance when necessary. Factors that would compel the SWPPP to be modified include:

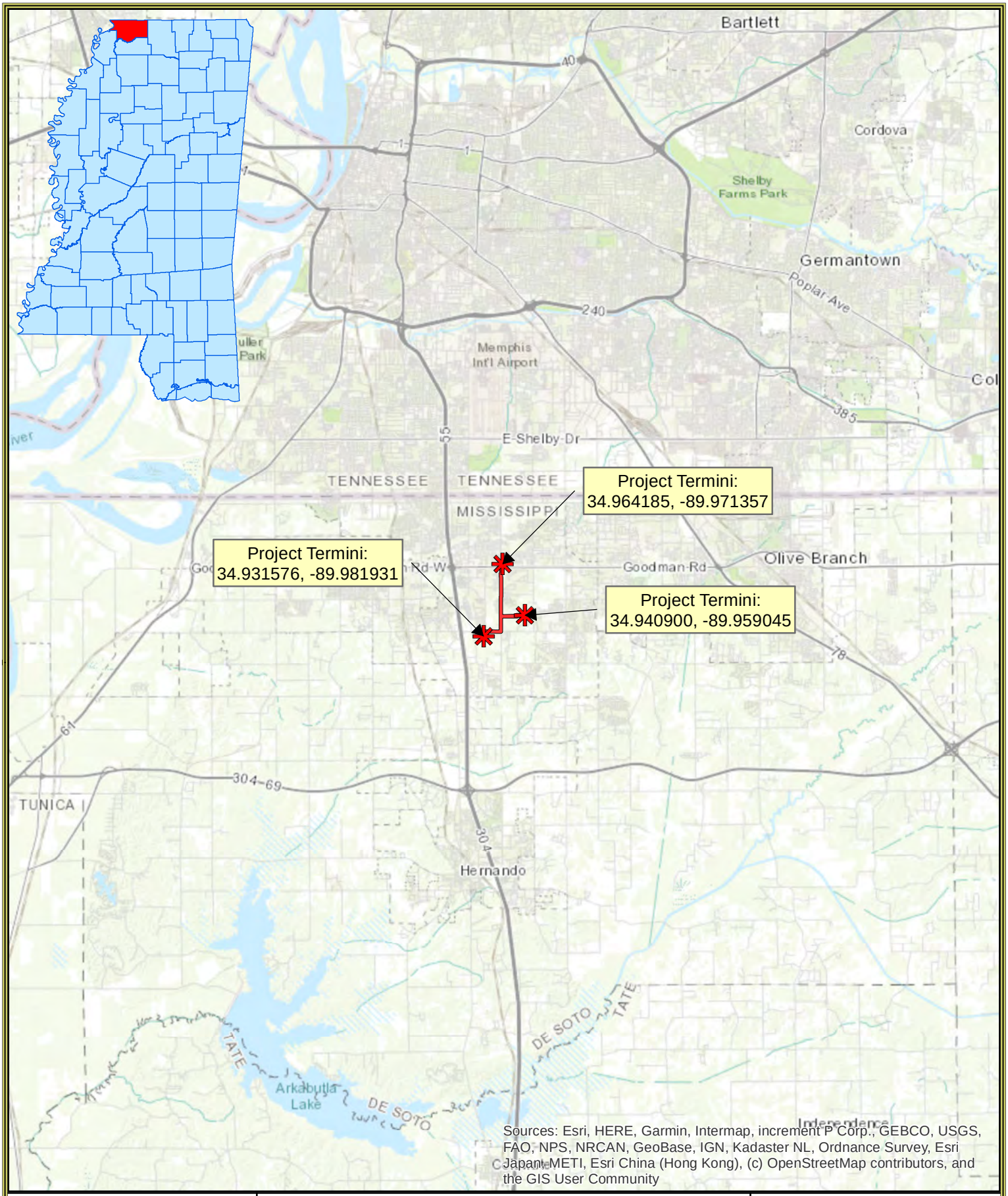
- Inadequacies revealed by routine inspections.
- Changes in identified sources, non-storm water discharges, or non-storm water solid wastes.
- MDEQ Office of Pollution Control notification that the plan does not meet one or more of the minimum requirements.
- Changes in design, construction, operation, or maintenance, which has affected the discharge of pollutants to waters of the State and which were not otherwise addressed in the SWPPP.
- Identification of any new contractor and/or subcontractor that will implement a measure of the SWPPP.
- Install additional erosion and sediment controls when existing controls prove to be ineffective.
- Any additions, removals, or modifications to construction entrances as shown on the site plans.
- All revisions to the SWPPP must be approved by Entergy Environmental.

A plan revision will be completed within 30 days of the date if determined that a revision is warranted. If the modification is in response to a request by the Office of Pollution Control (OPC), the permittee must submit to the OPC certification that the requested changes have been made.

VIII. TERMINATION OF COVERAGE

Within thirty (30) days of final stabilization, the Office of Pollution Control must be notified by a completed Request for Termination (RFT) of Coverage form (copy provided). MDEQ staff will inspect the site and if no sediment or erosion problems are identified and adequate permanent controls are established, the owner or operator will receive a termination letter. Coverage is not terminated until notified in writing by MDEQ. Failure to submit an RFT form is a violation of permit conditions.

IX. APPENDIX I – LOCATION MAPS



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Snowden Park Transmission Line

Sec 29, 31 & 32, T1 S, R7 W; Sec 5, 6, & 7, T2 S, R 7W
Desoto County, Mississippi

General Location Map

0 350,000 700,000 Feet

1:250,000

N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USGS 2001 Pleasant Hill (MS) Quad Basemap

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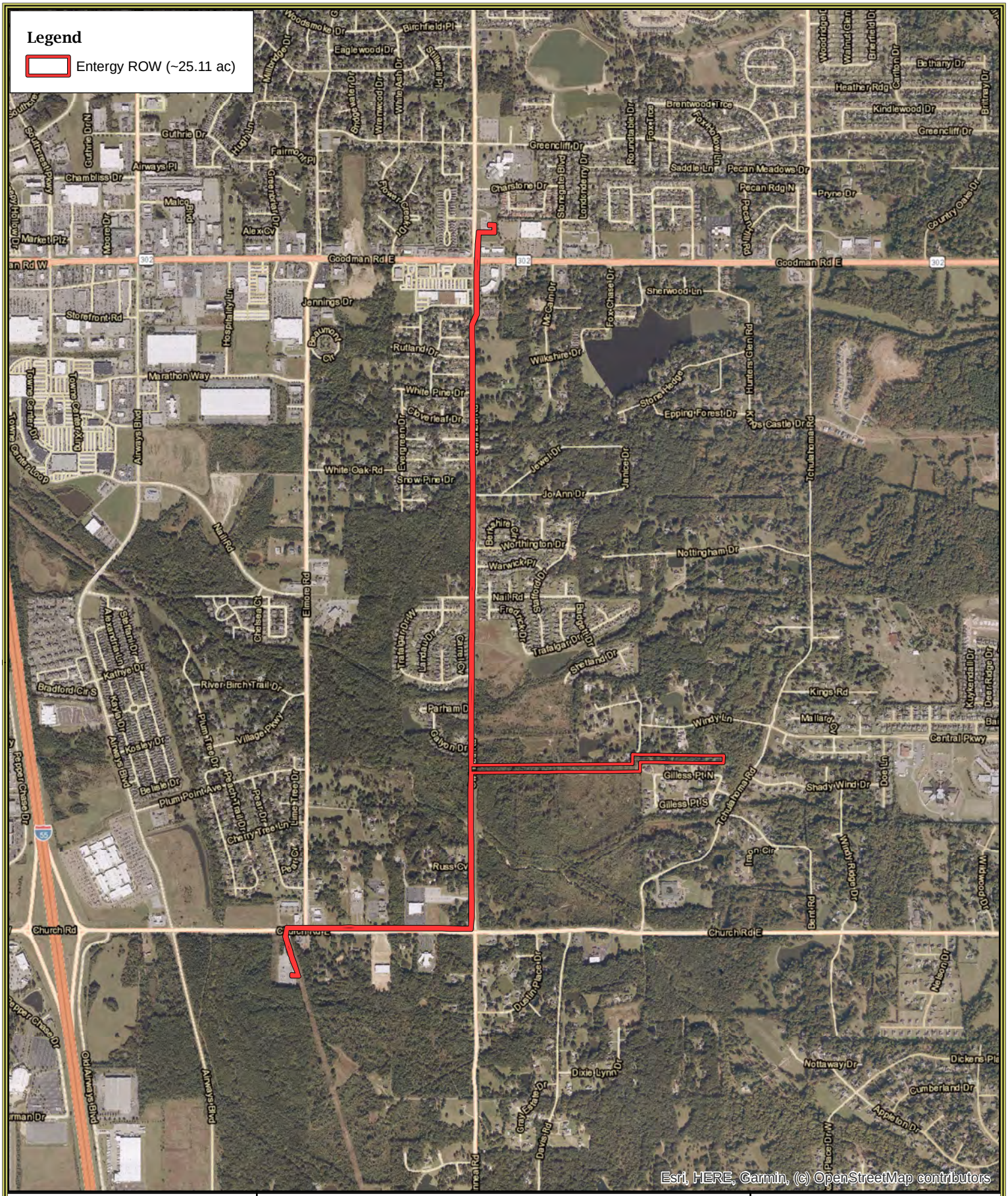

