AI Number : 63125

Received via email on 11/28/2022

MAJOR MODIFICATION FORM
FOR LARGE CONSTRUCTION GENERAL PERMIT
Coverage No. MSR10 8 5 6 9 County Madison

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

INSTRUCTIONS

Coverage recipients shall notify the Mississippi Department of Environmental Quality at least 30 days in advance of the following activities (check all that apply). This form should be submitted with a modified Storm Water Pollution Prevention Plan (SWPPP), updated USGS topographic map, Corps of Engineers Section 404 documentation and wastewater collection and treatment information, as appropriate.

- ☑ **SWPPP details have been developed and are ready for MDEQ review for subsequent phases of an existing, covered project.**
- ☑ **"Footprint" identified in the original LCNOI is proposed to be enlarged.**

This form must be signed by the current coverage recipient under Mississippi's Large Construction General Permit. A different developer of new phases of existing subdivisions must apply for separate permit coverage through the submittal of a new complete LCNOI package. Coverage recipients are authorized to discharge storm water associated with proposed expansions of existing subdivisions or subsequent phases, under the conditions of the General Permit, only upon receipt of written notification of approval by MDEQ. All other modifications, such as changes of erosion and sediment controls used, must be in accordance with ACT6, S-1 (6) and S-2 (7) of the General Permit.

ALL INFORMATION MUST BE COMPLETED (indicate "N/A" where not applicable)

COVERAGE RECIPIENT INFORMATION

COVERAGE RECIPIENT CONTACT NAME: Bobbie Ware TEL # (601) 968-1000

COMPANY NAME: MBMC - Hospital

STREET OR P.O. BOX: Baptist Drive

CITY: Madison STATE: MS ZIP: 39110 E-MAIL: bobbie.ware@bmhcc.org

PROJECT INFORMATION

PROJECT NAME: BOLDT Madison JEA, Medical Office Bldg.

CITY: Madison

ADDITIONAL ACREAGE TO BE DISTURBED: 12.12 TOTAL PROJECT ACREAGE: 18.44

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted 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 for knowing violations.

______________________________ Signature (must be signed by coverage recipient)

______________________________ Date

Bobbie Ware
Printed Name

CEO
Title

Please submit this form to:

Chief, Environmental Permits Division
MS Department of Environmental Quality, Office of Pollution Control
P.O. Box 2261
Jackson, Mississippi 39225

OC

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

LARGE CONSTRUCTION STORM WATER GENERAL NPDES PERMIT MSR107606

for

BMHCC Walking Trail
Boldt Madison JEA, Medical Office Bldg.

Madison County, Mississippi

October 2021
Modified January 2022
Modified November 2022

PREPARED BY:

Headwaters, Inc.
P. O. Box 2836
Ridgeland, Mississippi 39158
(601) 634-0097

HEADWATERS
NATURAL RESOURCES CONSULTING

TABLE OF CONTENTS

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 BMHCC, as required by the Mississippi Department of Environmental Quality (MDEQ) in compliance with the applicable regulations for coverage under the Large Construction Storm Water General NPDES Permit. Headwaters, Inc. has developed this SWPPP to be incorporated into the routine construction activities associated with the proposed site development plans. The potential sources of pollution have been identified at the site and are described in the plan. Several pollution control measures are specified in the plan to prevent contamination of storm water runoff from those sources. The plan also outlines implementation, inspection and maintenance requirements. The erosion and sediment control practices should be monitored, and the plan revised if the quality of storm water runoff is not satisfactory.

II. SITE ASSESSMENT

A. Location: The site is located within Sections 7 and 12, Township 7 North, Range 2 East, Madison County, Mississippi. The subject property is also referenced by Global Positioning System (GPS) N32.469317 – W90.136406. The subject property includes an approximate 6.32-acre parcel that will be disturbed, to some extent, to complete a walking trail for BMHCC. In addition to the walking trail, an office building with associated parking will be added to the existing parcel. An additional 12.12 acreage will be disturbed. Access to the property is granted via Baptist Drive just off Highland Colony Parkway. (Appendix I).

B. Soils: The site contains Ariel silt loam (Ar), Loring silt loam (LoB2) 2 to 5 percent slopes, moderately eroded, Loring silt loam (LoC2) 5 to 8 percent slopes, moderately eroded, and Oaklimeter silt loam (Oa) 0 to 2 percent slopes, occasionally flooded. All acres are in medium erosion hazard due to soil type and slopes (Appendix II).

C. Description of Work: BMHCC is now proposing to complete a walking trail to be utilized as part of their facilities. In addition to the trail, an office building with associated parking will be added to this parcel. The recent modification is to include additional property for staging and stock piling of materials during construction of the planned project.

The project areas storm water will be conveyed south and east into a small recreational lake and into an unnamed Tributary of Brashear Creek. Particular consideration has been given to maintain controls along the perimeter and upper reaches of the existing lake site to manage the functions and services of the lake and to prevent any adverse impacts.

Construction Methodology:
The construction activities will consist of clearing, stripping, and site grading, for the walking trail development. This amendment is for the construction of an adjacent office building on an adjoining parcel.

Construction Access**:**
Access to the project site will be through Baptist Drive just off Highland Colony Parkway. An additional construction entrance will be installed just off Baptist Circle.

General Storm Water Management Plan:
All storm water runoff will be directed via overland flows south and northeast off the site. Disturbed area within the southern watershed is approximately 9.91 acres. Disturbed area within the northern watershed is approximately 2.74 acres. Silt fence will be placed south and east around the perimeter of the proposed project site. Storm water runoff would then be detained in accordance with Madison County and MDEQ Storm Water Quality Criteria. The acreages are based on the recent modification to include the staging and stock piling areas.

D. **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 and other floating materials; eroded soils and other materials that will settle out of the storm water to form objectionable deposits in receiving waters; suspended solids, turbidity and color levels inconsistent with the receiving waters; chemicals in concentrations that would cause violations of the State Water Quality Criteria in the receiving waters.

