

Chapter 3. Existing Condition and Analysis / Affected Environment

Introduction

1 This chapter presents the summary and
2 analysis of the current condition of the
3 archeological landscape of Hopewell
4 Culture NHP. Narrative text, diagrams, and
5 photographs describe the existing condition
6 using a series of landscape characteristics.
7
8 The condition assessment is undertaken to
9 understand the archeological landscape as
10 a whole. It identifies and documents those
11 qualities and features that contribute to the
12 park's historic character, retain integrity,
13 and contribute to the significance of the
14 landscape. Field reconnaissance, undertaken
15 in October 2014, assisted in the recording of
16 the archeological landscape.
17
18 This chapter is organized to present the
19 existing condition and analysis evaluation
20 for the study area first, which includes the
21 evaluation of landscape characteristics that
22 relate to the study area as a whole. This is
23 followed by a condition assessment and
24 analysis for each of the five park units.
25
26 The existing condition and analysis of the
27 archeological landscape is evaluated using the
28 following criteria.
29
30 *Good* – Those features that do not require
31 intervention. Only minor or routine
32 maintenance is needed at this time.
33
34 *Fair* – Some deterioration, decline, or
35 damage is noticeable; the feature may
36 require immediate intervention. If
37 intervention is deferred, the feature will
38 require extensive attention in a few years.
39
40 *Poor* – Deterioration, decline, or damage is
41 serious; the feature is seriously deteriorated
42 or damaged, or presents a hazardous
43 condition. The feature requires extensive
44 and immediate attention.

1 The archeological landscape is documented
2 and assessed according to these landscape
3 characteristics:
4
5 • Natural Systems and Features
6 • Spatial Organization / Topography /
7 Views
8 • Land Use
9 • Archeological Features
10 • Circulation
11 • Vegetation
12 • Buildings and Structures
13 • Small Scale Features
14
15 Natural systems and land use are evaluated
16 for the study area as a whole. All other
17 landscape characteristics are also evaluated
18 individually for each earthwork complex.
19
20 *Natural Systems and Features* are those
21 natural aspects that have influenced the
22 development and physical form of the
23 study area including the river courses and
24 terraces, and floodplains, as well as the native
25 hardwood forests and adjacent uplands of the
26 Allegheny foothills.
27
28 *Spatial Organization / Topography / Views*
29 are evaluated as a singular landscape
30 characteristic as these three are inherently
31 intertwined in the development of the
32 archeological landscape. Spatial organization
33 is the arrangement of elements creating the
34 ground, vertical and overhead planes that
35 define and create space, including topography,
36 natural systems, vegetation, and archeological
37 features. Topography is the three-dimensional
38 configuration of the landscape surface
39 characterized by slope and orientation. Views
40 are a range of vision, natural or man-made.
41
42 *Land Use* is the organization, form and shape
43 of the landscape in response to land use.
44

Assessment of Integrity

1 *Archeological Features* are ruins, traces, or
2 elements that exist from early American
3 Indian periods, primarily associated with
4 Hopewell Culture including earthen walls,
5 mounds and borrow pits. These include
6 above-grade visible features (visible forms
7 on the surface, i.e. visible above the adjacent
8 grade) and below-grade features identified
9 by magnetic survey, other geophysical
10 remote sensing techniques, or by traditional
11 archeological survey, not visible on the
12 surface.^{3.1} Unverified features are also
13 covered, including those identified by
14 previous archeological investigations but are
15 not visible, and those on private property not
16 reviewed as part of the CLR / EA.^{3.2}

17
18 *Circulation* are features and materials that
19 constitute systems of movement including
20 vehicular routes such as roads and parking
21 areas, and pedestrian routes such as trails and
22 walkways. Circulation includes patterns of
23 movement across the earthwork spaces and
24 the transportation routes over land and water.

25
26 *Vegetation* is indigenous or introduced trees,
27 shrubs, vines, ground covers, herbaceous
28 materials, croplands and fields.

29
30 *Buildings and Structures* are three-
31 dimensional man-made constructs of
32 contemporary time, including park
33 administrative and maintenance buildings,
34 older, pre-park buildings and structures.

35
36 *Small Scale Features* are the human-scaled
37 elements of contemporary use that provide
38 specific functions and include fences, signs
39 and overlooks.

40

41

42 3.1 For the purpose of this report, above-grade archeological
43 features include mounds, and earthen walls that are
44 visible forms on the surface, i.e. visible above the adjacent
grade.

3.2 Some archeological features recorded by Squier and Davis
in 1848 have been verified through recent testing, while
others have not been recently investigated to determine
their current condition.

1 Integrity is the ability of a property to convey
2 its significance. In addition to being listed
3 in the National Register of Historic Places, a
4 property must also have integrity, which is
5 grounded in a property's physical features
6 and how they relate to its significance.
7 Essentially, the question of integrity is
8 answered by whether or not the property
9 retains the identity for which it is significant.
10 Integrity is defined by seven aspects or
11 qualities: location, design, setting, materials,
12 workmanship, feeling, and association.

13

14 *Location* is the place where the archeological
15 landscape was constructed or where an
16 historic event occurred.

17

18 *Design* is the combination of elements that
19 create the form, plan, space, structure and
20 style of the archeological landscape.

21

22 *Setting* is the physical environment of the
23 archeological landscape.

24

25 *Materials* are the physical elements that were
26 combined or deposited during the particular
27 period (s) of time and in a particular pattern
28 or configuration to form the archeological
29 landscape.

30

31 *Workmanship* includes the physical evidence
32 of the crafts of a particular culture or
33 people during any given period in history or
34 prehistory.

35

36 *Feeling* is the archeological landscape's
37 expression of the aesthetic or historic sense of
38 a particular period of time.

39

40 *Association* is the direct link between the
41 important historic event or person and a
42 archeological landscape.

43

44

1 The study area maintains many of its spatial,
2 topographic and visual relationships,
3 archeological features (some above-grade
4 and many known below-grade), use patterns,
5 and vegetation types. The study area retains
6 integrity as a significant archeological
7 landscape. Modern intrusions and alterations
8 to the vegetation have altered the setting,
9 however at a larger scale, the hills, terraces,
10 and rivers retain integrity.

11
12 The study area retains integrity in location,
13 setting, and design. It has diminished
14 integrity in feeling, material, workmanship,
15 and association.

16
17 The key acreages associated with the
18 development of the Hopewell Culture in
19 the five earthwork complexes—Mound
20 City Group, Hopeton Earthworks, Hopewell
21 Mound Group, Seip Earthworks, and High
22 Bank Works—and their extant features
23 remain in their original locations. The setting
24 of each earthwork complex reflects original
25 characteristics, particularly relationships to
26 rivers, foothills, and natural features.

27
28 Contributing archeological features or early
29 historical reconstructions of these features
30 remain in original locations and retain their
31 relationships to one another. These include
32 earthen walls, mounds, and borrow pits. In
33 all earthwork complexes, vegetation obscures
34 many contributing features and diminishes
35 the visibility of the relationships between
36 elements.

37
38 Integrity of setting is retained at all the
39 earthwork complexes due to the surrounding
40 woodlands, nearby waterways, the extant
41 topography of the river terraces, and views to
42 the foothills that remain from the time of the
43 Hopewell.

44

1 The study area retains integrity of design, as
2 the arrangement and layout of the original
3 earthwork complexes remain. Some features
4 remain extant above-grade. Although certain
5 elements cannot be seen, the form, plan,
6 and scale of extant below-grade features
7 provide evidence of the initial design of each
8 earthwork complex.

9
10 Integrity of materials has been compromised
11 due to agricultural practices, intrusive
12 archeological excavations, and the presence
13 of buildings, roads and other features
14 built upon the earthwork complexes. As a
15 result, some archeological features have
16 been removed, damaged, or destroyed.
17 Some of the earthwork complexes have
18 not been excavated and may retain all
19 original materials. The sub-base of the many
20 archeological features is evident on magnetic
21 surveys, and while some earthen walls and
22 mounds are no longer visible on the surface,
23 their historic fabric appears to be extant
24 below-grade.

25
26 Contributing features retain original
27 workmanship. The five archeological
28 earthwork complexes, consisting of site
29 design, earthen walls, mounds, and borrow
30 pits, reflect the building practices and
31 workmanship of the Hopewell. Workmanship
32 has been diminished due to damage by
33 plowing, excavations and reconstructions,
34 some of which has removed the original
35 craftsmanship. The original layering of
36 materials —clay, gravel, and soil— has been
37 removed for some features. A large number
38 of artifacts have been removed from the
39 earthwork complexes, which diminishes their
40 original context.

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1 The archeological landscape has diminished
2 feeling where above-grade archeological
3 features are missing or not readily visible.
4 Reconstructed earthwork complexes assist
5 in providing a sense of how the earthwork
6 complexes may have appeared to the
7 Hopewell.

8
9 The archeological landscape has diminished
10 integrity of association. The earthwork
11 complexes are extant archeological features
12 that have existed since the time of the
13 Hopewell, however their association with
14 a specific tribal lineage has been lost. The
15 specific meaning and relationships that they
16 had to the natural world and spiritual beliefs
17 of the Hopewell have been lost.

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Contributing and Non-Contributing Features

1 Contributing features are defined as
2 features that contribute to the archeological
3 landscape of Hopewell Culture NHP. They
4 include individual elements and physical
5 characteristics remaining from the period of
6 significance. Contributing features include
7 earthen walls, mounds, borrow pits, extant
8 below-grade earthen wall foundations,
9 postholes, structure floors, and other below-
10 grade features and artifacts. Reconstructed
11 earthen walls and mounds, at Mound City
12 Group and Seip Earthworks, are considered
13 contributing features for their role in
14 interpretation of the archeological landscape.

15
16 Non-contributing features are recent
17 additions that do not assist in maintaining
18 the historic character of the archeological
19 landscape of Hopewell Culture. These
20 include contemporary buildings, structures,
21 circulation routes, signs and fences.

22
23 Other features may be found to be significant
24 in their own right, but do not contribute to
25 the archeological landscape. This includes
26 agricultural buildings such as the Blackstone
27 House, WPA buildings and features, and
28 buildings and features from the Mission 66-
29 era.

30
31 Feature names, i.e. Square Enclosure or Circle
32 A, were provided by the park and reflect the
33 most current naming conventions informed
34 by archeological studies. A list of terminology
35 used to describe the archeological landscape
36 is included in Appendix F of this CLR / EA.

37 38 Study Area

39 Contributing Features

- 40 • Relationship of earthwork complexes to
- 41 river terraces and foothills
- 42 • Earthwork complex of archeological
- 43 features (above- and below-grade
- 44 features)

1 Mound City Group

2 Contributing Features

- 3 • Enclosure
- 4 • Gateways (two)
- 5 • Mounds (25)
- 6 • Reconstructed mounds (22)
- 7 • Extra-mural mounds (two)
- 8 • Borrow pits (eight)
- 9 • Areas of archeological scatter

10

11 Non-Contributing Features

- 12 • State Highway 104
- 13 • Entry drive
- 14 • Service drives
- 15 • Parking areas
- 16 • Pedestrian routes
- 17 • Vegetation
- 18 • Visitor center building
- 19 • Resource management building
- 20 • Administrative building
- 21 • Maintenance building
- 22 • Maintenance storage
- 23 • Flammable storage building
- 24 • Small scale features (signs, lights, etc.)
- 25 • CCC and WPA era walls, steps, stone grill

26

27 Hopeton Earthworks

28 Contributing Features

- 29 • Square Enclosure
- 30 • Great Circle
- 31 • Circle A
- 32 • Circle B
- 33 • Circle C
- 34 • Parallel Walls
- 35 • Mounds (three)
- 36 • Gateways (19)
- 37 • Borrow pits (five)
- 38 • Areas of archeological scatter

39

40 Non-Contributing Features

- 41 • Hopetown Road
- 42 • Pit Road
- 43 • Access Road
- 44 • Vaughan Road

- | | |
|---|---|
| 1 • Vegetation | 1 • Borrow pits |
| 2 • Small scale features | 2 • Hopewellian structure foundations |
| 3 | 3 • Areas of archeological scatter |
| 4 <u>Potentially Historic Features</u> | 4 |
| 5 • Cryder Farmstead | 5 <u>Non-Contributing Features</u> |
| 6 | 6 • U.S. Highway 50 |
| 7 Hopewell Mound Group | 7 • Dill Road |
| 8 <u>Contributing Features</u> | 8 • Entrance loop / parking area |
| 9 • Great Enclosure | 9 • Asphalt drive |
| 10 • Square Enclosure | 10 • Remnant drive |
| 11 • Small Enclosure | 11 • Service / access road |
| 12 • Mounds (30 to 40) | 12 • Pedestrian routes |
| 13 • Gateways (11) | 13 • Vegetation |
| 14 • Borrow pits | 14 • Picnic shelter |
| 15 • Natural springs | 15 • Porta potty |
| 16 • Areas of archeological scatter | 16 • Fish camp building |
| 17 | 17 • Shed privy |
| 18 <u>Non-Contributing Features</u> | 18 • Privy |
| 19 • Sulphur Lick Road | 19 • Building remnant |
| 20 • Maple Grove Road | 20 • Small scale features |
| 21 • Cydrus Lane | 21 |
| 22 • Maintenance roads | 22 <u>Potentially Historic Features</u> |
| 23 • Parking area | 23 • Old Seip Farm House / Blackstone |
| 24 • Pedestrian routes | 24 House ^{3.3} |
| 25 • Vegetation | 25 • Outbuildings |
| 26 • Comfort station | 26 |
| 27 • Picnic shelter | 27 High Bank Works |
| 28 • Cow shed remnant | 28 <u>Contributing Features</u> |
| 29 • Private buildings | 29 • Great Circle |
| 30 • Steel lattice transmission towers | 30 • Octagon |
| 31 • Small scale features | 31 • Parallel Walls |
| 32 • Corn crib | 32 • South Earthworks |
| 33 | 33 • Mounds (eight) |
| 34 <u>Potentially Historic Features</u> | 34 • Gateways |
| 35 • Barn | 35 • Borrow pits |
| 36 | 36 • Areas of archeological scatter |
| 37 Seip Earthworks | 37 |
| 38 <u>Contributing Features</u> | 38 <u>Non-Contributing Features</u> |
| 39 • Large Circle | 39 • Gravel road |
| 40 • Large Square | 40 • Dirt road |
| 41 • Small Circle | 41 • Vegetation |
| 42 • Seip-Pricer Mound | 42 • Small scale features |
| 43 • Seip-Conjoined Mound | 43 |
| 44 • Gateways | 44 |

3.3 The Blackstone House has been determined eligible for the NRHP.

Study Area

1 Introduction

2 This section describes the existing condition
3 of the study area as an archeological
4 landscape, documenting the influences of
5 the overall setting, and the characteristics of
6 the Hopewell development as one system of
7 earthwork complexes. The individual park
8 units are described in more detail later in this
9 chapter.

10

11 The evaluation of the study area is broad
12 in scope, with documentation on the
13 archeological landscape as an overall
14 description. The existing condition of the
15 study area is assessed according to the
16 following landscape characteristics.

17

18 Natural Systems and Features

19

20 Spatial Organization / Topography / Views

21

22 Land Use

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24 Archeological Features

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26 Circulation

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28 Vegetation

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1 Natural Systems and Features

2 Existing Condition

3 Hopewell Culture NHP is located within the
4 Scioto River Valley, an area with rich soils and
5 occasional flooding. The study area is on the
6 west edge of the West Allegheny Plateau with
7 the Allegheny Mountains to the south and
8 east, and the Till Plains / East Cornbelt Plains
9 to the north.^{3.4}

10

11 The intersection of these geologic features
12 and a continental climate has resulted in a
13 unique ecosystem with diverse plant and
14 animal life. The lower section of Paint Creek
15 has high water quality and provides valuable
16 habitat.^{3.5} The broader landscape is organized
17 by rivers and streams, mountains, geology
18 and soils, climate, and native flora and fauna.

19

20 The study area is located within the Scioto
21 River Valley, a tributary of the Ohio River.

22 Each of the five archeological earthwork
23 complexes is located along the river and
24 stream corridors associated with this valley.
25 The study area includes the tributaries of the
26 Scioto River, Paint Creek, and the North Fork
27 Paint Creek, which connect the park units.

28

29 Scioto River floods can occur during any
30 season, with flooding typical every two to
31 three years.^{3.6} Historically, the river and its
32 tributaries would naturally meander across
33 their floodplains, creating river terraces
34 and areas of wetland vegetation. River
35 embankments vary, and the riverbank of the
36 Scioto River is typically steep and subject to
37 erosion.^{3.7}

38

39 3.4 David Diamond et al., *Vegetation Classification and*
40 *Mapping of Hopewell Culture NHP* (Fort Collins: NPS,
2014), 3.

41 3.5 Ohio EPA, Paint Creek Watershed Final TMDL Report,
2012.

42 3.6 NPS, *Hopewell Culture National Historical Park Ancillary*
43 *Map Information Document - Geological Resource*
44 *Inventory* (2009), 7.

3.7 Army Corps of Engineers, *Engineering Report Scioto River*
Bank Erosion and Failure Mound City Group, (Huntington:
1985), 1.



Figure 3-1. Each archeological earthwork complex is located along river and stream corridors associated with the Scioto River Valley, a tributary of the Ohio River. North Fork Paint Creek is adjacent to Seip Earthworks, above. (Mundus Bishop 2014)



Figure 3-2. The foothills of the Appalachian Mountains are distinct landforms in each of the park units. The hills rise dramatically around Seip Earthworks, above. (Mundus Bishop 2014)

1 The lower portion of Paint Creek is among the
2 highest quality large rivers in the state, with
3 high water quality and a diverse fish species
4 population.^{3.8} While these streams flow
5 adjacent to park lands, the park has no direct
6 management responsibilities for these rivers.