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Site Location Map

0 350,000 700,000 Feet

1:24,000

N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2021 Imagery Basemap

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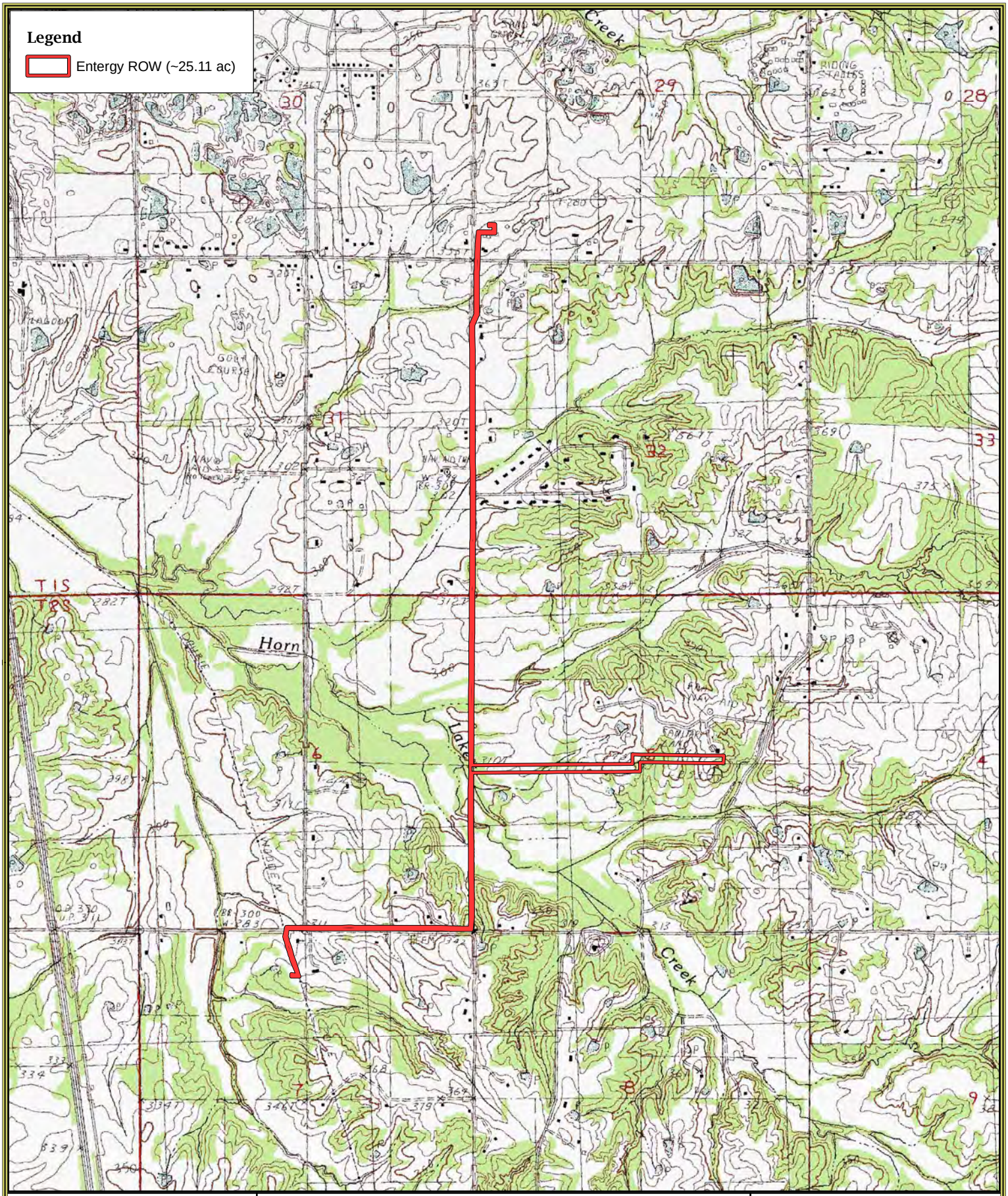

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Site Location Map

0 350,000 700,000 Feet

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USGS 2001 Pleasant Hill (MS) Quad Basemap

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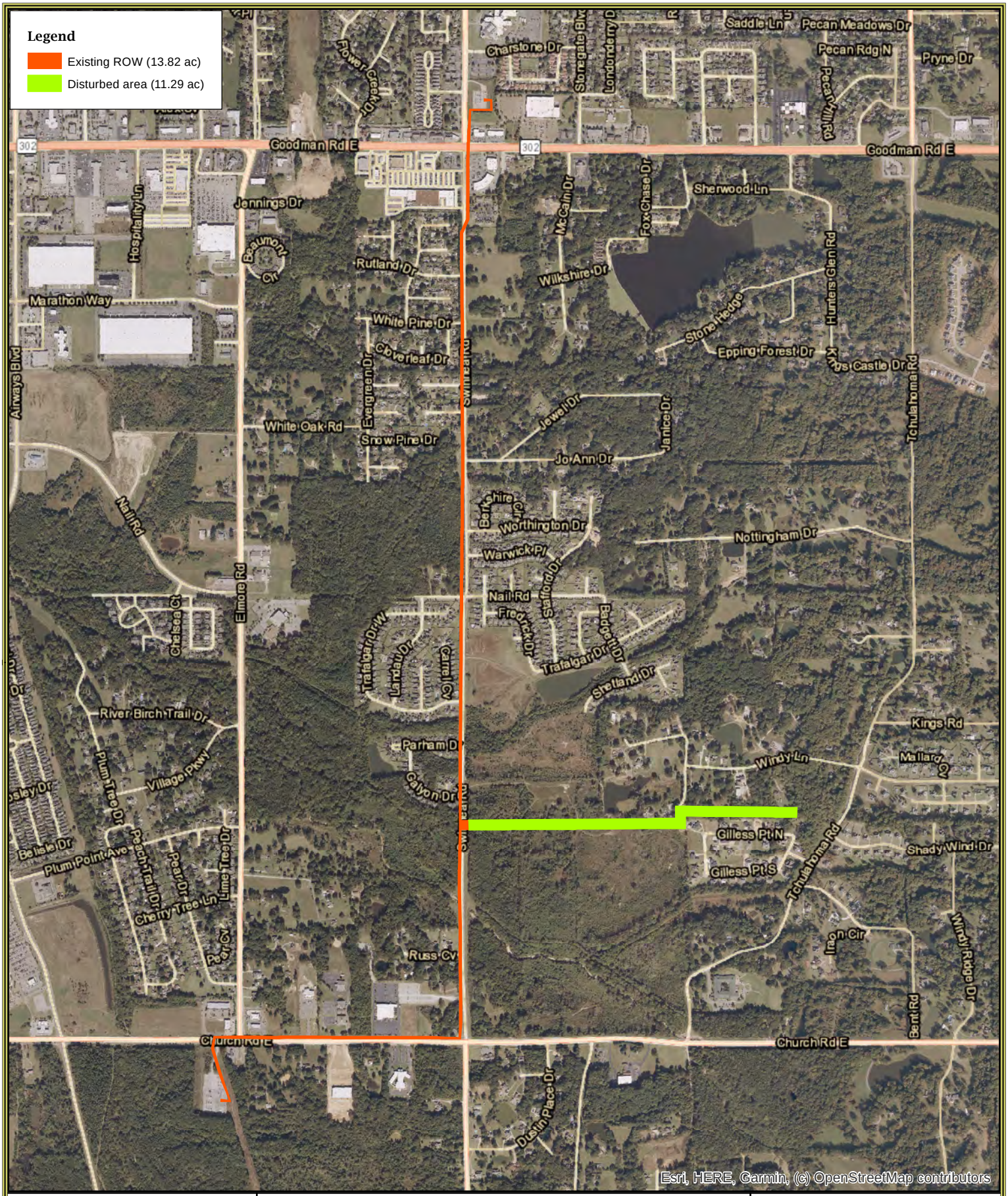
X. APPENDIX II – STORM WATER MANAGEMENT PLANS



