Storm Water Pollution Prevention Plan

for

MOSTF Improvements – Renasant Park

Prepared for:

Mississippi
Department of Environmental Quality

Prepared by:

Kimley-Horn and Associates, Inc.
Memphis, TN

July 24

Kimley»Horn

Storm Water Pollution Prevention Plan
MOSTF Improvements – Renasant Park
3335 Hwy 51 S, Hernando, Desoto County MS

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1.0 Project and Site Description

The City of Hernando plans to redevelop a portion of Renasant Park in Hernando, Desoto County, Mississippi (see the Vicinity Map in Appendix A). The existing site is currently heavily wooded with areas dedicated to pedestrian trails, a skate park, and gravel parking lots. The entire property is approximately 36.9± acres. The site is primarily pervious. The project will consist of the proposed amphitheater, pavilion, roadway, grading, utilities, parking, and landscaping. Construction will disturb approximately 9.90± acres. No construction shall commence until each permit is approved. See the USGS Quadrangle Map in Appendix C.

1.1 Pre-Construction Description

The site is located west of the intersection of Highway 51 and Renasant Park Drive in Hernando, Desoto County, MS. There are tributaries across the northern and southern boundaries of the property. The tributary along the southern border of the property serves as the discharge point for the proposed roadway drainage. Surface runoff flows to the two tributaries onsite, which eventually discharge into Mussacuna Creek. The project will disturb approximately 9.90± acres. The site is bordered by self-storage facility to the north and east, a church to the southeast, open to the north and residential to the west. No construction shall commence until permit is approved and all erosion measures have been installed per the plans in Appendix D.

1.2 Construction Description

Approximately 9.90± acres will be disturbed during construction. Site redevelopment will consist of roadway construction, amphitheater, grading, utilities, parking, and landscaping. Post-construction, the proposed roadway will drain to the southern tributary and the rest of the site will sheet flow to swales and discharge into the existing tributaries on site. The tributaries discharge into Mussacuna Creek.

Phase 1 of erosion control will consist of the installation of silt fence along the boundary of the disturbance, erosion eels at pavement sawcut limits, a construction entrance and concrete washout at the entrance into the project site and outlet protection for the existing road culvert. All Phase 1 BMPs should be installed before any grading activities begin. The Phase 1 Erosion Control Plan is included in Appendix D. In Phase 2 of erosion control, the construction entrance and concrete washout area will remain as well as the silt fence shown in Phase 2 Erosion Control Plan. The proposed pipe headwall and flumes on-site will require outlet protection and inlet protection should be installed on all proposed inlets on-site. Outlet protection should be installed on all discharge points. When grading work has been completed, permanent stabilization such as seeding, and sod will be put in place. The Phase 2 Erosion Control Plan is included in Appendix D. All accumulated sediment shall be removed from structural controls when sediment deposits reach one-third to one-half the height of the control.

Methods intended to reduce sediment runoff during construction include the use of the following temporary structural controls: construction entrance/exit, concrete wash out area, sediment basin, erosion control matting, silt fence, erosion eel, and inlet protection. These erosion control measures are intended to address the 5-year, 24-hour storm event.

- Silt fencing shall be installed as shown on the Erosion Control Plans in Appendix D. The silt fence is to be installed with a maximum of 5 feet between stakes with a 4" x 4" trench upslope along the line of the stakes. The filter material is attached to the upslope side of the stakes.
- Erosion eels shall be installed per plan.
- A construction entrance and concrete wash out area shall be installed at the proposed entrance to the site on Renasant Park Drive. During muddy conditions, drivers of construction vehicles will be required to wash their wheels before exiting the site.
- Inlet protection shall be installed on all proposed inlets to prevent sediment from entering the storm drainage system.
- Riprap outlet protection shall be installed at each discharge location and at the downstream end of the proposed concrete flumes.

Construction Details of these controls are shown on the Erosion Control Details plan in Appendix E.

1.3 Post-Construction Description

Upon completion, the project area will be stabilized and graded to drain. The site will drain to proposed inlets and swales on site. The stormwater entering the inlets will also be routed to the Mussacuna Creek onsite eventually. With the proposed grading and drainage plan, the development of the site should not disrupt existing drainage conditions. Sod and seed shall be placed to stabilize the area and all temporary erosion control will be removed.

1.4 Adjacent Property Description

The subject site is zoned R12 residential. The property to the east is zoned C-4 commercial, the area to the south is zoned A agriculture, the property to the north is zoned R-10 residential and the area to the west is zoned R-12 overlay residential.

2.0 Best Management Practices

General Information

This permit does **not** authorize discharges of storm water or other discharges that would result in a violation of a State water quality standard. Discharges of this type are a direct violation of this permit.

In addition to storm water discharges, this SWPPP and the associated permit covers the following non-storm water components of discharge:

- Dewatering of work areas;
- Waters used to wash vehicles (only of dust and soil and NOT process materials);
- Water used to control dust; and
- Potable water.

These non-storm water related discharges will be allowed only if detergents are not used, detention and filtering is provided, and no other solvents are used in any of the water-related activities.