E. **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.

F. **Drainage Patterns**: Based upon our field assessments, Storm water drainage on the subject property can be considered relatively good with storm water runoff flowing generally to the south and east across the subject property. Storm water that leaves the site is conveyed through the lake positioned to the south of the site. Further, storm water continues east through an unnamed tributary of Brashear Creek. Brashear Creek is located approximately 0.3 miles east of the project site and east of U.S. Interstate 55.

G. **Receiving Waters / Established TMDLs**: In accordance with the MDEQ 2020 303 (d) list of impaired streams, Brashear Creek is not a listed stream. In addition, no TMDLs have been established for stream.

H. **Wetlands:** The site has been evaluated and there are no wetlands or other waters that will be impacted by this project. Therefore, no notification to the Corps is 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 jurisdictional wetlands, streams or water body. Appropriately chosen and installed erosion and sediment control BMPs will be used to prevent sediment from leaving the site. 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. The site plan found in Appendix III will detail where each BMP will be used. Additional control measures could include but are not limited to the use of secured hay wattles, sediment/silt fencing, wooden or vinyl barriers and/or seeding or sodding of exposed or disturbed areas.

B. **Structural Practices:**

- Construction Entrance/Exit (Temporary Practice) – There will be two (2) construction entrances, one located in the southwest corner of the site and the other in the northeast corner of the site. Aggregate should be at least six (6) inches thick and 50 feet long using DOT #1 coarse aggregate. The entrance will be inspected weekly and periodic top dressing with new gravel may 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 should be removed as soon as possible.

- 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 the lake as needed and at any other locations deemed necessary once construction begins. The fence will be maintained, and the sediment will be removed when the deposits reach one-half the fence height. Silt fence used must be wire-backed silt fence and must be trenched into the ground a minimum of six (6) inches.

Exact locations for each of the BMP's are included in Appendix III within this report.

C. Vegetative Practices:

- 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.

- Permanent Seeding - The vegetative practices should be fertilized at one-half the initial rates at the beginning of the second growing season. Eroded areas should be shaped, smoothed and replanted at this time. See the MDEQ SWPPP Guidance Manual for seeding, mulching and fertilizing rates. All seed mix considered would be selected from the MDEQ approved listing (Appendix V).

- Vegetative Buffer – An approximate 50-foot undisturbed natural buffer will be left around waters of the United States where feasible. Where infeasible, additional sediment and erosion controls will be implemented.

- Dust Control - Dust will be controlled as much as possible during construction by temporary seeding and spraying with water. The construction accesses shall be stabilized and monitored during high traffic times to minimize the dust on construction roads.

- Tree Protection - Efforts will be made to maintain tree buffer areas around the site as stated in the Buffer Zone section of this report. Grading around these sites will be minimal to ensure the trees at these locations will remain as the buffer zone was designed.

D. Spill Prevention and Response Procedures: All above-ground fuel storage tanks (AST) shall be double-wall tanks and shall additionally include additional secondary containment measures (dike/berm per US EPA standards). If any fuel storage tanks are present on site, a dike should be constructed around them in order to contain any accidental spillage. All truck mounted tanks shall be double-walled tanks. It is understood that fuel will likely be transported via truck to equipment on the project site. In all circumstances, fuel that is transported on the project site shall be transported within a double-walled tank. The name and number of a competent hazardous waste disposal contractor shall be maintained by the contractor for use in the event of a spill.

- Fueling and Vehicle Maintenance Locations - Fueling and vehicle maintenance areas shall use BMP's 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.

E. **Operation and Maintenance**: The best management practices, once implemented, must be maintained to ensure that satisfactory operation continues. The sediment controls and diversions should routinely have excess sediment removed. This may be required following each major storm event. This material should be stockpiled and protected from possible re-entry into the storm water until it can be used.

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.

F. **Record Keeping:** Records shall be retained for three (3) years of all maintenance activities, spills and inspections, including a description of the quality and quantity of storm water.

G. **Employee Training:** 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.

H. **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:

- designate areas for equipment maintenance and repair
- provide waste receptacles at convenient locations and provide regular collection of waste
- provide protected storage areas for chemicals, paints, solvents, fertilizers and other potentially toxic materials
- provide adequately maintained sanitary facilities
- designate an area for concrete truck wash off
- streets will be swept as needed to remove sediment or other debris that has been tracked from construction site
- 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. The construction sequence will be updated 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. Begin minor clearing to install stabilized construction entrances at initial points of egress, construct sediment basins and perimeter controls.
4. Control measures should be installed to coincide with subsequent construction activities and at the time they are deemed to be most effective.
5. Begin major clearing and grubbing operations after key sediment controls are installed.
6. Install temporary diversions, where applicable, along steep cleared and grubbed slopes to divert runoff toward silt basins or other controls.
7. Install sub surface and surface drainage improvements.
8. Install utilities and interior access roads.
9. Complete temporary stabilization of residential lots and along access roads.
10. 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.
11. As site is cleared, maintain BMPs as needed to ensure minimal erosion and sedimentation problems.
12. Perform any temporary seeding as needed and instructed throughout the construction process.
13. Final grading, seeding, sodding, mulching, and fertilizing.
14. Ensure final stabilization is achieved within the project site.
15. Revision of sediment basin to wet detention basin.
16. 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. build sediment basins before major site grading
3. divert upslope water around area before major site grading
4. do not disturb an area until it is necessary
5. time construction activities to limit impact from seasonal weather
6. cover or stabilize disturbed area as soon as possible
7. do not remove temporary controls until after site stabilization
8. 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. **Vegetative Measures**: Vegetative plantings will be performed in accordance with the planting and seeding schedule found in the Mississippi SWPPP Guidance Manual. Disturbed areas shall be grassed during the first open planting season after completion. Construction should be scheduled in order that un-vegetated exposure is minimized.

C. **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 any rain event that produces a discharge, and
3. 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 insure safe and pollution free facility operation. Any poorly functioning erosion controls or sediment controls, non-compliant discharges, or any other deficiencies observed during the inspections required under this permit 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.