7
8 Relatively flat terraces rise above and flank
9 either side of the Scioto River and Paint Creek.
10 These terraces were created by glaciers in the
11 last ice age that extended to the north edge
12 of the Appalachian Plateau. The Hopewellian
13 earthwork complexes were typically built on
14 the first or second terrace above the river.

15
16 The rising foothills of the Appalachians in the
17 distance contrasts with the river drainages.
18 These foothills include Mt. Logan, Sand Hill,
19 Bald Hill, Sugarloaf, Mt. Ives, and Bunker
20 Hill to the east of Mound City Group, Farrell
21 Hill and Copperas Mountain near Seip
22 Earthworks, and Spruce Hill above Paint
23 Creek. The elevation at park headquarters is
24 650 feet above sea level. Other portions of the
25 study area are at a similar elevation.

26
27 The study area is on the north edge of the
28 Appalachian Plateau, on floodplains and
29 Wisconsin age glacial terraces consisting
30 of predominately of sands and gravels. The
31 surrounding are predominately shale capped
32 by resistant sandstone. The rock units within,
33 and surrounding the park can be divided into
34 three main types: Very old sedimentary rocks
35 of mid-Paleozoic age (approximately 420 to
36 330 million years old); Ice age deposits from
37 the Illinoian and Wisconsinan glacial periods
38 (less than 2.6 million years old); Modern
39 fluvial deposits associated with stream
40 channels dating to the past 17,000 years.^{3.9}

41
42 Sedimentary rocks of the Mississippian
43 Period of the Paleozoic Era are exposed in

45 3.8 Myra Vick, Inventory of Distribution, Composition, and
46 Relative Abundance of Mammals at Hopewell Culture
National Historical Park (Republic, MO: 2004), 4.

3.9 NPS, *Geologic Resources Inventory*, v.

1 outcrops near Chillicothe. An exposure of
2 Paleozoic-aged bedrock is exposed on the
3 slopes of Copperas Mountain. Although not
4 within the park, Copperas Mountain is visible
5 from Seip Earthworks, and the colored runoff
6 from the sediments may have been used by
7 Hopewell peoples for paints or dyes.^{3.10}

8
9 Approximately two million years ago, glacial
10 ice repeatedly advanced and retreated over
11 the area, sculpting the landscape and leaving
12 glacial deposits and sediments, creating the
13 characteristic, relatively flat terraces above
14 the rivers.^{3.11} The Hopewell people built
15 earthwork complexes on top of these terraces
16 of glacial deposits.

17
18 The glacial outwash terraces and moraines
19 are covered by silt-loam soils underlain
20 by sand and gravel; silt-loam soils lay over
21 sandstone and shale on the surrounding hills.

22
23 The park is located in a temperate climate
24 zone characterized by extreme heat and
25 humidity in the summer, and cold, icy winters.
26 Annual precipitation averages 37.8 inches.^{3.12}
27 The average daily temperature for the month
28 of January is 33.7 degrees Fahrenheit the
29 average daily temperature for the month of
30 July is 76.2.^{3.13}

31
32 The study area is located at the intersection
33 of the Till Plains and the Glaciated and
34 Unglaciated Appalachian Plateaus.^{3.14} These
35 areas are typified by oak-hickory forest in the
36 Appalachian Plateaus, and tall grass prairie
37 and savanna on the Till Plains.

38
39 Vegetation is characterized by farmland and
40 pasture in the river valleys, with upland
41 wooded forest on the adjacent Allegheny

42 3.10 NPS, *Geologic Resources Inventory*, 2.

43 3.11 NPS, *Geologic Resources Inventory*, v.

44 3.12 NPS, *Wildland Fire Management Plan*, 13.

45 3.13 Army Corps of Engineers, *Scioto River Bank Erosion and
Failure Mound City Group*, 1.

46 3.14 Brockman 1998.



Figure 3-3. Paleozoic-aged bedrock is exposed on the slopes of Copperas Mountain, visible from Seip Earthworks. (Mundus Bishop 2014)

1 foothills. Within the park, vegetation includes
2 woodlands, field grasses and forbs, and
3 riparian vegetation.

4
5 Dominant tree species in the upland, or
6 hardwood forest include sugar maple
7 (*Acer saccharum*), chinkapin oak (*Quercus*
8 *muehlenbergii*), white oak (*Quercus alba*),
9 hackberry (*Celtis occidentalis*), black walnut
10 (*Juglans nigra*), black cherry (*Prunus*
11 *serotina*), boxelder (*Acer negundo*), and Ohio
12 buckeye (*Aesculus glabra*).^{3.15}

13
14 Dominant tree species in the floodplains
15 include hackberry, pawpaw (*Asimina triloba*),
16 American sycamore (*Platanus occidentalis*),
17 cottonwood (*Populus deltoides*), and silver
18 maple (*Acer saccharinum*).^{3.16}

19
20 Orchardgrass, Timothy grass, and fescue
21 species occupy former croplands, and this
22 vegetation type occurs on all of the park units.
23 Invasive plant species have encroached into
24 former croplands and threaten native species,
25 a management concern.

26
27 Riparian vegetation occurs along the Scioto
28 River, North Fork Paint Creek, and Paint
29 Creek. The riparian vegetation contains
30 a wide diversity of species that provide
31 important wildlife habitat.

32
33 The study area provides habitat for a wide
34 variety of wildlife. Over 35 mammal species,
35 and 172 bird species have been observed.^{3.17}
36 Several endangered and threatened species
37 have been recorded in the study area,
38 and several bird species of continental
39 importance. The park is an important refuge
40 for migrating birds, and former agriculture
41 fields provide habitat as nesting sites.^{3.18}

43 3.15 Diamond, *Vegetation Classification and Mapping*, 22.

44 3.16 Diamond, *Vegetation Classification and Mapping*, 22.

45 3.17 Myra Vick, Inventory of Distribution, Composition, and
46 Relative Abundance of Birds at Hopewell Culture National
Historical Park (Republic, Missouri: Heartland Network
Inventory and Monitoring Program, 2004).

3.18 David Peitz, *Bird Monitoring at Hopewell Culture National*

1 Analysis

2 Hopewellian society benefited from the
3 fertility of the region's ecosystem. Rich
4 soils, long growing season and abundant
5 water made the region suitable for hunting,
6 gathering, and agriculture for more than
7 1,000 years. A rich forest habitat supported
8 diverse plant and animal life. During
9 the period of significance the system of
10 waterways and overland routes were
11 likely used for transportation, and were
12 organizing elements for the construction of
13 the earthwork complexes. Overland routes
14 also likely influenced the location of the
15 complexes.

16
17 Earthwork complexes were built above
18 the floodplains, and set adjacent to the
19 natural river systems. Since the period of
20 significance, much of the natural vegetation
21 has been cleared for agricultural uses.
22 Woodland, riparian, and wetland areas occur
23 in association with existing forests and river
24 corridors.

25
26 The natural systems continue to influence the
27 character and condition of the study area. The
28 waterways, geology, plants, and wildlife retain
29 their essential character. Natural systems
30 contribute to the historic landscape character
31 of Hopewell Culture NHP.

45 *Historical Park, Ohio: 2005-07 Status Report* (Republic,
46 MO: 2008), 29.

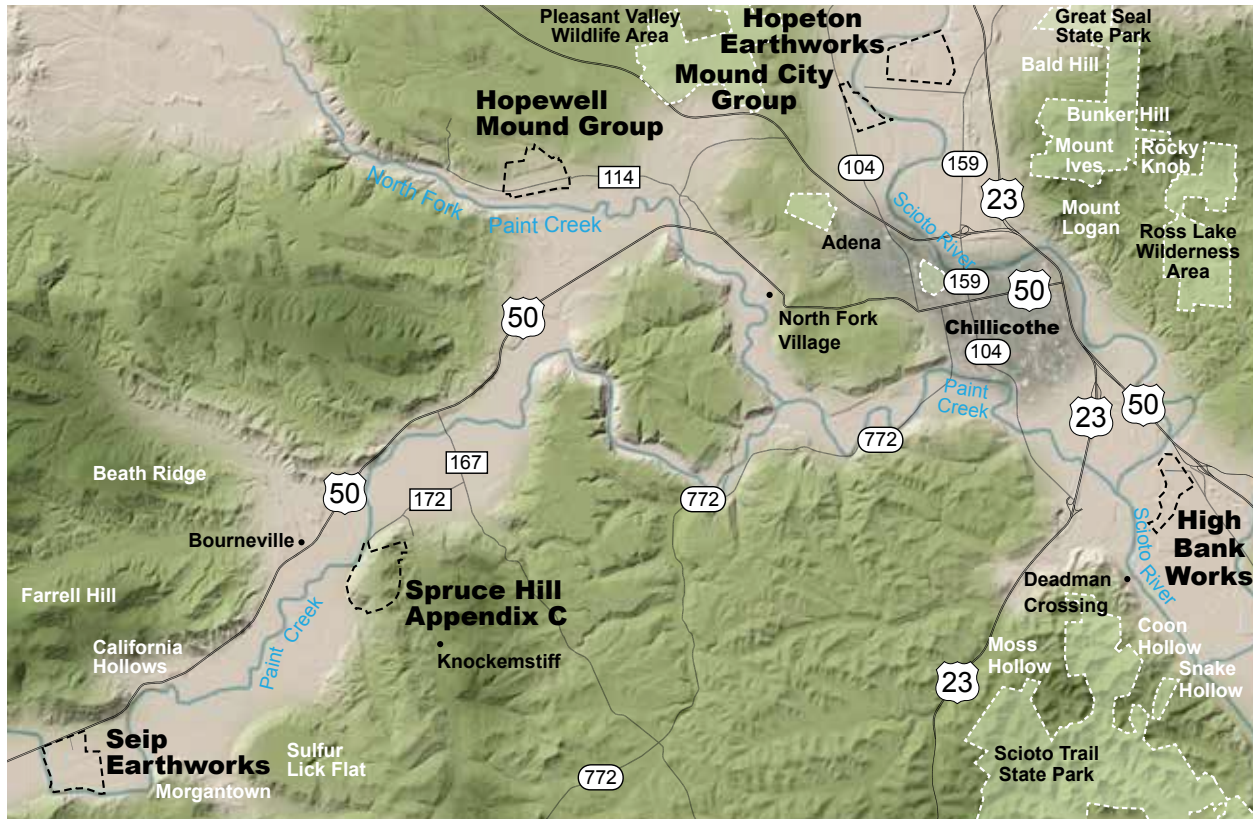


Figure 3-4. Each of the archeological earthwork complexes is located along river and stream corridors associated with the Scioto River Valley, a tributary of the Ohio River. (Mundus Bishop 2014)

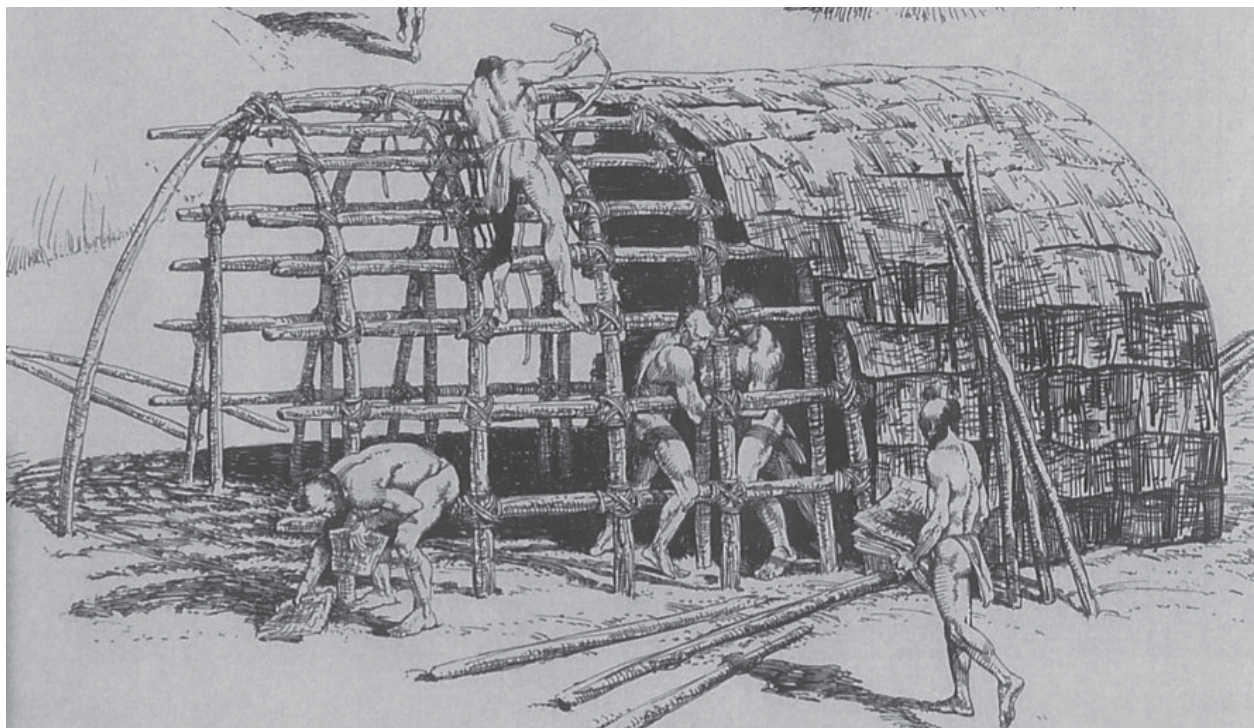


Figure 3-5. During the period of significance the earthworks would have included buildings — charnel houses, workshops, and ceremonial buildings — in association with the arrangement of mounds and earthen walls. (Hopewell Culture NHP Archives)

1 **Spatial Organization / Topography / Views**

2 Existing Condition

3 The study area is comprised of five
4 discontinuous earthwork complexes, all built
5 upon relatively level terraces adjacent to, and
6 above the river and creeks. All earthwork
7 complexes have views to mountain ridges
8 and peaks, across the river terraces, and up
9 and down valley floors. Views to the water
10 courses from the earthwork complexes are
11 obscured by vegetation.

12
13 In general, the five earthwork complexes are
14 not visible from one another, but are related
15 and connected through the river and stream
16 courses. Two earthwork complexes, Mound
17 City Group and Hopeton Earthworks, are
18 across the Scioto River from one another. The
19 arrangement of the gateway at Mound City
20 Group and the alignment of the parallel walls
21 at Hopeton Earthworks appear to connect or
22 point to one another.

23
24 The earthwork complexes are located within
25 river valleys, above the riparian edge of
26 adjacent rivers and streams, but lower in
27 elevation than adjacent foothills. These
28 valleys are mostly open farmland, which
29 contrast with the Appalachian foothills and
30 other forested ridgelines in the distance. The
31 surrounding hills are generally 1,000 to 1,300
32 feet above sea level, and include landforms
33 such as Copperas Mountain, visible from Seip
34 Earthworks, that appear to have influenced
35 the design and layout of the earthwork
36 complexes.

37
38 The earthwork complexes, grand in size
39 and scope, are generally large open spaces,
40 oriented to the waterways and the horizons,
41 and possibly specific peaks and ridges.^{3.19}

42 The geometric forms of each earthwork
43 were placed with a clear relationship to their
44 corresponding stream, either paralleling the
45 river course, or mimicking its form.

3.19 Hively and Horn 1984; Hively and Horn 2010.

1 The design of the earthwork complexes
2 suggest a relationship with distant natural
3 forms, including the Alleghenies, the horizon
4 beyond, celestial events, and the sun and
5 moon.^{3.20} The design and layout of earthwork
6 complexes appear to be a response to water
7 and mountain, because they reflect the shape
8 and arrangement of the natural topography.
9 The grand scale of most of the earthen walls
10 suggests that they were designed to extend
11 beyond the horizon, and as if they were
12 designed to be infinite.^{3.21}

13
14 Analysis

15 When first built between 1 AD and 400 AD,
16 the earthwork complexes were strategically
17 placed to have direct spatial relationships
18 to the Scioto River and Paint Creek, and
19 surrounding landforms.^{3.22} The earthwork
20 complexes were built above the floodplain of
21 the rivers on upper river terraces, with views
22 to the waterways, valleys, and hillsides. The
23 water courses served as organizing elements
24 for the design of the earthwork complexes,
25 which often align or mimic the shape of the
26 waterway. This arrangement likely served
27 a spiritual and symbolic purpose for the
28 Hopewell people. The size and arrangement
29 of the earthwork complexes were based on
30 an established system of metrics, common
31 among Hopewellian earthwork complexes.^{3.23}

32
33 During the period of significance the
34 earthwork complexes would have included
35 buildings — charnel houses, workshops,
36 and ceremonial buildings — in association
37 with the arrangement of mounds and
38 earthen walls. During the active use of these
39 earthwork complexes, the buildings would
40 have reinforced the spatial arrangement of

41
42 3.20 Hively and Horn 1984; Hively and Horn 2010.
43 3.21 Ibid.

44 3.22 Hively and Horn 1984; Hively and Horn 2010; Marshall
45 1996; Romain 2000.

46 3.23 The diameters of circles, length and shapes of earthwork
complexes is often the same throughout the region.