This SWPPP and associated permit do not cover the release of any hazardous substance or oil in the storm water discharges from the site of construction. This sort of action will be prevented or minimized and in the event of a release, the permittee is obligated under the reporting requirements of 40 CFR 117 and 40 CFR 302. The following actions will be taken:

- The National Response Center (800-424-8802) will be notified as soon as the discharge has been acknowledged;
- Within 14 calendar days of the knowledge of the release, the permittee will submit a description of the release to the EAC; and
- The SWPPP will be modified within 14 calendar days of the knowledge of release to provide a description of the release and the plan will be reviewed to prevent any reoccurrences.

The following items were considered for the development of this Storm Water Pollution Prevention Plan (SWPPP) and the selection of erosion and sediment controls:

- Constructing erosion and sediment controls prior to earth-moving activities;
- Limiting exposure of disturbed areas;
- Re-vegetating and/or stabilizing disturbed areas as soon as possible;
- Removing sediment from storm water prior to drainage from the site;

2.1 Planned Erosion and Sediment Controls

In summary, erosion and sediment control measures must be in place and functioning before any earth moving operations begin and must be constructed and maintained throughout the construction period. All erosion and sediment control practices will be inspected weekly and after rainfall events. Needed repairs will be made immediately and not exceed 24 hours of the inspection unless prevented by unsafe weather conditions as documented on the inspection form. Temporary measures may be removed at the beginning of the workday but must be replaced at the end of the workday. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction in that portion of the site has temporarily or permanently ceased. There are two exceptions: where the initiation of stabilization measures by the seventh day is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable; or where construction activity on a portion of the site has temporarily ceased, and earth-disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.

The erosion and sediment controls and management techniques planned for this site include vegetative controls, structural controls, and construction management. Site erosion and sedimentation control plans are shown on the Erosion Control Plan in Appendix D.

2.1.1. Vegetative Controls

2.1.1.1. Soil stabilization – vegetative stabilization measures must be initiated whenever any clearing, grading, excavating or other land disturbing activities have temporarily or permanently ceased on any portion of the site and will not resume for a period of fourteen (14) calendar days or more. The appropriate temporary or permanent vegetative practices shall be initiated immediately. For purposes of this permit, "immediately" is interpreted to mean no later than the next workday.

2.1.1.2. Appropriate annual vegetation for temporary soil stabilization will be maintained as follows:

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

Perennial vegetation for permanent soil stabilization will be applied as soon as practicable. Unpaved areas will be seeded or sodded as soon as final grading is complete. Stabilization practices may include: temporary seeding, permanent seeding, mulching, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures.

2.1.2. Structural Controls

2.1.2.1 **Construction entrance/exit and concrete washout** will be installed at the access point to the construction site. Construction vehicles must use this access point to prevent dirt and sediment from leaving the site.

2.1.2.2 **Erosion Eel** will be installed at the opening of all flumes.

2.1.2.3 **Outlet protection** will be applied to all outlet locations.

2.1.2.4 **Silt fence** will be installed as shown on the Erosion Control Plans to minimize sediment laden runoff from leaving the construction site.

2.1.2.5 **Inlet protection** will be installed on all proposed inlets on-site.

2.1.3 Construction Management Techniques

2.1.3.1 Cleared surface area exposure time will be minimized by sequenced construction.

2.1.3.2 Construction and maintenance of erosion and sediment control measures will be carried out throughout the construction period.

2.2 Other Control Items

2.2.1 No solid materials, including building materials, will be discharged to waters exiting the site.

2.2.2 Off-site vehicle tracking of sediments and the generation of dust will be minimized.

2.2.3 Sediment controls for installation of any waste disposal systems or sanitary sewer or septic systems on site will be provided.

2.2.4 Storage for construction and waste materials will be stored onsite properly. Containment will be provided to prevent spills and exposure to storm water. The proper authorities will be notified in the event of a release.

2.3 Sequence of Construction Events

Phase I

1. Install stabilized construction entrance and concrete washout area.
2. Construct sediment basin and install all Phase 1 silt fence and outlet protection.
3. Clear and grub the site.
4. Begin grading the site.
5. Install remaining drainage infrastructure.

Phase II

1. Move silt fence as indicated on the Phase 2 Plan.
2. Build out remaining pond banks and permanent ponds.
3. Install all erosion eels.
4. Fill in diversion ditches.
5. Prepare site for paving.
6. Pave the site.
7. Complete grading.

8. Complete installation of storm sewer and storm sewer structures.

9. Install permanent seed mix and/or sod to all disturbed areas.

10. Remove remaining BMPs once the site has been stabilized.

NOTES:

1. Contractor is responsible for interim erosion control measures due to construction phasing. See notes on Erosion Control Plans in Appendices D and E.