B. **Reporting**: The owner and/or contractor must inspect, as described in above section, and maintain controls and prepare weekly reports noting damages or deficiencies and corrective measures. These inspection reports are kept on-site until the site is stabilized.

As previously stated, all records, reports and information resulting from activities required by this plan and your permit coverage shall be retained for at least three (3) years from the date construction was completed.

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:

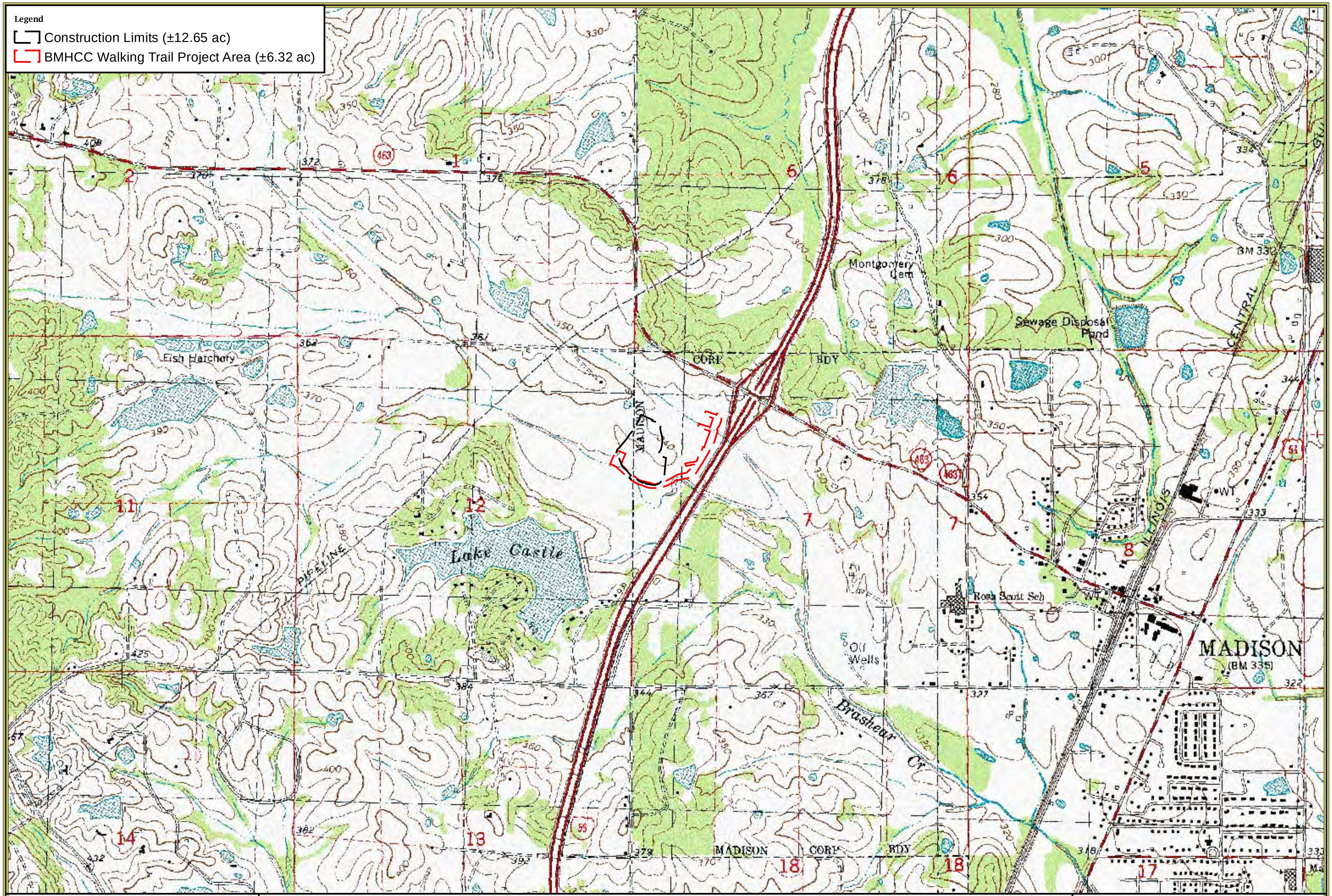
- Inadequacies revealed by routine inspections.
- Changes in identified sources, non-storm water discharges or non-storm water solid wastes.
- Office of Pollution Control notification that the plan does not meet one or more of the minimum requirements.
- Changes in design, construction, operation or 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.

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, the permittee must submit to the OPC certification that the requested changes have been made.