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Disturbed Area Location Map

0 2,350 4,700 Feet

1:18,000

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2021 Imagery Basemap

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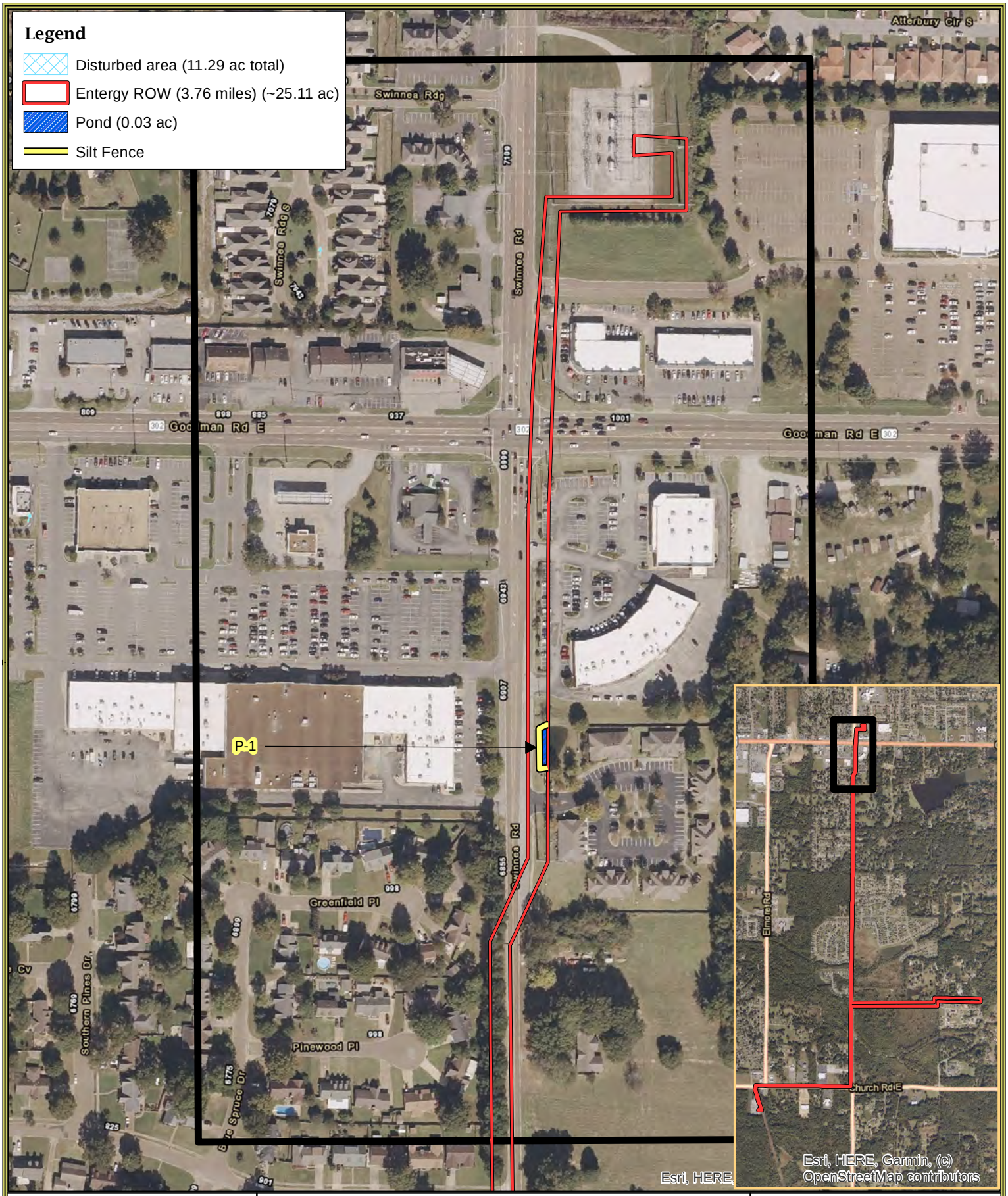

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BMP Location Map

Map 1 of 11

0 2,350 4,700 Feet

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N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

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Wetland Location Map

Map 2 of 11

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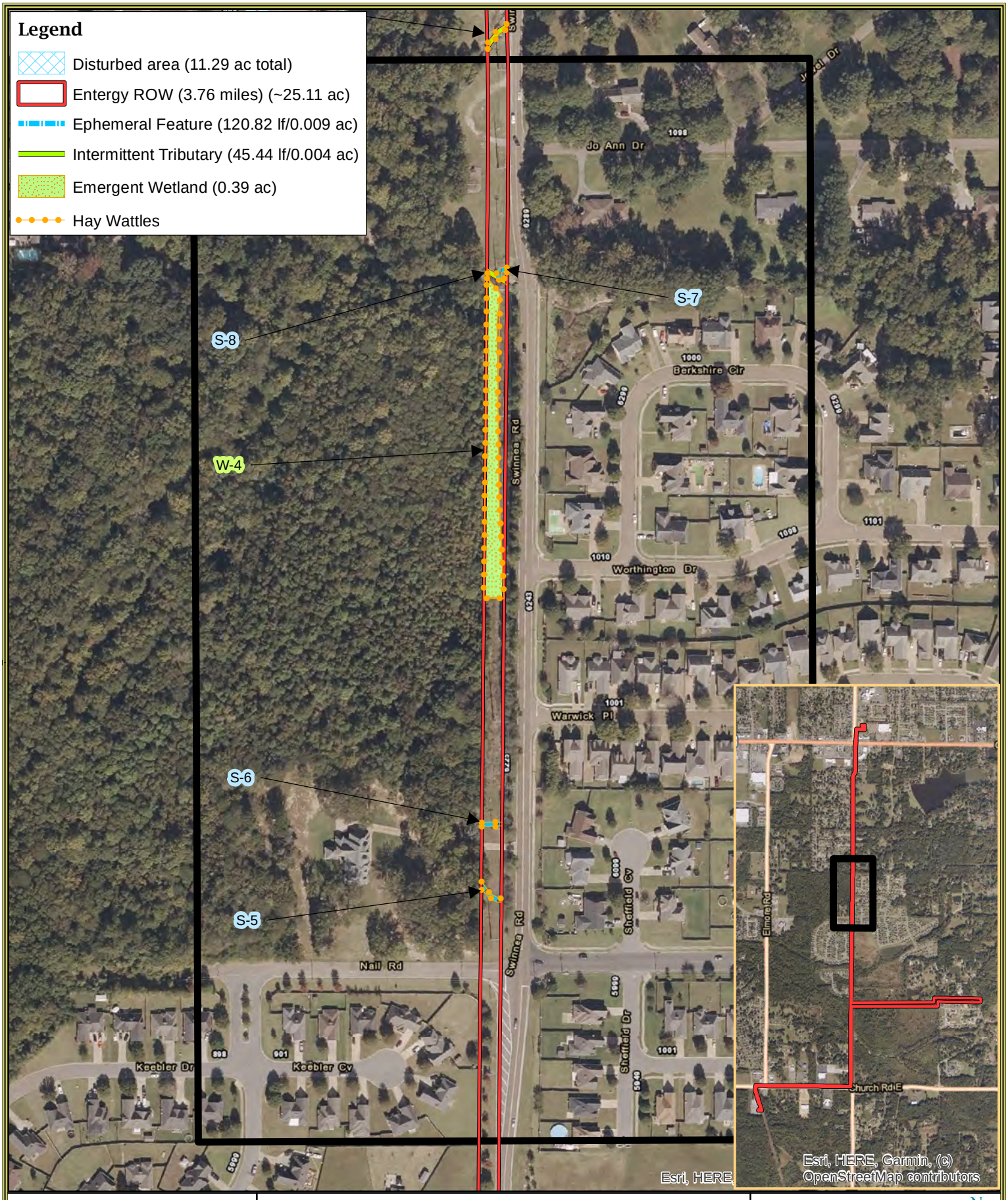