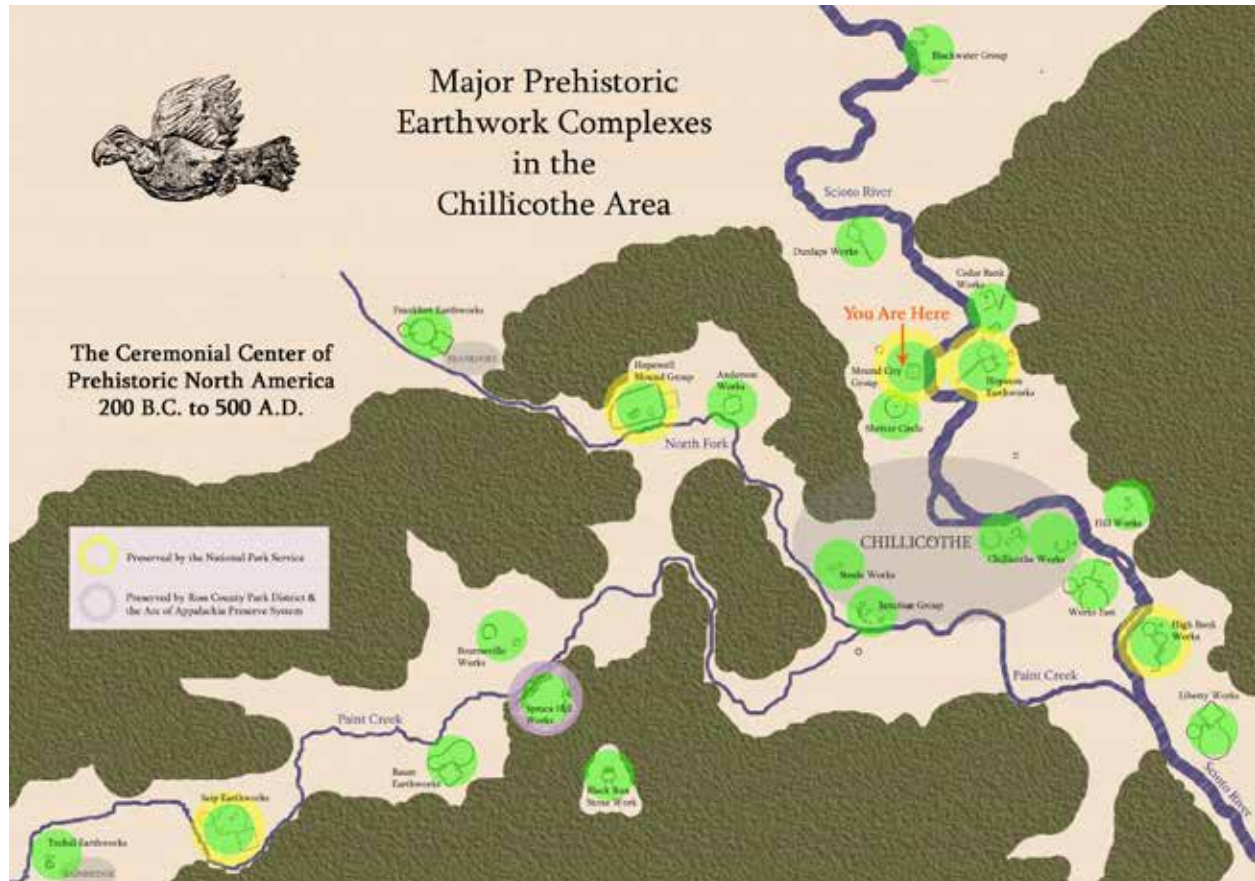


Figure 3-6. The Hopewell constructed several ceremonial and burial complexes throughout the Scioto River Valley. Today, most complexes are in private ownership. (Hopewell Culture NHP Archives)

1 the earthwork complexes. New buildings
2 were often constructed on top of existing
3 mounds, which would have enhanced the
4 earthwork's visibility.
5
6 After the decline of the Hopewell Culture,
7 post-400 AD, the earthwork complexes were
8 no longer used or maintained, and features
9 began to erode.
10
11 The rate of slow erosion was quickened
12 by agricultural practices in the eighteenth
13 through twentieth centuries that damaged
14 above-grade earthwork complexes. Further
15 damage to the earthwork complexes came
16 from the construction of roads, railroads,
17 buildings, and utility lines.
18
19 The topography has been changed due to
20 periodic flooding, naturally occurring erosion,
21 and agricultural cultivation. In the twentieth
22 century portions of the earthwork complexes
23 at Seip Earthworks and Mound City Group
24 were reconstructed. These features were
25 rebuilt to resemble their appearance as
26 recorded by Squier and Davis in the 1800s.
27 The reconstructed mounds, earthen walls,
28 and borrow pits assist in strengthening the
29 spatial organization at these earthwork
30 complexes. At the other earthwork complexes,
31 although the archeological landscape has
32 eroded, significant archeological features and
33 their distinctive spatial arrangement remain.
34
35 Views have been altered since the period
36 of significance due to changes in vegetation
37 and contemporary intrusions. Views have
38 been negatively impacted by roads, private
39 development, and governmental facilities. The
40 gravel quarry at Hopeton Earthworks, and the
41 State prisons adjacent to Mound City Group
42 both negatively impact the views and setting
43 of these ceremonial landscapes.
44
45 Wide and distant views to adjacent hills are
46 visible from all of the earthwork complexes,

1 and likely have remained since the period
2 of significance. These include the view
3 to Copperas Mountain visible from Seip
4 Earthworks, and the view of the Mount Logan
5 Range, which inspired the Ohio state seal,
6 visible from Mound City Group.
7
8 The spatial organization, topography, and
9 views retain integrity, and contribute to
10 the significance of the Hopewell Culture
11 NHP. The archeological features remain in
12 their original locations with the original
13 spatial arrangements intact. Views from the
14 earthwork complexes retain their connections
15 to waterways, valleys, and hills in the
16 distance, although some have been negatively
17 impacted by adjacent land uses. The level
18 and elevated terraces where the earthwork
19 complexes were built remain from the period
20 of significance and contribute to the character
21 of the setting.
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1 Land Use

2 Existing Condition

3 The study area includes lands managed by the
4 NPS, and areas of private property adjacent
5 to park lands. The park is 1,828 acres in size,
6 divided into six discontinuous park units with
7 a current land use as protected lands within
8 the national park system.

10 The five park units serve as the center for
11 archeological research on the Hopewell
12 Culture, and preserve significant earthwork
13 complexes. Three park units are open to
14 the public and provide visitor services.
15 Park functions include maintenance and
16 administrative uses at Mound City Group.
17 Maintenance equipment and personnel
18 are transported to the other park units as
19 necessary. A visitor center and museum are at
20 Mound City Group.

22 The study area is surrounded by privately-
23 owned land that is both agricultural
24 and forested areas. Ongoing residential
25 development occurs close to some park
26 units. Mound City Group is adjacent to three
27 government-owned institutional facilities,
28 including two state prisons and a Veterans
29 Administration hospital. A privately-owned
30 gravel pit is adjacent to Hopeton Earthworks.
31 A public bikeway traverses Hopewell Mound
32 Group. Other public and private roads, and
33 utilities have rights of way across the park
34 units.

36 The archeological features are primarily
37 within lands owned by the NPS, but some
38 portions of earthwork complexes remain in
39 private ownership. Archeological features
40 in private ownership include inholdings at
41 Hopewell Mound Group, three inholdings at
42 Seip Earthworks, and two inholdings with
43 most of the Parallel Walls at High Bank Works.
44 Spruce Hill Works is owned by a cooperating
45 partner.

1 At Seip Earthworks, two portions are
2 owned by a private individual. The NPS
3 has a cooperative agreement with the Ohio
4 Historical Society covering interpretive
5 resource management and maintenance
6 issues. The cooperative agreement expires on
7 December 31, 2020.

9 Analysis

10 When first built, the earthwork complexes
11 were for sacred and ceremonial purposes,
12 including funerals, feasts, and rites of
13 passage. Some earthwork complexes also
14 functioned as a final resting place for certain
15 individuals. Other portions of the landscape
16 were likely used for agricultural purposes,
17 while habitation sites likely occurred in
18 surrounding areas.

20 After 400 AD, the earthwork complexes
21 were periodically used for burials by other
22 American Indian tribes. Once European
23 Americans settled in the Ohio River Valley
24 in the 1700s, the landscape was largely
25 converted to farmland. Portions of the
26 study area — Mound City Group and Seip
27 Earthworks — were set aside in the early
28 twentieth century as historic landscapes
29 and developed as public parks. The other
30 park units continued in private ownership.
31 A quarry located adjacent to Hopeton
32 Earthworks, established in 1984, damaged
33 archeological resources at that park unit.

35 Today, the land use of the study area is a
36 national park, managed as a significant
37 archeological landscape, with portions open
38 for public use. Although the study area no
39 longer functions as an active ceremonial
40 site, Hopewell burials remain in-situ, and
41 neighboring properties continue to be farmed.
42 The land use of the study area as a sacred
43 place and burial ground is significant and
44 contributes to the archeological landscape.

1 **Archeological Features**

2 Existing Condition

3 The study area contains five archeological
4 earthwork complexes, each comprised of
5 ruins, traces, or elements that exist from
6 early American Indian periods, primarily
7 the Hopewell Culture. These archeological
8 features are typically earthen walls built in
9 geometric shapes, mounds, and borrow pits.
10 For a detailed description of archeological
11 features, refer to individual park units.

12

13 The archeological features consist of:

14

15 • Above-grade features, e.g. visible mounds.

16

17 • Below-grade features, e.g. post-holes,
18 mound sub-bases, structure floors, not
19 visible on the surface. Recent magnetic
20 surveys was used to confirm below-grade
21 archeological features.

22

23 • Unverified features, e.g. features
24 identified by previous archeological
25 investigations or LiDAR, but not currently
26 visible on the surface or on magnetic
27 surveys. Archeological features on private
28 property were not verified and were not
29 reviewed as part of this CLR / EA.

30

31 The archeological features of Mound City
32 Group include archeological evidence of at
33 least 25 mounds enclosed within an earthen
34 wall, eight borrow pits located outside the
35 perimeter wall, and two outlying mounds.
36 The wall and most mounds have been
37 reconstructed to appear as they may have
38 appeared during their use by the Hopewell.

39

40 The archeological features of Hopeton
41 Earthworks include a circle formed by
42 earthen walls which enclose a central open
43 space. The circle is conjoined to a square built
44 of earthen walls.

45

46

1 Three other extant circular enclosures occur,
2 and two parallel earthen walls extend from
3 the northwest corner of the square towards
4 the Scioto River.

5

6 The archeological features of Hopewell
7 Mound Group include the earthen walls
8 of a parallelogram, connected to a smaller
9 Square Enclosure also built of earthen walls.

10 Two archeological features occur within the
11 parallelogram. One is a circular earthen wall,
12 and the other D-shaped. In total, more than
13 30 mounds are scattered in and around the
14 enclosures.

15

16 Seip Earthworks includes earthen walls
17 that form a Great Circle, which is connected
18 to a smaller circle and square both built of
19 earthen walls. Two mounds occur within the
20 Great Circle, including the reconstructed Seip-
21 Pricer Mound and a Conjoined Mound, called
22 the Seip-Conjoined Mound.

23

24 At High Bank Works, the archeological
25 features include a conjoined Great Circle and
26 Octagon, both built of earthen walls. Two
27 parallel walls extend south from the Octagon.
28 Three conjoined circles occur as below-grade
29 features to the south of the Parallel Walls.

30

31 Analysis

32 Earthwork complexes were carefully built of
33 layers of sand, clay, gravel, and soil. The study
34 area's archeological features were built and
35 added on to during the period of significance
36 for hundreds of years, between 1 AD to 400
37 AD.

38

39 Other archeological features were associated
40 with buildings — charnel houses for storing
41 bones of the deceased, workshops, and
42 ceremonial buildings — used for funerals and
43 ceremonies, after which the buildings would
44 have been removed or burned and a mound
45 built over the top.

46



Figure 3-7. Above-grade features include visible mounds at Mound City Group. (Mundus Bishop 2014)

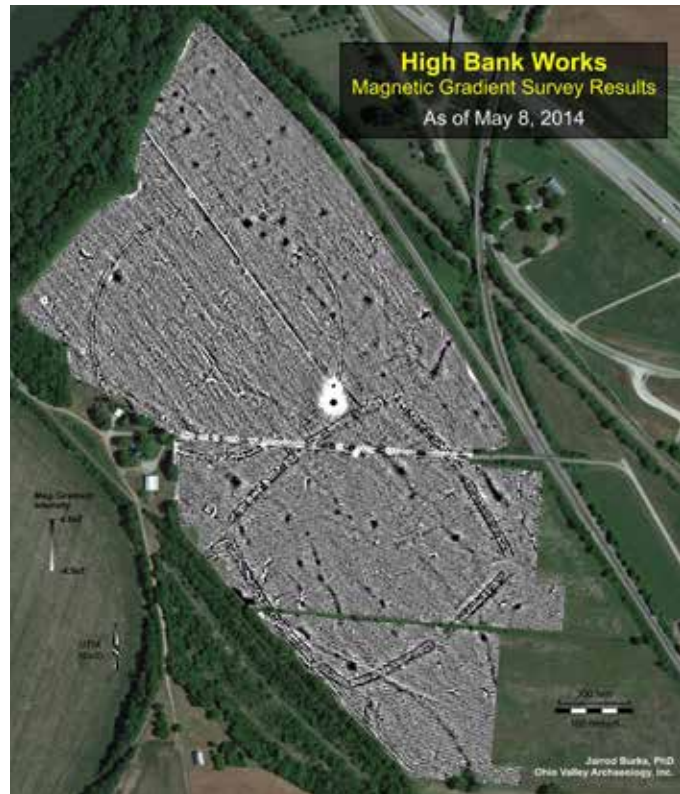


Figure 3-8. Below-grade features, not visible on the surface, are confirmed by magnetic surveys. (Hopewell Culture NHP Archives)

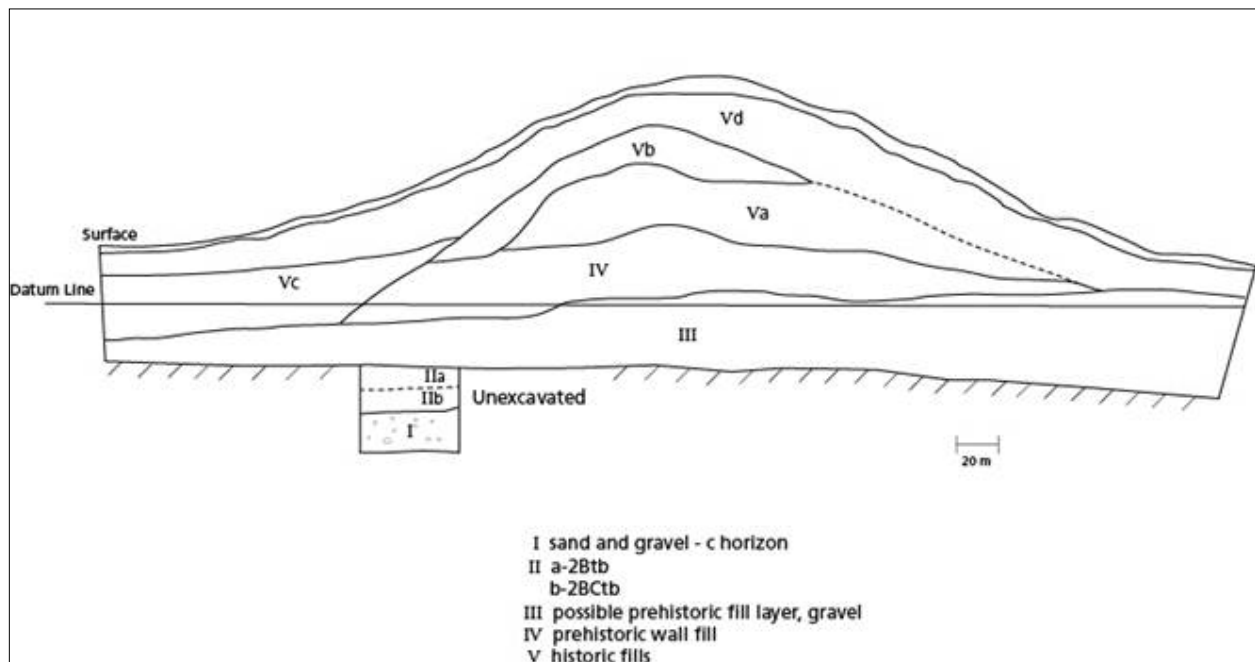


Figure 3-9. Earthworks were carefully constructed of layers of sand, clay, gravel, and soil. (Hopewell Culture NHP Archives)

1 Other earthwork complexes were not used
2 for burials but were built for other sacred or
3 ceremonial purposes.

4
5 After the decline of the Hopewell Culture
6 from 700 AD to 1000 AD, aboriginal groups
7 migrated into the region from the north. They
8 modified mounds to bury their own dead,
9 hence the name given to them – the “Intrusive
10 Mound” people.

11
12 During the eighteenth, nineteenth, and
13 into the twentieth centuries, most of the
14 earthwork complexes were farmed, with
15 cultivation activities degrading extant
16 above-grade features. Once motorized tilling
17 equipment was developed in the twentieth
18 century, the rate of erosion accelerated. These
19 actions reduced the height of the earthwork
20 complexes, and increased the width, as the
21 features leveled.

22
23 Archeological features have also been
24 negatively impacted by development of
25 buildings, structures, roads, railroads,
26 and quarries which have all damaged the
27 archeological features. Some previous
28 archeological investigations were invasive,
29 resulting in removal of vast amounts of
30 archeological artifacts and material. Damage
31 from tree roots and animals burrowing into
32 the earthwork complexes has occurred in
33 the past. Ancillary features to the earthwork
34 complexes (smaller mounds and earthen
35 walls) have been lost due to erosion and
36 cultivation.

37
38 The archeological features that remain from
39 the period of significance contribute to the
40 significance of the Hopewell Culture NHP.
41 Although extant above-grade archeological
42 features have been degraded by erosion and
43 agricultural cultivation, and other intrusions
44 have destroyed above-grade resources, the
45 below-grade archeological features have
46 been recorded by magnetic survey and other

1 geophysical techniques, which indicate that
2 the extant below-grade archeological features
3 have retained their essential form, mass, and
4 scale, and reflect their Hopewell appearance.
5 The below-grade archeological features have
6 integrity and are contributing features of the
7 archeological landscape.