VIII. TERMINATION OF COVERAGE

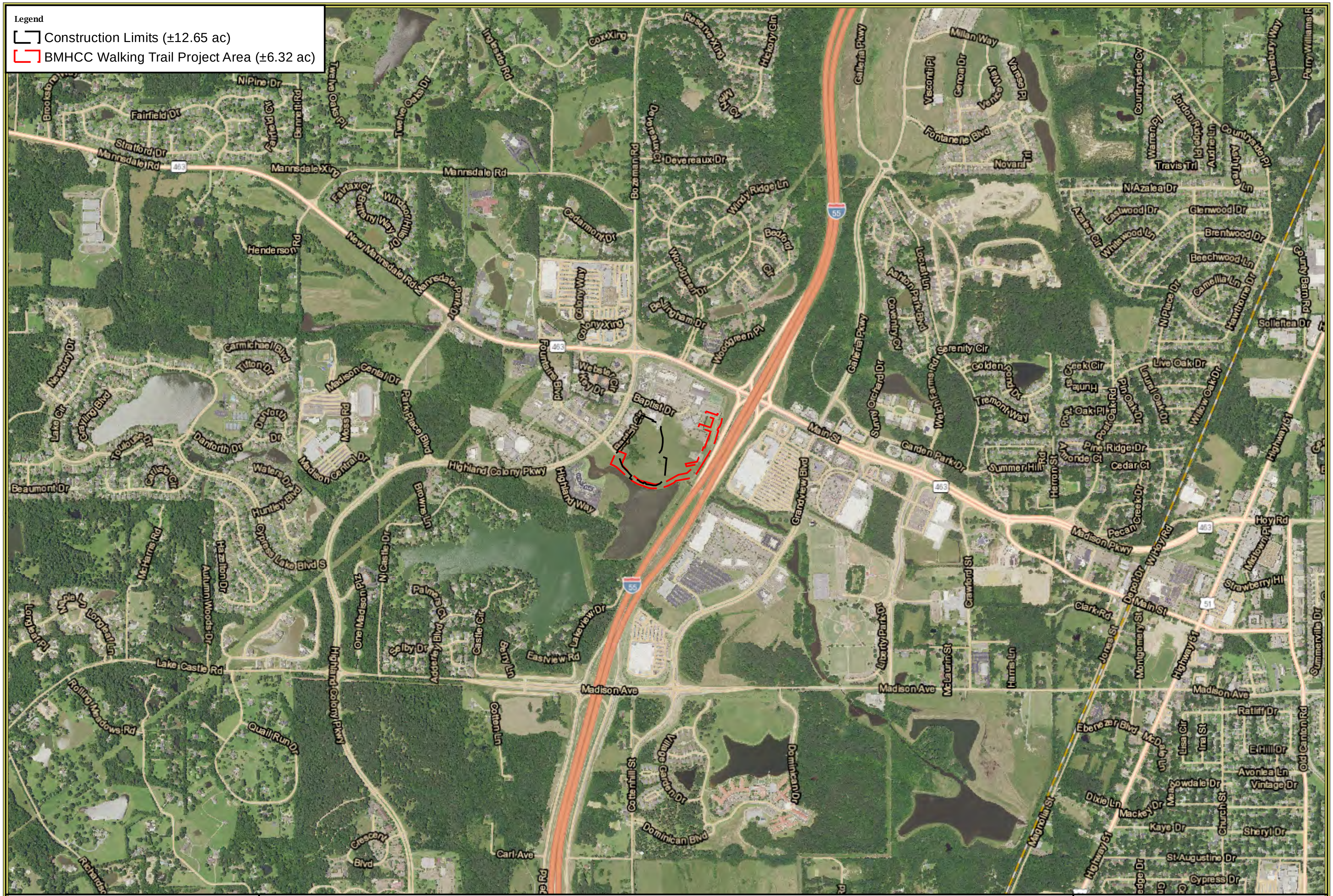
Within thirty (30) days of final stabilization, the Office of Pollution Control must be notified by a completed Request for Termination (RFT) of Coverage form (copy provided). MDEQ staff will inspect the site and if no sediment or erosion problems are identified and adequate permanent controls are established,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

IX. APPENDIX I – LOCATION MAPS



HEADWATERS INC. NATURAL RESOURCES CONSULTING WWW.HEADWATERS-INC.COM	**Baptist Health Services** Sec. 7 & 12 - T 7N - R 2E Madison County, Mississippi **Site Location Map**	0 1,200 2,400 Feet 1:24,000 N
Date Created: 11/28/2022 Created by: JDL		NAD 1983 StatePlane Mississippi West FIPS 2302 Feet USGS RIDGELAND (MS) Quad Basemap

S:\PROJECT FILES\McMaster & Assoc\BMHCC\Mapping\new.mxd



Baptist Health Services

Sec. 7 & 12 - T 7N - R 2E
Madison County, Mississippi

Site Location Map

WWW.HEADWATERS-INC.COM

Date Created: 11/28/2022 | Created by: JDL

0 1,200 2,400 Feet
1:24,000
N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2020 Imagery Basemap

S:\PROJECT FILES\McMaster & Assoc\BMHCC\Mapping\new.mxd

X. APPENDIX II – SOILS 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

Madison County, Mississippi

November 28, 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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.

Custom Soil Resource Report
Soil Map

Map Scale: 1:3,120 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 45, 90, 180, 270

Feet: 0, 150, 300, 600, 900

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N 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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Madison County, Mississippi
Survey Area Data: Version 17, Sep 9, 2022

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

Date(s) aerial images were photographed: Nov 8, 2021—Nov 29, 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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ar	Ariel silt loam	14.4	76.8%
LoB2	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	2.6	14.0%
LoC2	Loring silt loam, 5 to 8 percent slopes, moderately eroded, central	0.1	0.6%
Oa	Oaklimeter silt loam, 0 to 2 percent slopes, occasionally flooded, north	1.6	8.6%
Totals for Area of Interest		**18.7**	**100.0%**

Map Unit Descriptions

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.

Madison County, Mississippi

Ar—Ariel silt loam

Map Unit Setting

National map unit symbol: m288
Elevation: 150 to 670 feet
Mean annual precipitation: 60 to 75 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 270 to 335 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Ariel

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 5 inches: silt loam
H2 - 5 to 30 inches: silt loam
H3 - 30 to 65 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 (0.20 to 0.60 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.5 inches)

Interpretive groups

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

Minor Components

Unnamed hydric soils (134fp)

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: Yes

LoB2—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

LoC2—Loring silt loam, 5 to 8 percent slopes, moderately eroded, central

Map Unit Setting

National map unit symbol: 2x0ts
Elevation: 170 to 660 feet
Mean annual precipitation: 52 to 69 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 290 days
Farmland classification: Farmland of statewide importance

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 24 inches: silty clay loam
Btx - 24 to 48 inches: silt loam
C - 48 to 65 inches: silt loam

Properties and qualities

Slope: 5 to 8 percent
Depth to restrictive feature: 23 to 27 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 24 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/D
Hydric soil rating: No

Minor Components

Memphis

Percent of map unit: 4 percent
Landform: Interfluves, terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope, crest, riser
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Providence

Percent of map unit: 2 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

Grenada

Percent of map unit: 2 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

Smithdale

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Oa—Oaklimeter silt loam, 0 to 2 percent slopes, occasionally flooded, north

Map Unit Setting

National map unit symbol: 2x0th
Elevation: 110 to 390 feet
Mean annual precipitation: 54 to 59 inches
Mean annual air temperature: 59 to 65 degrees F
Frost-free period: 165 to 290 days
Farmland classification: Prime farmland if protected from flooding or not frequently flooded during the growing season