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BMP Location Map

Map 3 of 11

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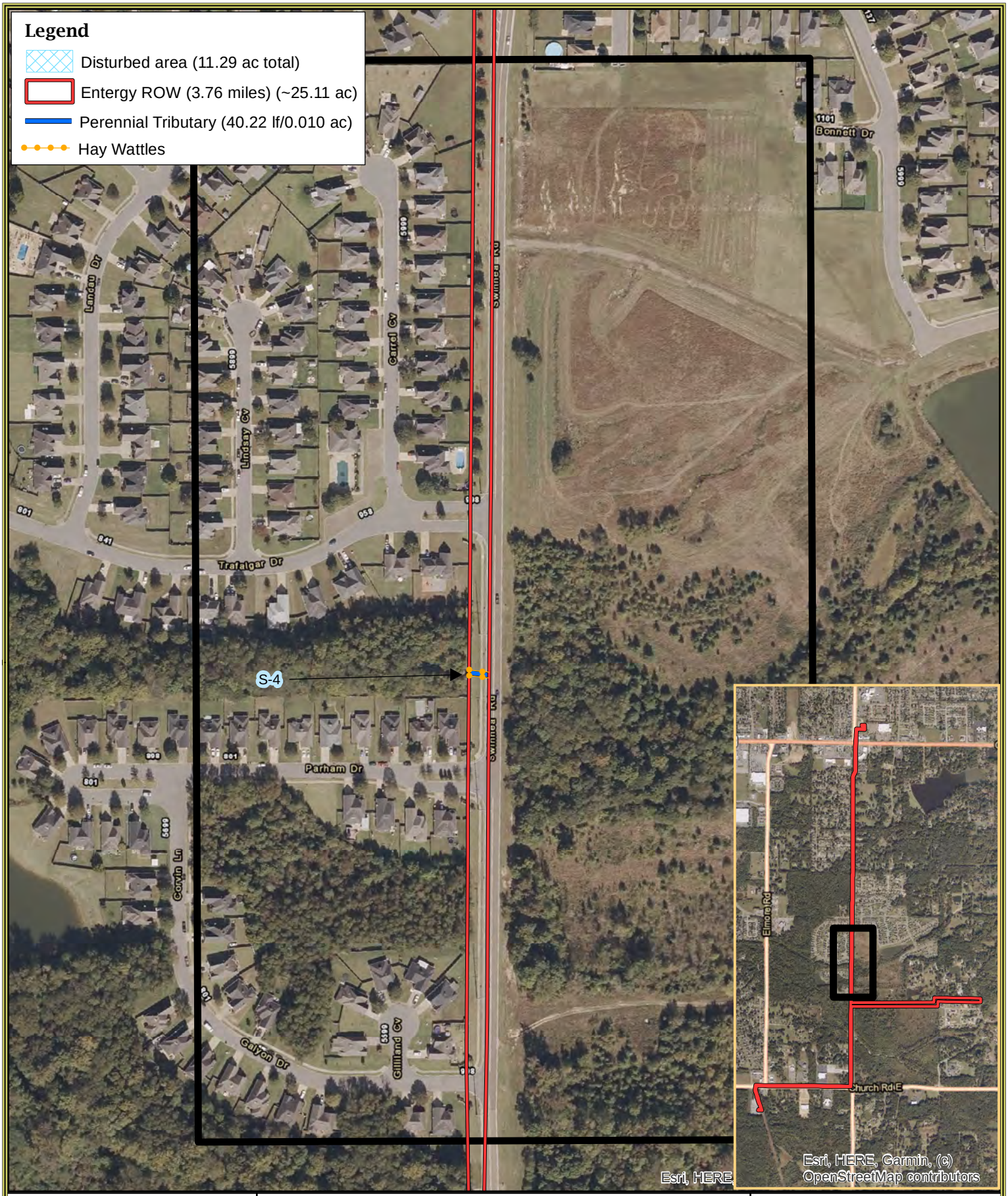

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Desoto County, Mississippi

BMP Location Map

Map 4 of 11

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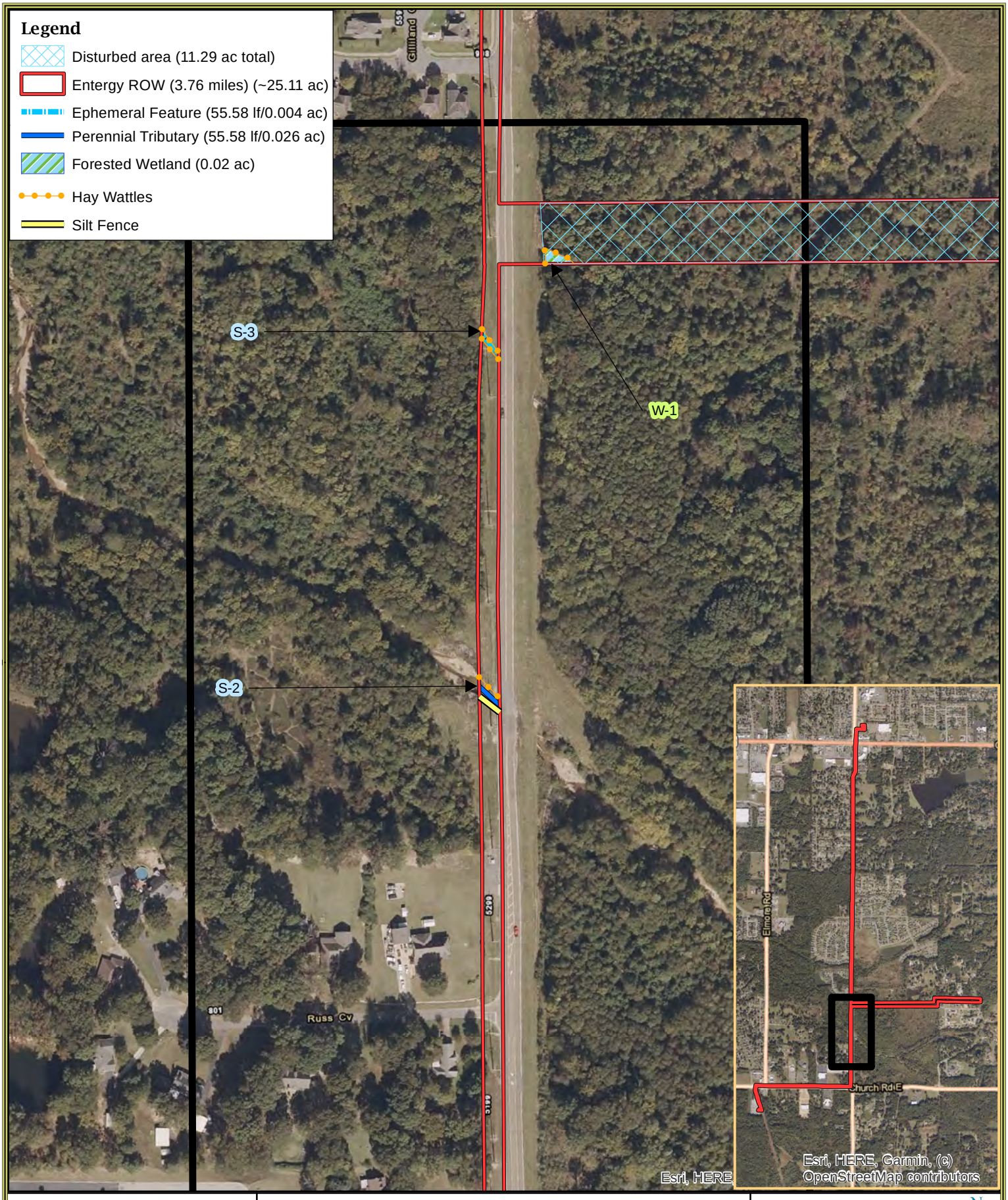

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BMP Location Map

Map 5 of 11

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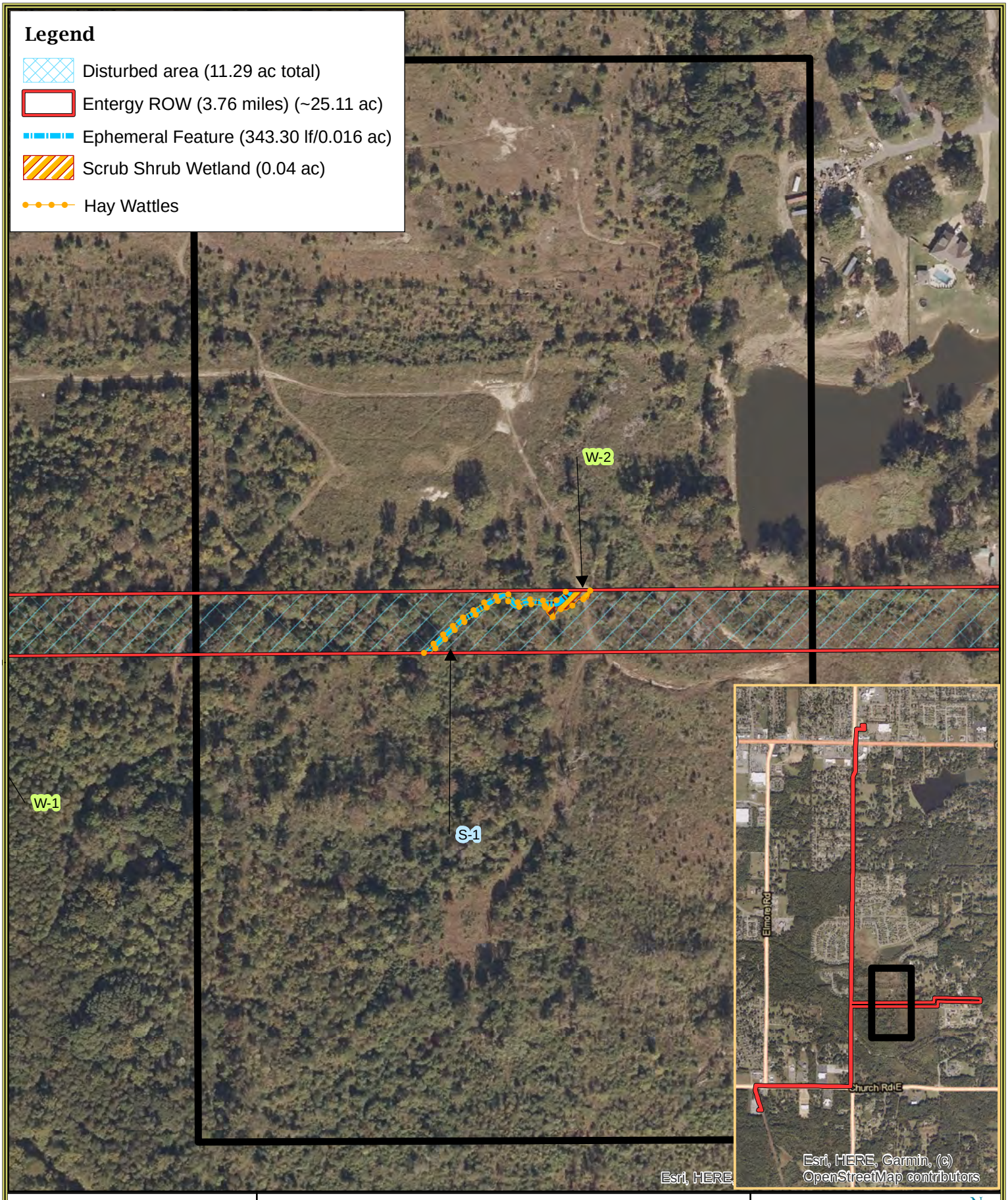