2. It is up to the Contractor to use means and methods necessary to stabilize any disturbed ground area to ensure that the site does not contain any of the following:

   a) Debris, oil, scum and other floating materials other than in trace amounts;
   b) Eroded soils and other materials that will settle to form objectionable deposits in receiving streams;
   c) Suspended solids, turbidity and color at levels inconsistent with the receiving waters; and
   d) Chemicals in concentrations that would cause violation of State Water Quality Criteria in the receiving waters.

3. SWPPP Implementation Requirements (from the MDEQ Large Construction General Permit, ACT6 (LCGP) Implementation, Inspection and Reporting Requirements, issued November 17, 2015). (Note: per MDEQ website, "Even though the current General Permit has an expiration date of December 31, 2015, your current coverage will remain in effect until the General Permit is reissued")

   a) Implement the SWPPP and retain a copy of the SWPPP at the permitted site;
   b) Implement the following pre-construction activities:
      a. Mark off areas of "disturbance", "no disturbance", and "sensitive areas,
      b. Preserve native topsoil on the site to the extent feasible, and
      c. Limit construction stream crossings to the minimum necessary to provide access for the construction project.
   c) Ensure that the appropriate Best Management Practices (BMPs) are in place upon commencement of construction;
   d) Amend the SWPPP if notified at any time by the Executive Director of the MDEQ that the SWPPP does not meet the minimum requirements. The operator shall certify in writing to the Executive Director that the requested changes were made. The requested changes should be made within 15 days;
   e) Amend the SWPPP whenever there is a change in design, construction, operation or maintenance which may potentially affect the discharge to State waters; or the SWPPP proves to be ineffective in controlling storm water pollutants. The amended SWPPP shall be submitted within thirty (30) days of amendment;
   f) Install needed erosion controls even if they may be in the way of subsequent activities, such as utility installation, grading or construction;
   g) Install additional and/or alternative erosion and sediment controls when existing controls prove to be ineffective in preventing sediment from leaving the site;
   h) Comply with applicable State or local waste disposal, sanitary sewer or septic system regulations;
   i) Maintain all erosion controls. Excluding sediment basins, all accumulated sediment shall be removed from structural controls when sediment deposits reach one-third to one-half of the height of the control. For sediment basins, accumulated sediment shall be removed when the capacity has been reduced by 50%. Non-functioning controls shall be repaired, replaced or supplemented with functional controls within twenty-four (24) hours of discovery or as soon as field conditions allow; and

j) Implement steps necessary to meet a specific waste load allocation established after the beginning of construction.

A modification notification must be submitted by the contractor or owner to the Permit Board at least 30 days before the following activities:

- Any planned changes in project operations that may affect storm water discharges,
- Any planned changes of ownership, or
- Any changes in information previously submitted in the LCNOI.

3.0 Operation and Maintenance

General Information

Inspections shall be documented and include the scope of the inspection, name(s) and title(s) or qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollutants from the site and of any control device that failed to operate as designed (or proved inadequate for a particular location), and actions taken based on the results of the inspection. An inspection form is provided in Appendix F. Inspections are required at a minimum of four times per month and as often as necessary to ensure that appropriate erosion and sediment controls have been properly constructed and maintained, and to determine if additional or alternative control measures are required. They are also required within 24 hours after commencement of a rainfall event greater than or equal to a two year 24-hour storm event (4 inches near the border of Mississippi). Before conduction the site inspection, the inspector should review Chapter 4, Inspector's Checklist and Troubleshooting Chart found in MDEQ's Field Manual for Erosion and Sediment Control on Construction Sites in Mississippi. MDEQ recommends that "walk through" inspections be performed on the construction site prior to anticipated storm events when possible.

Inspections must be performed by qualified personnel who is knowledgeable in erosion and sediment control principles and practice. Qualified personnel must possess skills to assess conditions on the site that could impact stormwater quality and the effectiveness of sediment and erosion control measures.

3.1 Temporary Measures (vegetative and structural)

Stabilization measures will be initiated as soon as possible in areas where construction activities have ceased and in no more than seven days after the activity stopped. There are two exceptions: 1) where the initiation of stabilization measures by the seventh day is precluded by snow cover or frozen ground conditions; and 2) where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 15 days.

3.1.1 Temporary measures may be removed at the beginning of the workday but will be replaced at the end of the workday.

3.1.2 Silt will be inspected after each rainfall and at least daily during prolonged rainfall.

3.1.3 Sediment will be removed from behind the silt fence when it reaches approximately 6 inches deep.

3.1.4 Sediment removal will be monitored to avoid damage to erosion control structures.

3.1.5 Soil stabilization, with temporary controls, after final grading will be accomplished within 15 days.

3.1.6 All erosion control measures will be inspected at least once every 7 days or within 24 hours after commencement of a rainfall event greater than 4 inches.

3.2 Construction Management

3.2.1 All control measures will be inspected prior to anticipated storm events.

3.2.2 All control measures will be inspected on a weekly basis and after each rainfall.

3.2.3 All controls will be checked during prolonged rainfall.

3.2.4 Construction debris will be inhibited from entering drainage channels.

3.2.5 A specific individual will be designated responsible for erosion control measures at the site.

3.3 Permanent Measures (vegetative and structural)

3.3.1 Vegetated areas will be maintained in adequate condition to provide proper ground cover.

3.3.2 Areas where vegetation is lost, will be fertilized, seeded and maintained as necessary to restore proper ground cover.