Map Unit Composition

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

Description of Oaklimeter

Setting

Landform: Alluvial flats, flood plains

Landform position (three-dimensional): Talf, rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium

Typical profile

Ap - 0 to 6 inches: silt loam
Bw - 6 to 27 inches: silt loam
EBb - 27 to 52 inches: silt loam
Btgb - 52 to 70 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 18 to 30 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ariel

Percent of map unit: 4 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Gillsburg

Percent of map unit: 4 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Rosebloom

Percent of map unit: 2 percent
Landform: Flood plains, alluvial flats
Landform position (three-dimensional): Dip
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

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.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

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

Map Scale: 1:3,120 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 45, 90, 180, 270

Feet: 0, 150, 300, 600, 900

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N 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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Madison County, Mississippi
Survey Area Data: Version 17, Sep 9, 2022

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

Date(s) aerial images were photographed: Nov 8, 2021—Nov 29, 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

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ar	Ariel silt loam	10	14.4	76.8%
LoB2	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	0	2.6	14.0%
LoC2	Loring silt loam, 5 to 8 percent slopes, moderately eroded, central	0	0.1	0.6%
Oa	Oaklimeter silt loam, 0 to 2 percent slopes, occasionally flooded, north	2	1.6	8.6%
Totals for Area of Interest			**18.7**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

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

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

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

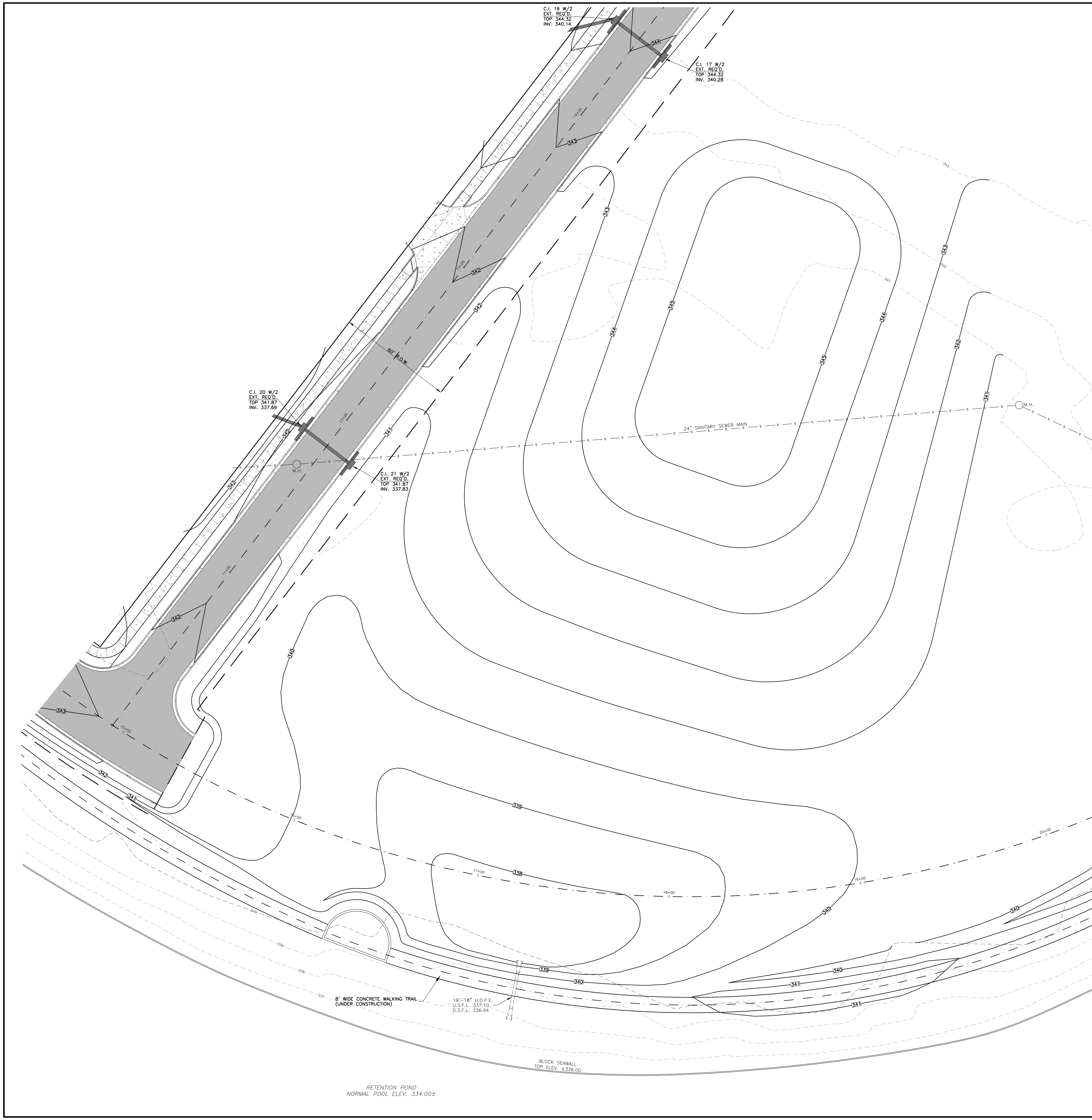
United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

XI. APPENDIX III – STORM WATER MANAGEMENT PLANS



SCALE: 1"=20'

LEGEND

— W — W — W —	EXISTING WATER LINE
— S — S — S —	EXISTING SANITARY SEWER LINE
— P — P — P —	EXISTING OVERHEAD POWERLINE
— UGE — UGE —	EXISTING UNDERGROUND ELECTRIC CABLE
	PROPOSED PARKING/DRIVE LANES/ENTRANCE/EXITS
	PROPOSED STREET SECTION
	PROPOSED CONCRETE AREAS
	PROPOSED BUILDING