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BMP Location Map

Map 6 of 11

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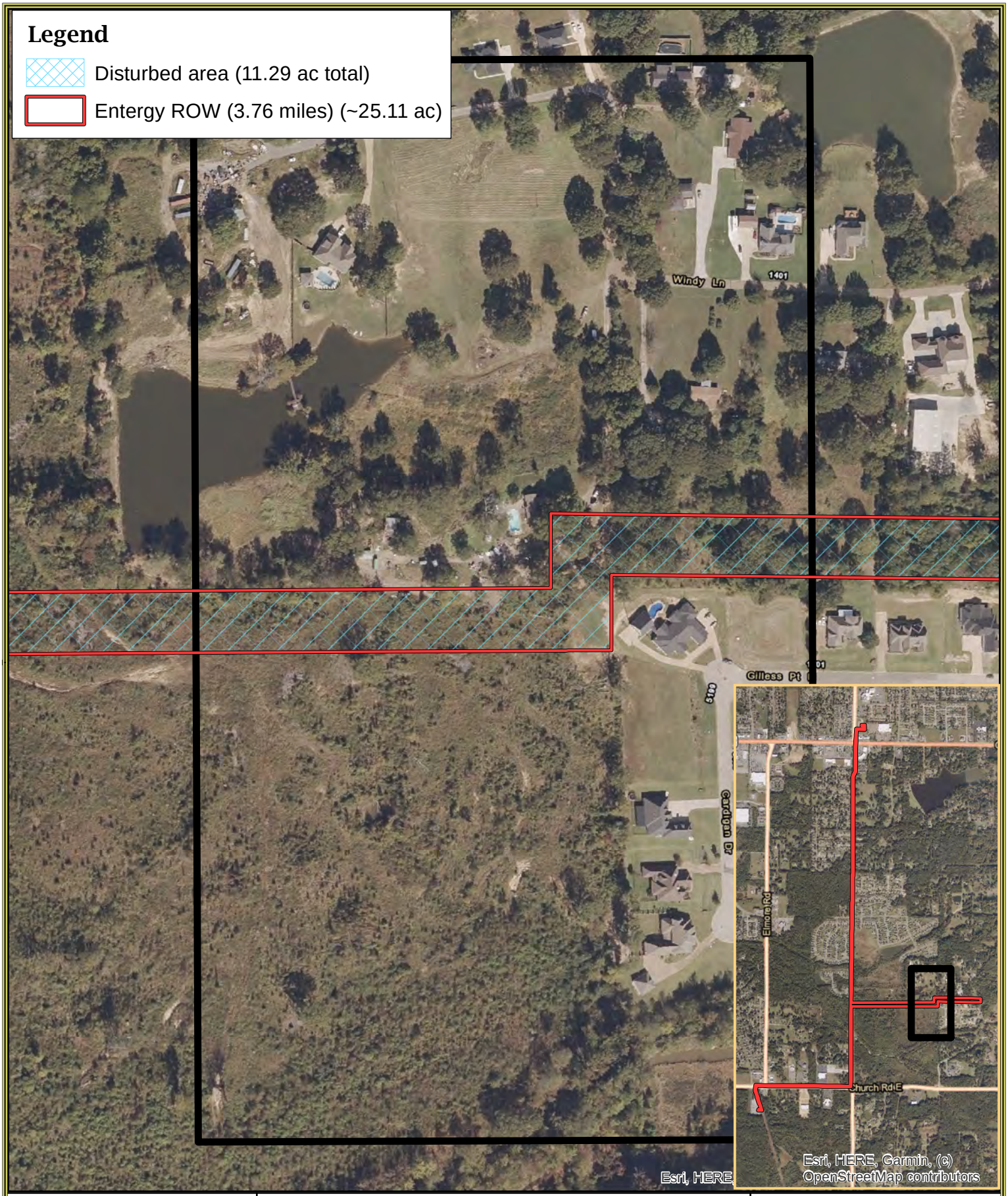

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BMP Location Map

Map 7 of 11

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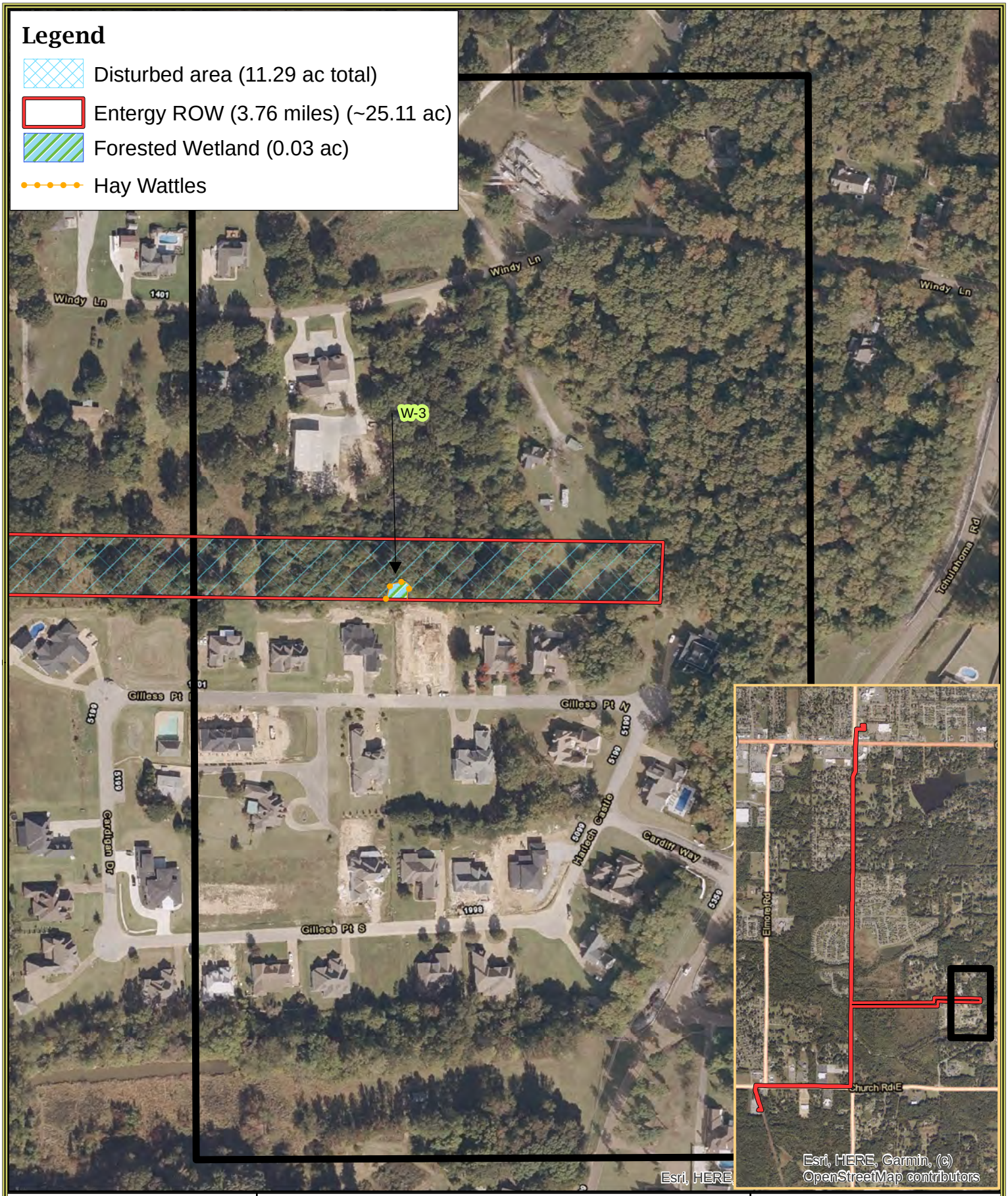