3.3.3 Soil stabilization, with permanent controls, after final grading will be accomplished within 15 days and will replace temporary measures as soon as practicable.

3.3.4 Structural measures will be examined at least annually and maintenance performed as needed.

3.4 Records and Reports

3.4.1 The following records must be maintained on site: the date(s) when major grading activities occur, the date(s) when construction activities temporarily or permanently cease on a portion of the site, and the date(s) when stabilization measures are initiated. The permittee shall retain copies of storm water pollution prevention plans, and all reports required by the permit and records of all data used to complete Notice of Intent covered by this permit for a period of at least three years from the date of notice of termination is filed. The following information must be posted near the main entrance of the construction site:

3.4.2 The SWPPP;

3.4.3 The location of the SWPPP, if the site is inactive or does not have an on-site location to store the plan;

3.4.4 A copy of the Notice of Coverage with the NPDES permit number for the project;

3.4.5 The name and telephone number of the local contact person; and

3.4.6 A brief description of the project.

4 Employee Continuing Education

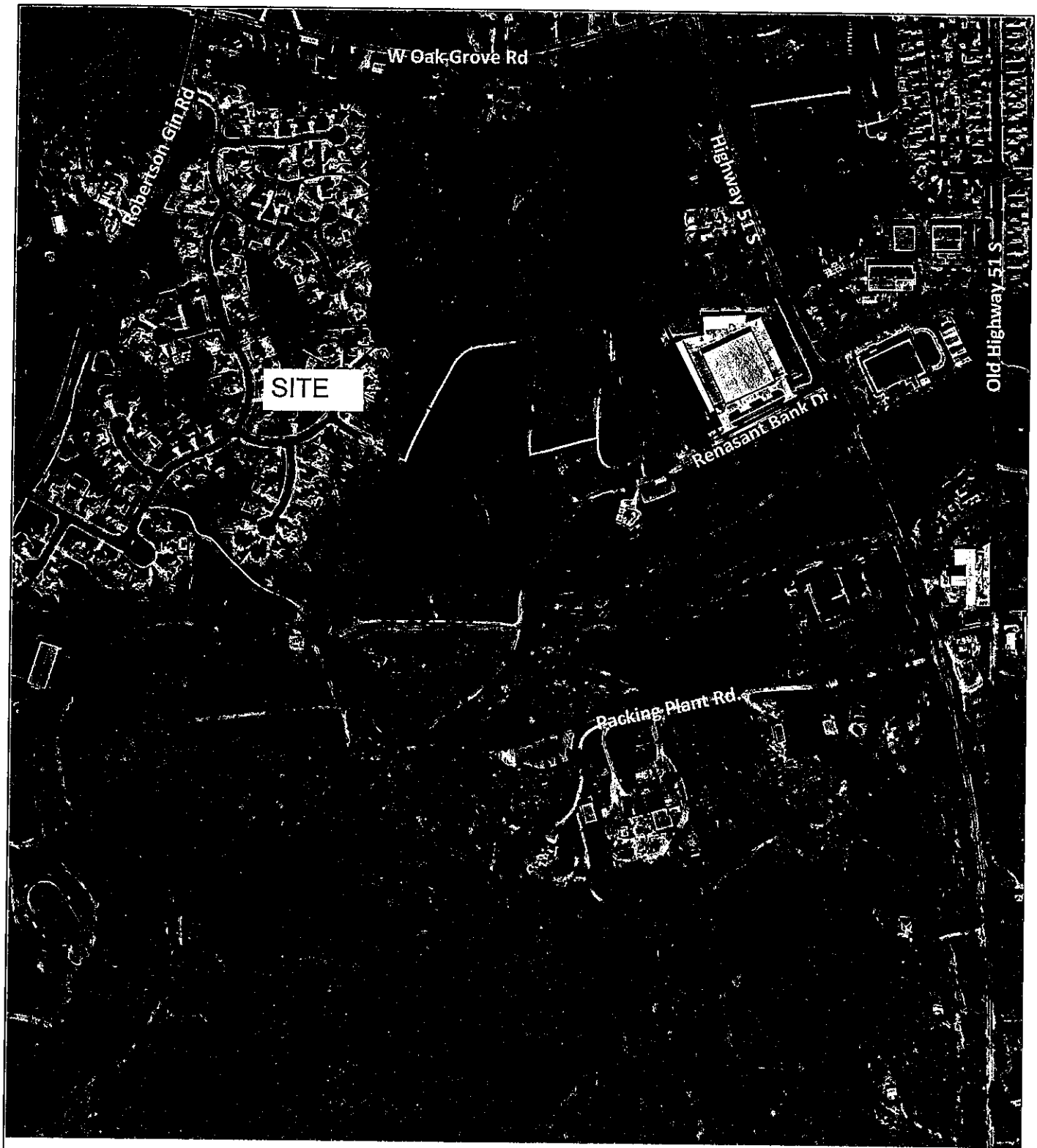
4.1 New employees to a site will be familiarized with the erosion, sediment, and stormwater control plan and the implementation schedule.