1 **Circulation**

2 Existing Condition

3 The circulation system of the study area is
4 composed of vehicular, bicycle, pedestrian,
5 and train routes. Vehicular routes occur along
6 state and federal highways, local roads, and
7 the park's entry drives, and parking areas.
8 These routes connect the five discontinuous
9 park units, and are part of the area's regional
10 circulation system. Features that provide
11 access to park headquarters, and one or
12 more of the park units are highways, access
13 roads, scenic routes, and railroads that are
14 part of the regional network of circulation.
15 Circulation specific to a park unit, such as
16 service drives, trails and parking areas, are
17 described in more detail in each park unit.

18
19 The Ancient Ohio Trail is a collaborative
20 program by land owners and managers of
21 historic landscapes who have designated
22 driving routes throughout Ohio to link
23 historic places. For Hopewell Culture,
24 the driving routes associated with the
25 Ancient Ohio Trail include routes through
26 the Chillicothe area that direct visitors to
27 Hopewell Culture NHP.

28
29 The study area is near Chillicothe, Ohio,
30 where several state and federal highways
31 intersect. These routes connect the five park
32 units, and provide access to nearby cities and
33 rural areas.

34
35 The following highways are adjacent to the
36 park, and provide a connection or partial
37 connection to one or more of the earthwork
38 complexes.

39
40 *U.S. Highway 35* extends southeast to
41 northwest, and connects the study area with
42 Dayton, Ohio to the northwest. Vehicular
43 access to High Bank Works is via Highway 35
44 from Chillicothe.

45
46

1 *U.S. Highway 32* extends north south, and
2 connects Chillicothe with Columbus, Ohio.
3 Vehicular access to Hopeton Earthworks from
4 either city is via Highway 32, located just to
5 the east of the earthwork complex.

6
7 *U.S. Highway 50* provides vehicular access to
8 Seip Earthworks. Highway 50 connects the
9 study area with Cincinnati, Ohio to the west.

10
11 *Hopetown Road* provides vehicular access to
12 Hopeton Earthworks from its intersection
13 with U.S. Highway 23 and State Highway 159.
14 The asphalt-paved road follows the south
15 boundary of Hopeton Earthworks. At the
16 park's southwest boundary, Hopetown Road
17 curves, and becomes a dirt road where it
18 provides access into the earthwork complex.

19
20 *Sulphur Lick Road* is a narrow, asphalt paved
21 two-lane road that provides vehicular access
22 to Hopewell Mound Group. It traverses the
23 south portion of the Hopewell Mound Group,
24 where it provides access.

25
26 *County Road 900* connects with Old Route 35,
27 and parallels the railroad tracks at High Bank
28 Works. Vehicular access to the park unit is
29 via this narrow, asphalt paved road that ends
30 just east of the earthwork complex, where
31 a smaller, private gravel road crosses the
32 railroad tracks and provides access to High
33 Bank Works and the private property.

34
35 Public access is limited to three of the five
36 park units: Mound City Group, Hopewell
37 Mound Group, and Seip Earthworks. Each has
38 an asphalt paved parking area, and a network
39 of trails that facilitate visitor movement, to
40 the earthwork complexes, and to natural
41 areas and overlooks. In all, the study area
42 includes three pedestrian trails, all soft
43 surface or gravel paved, and four parking
44 areas, including the visitor center.

45
46

1 *Tri-County Trail* extends through Hopewell
2 Mound Group, it is now a publicly accessible
3 multiple use trail that connects Chillicothe
4 and Frankfort, Ohio, and Washington
5 Courthouse. The trail is 28-plus miles, built on
6 an abandoned railroad grade.

7
8 Two major railroads haul coal and other
9 freight across the study area. The Baltimore
10 and Ohio / Chesapeake and Ohio railroads
11 occur on the east side of High Bank Works
12 and at Hopeton Earthworks. Access across
13 the railroad tracks at High Bank Works is
14 at-grade. An underpass for Hopetown Road
15 provides access across the railroad tracks to
16 Hopeton Earthworks.

17 Analysis

18 The original primary access to, and from
19 the earthwork complexes was likely along
20 the waterways of the Scioto River and Paint
21 Creek, supported by overland routes. The
22 water routes would have been primarily by
23 canoe rather than by land, with Hopewellian
24 people traveling between earthwork
25 complexes and their homelands. Land
26 routes likely existed during the period of
27 significance, but their locations are unknown.

28
29 During the period of significance, paths
30 within the earthwork complexes and patterns
31 of movement throughout the landscape would
32 have occurred, but these routes are unknown.
33 The gateways in the earthen walls were likely
34 used as circulation by the Hopewell to gain
35 access into the interior of the enclosures.

36
37 Mound City Group and Hopeton Earthworks
38 are approximately one mile apart, separated
39 by the river. The east gateway at Mound
40 City Group faces the river, and seems to
41 connect to the parallel walls at Hopeton
42 Earthworks on the opposite side of the
43 river bank. Other connections between the
44 earthwork complexes are less obvious. High
45 Bank Works and Mound City Group are

1 approximately seven miles apart, connected
2 by the Scioto River. Hopewell Mound Group
3 is approximately five miles from Mound City
4 Group, and Seip Earthworks is another ten
5 miles distant.

6
7 The land routes that exist today are not
8 from the period of significance. Many of the
9 vehicular routes appear on maps drawn by
10 Squier and Davis in the mid 1800s. These
11 include State Highway 104, U.S. Highway 50,
12 Dill Road, and Sulphur Lick Road, although
13 they had different names at the time. Over
14 time, travel by water decreased and the road
15 network increased. Roads throughout the
16 study area were built as part of European
17 American settlement, to access farms and
18 other settlements.

19
20 The railroads at Hopeton Earthworks,
21 Hopewell Mound Group, and High Bank
22 Works were built after the 1850s, when
23 railroads were first constructed through
24 Chillicothe. One of the railroads at High Bank
25 Works has since been abandoned, as has the
26 line at Hopewell Mound Group, which now is
27 a publicly accessible multi-use path, installed
28 in 1999.

29
30 The circulation routes that exist today are
31 not from the period of significance. All
32 features are non-contributing. Roads traverse
33 the earthwork complexes and damage the
34 archeological features; railroads distract from
35 the archeological landscape.

36
37 Today circulation along the waterways is
38 possible; although, only one launch exists,
39 at the canoe launch at Seip Earthworks.
40 The pedestrian paths that exist today are
41 contemporary additions to provide visitor
42 access to the earthwork complexes, and are
43 non-contributing features.

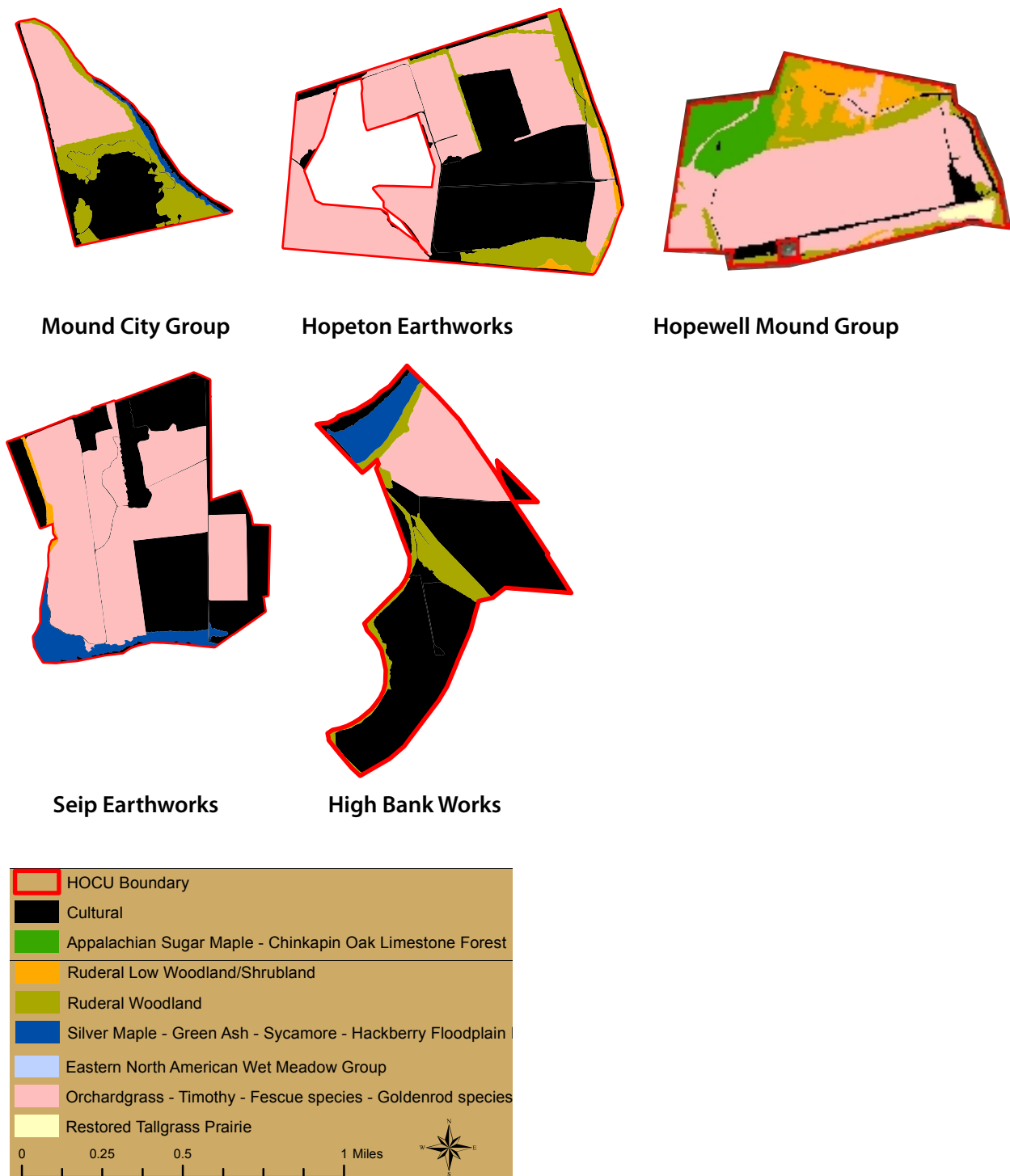


Figure 3-10. Existing vegetation in the study area includes hardwood forest, hayfields and former agricultural fields, areas of native grasslands, shrubland, regularly mown lawn and ornamental plantings (cultural), and riparian vegetation. Ruderal species are those that first colonize formerly disturbed land. (Diamond, Vegetation Classification and Mapping, Figure 8.)

1 **Vegetation**

2 Existing Condition

3 Existing vegetation in the study area includes
4 hay fields, former and agricultural fields,
5 regularly mown lawn, ornamental plantings,
6 woodlands or hardwood forests, shrublands,
7 riparian vegetation, and planted native
8 grasslands.

9
10 Hay fields are composed of orchard and
11 pasture grasses that are harvested for hay.
12 Most of the earthwork complexes are located
13 within open fields of this type. The hay fields
14 are generally in good condition, with some
15 exotic vegetation occurring particularly along
16 field edges.

17
18 Portions of park are cultivated yearly with
19 corn and soybean fields. Crop cultivation may
20 promote soil erosion and damage earthwork
21 complexes.

22
23 Interpreted areas, such as the visitor center
24 at Mound City Group, or the front sections at
25 Seip Earthworks, are maintained as regularly
26 mown lawn, noted as 'Cultural' on Figure
27 3-10. This same lawn (predominately fescue)
28 is the same treatment and maintenance
29 practice used on the earthwork complexes
30 and individual archeological features
31 including mounds and earthen walls
32 throughout the study area. Large deciduous
33 trees are scattered across the manicured
34 lawns, particularly at Mound City Group and
35 Seip Earthworks. Ornamental shrub and small
36 tree plantings are few in number and are
37 mostly clustered around interpretive areas
38 such as the visitor center.

39
40 Woodland or hardwood forest vegetation
41 include two types — Appalachian Sugar
42 Maple / Chinkapin Oak Limestone Forest and
43 ruderal woodlands. Common species to the
44 Appalachian Sugar Maple / Chinkapin Oak
45 Limestone Forest are sugar maple, chinkapin
46 oak, white oak, hackberry, black walnut,

1 black cherry, boxelder, and Ohio buckeye.

2 The shrub layer is typically composed of
3 tartarian honeysuckle (*Lonicera tatarica*)
4 and multiflora rose (*Rosa multiflora*).^{3.24} The
5 woodland forests of the study area show
6 evidence of past clearing, and some exotic
7 plant species occur.^{3.25} Invasive species
8 such as honeysuckle and garlic mustard are
9 removed by the NPS.

10
11 Shrubland occurs in areas that were heavily
12 used by humans in the past, mainly through
13 clearing, plowing, and grazing. Shrubland
14 vegetation includes ruderal low woodland/
15 shrubland and is dominated by ruderal or
16 exotic species.^{3.26}

17
18 The riparian areas include the Silver Maple /
19 Green Ash / Sycamore / Hackberry floodplain
20 vegetation that is composed of smaller
21 boxelder and hackberry, pawpaw, American
22 sycamore, cottonwood, and silver maple.
23 Plants in on the riparian floor are garlic
24 mustard (*Alliaria petiolata*), common blue
25 violet (*Viola sororia*), smooth sweet cicely
26 (*Myrrhis odorata*), and tall fescue (*Festuca*
27 *arundinacea*).^{3.27}

28
29 Prairie is composed of a combination
30 of grasses and forbs. Dominant species
31 include big bluestem (*Andropogon gerardii*),
32 Indiangrass (*Sorghastrum nutans*),
33 switchgrass (*Panicum virgatum*), and Canada
34 goldenrod (*Solidago canadensis*). Other
35 important species included sideoats grama
36 (*Bouteloua curtipendula*), black-eyed and
37 brown-eyed Susan (*Rudbeckia hirta* and
38 *Rudbeckia triloba*), wild bergamot (*Monarda*
39 *fistulosa*), and stiff goldenrod (*Oligoneuron*
40 *rigidum*).^{3.28}

43 3.24 Diamond, *Vegetation Classification and Mapping*, 22.

44 3.25 Diamond, *Vegetation Classification and Mapping*, 34.

45 3.26 Diamond, *Vegetation Classification and Mapping*, 31.

46 3.27 Diamond, *Vegetation Classification and Mapping*, 5.

46 3.28 Diamond, *Vegetation Classification and Mapping*, 28.

1 Exotic plant species of special concern include
2 Japanese honeysuckle (*Lonicera japonica*),
3 bush honeysuckle species (*Lonicera spp.*),
4 Canada thistle (*Cirsium arvense*), garlic
5 mustard, multiflora rose, autumn olive
6 (*Elaeagnus umbellata*), and Johnson grass
7 (*Sorghum halepense*).^{3.29} These plants invade
8 disturbed areas and compete with native
9 plants.

10

11 Analysis

12 No definitive information exists to indicate
13 the type of vegetation on the mounds and
14 earthwork complexes during the period of
15 significance. Archeological data suggests
16 that large-scale disturbance of the forest in
17 the vicinity of the earthwork complexes and
18 throughout the region occurred during the
19 Woodland Period (1000 BC to 1000 AD). This
20 indicates an increasing reliance on cultivated
21 plant foods. Wood charcoal, seed, and pollen
22 spectra all indicate large-scale forest clearing
23 and an increase in second-growth and forest-
24 edge species during this period.

25

26 Some archeologists theorize that the
27 earthwork complexes were periodically
28 burned to keep the forest away, but the scale
29 and frequency is unknown. It is possible that
30 maintained groves of trees were within the
31 earthwork complexes. The opposite is also
32 theorized, that the topsoil was stripped to
33 retard vegetation growth altogether. Foot
34 traffic, with resultant soil compaction, may
35 have played a role in controlling vegetation.
36 Some of the mounds were covered with a final
37 layer of gravel or river cobble, implying that
38 they were unvegetated.

39

40 Even after the decline of the Hopewell Culture
41 in 400 AD and the arrival of Europeans in
42 the sixteenth century, the vegetation type
43 is unknown. During European American
44 settlement after the Revolutionary War,

3.29 Diamond, *Vegetation Classification and Mapping*, 26.

1 people reported the land to be a heavily
2 forested wilderness. Some research has
3 attempted to reconstruct the natural
4 vegetation of Ohio in pioneer days using early
5 historic accounts.^{3.30}

6

7 In the nineteenth and twentieth centuries
8 much of the land was cleared — trees were
9 cut for lumber and large riparian area were
10 cleared for growing crops and raising animals.
11 The 1848 maps by Squier and Davis indicate
12 that most of the earthwork complexes were
13 under cultivation, with the exception of
14 Hopeton Earthworks and Mound City Group
15 which were still partially forested.

16

17 By the late 1800s the earthwork complexes
18 were under cultivation. Some land was
19 cleared of vegetation and maintained as part
20 of a working farm — farmhouses, barnyards,
21 gardens, etc. Throughout the historic period
22 the vegetation along the river corridors
23 was likely logged periodically. Increasingly
24 the native vegetation would have been in
25 competition with exotic, non-native plants
26 brought in by settlers. Once the earthwork
27 complexes were acquired by the OHS (1923
28 at Mound City Group, 1927 Seip Earthworks)
29 or the NPS (1992 for Hopewell Mound Group,
30 Hopeton Earthworks, and High Bank Works),
31 agriculture ceased in most areas.

32

33 It is unknown if the vegetation of the study
34 area reflects the original pattern. Adjacent
35 lands, including hills and riverbanks,
36 were likely forested during the period of
37 significance as they are now, but this is
38 unconfirmed. The vegetation and vegetation
39 patterns of the study area of the study area do
40 not contribute to the archeological landscape.

41

42 3.30 Gordon, The natural vegetation of Ohio in pioneer days.
Bulletin of the Ohio Biological Survey, New Series, Volume
43 III, Number 2. Ohio State University, Columbus, 1969.
Ohio Dept. of Natural Resources, adaptation of Robert
44 Gordon's map published by the Ohio Biological Survey.
Original Vegetation of Ohio at the Time of the Earliest
Land Surveys, 1966.