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BMP Location Map

Map 8 of 11

0 2,350 4,700 Feet

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

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BMP Location Map

Map 9 of 11

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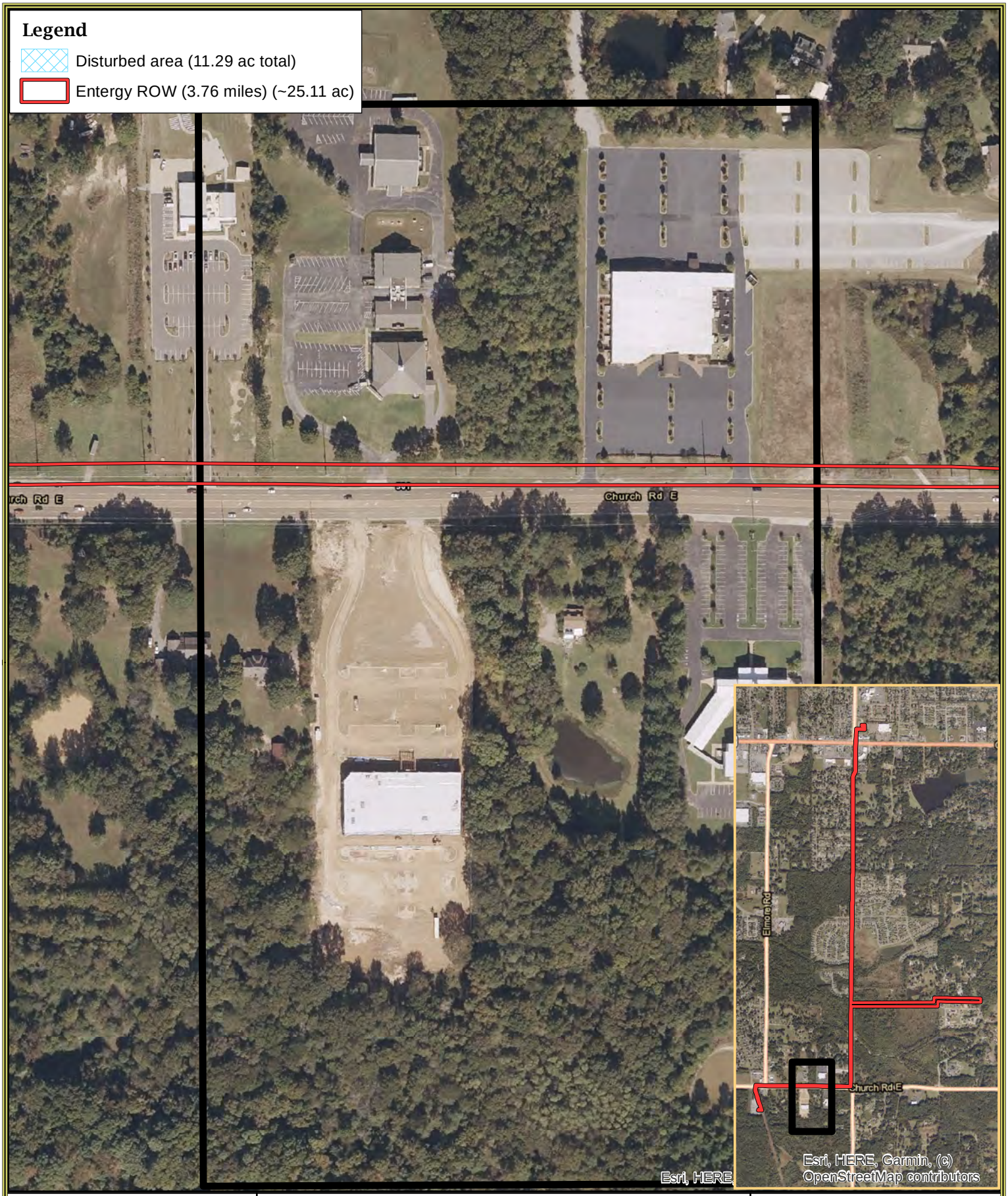

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BMP Location Map

Map 10 of 11

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BMP Location Map

Map 11 of 11

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NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2021 Imagery Basemap

C:\Users\phall\Documents\Entergy\Snowden Park Transmission Line\Mapping\SWPPP BMP map 11.mxd

XI. APPENDIX III – SOIL REPORT

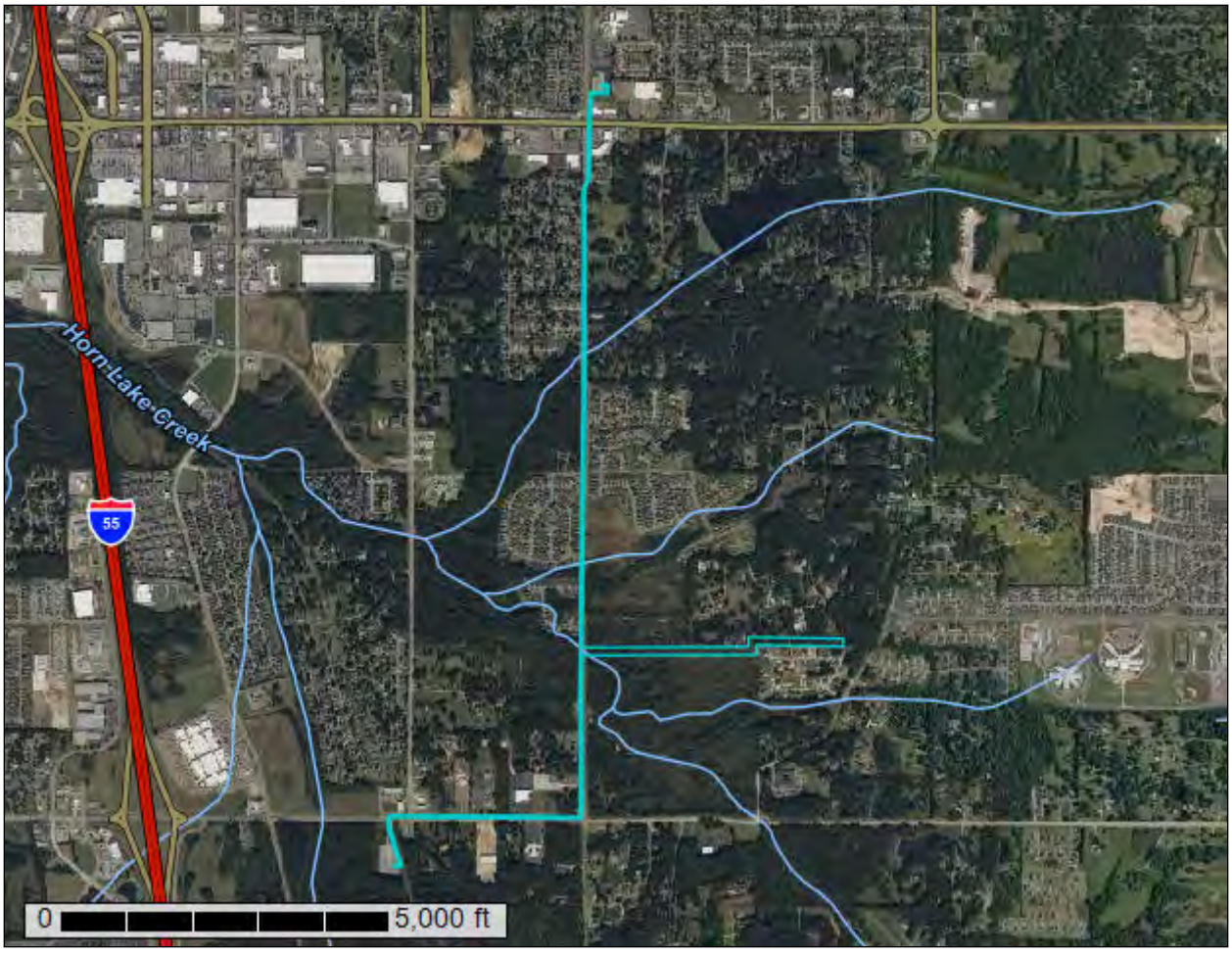
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for DeSoto County, Mississippi