4.2 Subcontractors and their employees shall be given an overview of the plan and their responsibilities for following the plan.

4.3 Employees responsible for long-term maintenance will be informed of the proper function of BMPs, how to detect deficiencies, and how to take corrective action.

Appendix A

Vicinity Map



NORTH

Kimley»Horn	**Renasant Park** **3335 Highway 51 S.** **Hernando, DeSoto Co., MS**	**Vicinity Map**

Appendix B

FEMA Flood Map

90°W 34°48'58.2"N

89°56'14.17"W 34°44'46.85"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance Agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 14, 2010.

The map was created from FEMA's National Flood Hazard Layer (NFHL) on 7/31/2018 3:08 PM, and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/111138

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. The flood zones shown in panel 0 this map and/or some of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS: Geodetic Reference System 1980
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

1 inch = 1,000 feet 1:12,000
0 500 1,000 2,000 3,000 4,000 Feet
0 105 210 420 630 840 Meters

N

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
PANEL 240 OF 375

	NUMBER	PANEL
DESOTO COUNTY UNINCORPORATED AREAS	280089	0240
CITY OF HERNANDO	280262	0240

MAP NUMBER
28033C0240H
EFFECTIVE DATE
May 05, 2014

Appendix C

USGS Quadrangle Map

AI: 87114

Rec'd via hard copy: 08/09/2024

MSR10 9361

(NUMBER TO BE ASSIGNED BY STATE)

APPLICANT IS THE: ☑ OWNER ☐ PRIME CONTRACTOR

OWNER CONTACT INFORMATION

OWNER CONTACT PERSON: Jared Barkley

OWNER COMPANY LEGAL NAME: City of Hernando

OWNER STREET OR P.O. BOX: 475 W. Commerce Street

OWNER CITY: Hernando **STATE:** MS **ZIP:** 38632

OWNER PHONE #: (662) 429-9095 **OWNER EMAIL:** jbarkley@cityofhernando.org

PREPARER CONTACT INFORMATION

IF NOI WAS PREPARED BY SOMEONE OTHER THAN THE APPLICANT

CONTACT PERSON: Lindsey Hearon

COMPANY LEGAL NAME: Kimley-Horn

STREET OR P.O. BOX: 6750 Poplar Avenue, Ste 600

CITY: Memphis **STATE:** TN **ZIP:** 38138

PHONE # ( ) 901-374-9109 **EMAIL:** lindsey.hearon@kimley-horn.com

PRIME CONTRACTOR CONTACT INFORMATION

PRIME CONTRACTOR CONTACT PERSON: TBD

PRIME CONTRACTOR COMPANY LEGAL NAME:

PRIME CONTRACTOR STREET OR P.O. BOX:

PRIME CONTRACTOR CITY: **STATE:** **ZIP:**

PRIME CONTRACTOR PHONE #: ( ) **PRIME CONTRACTOR EMAIL:**

FACILITY SITE INFORMATION

FACILITY SITE NAME: Renasant Park

FACILITY SITE ADDRESS (If the physical address is not available, please indicate the nearest named road. For linear projects indicate the beginning of the project and identify all counties the project traverses.)

STREET: 3335 Highway 51 S.

CITY: Hernando STATE: MS COUNTY: Desoto ZIP: 38632

FACILITY SITE TRIBAL LAND ID (N/A If not applicable): N/A

LATITUDE: 35 degrees 48 minutes 38.13 seconds **LONGITUDE:** -89 degrees 59 minutes 40.33 seconds

LAT & LONG DATA SOURCE (GPS *(Please GPS Project Entrance/Start Point)* or Map Interpolation):

TOTAL ACREAGE THAT WILL BE DISTURBED [1]: 9.90 +/-

O.C

IS THIS PART OF A LARGER COMMON PLAN OF DEVELOPMENT? YES ☐ NO ☑

IF YES, NAME OF LARGER COMMON PLAN OF DEVELOPMENT: _____
AND PERMIT COVERAGE NUMBER: MSR10____

ESTIMATED CONSTRUCTION PROJECT START DATE: 2024-11 YYYY-MM-DD

ESTIMATED CONSTRUCTION PROJECT END DATE: 2025-07 YYYY-MM-DD

DESCRIPTION OF CONSTRUCTION ACTIVITY: Roadway, amphitheater, grading and drainage, recreation

PROPOSED DESCRIPTION OF PROPERTY USE AFTER CONSTRUCTION HAS BEEN COMPLETED:
Public Park

SIC Code: ___ ___ ___ ___ NAICS Code _____

NEAREST NAMED RECEIVING STREAM: Mussacuna

IS RECEIVING STREAM ON MISSISSIPPI'S 303(d) LIST OF IMPAIRED WATER BODIES? (The 303(d) list of impaired waters and TMDL stream segments may be found on MDEQ's web site: http://www.deq.state.ms.us/MDEQ.nsf/page/TWB_Total_Maximum_Daily_Load_Section) YES ☑ NO ☐