Mound City Group

1 Introduction

2 Mound City Group is an earthwork complex
3 enclosed by a large earthen wall, with
4 archeological evidence of at least 25
5 mounds inside the 15.6 acre enclosure; 22
6 of these have been reconstructed. Set on a
7 terrace above the west bank of the Scioto
8 River, the 120-acre park unit is four miles
9 north of Chillicothe, Ohio, and is one of the
10 three park units with visitor facilities. The
11 earthwork complex is on the east side of
12 State Highway 104, accessed by an entry
13 drive from the highway. Mound City Group
14 is park headquarters, and the main visitor,
15 administrative, and maintenance center for
16 the entire park. The park unit has a visitor
17 center and museum, administrative offices,
18 and maintenance buildings.

19
20 This archeological landscape consists of
21 many archeological features — mounds, an
22 earthen wall, borrow pits, and two outlying
23 mounds. The archeological features are
24 mostly visible, as the majority of these have
25 been reconstructed. Extensive archeological
26 resources, including ceremonial deposits, also
27 occur below-grade.

28
29 Mound City Group represents a distinctive
30 building style that reflects a ceremonial
31 landscape used and built over several
32 centuries for social and religious ceremonies,
33 and uniquely Hopewellian funerals.

34
35 This section evaluates the existing condition
36 and presents an analysis of Mound City Group
37 using six landscape characteristics:

- 38
39 • Spatial Organization / Topography /
40 Views
41 • Archeological Features
42 • Circulation
43 • Vegetation
44 • Buildings and Structures
45 • Small Scale Features



Figure 3-11. A earthen walls encloses 25 mounds at Mound City Group. (Mundus Bishop 2014)



Figure 3-12. Mound City Group has a distinctive building style due to the many earthen burial mounds clustered together. (Mundus Bishop 2014)



Figure 3-13. Mound City Group is set on the river's west terrace. (Mundus Bishop 2014)



Figure 3-14. The complex wall is in the shape of a square with rounded corners, defined by an earthen wall that encloses 22 reconstructed mounds. Extensive below-grade features and artifacts occur throughout the park unit. (Mundus Bishop 2014).

1 **Spatial Organization / Topography / Views**

2 Existing Condition

3 Mound City Group is organized in relationship
4 to the Scioto River, set on the river's west
5 terrace; the earthwork complex is separated
6 from the river by a steep slope. To the east are
7 views of the Appalachian foothills. Hopeton
8 Earthworks is located across the river to
9 the east, and while it is not visible, the two
10 park units are spatially connected by the
11 orientation of the archeological features.

12
13 The park unit consists five distinct spatial
14 areas:

- 15
16 • Earthwork complex
17 • Scioto River and riverbank terrace
18 • Visitor center, picnic and parking area
19 • Administration / Maintenance area
20 • Open field, north end of the park unit

21
22 The earthwork complex of Mound City Group
23 is situated adjacent and parallel to the river's
24 edge. The earthwork complex is in the shape
25 of a square with rounded corners, created
26 by earthen walls that create an enclosure.
27 The earthwork walls are pierced by openings
28 that form gateways to the east and west. The
29 east gateway aligns with a natural gully in
30 the riverbank. The 22 reconstructed mounds
31 are clustered within the 15.6 acre space of
32 the enclosure. The space is open, mown lawn
33 that contrasts with the dense, tall forest
34 surrounding the earthwork.

35
36 The Scioto River and riverbank are spatially
37 distinct from the rest of the park unit. The
38 steep riverbank physically separates the
39 river from the rest of the park, and views
40 are focused along the water and to the east,
41 across the river. The river extends north south
42 and serves as an organizing element for the
43 earthwork complex. The walls of the square
44 enclosure are parallel to the river course.

45
46

1 The visitor center, picnic and parking area are
2 on the west side of the earthwork complexes,
3 in an open space maintained as mown lawn
4 and surrounded by woodland vegetation. The
5 visitor center was built on axis with the west
6 gateway and is the current-day entrance to
7 the earthwork complexes. From the visitor
8 center, the earthwork complexes are visible
9 to the east and State Highway 104 and the
10 prison are visible to the west.

11
12 The Administration / Maintenance Area is a
13 distinct spatial area, created by the cluster of
14 buildings, set in a clearing of the woodland
15 forest. It is connected to the remainder of the
16 park unit by the service drive and trails.

17
18 The north of the park unit is maintained as a
19 hay field, surrounded by forest vegetation. It
20 is spatially distinct from the rest of the park
21 unit.

22
23 Analysis

24 The spatial organization / topography / views
25 at Mound City Group is strong, primarily due
26 to the presence of reconstructed mounds.

27 The spatial organization / topography /
28 views at Mound City Group contribute to the
29 archeological landscape.

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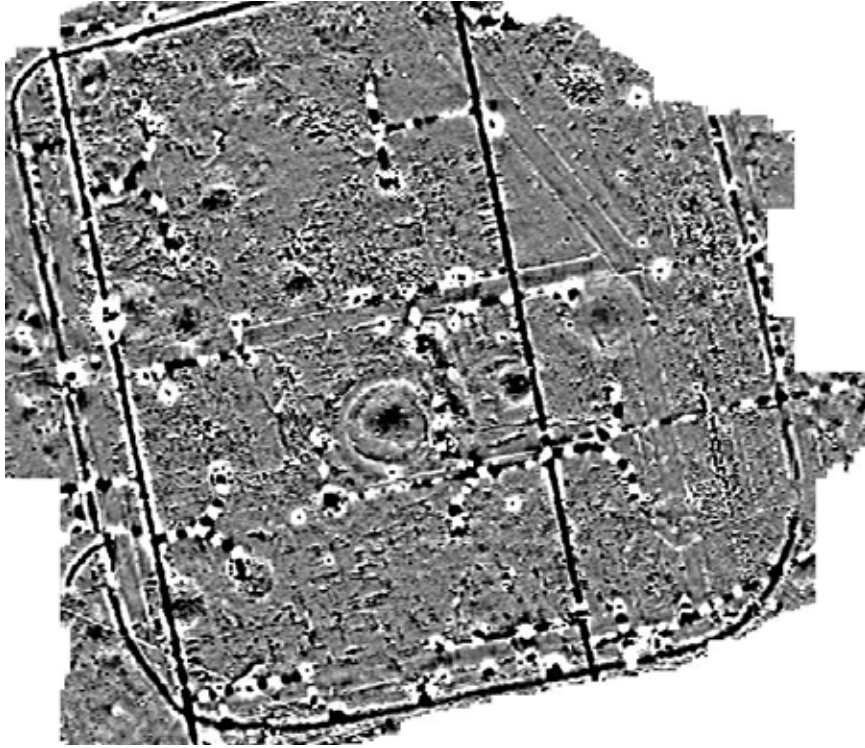


Figure 3-15. Magnetic maps of Mound City Group revealed below-grade archeological features of the enclosure walls, mounds, and portions of the borrow pits. (Ruby 2013 Authenticity and Integrity - Mound City Group-Revised 25JUL13)



Figure 3-16. The interior space of the enclosure is 15.6 acres. (Mundus Bishop 2014)



Figure 3-17. Two gateways on the east and west sides of the enclosure are 10- to 15 feet wide. (Mundus Bishop 2014)

1 **Archeological Features**

2 Existing Condition

3 The archeological features of Mound City
4 Group consist of earthwork complexes—
5 large structures made of sand, gravel, and
6 soil— that define the space and the individual
7 features of the earthwork complexes—
8 earthen walls, mounds, and gateways.

9
10 The archeological features are of three types:
11 extant (visible and above-grade); extant
12 (below-grade); and unverified. Magnetic maps
13 of Mound City Group revealed below-grade
14 archeological features of the enclosure walls,
15 mounds, and portions of the borrow pits.

16
17 Mound City Group has 34 archeological
18 features. A two-part earth and gravel wall
19 surrounds 22 reconstructed mounds, eight
20 borrow pits are outside of the wall, as are
21 two reconstructed outlying mounds. Other
22 archeological features include building post-
23 holes, a crematory basin, and structure floors
24 associated with the mounds.

25
26 Archeological evidence exists for 25 mounds
27 at Mound City Group. Each mound covered
28 the remains of a ceremonial structure,
29 cremated burials, and ritual deposits. The
30 below-grade features, including post-holes
31 associated with each of the mounds are
32 extant.^{3.31}

33
34 The Mound City Group archeological
35 features are extant and visible. The wall of
36 the enclosure, and 22 of the mounds were
37 reconstructed to resemble their original
38 appearance during use by the Hopewell
39 Culture. However, all archeological features
40 have been modified by land use practices,
41 particularly the construction of Camp
42 Sherman buildings that were built on top

44 3.31 The mounds have been excavated, verifying their
45 locations, and recently magnetically mapped — the
46 magnetic survey revealed the below-grade archeological
features associated with the mounds.

1 of all the mounds (except Mound 7) and
2 removed most of the above-grade features.

3
4 Based upon the magnetic survey, below-grade
5 archeological features, Camp Sherman-era
6 roads and utility corridors appear to be
7 extant.^{3.32} Other below-grade archeological
8 features and resources likely exist throughout
9 the earthwork complex.

10
11 The enclosure is the largest earthwork at
12 Mound City Group. It is formed of an earth
13 and gravel wall, organized as a large square
14 with rounded corners, with an interior space
15 of 15.6 acres. The above-grade portion of
16 the enclosure was reconstructed on top of
17 extant below-grade features (verified by
18 recent archeological work). The above-grade
19 wall is approximately 3 feet high by ten feet
20 wide. The wall has two gateways on the east
21 and west, each is approximately 10- to 15
22 feet wide. The wall is easily visible, except
23 in the northeast corner, as the vegetation is
24 maintained as mown lawn. The above and
25 below-grade features of the enclosure are in
26 good condition. However it is impacted by
27 several large trees growing along the edges of
28 the wall, particularly in the northeast corner.

29
30 Twenty-two mounds are reconstructed
31 features on top of the corresponding below-
32 grade features (the ceremonial structures and
33 burials). The mounds vary in height and size,
34 and are dispersed within the enclosure in a
35 distinct pattern.

36
37 The reconstructed mounds are vegetated
38 with mown lawn. The above and below-grade
39 portions of the mounds are in good condition.
40 However, they continue to be impacted by
41 foot-traffic and mowing. Roots of mature
42 trees within the enclosure maybe negatively
43 impacting extant below-grade features.

44
45 3.32 NPS, *Magnetic Survey of Mound City Group*, (Chillicothe:
46 2009 and 2012), images on file in Hopewell Culture NHP
Archives.

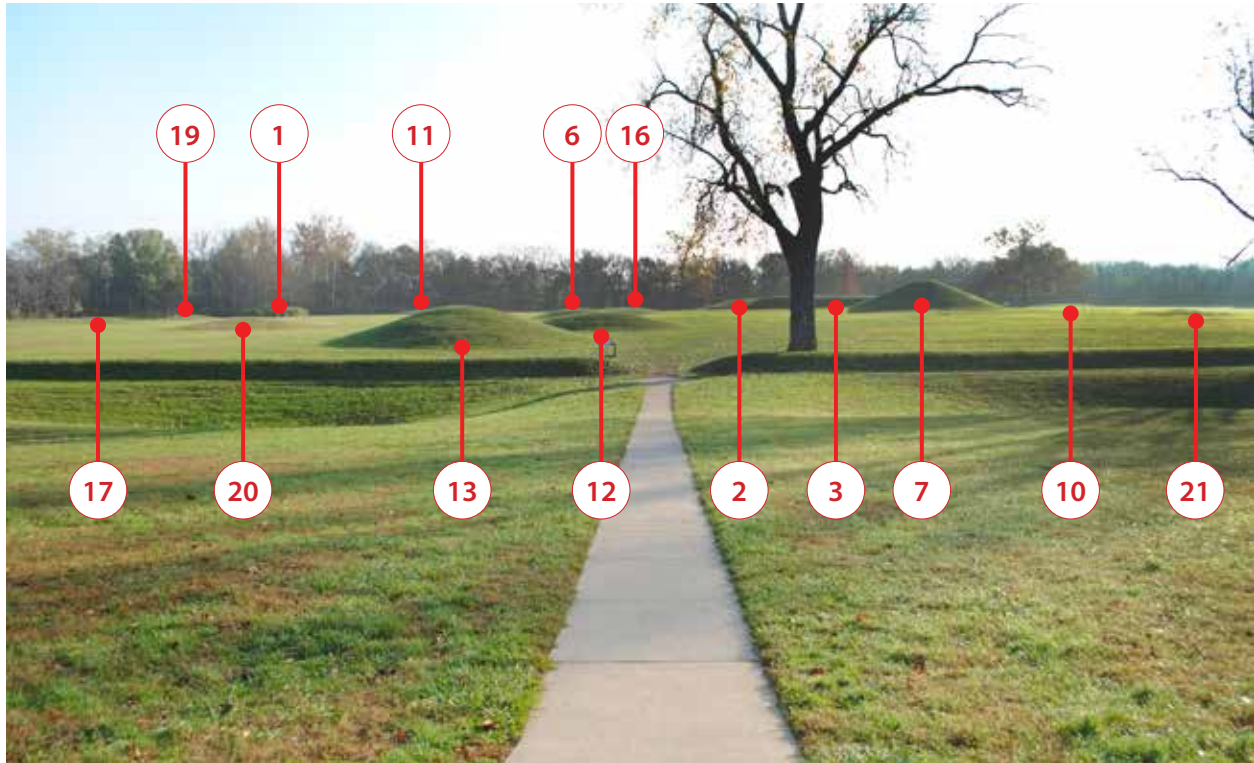


Figure 3-18. Mounds 17, 19, 20, 1, 11, 13, 6, 12, 16, 2, 3, 7, 10, and 21 are visible from the visitor center. (Mundus Bishop 2014)

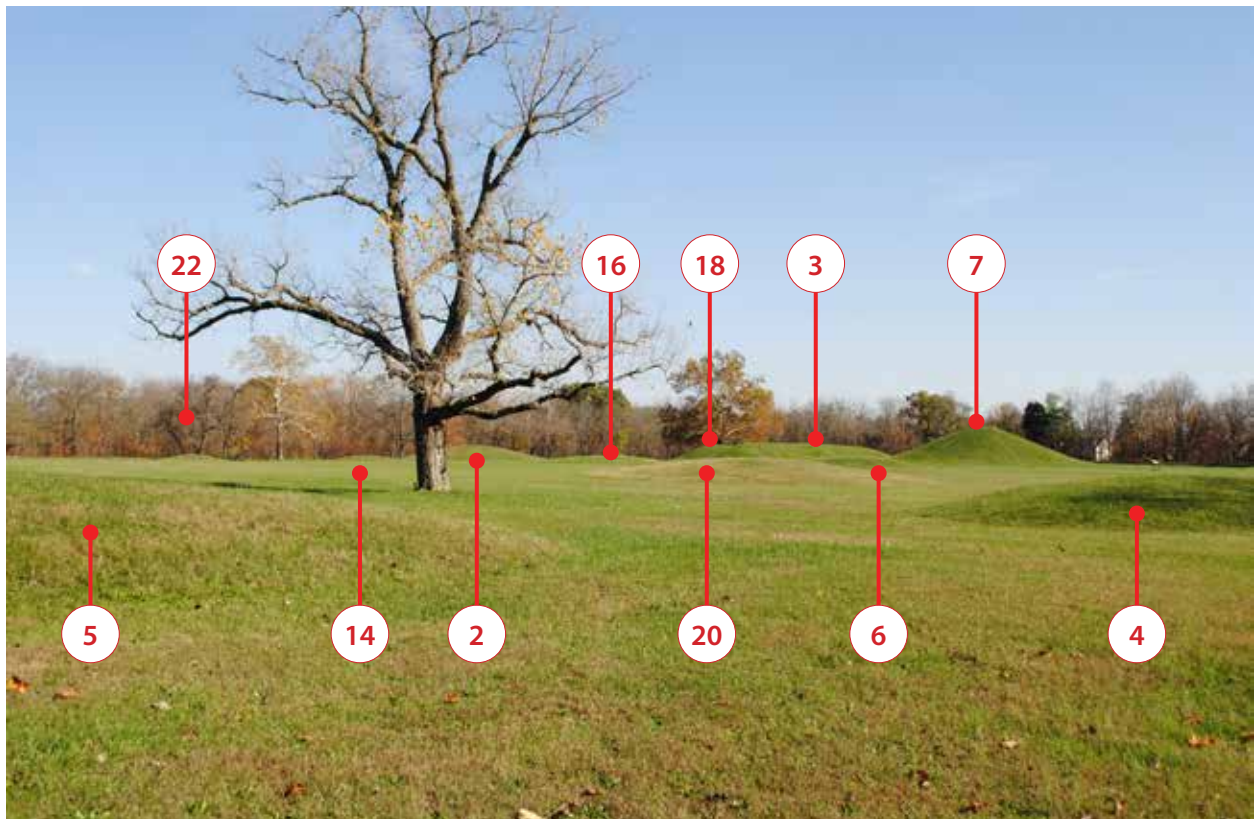


Figure 3-19. Mounds 5, 22, 14, 2, 16, 20, 18, 3, 6, 7, and 4. (Mundus Bishop 2014)

1 *Mound 1* is a conical burial mound with
2 a diameter of 35 feet and is seven feet in
3 height. The mound is covered with vegetation
4 including trees, understory, and invasive
5 honeysuckle. Below-grade features are
6 unverified. This mound was leveled in 1917
7 for the construction of Camp Sherman. It was
8 reconstructed in the wrong location in 1921
9 by the Ohio State Museum. Mound 1 was
10 reconstructed again in 1969 in its original
11 location. Mound 1 is in good condition.

12
13 *Mound 2* is a conical burial mound with
14 a diameter of 90 feet and height of 10-
15 feet. Below-grade features are unverified.
16 This mound was leveled in 1917, and
17 reconstructed in 1921 by the Ohio State
18 Museum. Mound 2 is in good condition.