McMASTER & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS

212 WATERFORD SQUARE
SUITE 300
MADISON, MS 39110
601.605.1090

DEAN ARCHITECTURE
GEDDIE | GRANT | OUBRE

661 Sunnybrook, Ste 140
Ridgeland, MS 39157
601.939.7717
deandean.com

RONALD C. McMASTER JR.
LICENSED PROFESSIONAL
ENGINEER AND SURVEYOR
P.E. 10635
P.S. 3051
STATE OF MISSISSIPPI

CONSTRUCTION DOCUMENTS

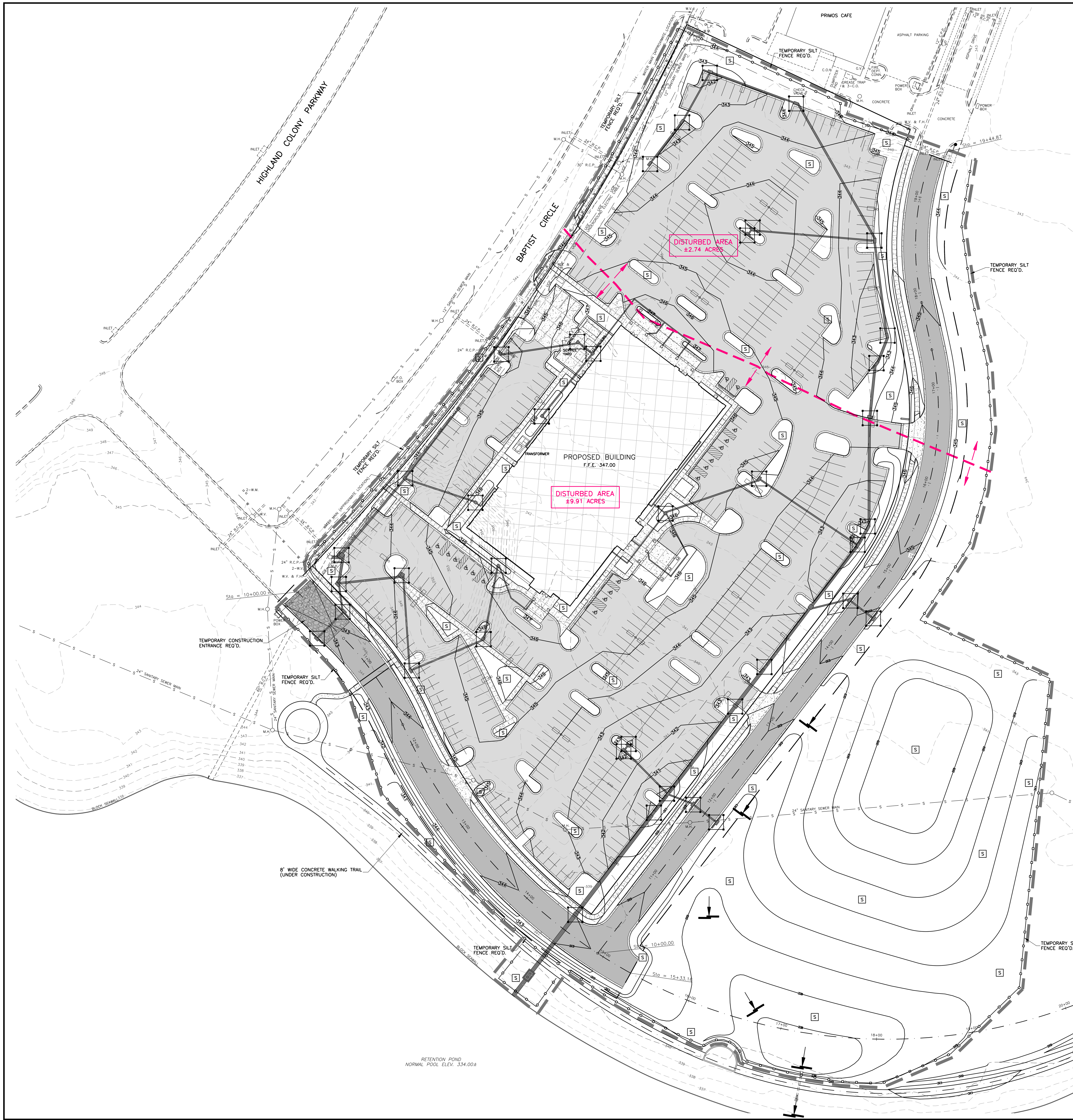
Project No. : 21043
Date: July 29, 2022
Drawn: DP
Checked: RCM
Revisions:

BMHCC BOLDT MADISON PHYSICIAN'S OFFICE BUILDING MADISON, MS

Sheet Number:

C2.3

GRADING WITH SPOIL AREA



TEMPORARY EROSION CONTROL PRACTICES

- CONTRACTOR ENTRANCE/EXIT
- STORM DRAIN INLET PROTECTION (SILT FENCE, WATTLE)
- SILT FENCE
- PROTECTIVE FENCE
- EROSION CHECK (WATTLE)
- STONE FILTER RING
- CONSTRUCTION LIMITS

PERMANENT EROSION CONTROL PRACTICES

- RR — RIPRAP
- S — TEMPORARY AND PERMANENT SEEDING/SODDING
- WSF — WATTLE AND SILT FENCE

NOTES:

CONTRACTOR SHALL KEEP ALL EXISTING STREETS FREE AND CLEAN OF DEBRIS AND SEDIMENT DURING CONSTRUCTION.

ALL INLETS SHALL BE PROTECTED BY SILT FENCE AND WATTLES FOLLOWING INSTALLATION. CONTRACTOR SHALL MAINTAIN INLET PROTECTION UNTIL FINAL STABILIZATION.

FOLLOW PLANNING AND DESIGN MANUAL (DEQ) FOR STORMWATER MANAGEMENT.

ANY DISTURBED AREAS LAID-UP FOR OVER 7 DAYS WILL BE SEEDED (TEMPORARY) IMMEDIATELY. AFTER FINAL GRADING, ALL DISTURBED AREAS WILL BE SEEDED IMMEDIATELY.