HAS A TMDL BEEN ESTABLISHED FOR THE RECEIVING STREAM SEGMENT? YES ☑ NO ☐

FOR WHICH POLLUTANT:

ARE THERE RECREATIONAL STREAMS, PRIVATE/PUBLIC PONDS OR LAKES WITHIN ½ MILE DOWNSTREAM OF PROJECT BOUNDRY THAT MAY BE IMPACTED BY THE CONSTRUCTION ACTIVITY? YES ☐ NO ☑

EXISTING DATA DESCRIBING THE SOIL (for linear projects please describe in SWPPP):
Soil Soils

WILL FLOCCULANTS BE USED TO TREAT TURBIDITY IN STORM WATER? YES ☐ NO ☑

IF YES, INDICATE THE TYPE OF FLOCCULANT.
☐ ANIONIC POLYACRYLIMIDE (PAM)
☐ OTHER _____

IF YES, DOES THE SWPPP DESCRIBE THE METHOD OF INTRODUCTION, THE LOCATION OF INTRODUCTION AND THE LOCATION OF WHERE FLOCCULATED MATERIAL WILL SETTLE?

IS A SDS SHEET INCLUDED FOR THE FLOCCULATE? YES ☐ NO ☑

WILL THERE BE A 50 FT BUFFER BETWEEN THE PROJECT DISTURBANCE AND THE WATERS OF THE STATE? YES ☑ NO ☐

IF NOT, PROVIDE EQUIVALENT CONTROL MEASURES IN THE SWPPP.

[1]Acreage for subdivision development includes areas disturbed by construction of roads, utilities and drainage. Additionally, a housesite of at least 10,000 ft^2 per lot (entire lot, if smaller) shall be included in calculating acreage disturbed.

DOCUMENTATION OF COMPLIANCE WITH OTHER REGULATIONS/REQUIREMENTS

COVERAGE UNDER THIS PERMIT WILL NOT BE GRANTED UNTIL ALL OTHER REQUIRED MDEQ PERMITS AND APPROVALS ARE SATISFACTORILY ADDRESSED

IS LCNOI FOR A FACILITY THAT WILL REQUIRE OTHER PERMITS? YES ☐ NO ☑

IF YES, CHECK ALL THAT APPLY: ☐ AIR ☐ HAZARDOUS WASTE ☐ PRETREATMENT ☐ WATER STATE OPERATING ☐ INDIVIDUAL NPDES ☐ OTHER: _____

IS THE PROJECT REROUTING, FILLING OR CROSSING A WATER CONVEYANCE OF ANY KIND? (If yes, contact the U.S. Army Corps of Engineers' Regulatory Branch for permitting requirements.) YES ☐ NO ☑

IF THE PROJECT REQUIRES A CORPS OF ENGINEER SECTION 404 PERMIT, PROVIDE APPROPRIATE DOCUMENTATION THAT:

-The project has been approved by individual permit, or
-The work will be covered by a nationwide permit and NO NOTIFICATION to the Corps is required, or
-The work will be covered by a nationwide or general permit and NOTIFICATION to the Corps is required

IS THE PROJECT REROUTING, FILLING OR CROSSING A STATE WATER CONVEYANCE OF ANY KIND? (If yes, please provide an antidegradation report.) YES ☐ NO ☑

IS A LAKE REQUIRING THE CONSTRUCTION OF A DAM BEING PROPOSED? (If yes, provide appropriate approval documentation from MDEQ Office of Land and Water, Dam Safety.) YES ☐ NO ☑

IF THE PROJECT IS A SUBDIVISION OR A COMMERCIAL DEVELOPMENT, HOW WILL SANITARY SEWAGE BE DISPOSED? Check one of the following and attach the pertinent documents.

☑ Existing Municipal or Commercial System. Please attach plans and specifications for the collection system and the associated "Information Regarding Proposed Wastewater Projects" form or approval from County Utility Authority in Hancock, Harrison, Jackson, Pearl River and Stone Counties. If the plans and specifications can not be provided at the time of LCNOI submittal, MDEQ will accept written acknowledgement from official(s) responsible for wastewater collection and treatment that the flows generated from the proposed project can and will be transported and treated properly. The letter must include the estimated flow.

☐ Collection and Treatment System will be Constructed. Please attach a copy of the cover of the NPDES discharge permit from MDEQ or indicate the date the application was submitted to MDEQ (Date: _____.)

☐ Individual Onsite Wastewater Disposal Systems for Subdivisions Less than 35 Lots. Please attach a copy of the Letter of General Acceptance from the Mississippi State Department of Health or certification from a registered professional engineer that the platted lots should support individual onsite wastewater disposal systems.