19
20 *Mound 3* is an oval burial mound, 50 feet by
21 140 feet wide, and ten feet in height. Below-
22 grade features are unverified. This mound
23 was leveled in 1917, and reconstructed in
24 1921 by the Ohio State Museum. Mound 3 is
25 in good condition.

26
27 *Mound 4* is an oval burial mound, 60 feet by
28 90 feet wide, and six feet in height. Below-
29 grade features are unverified. Mound 4 was
30 leveled in 1917, and reconstructed in 1921
31 by the Ohio State Museum in the wrong
32 location. Mound 4 was reconstructed in 1964
33 in its original location. Mound 4 is in good
34 condition.

35
36 *Mound 5* is 60 feet by 90 feet wide, and six
37 feet in height. Below-grade features are
38 extant. Mound 5 was leveled in 1917, and
39 reconstructed in 1921 by the Ohio State
40 Museum in the wrong location. Mound 5 was
41 reconstructed in 1965 in its original location.
42 Mound 5 is in good condition.

43
44 *Mound 6* is a conical burial mound, 50 feet in
45 diameter and five feet in height. Below-grade
46 features are extant. Mound 6 was leveled in

1 1917, and reconstructed in 1925 by the Ohio
2 State Museum in the wrong location. Mound
3 6 was reconstructed in 1970 in its original
4 location. Mound 6 is in good condition.

5
6 *Mound 7* is the tallest mound in Mound City
7 Group. It is a conical burial mound with a
8 100 foot diameter, and a height of 17 feet.
9 Below-grade features are extant. This was
10 reconstructed in the 1920s. Mound 7 is in
11 good condition.

12
13 *Mound 8* is a conical burial mound, 55 feet
14 in diameter and eight feet in height. Below-
15 grade features are extant. Mound 8 was
16 leveled in 1917, and reconstructed in 1926 by
17 the Ohio State Museum. Mound 8 is in good
18 condition.

19
20 *Mound 9* is a conical burial mound, 50 feet in
21 diameter and four feet in height. Below-grade
22 features are extant. Mound 9 was leveled
23 in 1917, a portion of the military plumbing
24 system disturbed below-grade features.
25 Mound 9 was reconstructed in 1926 by the
26 Ohio State Museum. It is unverified if this
27 mound was reconstructed in the 1960s or
28 1970s. Mound 9 is in good condition.

29
30 *Mound 10* is a conical burial mound 60 feet
31 in diameter, and three feet in height. Below-
32 grade features are extant. Mound 10 was
33 leveled in 1917, and reconstructed in 1922 by
34 the Ohio State Museum in the wrong location.
35 Mound 10 was reconstructed in 1963 in
36 its original location. Mound 10 is in good
37 condition.

38
39 *Mound 11* is a conical burial mound 55 feet in
40 diameter and five feet in height. Below-grade
41 features are extant. Mound 11 was leveled in
42 1917, and reconstructed in 1922 by the Ohio
43 State Museum in the wrong location. Mound
44 11 was reconstructed in 1971 in its original
45 location. Mound 11 is in good condition.

46

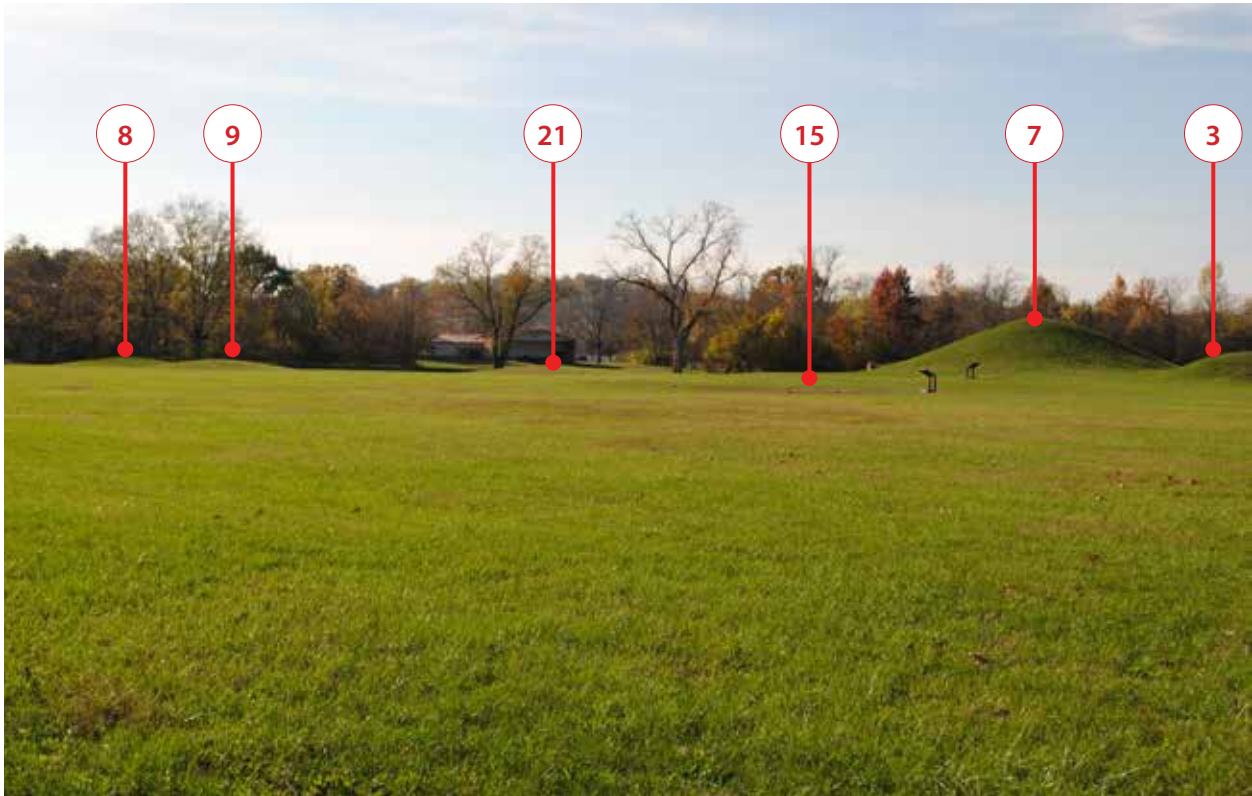


Figure 3-20. Mounds 8, 9, 21, 15, 7, and 3. (Mundus Bishop 2014)

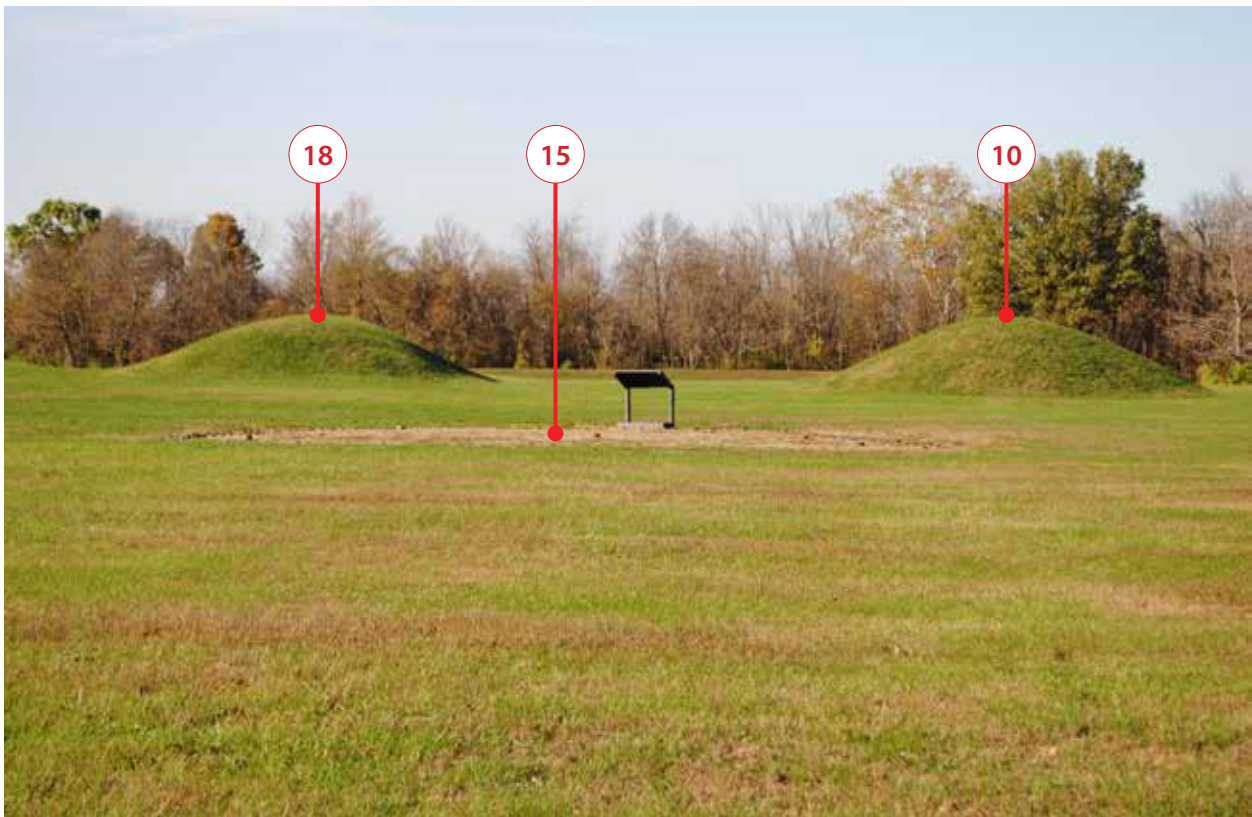


Figure 3-21. Mounds 18, 15, and 10. (Mundus Bishop 2014)

1 *Mound 12* is a conical burial mound 55
2 feet in diameter and six feet in height.
3 Below-grade features are extant. Mound
4 12 was leveled in 1917 and portions of the
5 below-grade features were damaged by the
6 military plumbing system. Mound 12 was
7 reconstructed in 1922 by the Ohio State
8 Museum. It is unverified if this mound was
9 reconstructed in the 1960s and 1970s. Mound
10 12 is in good condition.

11
12 *Mound 13* is a conical burial mound 70 feet in
13 diameter, and nine feet in height. Below-grade
14 features are extant. Mound 13 was leveled in
15 1917, and reconstructed in 1922 by the Ohio
16 State Museum in the wrong location. Mound
17 13 was reconstructed in 1963 in its original
18 location. This mound contained the 'Great
19 Mica Grave' exhibit, since removed. Mound 13
20 is in good condition.

21
22 *Mound 14* is a conical burial mound 50 feet in
23 diameter and five feet in height. Below-grade
24 features are extant. Mound 14 was leveled in
25 1917, and reconstructed in 1922 by the Ohio
26 State Museum in the wrong location. Mound
27 14 was reconstructed in 1974 in its original
28 location. Mound 14 is in good condition.

29
30 *Mound 15* is outlined on the ground as an
31 interpretive exhibit illustrating the sub-
32 mound post-hole pattern of the building that
33 once stood in this location. The exposed sub-
34 mound posthole pattern is a round cornered
35 rhomboid with dimensions of 40 feet by
36 27.5 feet on the north and 40.5 feet on the
37 south. The pattern of post-holes is typical for
38 structures at Mound City Group. Mound 15
39 was leveled in 1917, and was reconstructed in
40 1921 by the Ohio State Museum, and removed
41 in 1963 to create the post-hole exhibit. The
42 below-grade features of Mound 15 are in good
43 condition.

44
45 *Mound 16* is a conical burial mound 55 feet
46 in diameter, and five feet in height. Below-

1 grade features are extant. Mound 16 was
2 leveled in 1917, and military ditches greatly
3 disturbed below-grade features. The mound
4 was reconstructed in 1922 by the Ohio State
5 Museum. It is unverified if this mound was
6 reconstructed in the 1960s / 1970s. Mound
7 16 is in good condition.

8
9 *Mound 17* is a conical burial mound 55 feet
10 in diameter and three feet in height. Below-
11 grade features are extant. Mound 17 was
12 leveled in 1917, and reconstructed in 1922 by
13 the Ohio State Museum in the wrong location.
14 Mound 17 was reconstructed in 1968 in
15 its original location. Mound 17 is in good
16 condition.

17
18 *Mound 18* is a conical burial mound 90 feet in
19 diameter and ten feet in height. Below-grade
20 features are extant. Mound 18 was leveled
21 in 1917, and reconstructed in 1922 by the
22 Ohio State Museum. It is unverified if Mound
23 18 was reconstructed in the 1960s / 1970s.
24 Mound 18 is in good condition.

25
26 *Mound 19* is a conical burial mound 45 feet
27 in diameter and three feet in height. Below-
28 grade features are extant. Mound 19 was
29 leveled in 1917, and reconstructed in 1922 by
30 the Ohio State Museum in the wrong location.
31 Mound 19 was reconstructed in 1969 in
32 its original location.) Mound 19 is in good
33 condition.

34
35 *Mound 20* is a conical burial mound 65 feet in
36 diameter, and four feet in height. Below-grade
37 features are extant. Mound 20 was leveled in
38 1917, and reconstructed in 1925 by the Ohio
39 State Museum in the wrong location. Mound
40 20 was reconstructed in 1970 in its original
41 location. Mound 20 is in good condition.

42
43 *Mound 21* is a conical burial mound 50 feet
44 in diameter and three feet in height. Below-
45 grade features are extant. Mound 21 was
46 leveled in 1917, and reconstructed in 1922 by



Figure 3-22. Outlying mound X1 at Mound City Group. (Mundus Bishop 2014)



Figure 3-23. Eight borrow pits, varying in size, are outside the enclosure. (Mundus Bishop 2014)

1 the Ohio State Museum in the wrong location.
2 Mound 21 was reconstructed in 1974 in
3 its original location. Mound 21 is in good
4 condition.

5
6 *Mound 22* is a conical burial mound 40 feet in
7 diameter, and five feet in height. Below-grade
8 features are extant. Mound 22 was leveled in
9 1917, and reconstructed in 1922 by the Ohio
10 State Museum in the wrong location. Mound
11 22 was reconstructed in 1974 in its original
12 location. Mound 22 is in good condition.

13
14 *Mound 23* is a conical burial mound 60 feet
15 in diameter and 3.5 feet in height. Below-
16 grade features are extant. Mound 23 was
17 leveled in 1917, and reconstructed in 1922 by
18 the Ohio State Museum in the wrong location.
19 Mound 23 was reconstructed in 1968 in
20 its original location. Mound 23 is in good
21 condition.

22
23 Two mounds at Mound City Group are
24 outside of the enclosure. Outlying mound
25 X1 is southwest of the visitor center, in a
26 small forest clearing. This mound is a conical
27 mound with a 30 foot diameter and five feet
28 in height. It is a reconstruction but is not in
29 the same location as the original mound.

30
31 Outlying mound X2 is outside the enclosure.
32 It is conical mound with a 40 foot diameter
33 and seven feet in height. It is northwest of the
34 visitor center. This is a reconstructed mound,
35 but is not in the same location as the original
36 mound.

37
38 Mound City Group includes eight borrow pits
39 outside the enclosure. The borrow pits vary in
40 size. The largest is approximately 200 feet by
41 80 feet wide, and 18 feet deep. The smallest
42 is approximately 80 feet by 24 feet wide, and
43 10 feet deep. Seven borrow pits have been
44 reconstructed; one is extant below-grade.

45
46

1 Below-grade features associated with the
2 borrow pits likely exist. The 2010 magnetic
3 survey is limited to within the enclosure, but
4 does appear to indicate the two borrow pits
5 that flank the west gateway. The borrow pits
6 are maintained as mown lawn. These features
7 are in good condition. The borrow pits have
8 not been magnetically mapped to verify
9 locations and full extent of the features.

10
11 Recent NPS investigations have revealed
12 archeological deposits within the tract to
13 the north of Mound City Group. These are
14 relatively unexplored resources.

15
16 Analysis

17 The archeological features of Mound City
18 Group have been altered since the period of
19 significance. Prominent, above-grade features
20 have been modified. However, below-grade
21 archeological features remain intact from the
22 original construction by the Hopewell.