June 2, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

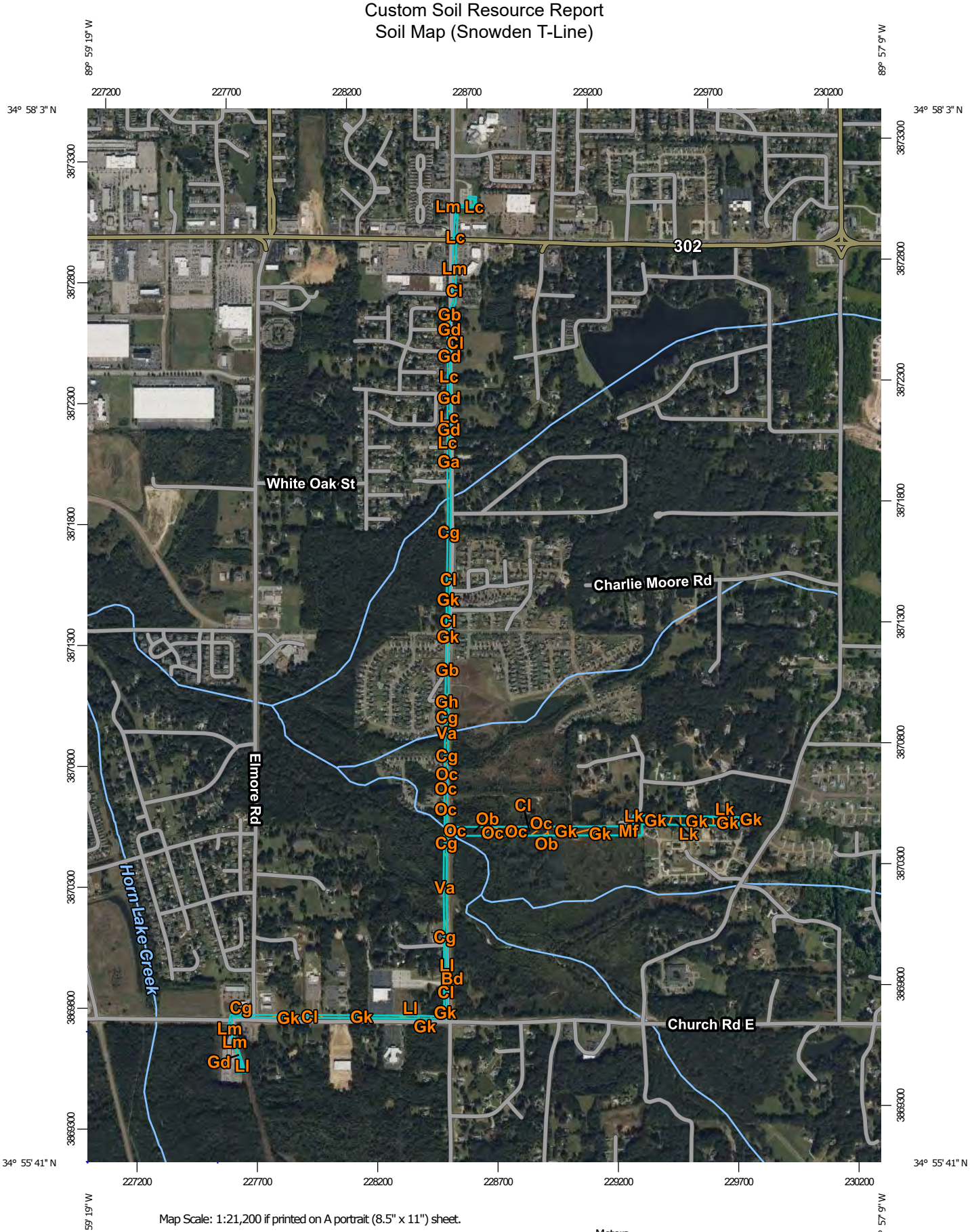
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


89° 59' 19" W
89° 57' 9" W
227200
227700
228200
228700
229200
229700
230200
34° 58' 3" N
34° 55' 41" N
3873300
3872800
3872300
3871800
3871300
3870800
3870300
3869800
3869300
302
White Oak St
Elmore Rd
Charlie Moore Rd
Church Rd E
Horn Lake Creek
Lm Lc
Lc
Lm
Cl
Gb
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Oc
Oc
Oc
Gk
Gk
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Lk
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Mf
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Gk
Map Scale: 1:21,200 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
300
600
1200
1800
Feet
0
1000
2000
4000
6000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeSoto County, Mississippi
Survey Area Data: Version 20, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 2, 2019—Oct 23, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Snowden T-Line)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Bd	Brandon-Loring silt loams, strongly sloping phases	0.6	2.2%
Cg	Collins silt loam (adler)	2.9	11.7%
Cl	Collins and Falaya silt loams, local alluvium phases	2.3	9.1%
Ga	Grenada silt loam, eroded, very gently sloping phase	0.6	2.4%
Gb	Grenada silt loam, severely eroded very gently sloping phase	0.7	2.6%
Gd	Grenada silt loam, severely eroded, gently sloping phase	1.2	4.6%
Gh	Gullied land, Grenada soil material	0.2	0.7%
Gk	Gullied land, Loring soil material	7.1	28.1%
Lc	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	0.9	3.5%
Lk	Loring silty clay loam, severely eroded very gently sloping phase	1.0	3.9%
Ll	Loring silty clay loam, severely eroded gently sloping phase	0.5	1.8%
Lm	Loring silty clay loam, severely eroded sloping phase	0.9	3.6%
Mf	Memphis silty clay loam, severely eroded very gently sloping phase	1.6	6.2%
Ob	Olivier silt loam, eroded very gently sloping phase (loring)	1.7	6.6%
Oc	Olivier silt loam, severely eroded gently sloping phase (loring)	2.0	8.1%
Rb	Richland silt loam, severely eroded gently sloping phase (loring)	0.1	0.4%
Va	Vicksburg silt loam	1.1	4.4%
Totals for Area of Interest		**25.1**	**100.0%**

Map Unit Descriptions (Snowden T-Line)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

DeSoto County, Mississippi

Bd—Brandon-Loring silt loams, strongly sloping phases

Map Unit Setting

National map unit symbol: m1rh
Elevation: 210 to 390 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Brandon and similar soils: 70 percent
Loring and similar soils: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brandon

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 25 inches: silty clay loam
H3 - 25 to 42 inches: gravelly clay loam

Properties and qualities

Slope: 12 to 17 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Loring

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Loess deposits

Typical profile
H1 - 0 to 5 inches: silt loam
H2 - 5 to 26 inches: silty clay loam
H3 - 26 to 48 inches: silt loam

Properties and qualities
Slope: 12 to 17 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Cg—Collins silt loam (adler)

Map Unit Setting
National map unit symbol: m1rq
Elevation: 160 to 390 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Collins and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Collins

Setting
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium deposits

Typical profile
H1 - 0 to 6 inches: silt loam

H2 - 6 to 42 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: NoneRareOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Cl—Collins and Falaya silt loams, local alluvium phases

Map Unit Setting

National map unit symbol: m1rt
Elevation: 10 to 450 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Collins and similar soils: 50 percent
Falaya and similar soils: 40 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Collins

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 42 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained

Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: NoneRareOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Falaya

Setting
Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Silty alluvium

Typical profile
H1 - 0 to 10 inches: silt loam
H2 - 10 to 40 inches: silt loam

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Unnamed hydric soils (134de)
Percent of map unit: 3 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ga—Grenada silt loam, eroded, very gently sloping phase

Map Unit Setting

National map unit symbol: m1sg
Elevation: 230 to 410 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Grenada and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 42 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 18 to 36 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Gb—Grenada silt loam, severely eroded very gently sloping phase

Map Unit Setting

National map unit symbol: m1sh
Elevation: 230 to 430 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Grenada, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 42 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 18 to 36 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Gd—Grenada silt loam, severely eroded, gently sloping phase

Map Unit Setting

National map unit symbol: m1sj
Elevation: 210 to 430 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Grenada, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silt loam
H3 - 24 to 42 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 18 to 36 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Gh—Gullied land, Grenada soil material

Map Unit Setting

National map unit symbol: m1sn
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Gullied land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gullied Land

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty loess

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 23 inches: silty clay loam
H3 - 23 to 80 inches: silt loam

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydric soil rating: No

Gk—Gullied land, Loring soil material

Map Unit Setting

National map unit symbol: m1sp
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Gullied land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gullied Land

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty loess

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 23 inches: silty clay loam
H3 - 23 to 80 inches: silt loam

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Ecological site: F134XY001TN - Northern Deep Loess Backslope Mesophytic Forest
Hydric soil rating: No