☐ Individual Onsite Wastewater Disposal Systems for Subdivisions Greater than 35 Lots. A determination of the feasibility of installing a central sewage collection and treatment system must be made by MDEQ. A copy of the response from MDEQ concerning the feasibility study must be attached. If a central collection and wastewater system is not feasible, then please attach a copy of the Letter of General Acceptance from the State Department of Health or certification from a registered professional engineer that the platted lots should support individual onsite wastewater disposal systems.

INDICATE ANY LOCAL STORM WATER ORDINANCE (I.E. MS4)WITH WHICH THE PROJECT MUST COMPLY:

_____

_____

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 of Applicant[1] (owner or prime contractor)

7-26-24
Date Signed

Chip Johnson
Printed Name

Mayor
Title

[1]This application shall be signed as follows:

- For a corporation, by a responsible corporate officer.
- For a partnership, by a general partner.
- For a sole proprietorship, by the proprietor.

For a municipal, state or other public facility, by principal executive officer, mayor, or ranking elected official

Please submit the LCNOI form to:

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

Electronically: https://www.mdeq.ms.gov/construction-stormwater/

Revised 3/23/22

Appendix I

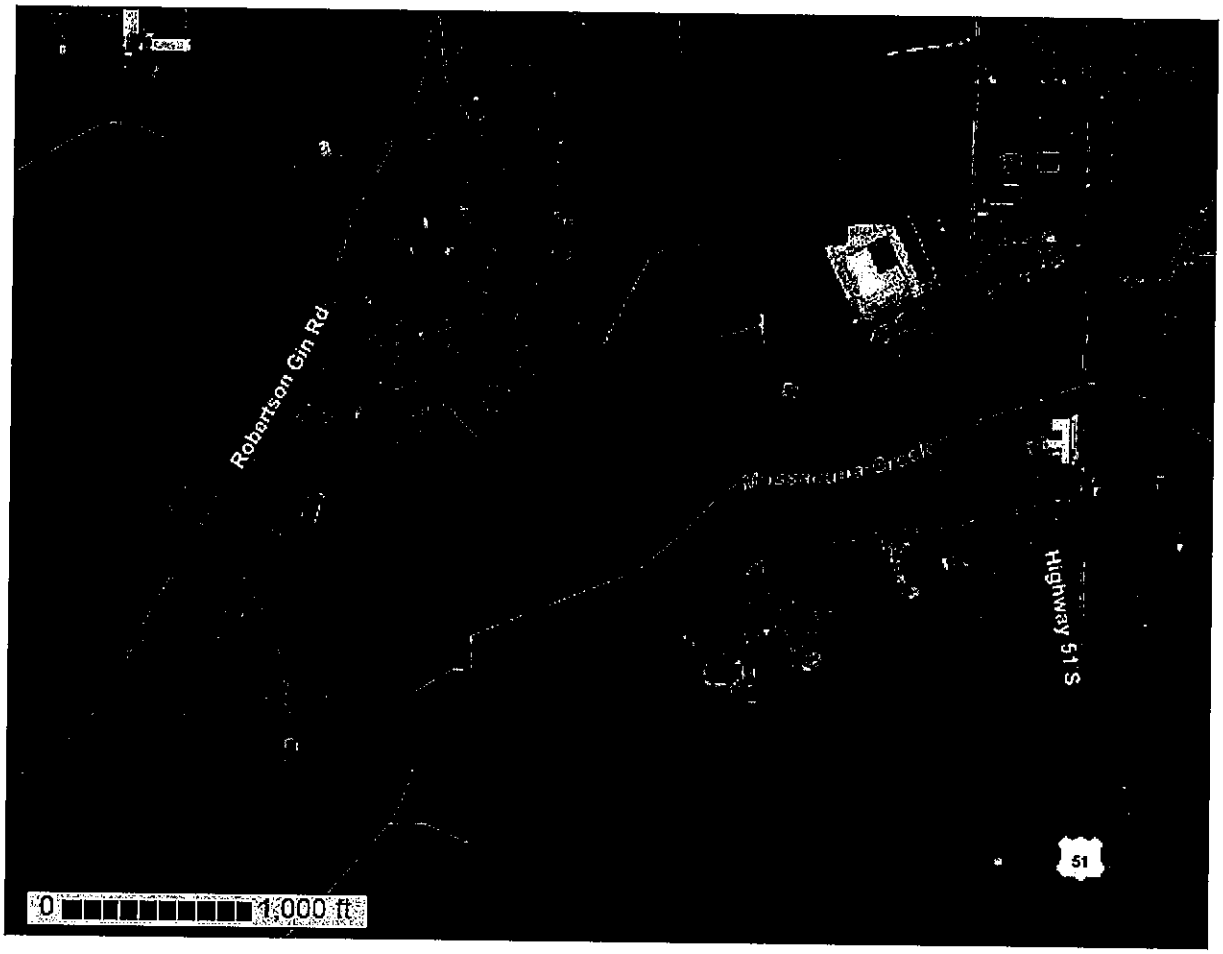
Web Soil Survey Data

USDA 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



July 22, 2024

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

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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: 1:8,810 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

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.