23
24 During the period of significance, the
25 archeological features at Mound City Group
26 formed a sacred necropolis of at least 25
27 mounds enclosed within a large earthen wall.
28 Buildings and earthwork complexes were
29 built to support spiritual ceremonies and
30 burials of important family and community
31 members. The mounds were basically
32 commemorative — they marked locations
33 where buildings once stood. The Hopewell
34 built these buildings for ceremonies and
35 contained clay basins or altars where artifacts
36 and ancestral bones were burned in rituals
37 that have a strong sacrificial character. Once
38 ceremonies were completed, the wooden
39 buildings were dismantled, and their
40 locations covered with a mound of earth. The
41 dead were either cremated or buried on-site
42 with valuable objects of copper, stone, shell,
43 and bone accompanying them. The large
44 mounds (>6 feet tall; n = 9) were originally
45 capped with a one foot layer of cobble sized
46 river rocks.^{3.33}

3.33 Brown, *Mound City: The Archaeology of a Renown Ohio Hopewell Mound Center*, 115.

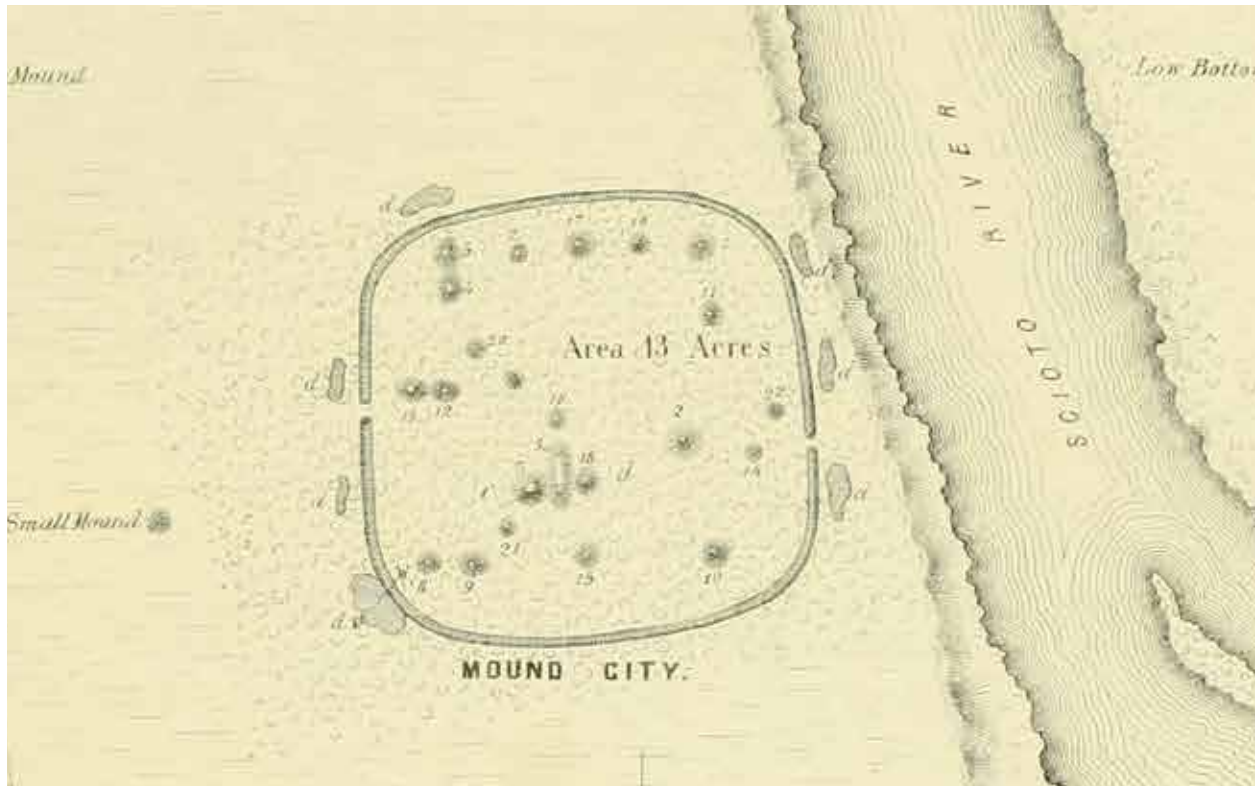


Figure 3-24. Mound City Group was mapped and partially excavated by Squier and Davis. Note the Ohio-Erie Canal to the west of the park unit, and the forest that still covered the mounds. (Hopewell Culture NHP Archives)

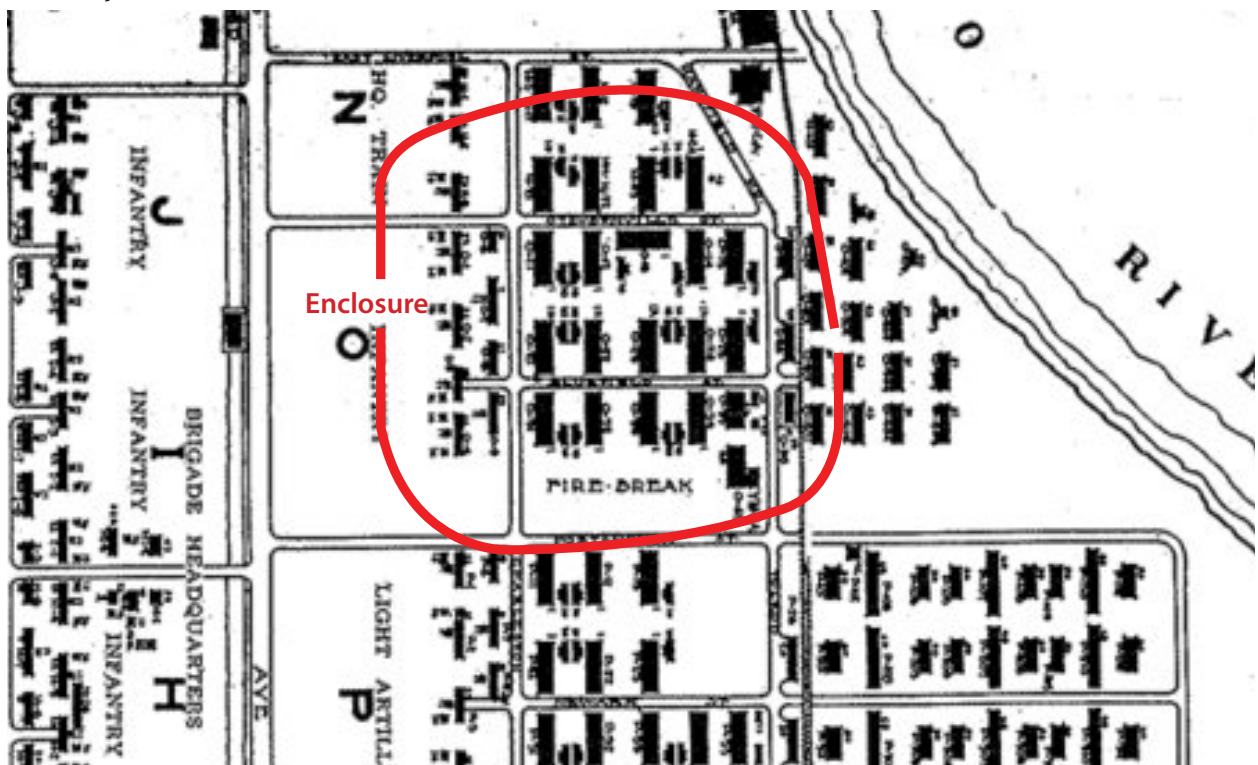


Figure 3-25. Above-grade features were leveled and removed for the construction of Camp Sherman during World War I. Only Mound 7 was not fully removed. (Hopewell Culture NHP Archives)

1 Major changes have occurred since the period
2 of significance. This includes late 19th and
3 early 20th century farming impacts, as well
4 as alterations by the construction of Camp
5 Sherman in 1917, and extensive archeological
6 excavations and reconstructions during the
7 1920s, 1960s, and 1970s.

8
9 Above-grade features were leveled and
10 removed for the construction of Camp
11 Sherman during World War I. The camp's
12 buildings were built on top of the mounds,
13 enclosure, and borrow pits. Most of the
14 earthwork complex's features were disturbed
15 by the camp construction. Only Mound 7
16 was preserved. The army turned one of the
17 barracks perpendicular to the others so it
18 wouldn't cover the mound. The construction
19 of a railroad line and utility corridor for
20 the military camp through the earthwork
21 complexes also partially damaged below-
22 grade resources. Since the Camp Sherman
23 buildings were inexpensive and quickly built,
24 little site preparation occurred. The post and
25 pier foundations caused only minor impacts
26 on the upper mound strata, leaving the lower
27 mound floors intact.

28
29 In the 1920s, Camp Sherman was
30 decommissioned, and the buildings
31 eventually were removed. In the 1920s twelve
32 archeological features were extensively
33 excavated, and all twelve were reconstructed
34 at a later date. Although the reconstructions
35 were based on known information, most were
36 erroneous. The south wall of the enclosure
37 was reconstructed north of its original
38 position due to there already being a quantity
39 of fill in that area. The northwest corner was
40 reconstructed at a sharper angle than the
41 original.

42
43 Archeological investigations between 1963
44 and 1975 were undertaken to explore the
45 accuracy of the 1920s reconstruction and
46 to identify intact archeological deposits

1 found beneath reconstructed mounds,
2 and inaccuracies in the alignments of the
3 reconstructed enclosure wall. The earthwork
4 complex was then reconstructed in the 1960s
5 to 1970s to reflect the more accurate location
6 and appearance. All but four mounds within
7 the enclosure (Mounds 2, 3, 7, and 18), and
8 the two outlying mounds were re-excavated
9 during this period and reconstructed. The
10 reconstructed Mound 15 was removed in the
11 1960s to become the posthole exhibit. There
12 is archeological evidence of two mounds
13 (Mound 24 aka 'Mills 21,' and Mound 25 aka
14 'H3 Mills 23') that were not reconstructed,
15 and least one of the borrow pits shown on
16 Squier and Davis' map was not reconstructed.

17
18 A magnetic survey completed in 2009 to
19 2012 confirms that extant below-grade
20 archeological features of the enclosure and
21 mounds are intact, and that the reconstructed
22 mounds are located in correct positions.

23
24 The archeological features at Mound City
25 Group have been modified since the period
26 of significance. Extant below-grade features
27 of Mound City Group retain integrity,
28 and contribute to the significance of the
29 earthwork complex as they are original
30 features. Above-grade reconstructed features
31 have gained significance for their role in
32 aiding interpretation of the landscape.



Figure 3-26. Mounds and earthworks were reconstructed in the 1920s, but not at the precise location of the original mounds and earthworks. Note the picnic shelter at the southeast corner of the earthwork and the angled earthen wall at the northwest corner. 1948. (Hopewell Culture NHP Archives)

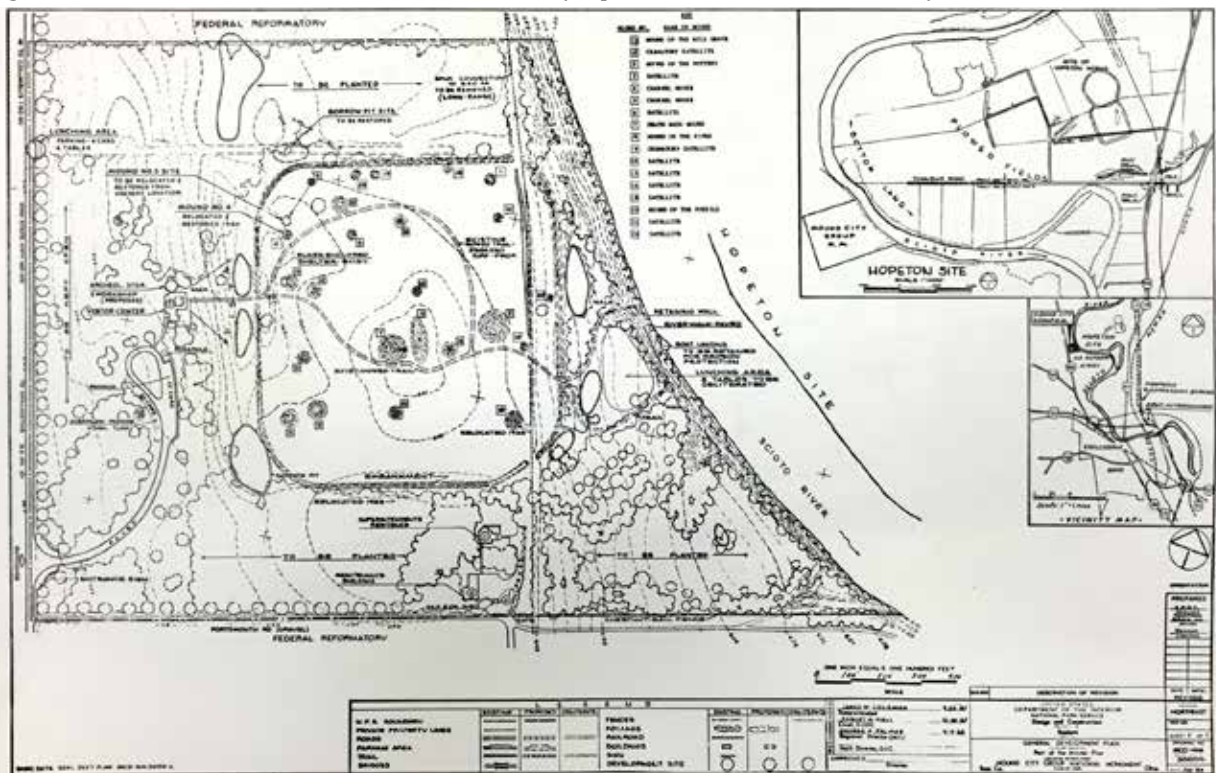


Figure 3-27. By the 1960s, mounds were reconstructed in the correct archeological locations. Note the visitor center and parking area west of the earthworks. (Hopewell Culture NHP Archives)



Figure 3-28. Magnetic survey confirmed that the reconstructed mounds evident today are archeologically accurate. (Google Earth)



Figure 3-29. The entry drive is the only vehicular access into Mound City Group from State Highway 104. (Mundus Bishop 2014)



Figure 3-30. The service drive along the park's south edge leads to the Administration / Maintenance Area. (Mundus Bishop 2014)



Figure 3-31. The parking area at the visitor center includes 19 spaces. (Mundus Bishop 2014)

1 **Circulation**

2 Existing Condition

3 The circulation system of Mound City Group is
4 composed of vehicular and pedestrian routes.
5 The vehicular system includes access roads,
6 as entry and service drives, and parking
7 areas. The pedestrian system includes paved
8 sidewalks, informal mown lawn paths, and
9 dirt / gravel trails, and an asphalt walkway
10 and staircase to the Scioto River.

11
12 *State Highway 104* extends from Chillicothe,
13 Ohio north to Mound City Group. It is the west
14 edge of the park and is a four-lane highway.

15
16 The *entry drive* is the only vehicular access
17 into Mound City Group. It extends from
18 Highway 104 on the east side of the park to
19 the visitor center. It is an asphalt-paved two-
20 lane road in good condition.

21
22 A *service drive* is along the park's south edge,
23 connected to the entry drive. This route
24 extends to the Administration / Maintenance
25 area. This is a two-lane, 16 feet wide asphalt
26 paved road in good condition.

27
28 A second *service drive* is an 8 foot wide gravel
29 surface drive that connects the maintenance
30 area to the earthwork complexes, provides
31 access for mowing equipment, and doubles
32 as a pedestrian route. This route is in good
33 condition.

34
35 The *parking area* at the visitor center includes
36 19 spaces, including two accessible spaces
37 and one eco car space. The parking area
38 is asphalt paved with a concrete curb and
39 continuous sidewalk and accessed by a one-
40 way loop road. Part of this loop road is paved
41 with turf pavers, for overflow parking. The
42 visitor parking area is in good condition.

43
44 The parking area at the administration /
45 maintenance area has 29 spaces with two
46 accessible spaces. The parking area occurs

1 in three locations: in front of the resource
2 management building, administration
3 building, and maintenance building. The
4 parking area is asphalt paved with a stone
5 curb. It is in fair condition, with some spalling
6 of the concrete at the accessible spaces, and
7 asphalt paving covering some of the stone
8 curb.

9
10 Pedestrian circulation is associated with
11 visitor and maintenance access. A network of
12 paved and soft-surface paths provides access
13 to the earthwork complexes, natural areas,
14 and the Scioto River. The paths for visitor
15 access include a sidewalk from the visitor
16 center to the west gateway of the enclosure.
17 A nature path begins and ends at the visitor
18 center, forming a loop around the earthwork
19 complex.

20
21 *Visitor center sidewalks* include a 4 foot wide
22 concrete sidewalk from the parking area to
23 the visitor center. The sidewalk continues
24 around the exterior of the building on the
25 south and east edges. A second concrete
26 sidewalk, five feet wide, connects to the
27 flagpole within the entry loop. A 4 foot wide
28 concrete sidewalk connects the visitor center
29 to the earthwork complexes. The concrete
30 paving ends just outside of the west gateway,
31 where it becomes an informal route through
32 the gateway and into the enclosure. Another
33 four foot wide concrete paved path connects
34 the visitor center to a picnic area, located
35 north of the building. These sidewalks are in
36 good condition.



Figure 3-32. Granite walls, planting, and a small terrace mark the entry to the visitor center. (Mundus Bishop 2014)



Figure 3-33. The nature trail meanders through the woodland forest surrounding the earthworks. (Mundus Bishop 2014)



Figure 3-34. The lower overlook provides a view of the Scioto River. (Mundus Bishop 2014)

1 A *small terrace* of red-colored exposed
2 aggregate concrete pavers is at the visitor
3 center entrance. The terrace is framed by
4 granite walls, and planting areas around the
5 building. The visitor center entrance terrace
6 is in good condition.
7
8 Another *terrace* is on the east side of
9 the visitor center. It is a concrete paved
10 rectangular space of 2,000 square feet. Two
11 granite walls occur on its west edge. A portion
12 of the terrace is covered by a canopy that
13 covers approximately 500 square feet, and the
14 rest of the area is open. The terrace is in good
15 condition.
16
17 A 3 foot concrete *sidewalk* connects the
18 administration building with the resource
19 management building. Another sidewalk
20 extends from the parking area to the
21 administration building, and connects to an
22 accessible ramp on the building's north side.
23 Both the ramp and the sidewalk are in good
24 condition.
25
26 The *nature trail* is an 8 foot wide soft surface
27 path that meanders through the woodland
28 forest surrounding the earthwork complexes,
29 in loop around the park unit. The path is a
30 decomposed granite / crusher fines trail
31 along the upper edge of the river terrace. The
32 trail widens where it connects to the river
33 overlook. The nature trail is in good condition.
34
35 A *river trail* follows the river's edge and forms
36 a loop, connecting to the nature trail on both
37 ends. The river trail is asphalt-paved, and
38 descends down the steep riverbank in a series
39 of concrete staircases with pipe handrails.
40 The trail is 4 foot wide, follows the river for
41 approximately 200-feet, and is edged with
42 stone retaining walls on either side. The
43 stone retaining walls are built of mortared
44 cobblestones, and are 6-inches wide and vary
45 in height along the edge of the steep slope. On
46 average the stone walls are two feet high.