Lc—Loring silt loam, 2 to 5 percent slopes, moderately eroded, central

Map Unit Setting

National map unit symbol: 2x0tr
Elevation: 170 to 660 feet
Mean annual precipitation: 52 to 58 inches
Mean annual air temperature: 60 to 66 degrees F
Frost-free period: 180 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Loring and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 27 inches: silty clay loam
Btx - 27 to 56 inches: silt loam
C - 56 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 27 to 33 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 24 to 28 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Providence

Percent of map unit: 5 percent
Landform: Loess hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Memphis

Percent of map unit: 3 percent
Landform: Interfluves, terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Grenada

Percent of map unit: 1 percent
Landform: Stream terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Byram

Percent of map unit: 1 percent
Landform: Loess hills
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lk—Loring silty clay loam, severely eroded very gently sloping phase

Map Unit Setting

National map unit symbol: m1t1
Elevation: 250 to 410 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Loring, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silty clay loam
H2 - 5 to 26 inches: silty clay loam
H3 - 26 to 48 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Ll—Loring silty clay loam, severely eroded gently sloping phase

Map Unit Setting

National map unit symbol: m1t2
Elevation: 200 to 430 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Loring, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silty clay loam
H2 - 5 to 26 inches: silty clay loam
H3 - 26 to 48 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Lm—Loring silty clay loam, severely eroded sloping phase

Map Unit Setting

National map unit symbol: m1t3
Elevation: 200 to 430 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Loring, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silty clay loam
H2 - 5 to 26 inches: silty clay loam
H3 - 26 to 48 inches: silt loam

Properties and qualities

Slope: 8 to 12 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Mf—Memphis silty clay loam, severely eroded very gently sloping phase

Map Unit Setting

National map unit symbol: m1tb
Elevation: 230 to 390 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Memphis and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Memphis

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess deposits

Typical profile

H1 - 0 to 5 inches: silty clay loam
H2 - 5 to 35 inches: silty clay loam
H3 - 35 to 99 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 12.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Ob—Olivier silt loam, eroded very gently sloping phase (loring)

Map Unit Setting

National map unit symbol: m1tl
Elevation: 200 to 390 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Olivier and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olivier

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 20 inches: silt loam
H3 - 20 to 48 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Oc—Olivier silt loam, severely eroded gently sloping phase (loring)

Map Unit Setting

National map unit symbol: m1tm
Elevation: 230 to 380 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: Not prime farmland

Map Unit Composition

Olivier, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Olivier, Severely Eroded

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 20 inches: silt loam
H3 - 20 to 48 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Rb—Richland silt loam, severely eroded gently sloping phase (loring)

Map Unit Setting

National map unit symbol: m1tp
Elevation: 200 to 390 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Richland, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Richland, Severely Eroded

Setting

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty loess

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 24 inches: silt loam
H3 - 24 to 42 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Va—Vicksburg silt loam

Map Unit Setting

National map unit symbol: m1ty
Elevation: 180 to 380 feet
Mean annual precipitation: 45 to 55 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 230 to 290 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Vicksburg and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vicksburg

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 55 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: NoneRareOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Waverly

Percent of map unit: 5 percent
Landform: Depressions
Landform position (three-dimensional): Talf

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (Snowden T-Line)

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

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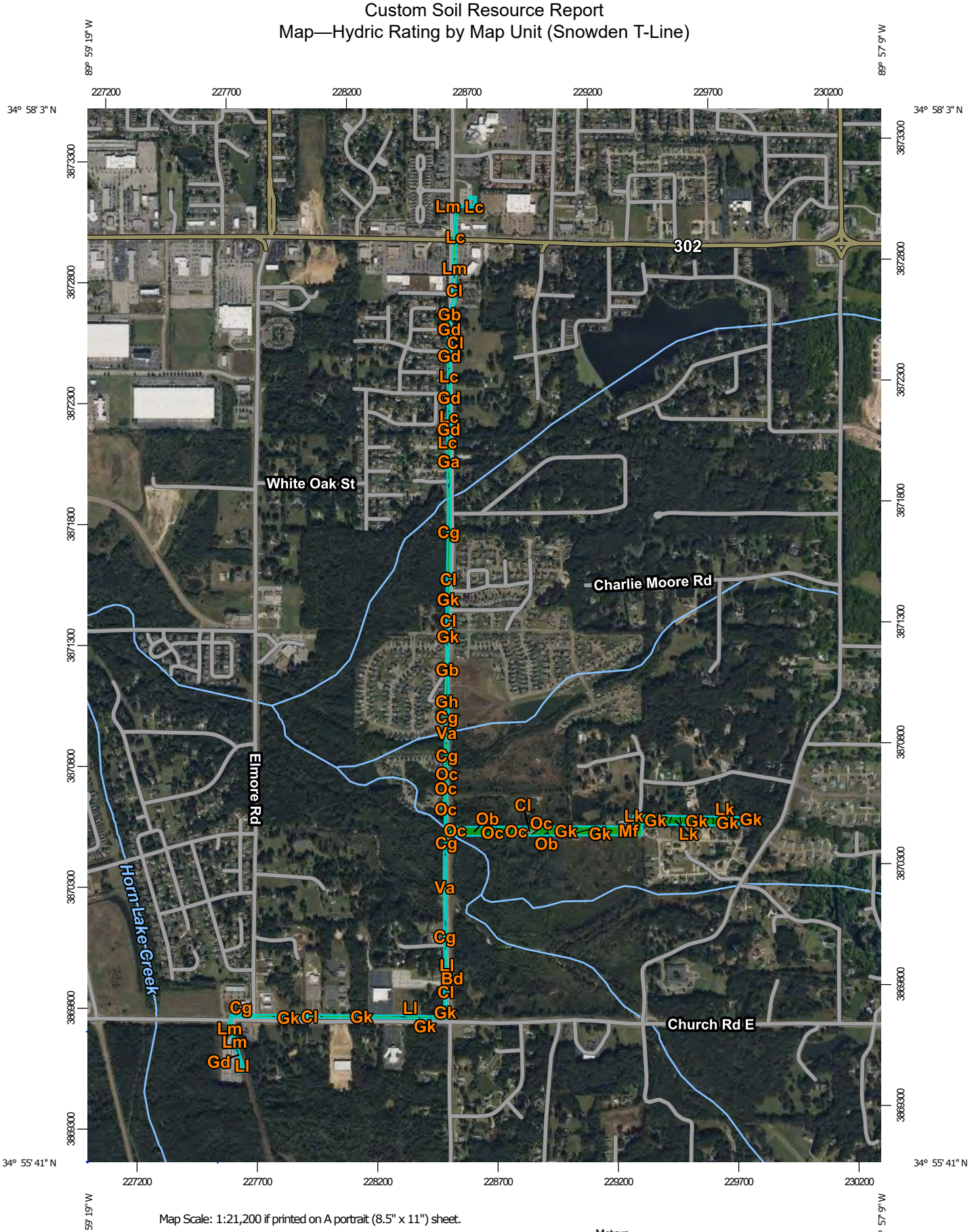
Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Map—Hydric Rating by Map Unit (Snowden T-Line)



Map Scale: 1:21,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 300 600 1200 1800

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points
- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeSoto County, Mississippi
Survey Area Data: Version 20, Sep 8, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Nov 2, 2019—Oct 23, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydric Rating by Map Unit (Snowden T-Line)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Bd	Brandon-Loring silt loams, strongly sloping phases	0	0.6	2.2%
Cg	Collins silt loam (adler)	0	2.9	11.7%
Cl	Collins and Falaya silt loams, local alluvium phases	3	2.3	9.1%
Ga	Grenada silt loam, eroded, very gently sloping phase	0	0.6	2.4%
Gb	Grenada silt loam, severely eroded very gently sloping phase	0	0.7	2.6%
Gd	Grenada silt loam, severely eroded, gently sloping phase	0	1.2	4.6%
Gh	Gullied land, Grenada soil material	0	0.2	0.7%
Gk	Gullied land, Loring soil material	0	7.1	28.1%
Lc	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	0	0.9	3.5%
Lk	Loring silty clay loam, severely eroded very gently sloping phase	0	1.0	3.9%
Ll	Loring silty clay loam, severely eroded gently sloping phase	0	0.5	1.8%
Lm	Loring silty clay loam, severely eroded sloping phase	0	0.9	3.6%
Mf	Memphis silty clay loam, severely eroded very gently sloping phase	0	1.6	6.2%
Ob	Olivier silt loam, eroded very gently sloping phase (loring)	0	1.7	6.6%
Oc	Olivier silt loam, severely eroded gently sloping phase (loring)	0	2.0	8.1%
Rb	Richland silt loam, severely eroded gently sloping phase (loring)	0	0.1	0.4%
Va	Vicksburg silt loam	5	1.1	4.4%
Totals for Area of Interest			**25.1**	**100.0%**

Rating Options—Hydric Rating by Map Unit (Snowden T-Line)

Aggregation Method: Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

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