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: DeSoto County, Mississippi
Survey Area Data: Version 22, Sep 9, 2023

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

Date(s) aerial images were photographed: Feb 13, 2023—Mar 5, 2023

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
Cg	Collins silt loam (adler)	108.6	30.1%
Cl	Collins and Falaya silt loams, local alluvium phases	23.0	6.4%
Fa	Falaya silt loam (arkabutla)	7.6	2.1%
Gd	Grenada silt loam, severely eroded, gently sloping phase	18.5	5.1%
Gk	Gullied land, Loring soil material	108.0	30.0%
GP	Gravel pits	19.0	5.3%
Lc	Loring silt loam, 2 to 5 percent slopes, moderately eroded, central	11.8	3.3%
Ld	Loring silt loam, gently sloping phase	5.3	1.5%
Lg	Loring silt loam, eroded strongly sloping phase	4.8	1.3%
Lk	Loring silty clay loam, severely eroded very gently sloping phase	10.1	2.8%
Ll	Loring silty clay loam, severely eroded gently sloping phase	3.9	1.1%
Lm	Loring silty clay loam, severely eroded sloping phase	5.9	1.6%
Ln	Loring silty clay loam, severely eroded strongly sloping phase	2.1	0.6%
M-W	Miscellaneous water	6.7	1.9%
Mg	Memphis silty clay loam, severely eroded gently sloping phase	5.1	1.4%
Ob	Olivier silt loam, eroded very gently sloping phase (loring)	1.0	0.3%
Rb	Richland silt loam, severely eroded gently sloping phase (loring)	6.7	1.9%
Rc	Richland silt loam, severely eroded very gently sloping phase (loring)	0.5	0.1%
Rd	Richland silt loam, eroded very gently sloping phase (loring)	4.0	1.1%
W	Water	7.7	2.1%
Totals for Area of Interest		**360.3**	**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.

DeSoto County, Mississippi

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: Occasional
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
Ecological site: F134XY018AL - Northern Alluvial Flat - PROVISIONAL, F134XY014AL - Northern Non-Acid Floodplain - PROVISIONAL
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: Occasional
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
Ecological site: F134XY018AL - Northern Alluvial Flat - PROVISIONAL
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: Occasional
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
Ecological site: F134XY019AL - Northern Moderately Wet Alluvial Flat - PROVISIONAL
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

Fa—Falaya silt loam (arkabutla)

Map Unit Setting
National map unit symbol: m1sb
Elevation: 200 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: Prime farmland if drained

Map Unit Composition

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

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 18 inches
Frequency of flooding: Occasional
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
Ecological site: F134XY019AL - Northern Moderately Wet Alluvial Flat - PROVISIONAL
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
Ecological site: F134XY020AL - Northern Wet Alluvial Flat - PROVISIONAL
Hydric soil rating: Yes

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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
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

GP—Gravel pits

Map Unit Setting

National map unit symbol: 25z2f
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

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

Description of Gravel Pits

Setting

Parent material: Loamy fluviomarine deposits

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

Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL, F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL, F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
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
Ecological site: F134XY007AL - Northern Loess Terrace - PROVISIONAL, F134XY003AL - Northern Loess Interfluve - PROVISIONAL
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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL, F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
Hydric soil rating: No

Ld—Loring silt loam, gently sloping phase

Map Unit Setting

National map unit symbol: m1sw
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: Farmland of statewide importance

Map Unit Composition

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

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: 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): 3e
Hydrologic Soil Group: C
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
Hydric soil rating: No

Lg—Loring silt loam, eroded strongly sloping phase

Map Unit Setting

National map unit symbol: m1sz
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

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

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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
Hydric soil rating: No

LI—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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
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
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
Hydric soil rating: No

Ln—Loring silty clay loam, severely eroded strongly sloping phase

Map Unit Setting

National map unit symbol: m1t4
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

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: 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): 7e
Hydrologic Soil Group: C
Ecological site: F134XY012AL - Northern Loess Fragipan Upland - PROVISIONAL
Hydric soil rating: No

M-W—Miscellaneous water

Map Unit Composition

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

Mg—Memphis silty clay loam, severely eroded gently sloping phase

Map Unit Setting

National map unit symbol: m1tc
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

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: 5 to 8 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: Very high (about 12.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B
Ecological site: F134XY002TN - Northern Deep Loess Summit
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
Ecological site: F134XY008AL - Northern Moderately Wet Loess Terrace - PROVISIONAL
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
Ecological site: F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
Hydric soil rating: No

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

Map Unit Setting

National map unit symbol: m1tq
Elevation: 210 to 360 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

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: 2 to 5 percent
Depth to restrictive feature: 14 to 35 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Very 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 12 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): 3e
Hydrologic Soil Group: C/D
Ecological site: F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
Hydric soil rating: No

Rd—Richland silt loam, eroded very gently sloping phase (loring)

Map Unit Setting

National map unit symbol: m1tr
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: Farmland of statewide importance

Map Unit Composition

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

Description of Richland

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: 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 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F134XY013AL - Northern Loess Fragipan Terrace - PROVISIONAL
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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