NO CONSTRUCTION TRAFFIC OR OPERATIONS WILL BE ALLOWED WITHIN THE BLUE HEALTH PARKING LOT

LEGEND

- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING OVERHEAD POWERLINE
- EXISTING UNDERGROUND ELECTRIC CABLE
- PROPOSED PARKING/DRIVE LANES/ENTRANCE/EXITS
- PROPOSED STREET SECTION
- PROPOSED CONCRETE AREAS
- PROPOSED BUILDING

McMASTER & ASSOCIATES, INC.
CIVIL ENGINEERS & LAND SURVEYORS
212 WATERFORD SQUARE
SUITE 300
MADISON, MS 39110
601.605.1090

DEAN ARCHITECTURE
GEDDIE | GRANT | OUBRE
661 Sunnybrook, Ste 140
Ridgeland, MS 39157
601.939.7717
deandean.com

CONSTRUCTION DOCUMENTS

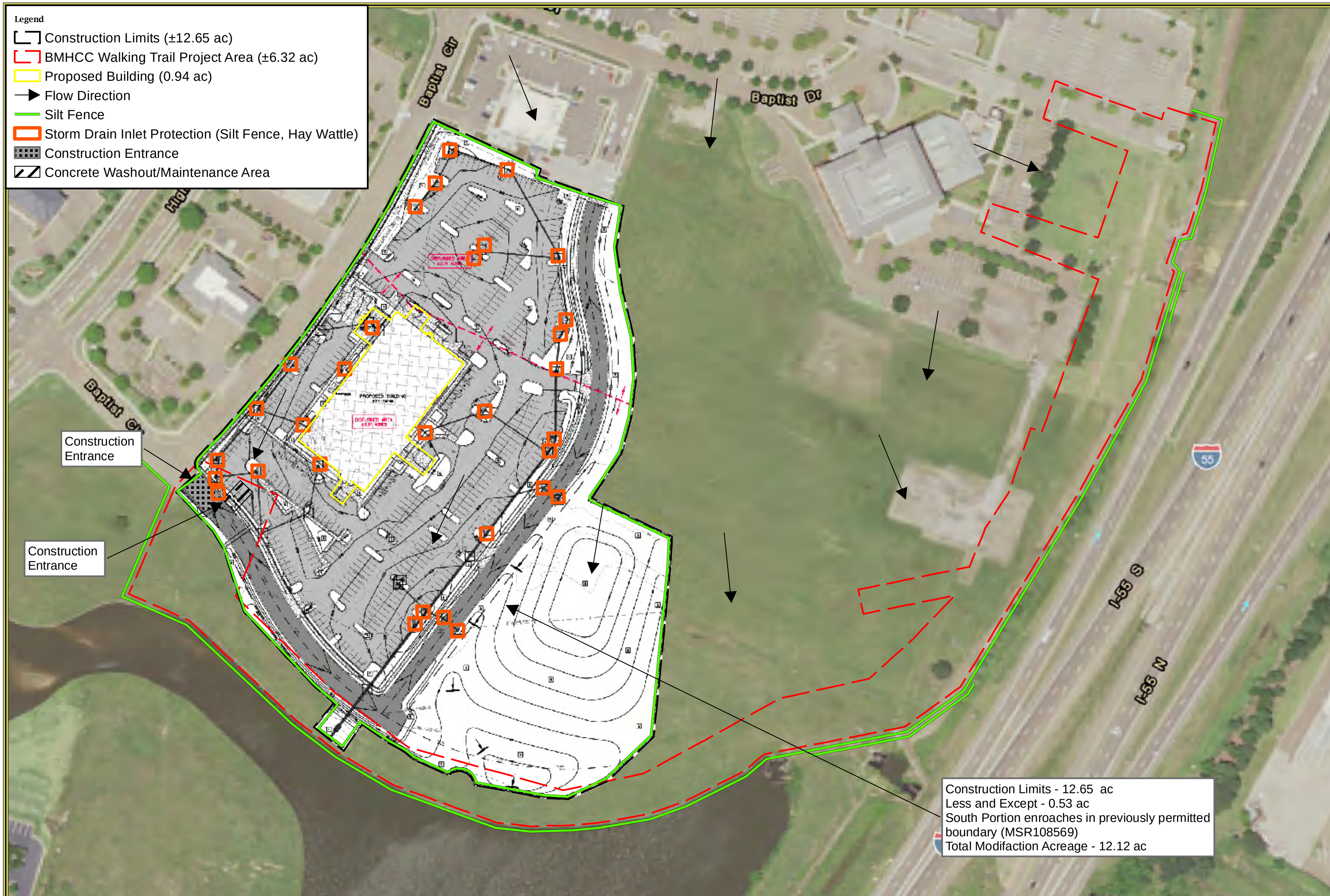
Project No.: 21043
Date: July 29, 2022
Drawn: DP
Checked: RCM
Revisions:

BMHCC BOLDT MADISON PHYSICIAN'S OFFICE BUILDING MADISON, MS

Sheet Number:

C5.1

EROSION CONTROL PLAN



HEADWATERS INC.
NATURAL RESOURCES CONSULTING
WWW.HEADWATERS-INC.COM

Date Created: 11/28/2022 | Created by: JDL

Baptist Health Services

Sec. 7 & 12 - T 7N - R 2E
Madison County, Mississippi

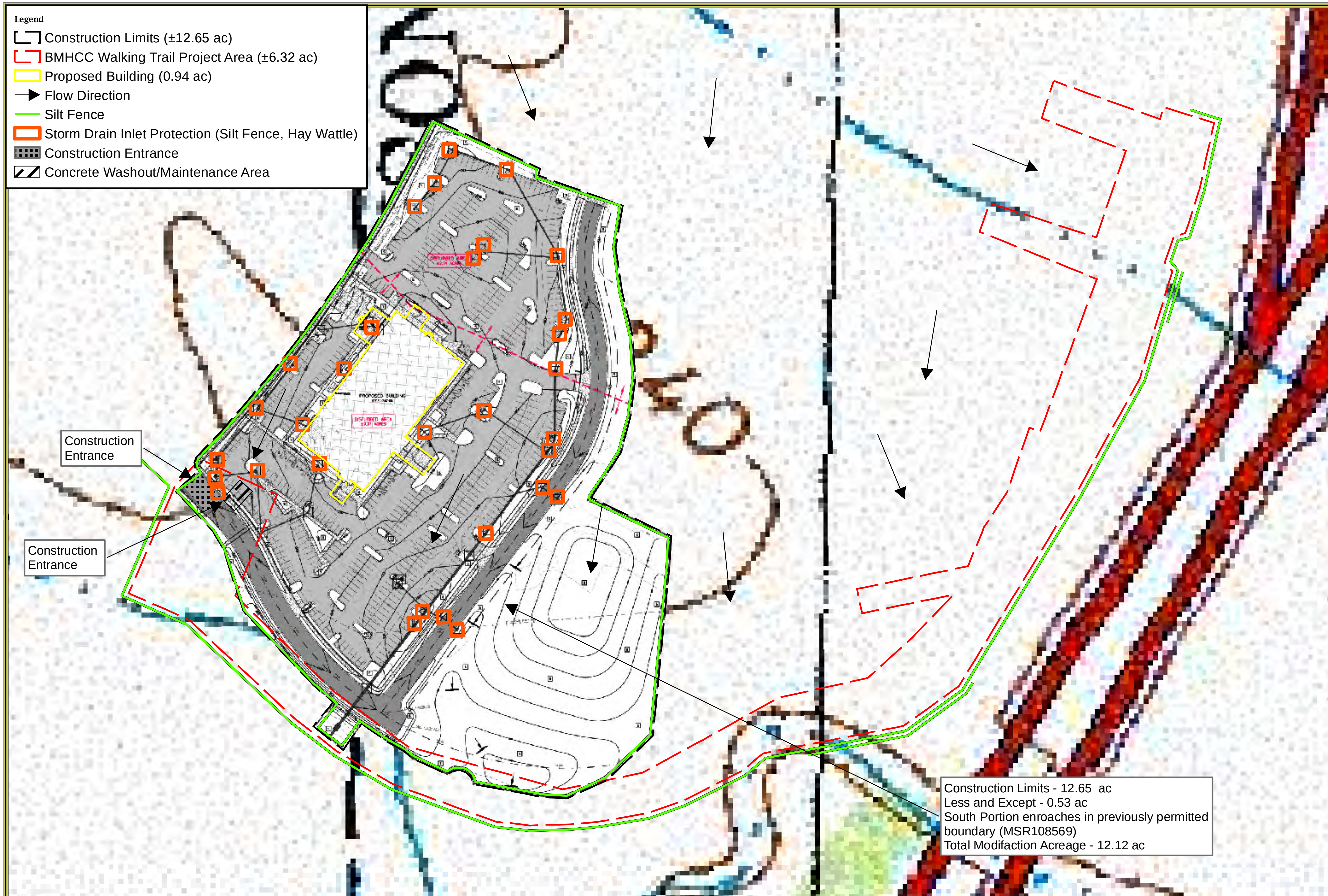
Erosion Control Plan Map

0 125 250 Feet
1:2,500
N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USDA NAIP 2020 Imagery Basemap

S:\PROJECT FILES\McMaster & Assoc\BMHCC\Mapping\new.mxd



HEADWATERS INC.
NATURAL RESOURCES CONSULTING
WWW.HEADWATERS-INC.COM

Date Created: 11/28/2022 | Created by: JDL

Baptist Health Services

Sec. 7 & 12 - T 7N - R 2E
Madison County, Mississippi

Erosion Control Plan Map

0 125 250 Feet
1:2,500
N

NAD 1983 StatePlane Mississippi West FIPS 2302 Feet

USGS RIDGELAND (MS) Quad Basemap

S:\PROJECT FILES\McMaster & Assoc\BMHCC\Mapping\new.mxd

XII. APPENDIX IV – SEEDING CHART FOR STATE OF MS

SEEDING CHART FOR THE STATE OF MISSISSIPPI

***For a more comprehensive vegetation schedule, see "Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas (Three Volumes)"**

SPECIES	SEEDING RATE/ ACRE	PLANTING TIME	DESIRED pH RANGE	FERTILIZATION RATE/ACRE	METHOD OF ESTABLISH-MENT	ZONE OF ADAPT-ABILITY	NATIVE/ INTRODUCED
Common Bermuda	15 lbs. alone 10 lbs. mix-ture	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All	Introduced *Potential for Invasiveness
Bahia	40 lbs. alone 30 lbs. mixture	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	Central & South	Introduced
Fescue	40 lbs. alone 30 lbs. mix-ture	9/1- 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	North & Central	Native
Saint Augustine	--	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	sod only	Central & South	Native
Centipede	4 lbs. alone 2.5 lbs. mix	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All	Introduced
Carpet Grass	15 lbs. alone 10 lbs. mix-ture	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed or sod	All	Native
Zoysia Grass	--	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	sod only	All	Introduced
Creeping Red Fescue	30 lbs. alone 22.5 lbs. mix	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All	Native
Weeping Lovegrass	10 lbs. alone 5 lbs. mix	3/1 - 7/15	6.0 - 7.0	600 lbs. 13-13-13	seed	All	Introduced
Sericea Lespedeza	40 lbs.	3/1 - 7/15 9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All	Introduced
***Wheat**	90 lbs. alone	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All	Native
***Ryegrass**	30 lbs.	9/1 - 11/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All	Native
***White Clover**	5 lbs.	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All	Introduced
***Crimson Clover**	15 lbs.	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All	Introduced
***Hairy Vetch**	30 lbs.	9/1 - 11/30	6.0 - 7.0	400 lbs. 6-24-24	seed	All	Introduced
***Browntop Millet**	40 lbs. alone 15 lbs. mix	4/1 - 8/30	6.0 - 7.0	600 lbs. 13-13-13	seed	All	Introduced

*Note on Annuals. For permanent seeding, annuals can only be used in a mixture with perennials.

North-north of Hwy. 82
Central- south of Hwy. 82 & north of Hwy. 84
South- south of Hwy. 84