1 The river trail has two overlooks, lower
2 and upper, connected by stone steps. The
3 overlooks are paved in concrete, and are
4 approximately 15 feet by ten feet wide. The
5 lower overlook is connected to the stone
6 retaining walls, at an approximate height
7 of 5-feet. The stone walls are in good to fair
8 condition. The concrete-paved overlooks are
9 in good condition. Portions of the asphalt
10 paving are cracked and heaved, and are in
11 poor condition.
12
13 An 8 foot wide soft surface trail connects the
14 administration area to the visitor center. It
15 covered with mulch set over a fabric. This
16 trail is in good condition.
17
18 A dirt path occurs at the east gateway and
19 connects to the nature trail to the east. This
20 path measures approximately six feet wide.
21
22 A dirt path connects the enclosure's north
23 edge to the nature trail. The dirt path
24 continues into the field at the north of the
25 park unit.
26
27 Analysis
28 Modifications to the circulation system
29 at Mound City Group since the period of
30 significance include the grid of streets
31 installed as part of Camp Sherman in 1917.
32 This system was changed to the current
33 routes in the late 1950s, as part of the Mission
34 66-era development. There is no longer an
35 established water route to Mound City Group.
36
37 The circulation routes that exist today are not
38 from the period of significance and are non-
39 contributing features.
40
41 The stone retaining walls at the river trail
42 were built by the Civilian Conservation Corps
43 (CCC). While they are non-contributing to
44 the archeological landscape, they may have
45 historical significance for their association
46 with the WPA.



Figure 3-35. Periwinkle was planted for erosion control along the Scioto River bank. (Mundus Bishop 2014)



Figure 3-36. Mature trees occur on the earthen wall and may be negatively impacting the archeological landscape. (Mundus Bishop 2014)

1 **Vegetation**

2 Existing Condition

3 The vegetation of Mound City Group consists
4 of mown lawn and ornamental plantings,
5 woodlands, riparian areas, and hay fields.
6 Nearly half the land is cleared. Mown lawn
7 covers most of the earthwork complexes; a
8 mown hay field covers the north end of the
9 park unit. A hardwood forest surrounds the
10 earthwork complexes and extends along the
11 riverbank.

12
13 Visitor areas and the earthwork complexes
14 are both maintained as regularly mown lawn.
15 Areas around parking areas, picnic areas,
16 and the Administration / Maintenance area
17 consist of mown lawn. The edge of the mown
18 lawn ends abruptly at the forest edge, with no
19 transition. A few ornamental plantings occur
20 around the visitor center. A traditional food,
21 fiber and medicinal plant garden is grown
22 in raised plots near the visitor center. This is
23 maintained by Natural Resources staff. Plants
24 include common milkweed, Indian corn,
25 chenopodium, and gourds.

26
27 The enclosure includes mature trees
28 primarily set in mown lawn. The trees occur
29 along the edge of the wall within and near
30 some of the mounds. Most are American
31 sycamore, white ash (*Fraxinus americana*),
32 and common hackberry and are healthy and
33 in good condition. However, root systems
34 of these trees may be negatively impacting
35 archeological features.

36
37 Woodland forests surround the earthwork
38 complexes. A wide variety of woody species
39 is present, occurring as monodominant or
40 mixed stands. These communities are rather
41 open, low, young woodlands, and the canopy
42 is closed in some places. Dominant trees
43 include common hackberry, black walnut,
44 sugar maple, and black locust (*Robinia*

45
46

1 *pseudoacacia*).^{3.34} Invasive exotic vegetation
2 occurs, and is removed by NPS staff by hand-
3 pulling for honeysuckle and garlic mustard.
4 The hardwood forest encroaches on the
5 northeast corner of the enclosure.
6
7 Riparian areas occur along the bank of the
8 Scioto River within the floodplain. Dominant
9 species include common hackberry, American
10 sycamore, silver maple, and boxelder.^{3.35} This
11 is similar to a variety of floodplain forests of
12 east North America and areas are often under
13 water for some period each spring. Periwinkle
14 (*Vinca minor*), an invasive species, grows
15 throughout the understory along the nature
16 trail near the river for erosion control.

17
18 The northernmost area of the park unit is
19 maintained as a hay field. The vegetation
20 includes Orchardgrass (*Dactylis glomerata*)
21 as the most common species, followed
22 by Canada goldenrod, meadow fescue
23 (*Schedonorus pratensis*), Timothy grass
24 (*Phleum pratense*), and black medick
25 (*Medicago lupulina*).^{3.36} The field is in good
26 condition.

27 28 Analysis

29 It is unknown what the vegetation was
30 like during the period of significance. The
31 1848 maps by Squier and Davis indicate
32 that Mound City Group was forested. Soon
33 afterwards the land was plowed and planted
34 with crops, until the Army took over in 1917.

35
36 Extant vegetation includes trees planted at
37 Mound City Group in the 1940s and 1970s to
38 screen views in and out of the earthwork area.
39 Trees and shrubs in the northeast corner of
40 the enclosure were intentionally planted in
41 the 1960s, in an attempt to reconstruct the
42 scene as Squier and Davis experienced it. A
43 few ornamental plantings were added to the

44
45 3.34 Diamond, *Vegetation Classification and Mapping*, 21.

46 3.35 Diamond, *Vegetation Classification and Mapping*, 21-22.

3.36 Diamond, *Vegetation Classification and Mapping*, 26.



Figure 3-37. The visitor center serves as the main visitor contact point for the entire park. It includes an information desk, museum, restrooms, gift shop, and offices for interpretive staff. (Mundus Bishop 2014)



Figure 3-38. The resource management building has offices, library, archive and storage. (Mundus Bishop 2014)

1 visitor center at Mound City Group in 1959.
2 It is unknown if the vegetation at Mound
3 City Group reflects its original pattern. The
4 vegetation and vegetation patterns of Mound
5 City Group are non-contributing to the
6 archeological landscape.

8 **Buildings and Structures**

9 Existing Condition

10 Mound City Group includes several buildings
11 and structures for visitor, administrative, and
12 maintenance functions. The visitor center is
13 at the west edge of the park unit, adjacent to
14 the earthwork complexes. The administrative
15 and maintenance buildings are clustered
16 at the south end, away from the earthwork
17 complexes and visitor areas.

18
19 The Mission 66-era *visitor center* serves
20 as the main visitor contact point for the
21 entire park. It includes an information desk,
22 museum, restrooms, gift shop, and offices
23 for interpretive staff. It is a cement block,
24 masonry building with granite and masonry
25 accents, and a red metal roof. The visitor
26 center was built in 1959 and modified in
27 1992. It is in good condition.

28
29 The *resource management building* is a single-
30 story, vinyl-sided building. It houses offices,
31 library, and storage. This building is in good
32 condition.

33
34 The *collections storage building* is a single-
35 story, vinyl-sided building, connected to the
36 resource management building to the north. It
37 houses the archives and storage. This building
38 is in good condition.

39
40 The *administration building* houses
41 administrative offices. It is a two-story wood
42 building with an asphalt shingle roof, a stone
43 foundation, and stone porch and steps. Three
44 stone steps with painted steel railing descend
45 to a basement on the south exterior of the
46 building. An accessible ramp is on the north
47 side. This building is in good condition.

1 The *maintenance building* provides vehicular
2 and equipment storage, and a maintenance
3 shop. A fenced parking area and maintenance
4 yard is on the building's south side. The
5 building is 3,200 square feet, vinyl sided
6 with an asphalt roof. This building is in good
7 condition.

8
9 The *maintenance storage structure* is a single-
10 story, vinyl-sided tool shed with an asphalt
11 roof. It is within the maintenance yard. It is an
12 open-sided, used for equipment storage. The
13 shed is in good condition.

14
15 The *storage building*, 280-square foot vinyl
16 sided shed with an asphalt roof, is adjacent
17 the administration building. This building is
18 in good condition.

19
20 A wood-frame *shelter* is adjacent to the Ohio
21 Erie canal stones. The structure measures 16
22 feet by 12-feet. The roof is supported by six
23 beams. It has a decomposed granite / crusher
24 fines floor. The shelter is in good condition.

25 26 Analysis

27 Since the period of significance, buildings
28 were built at Mound City Group as part of
29 Camp Sherman in 1917. These were mostly
30 removed in the 1920s.

31
32 The administrative building and resource
33 management building were originally built in
34 the 1930s, and have since been remodeled.
35 The collections storage building was added in
36 1999. The visitor center was built in 1959 as
37 part of the Mission 66-era development, and
38 was modified from its original design in 1992.

39
40 These buildings have not been formally
41 evaluated for significance but may be of
42 historical significance for their association
43 with park development and Mission 66. They
44 are non-contributing to the archeological
45 landscape.



Figure 3-39. Administration building has offices. (Mundus Bishop 2014)



Figure 3-40. The maintenance building and yard. The maintenance storage shed is in the background. (Mundus Bishop 2014)



Figure 3-41. A wood frame shelter at the Ohio Erie canal stones wall. (Mundus Bishop 2014)



Figure 3-42. Stone entrance walls flank the entrance into the park. (Mundus Bishop 2014)



Figure 3-43. Granite walls and planters frame the entry terrace at the visitor center. (Mundus Bishop 2014)

1 **Small Scale Features**

2 Existing Condition

3 The small scale features of Mound City
4 Group include stone walls, regulatory and
5 interpretive signs; visitor amenities such as
6 outdoor furniture and picnic tables, fences,
7 a flagpole; and canal lock stones remaining
8 from the original Ohio Erie Canal.

9
10 *Stone entrance walls* flank the entrance into
11 the park at the intersection of the entrance
12 drive with the highway. The two stacked
13 sandstone walls, are curved and two feet in
14 height with 3 foot tall columns at the ends.
15 The walls are in good condition.

16
17 *Granite walls and planters* frame the entry
18 terrace at the visitor center. The walls create
19 five planting areas. The walls are 8-inches
20 wide, with 20-inch columns with 24-inch by
21 4-inch caps. The granite planters have built-in
22 Trex benches.

23
24 *Canal lock stones* from the Ohio and Erie
25 Canal are along the nature trail, north of the
26 visitor center. The limestone slabs include a
27 partial stack stone wall on several engraved
28 top stones. It is L-shaped, and measures 11
29 feet by 12-feet. These have not been formally
30 evaluated for significance, but may be of
31 historical significance for their association
32 with Ohio history and development.

33
34 *Two entry signs* occur at the park entrance.
35 They are standard brown NPS signs, placed to
36 be visible from the highway. They are in good
37 condition.

38
39 A *kiosk* with visitor information is at the
40 visitor center. The kiosk is wood frame on
41 painted steel, set on a concrete pad. It is in
42 good condition.

43
44 There are ten *interpretive waysides* placed
45 throughout the park unit to interpret the
46 archeological landscape.

1 *Regulatory signs* include those devoted to
2 public safety and vehicular regulations, and
3 others marking trails, service drive, and
4 parking.

5
6 Four *vegetable planters* are near the visitor
7 center, built of Trex with seasonal plantings.
8 The overall dimension of the planting area is
9 16 feet by 10-feet.

10
11 *Picnic tables* are at the visitor center and
12 the adjacent picnic area. The picnic tables
13 at the picnic area are built of Trex slats on
14 galvanized steel bases. Two are set on a
15 concrete pad, others are on mown lawn.

16
17 Four picnic tables, built of Trex slats with
18 painted steel legs are near the visitor center.
19 Three are standard, one is accessible. The
20 tables are dispersed: one on the terrace, two
21 in the lawn, one at the entry terrace.

22
23 There are six picnic tables built of Trex slats
24 on galvanized steel bases placed in the lawn
25 between the resource management building
26 and the administration building.

27
28 This park unit includes three types of benches
29 in different areas. One bench, built of Trex
30 slats with a back on standard supports is
31 along the east portion of the nature trail,
32 at the top of the river bank. A wood slat
33 bench with decorative steel is outside the
34 east entrance of the resource management
35 building. A dual-colored bench, built of Trex
36 slats is on the south side of the administration
37 building.

38
39 A *stone grill* is near the administration
40 building and picnic tables. The grill has a
41 concrete base and is L-shaped, measuring 5
42 feet long by 3- to 5 feet high.

43
44 A *flagpole* is near the visitor center. It is
45 25 feet tall, and placed on a concrete pad,
46 connected by sidewalk to the visitor center.



Figure 3-44. Kiosk at the visitor center. (Mundus Bishop 2014)

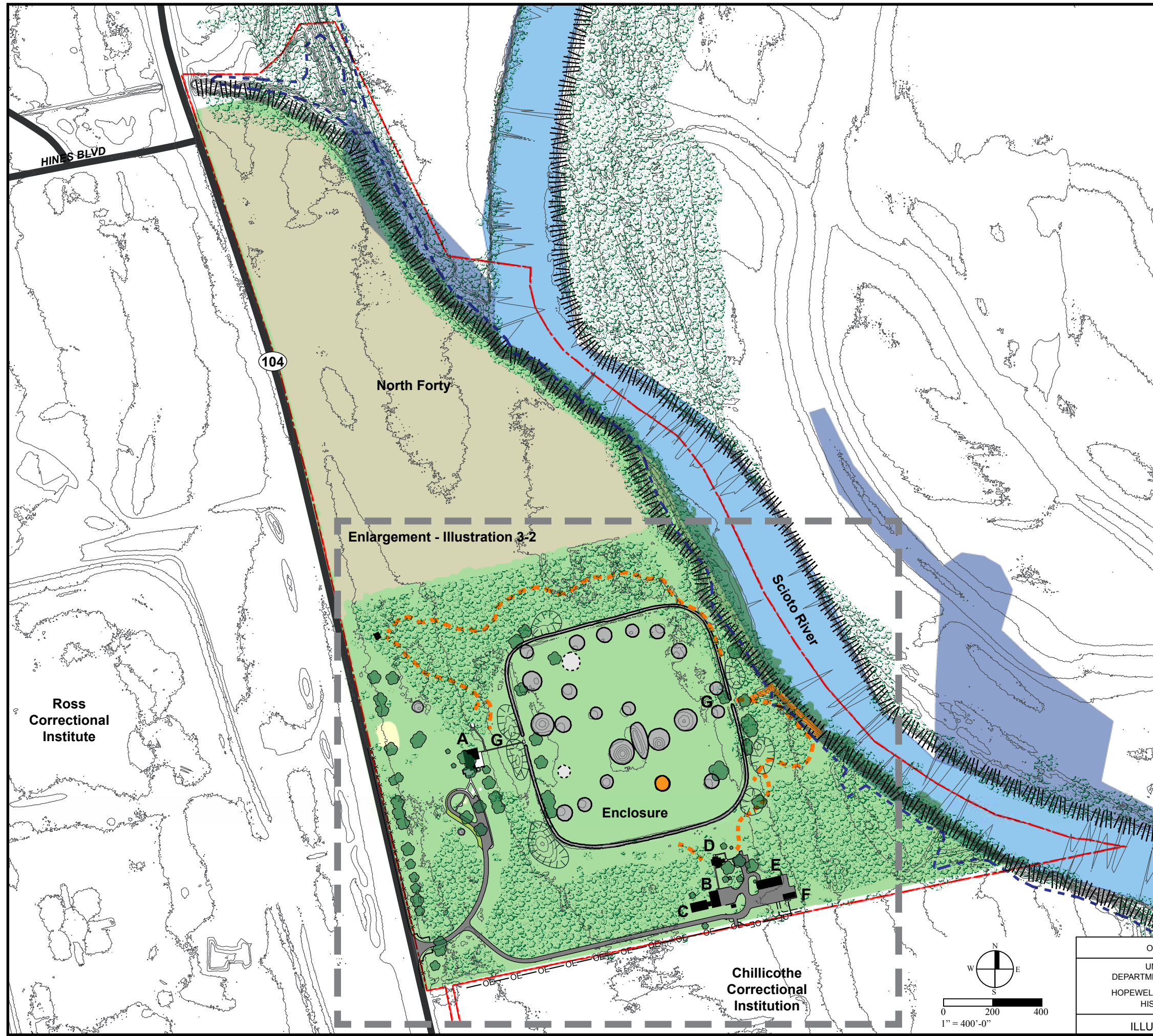


Figure 3-45. Ten interpretive waysides are placed throughout the park unit to interpret the archeological landscape. (Mundus Bishop 2014)

1 The flagpole is in good condition.
2
3 Two *bike racks* are within the park. One is
4 at the administration building of unpainted
5 steel, and the other is in front of the visitor
6 center, painted green.
7
8 *Trash receptacles* are within the picnic
9 area, including one large receptacle, one
10 small receptacle, and a recycle bin. A trash
11 receptacle is at the lower river overlook.
12
13 Two types of *fences* are within this park unit.
14 A two-rail split rail fence is along the park's
15 west border, along the highway. It is in good
16 condition. A chainlink fence, approximately
17 6 feet high, surrounds the maintenance yard.
18 A chainlink gate provides access to the yard.
19 Both are in good condition.
20
21 Solar-powered *street lighting* is in the
22 administrative / maintenance area, and at
23 the visitor center. Eleven powder-coated steel
24 bollard lights, on concrete bases, are along the
25 sidewalks at the visitor center and within the
26 entry terrace.
27
28 Fire hydrants are at the administrative /
29 maintenance area, and at the visitor center.
30 An electrical overhead power-line occurs at
31 the south property edge.
32
33 Analysis
34 The small scale features that exist today are
35 not from the period of significance.
36
37 The Ohio-Erie Canal stones are part of the
38 story of the development of the area. They are
39 non-contributing features to the archeological
40 landscape, but may be historically significant
41 in their own right. The stone entrance walls
42 were added in the late 1920s, and although
43 they may be found to be significant historic
44 resources, they are non-contributing features
45 of the archeological landscape.
46



Figure 3-46. One of eight picnic tables at the picnic area. (Mundus Bishop 2014)



Legend

- NPS Boundary
- Water Bodies
- Wetlands
- 100 Year Floodplain
- Embankment
- Highway
- Paved Road
- Unpaved Road
- Paved Trail
- Unpaved Trail
- 1 ft Contours
- Mound - Extant Above-Grade
- Mound - Extant Below-Grade
- Earthen Wall - Extant Above-Grade
- Borrow Pit - Extant Above-Grade
- Borrow Pit - Unverified
- Building Remnant - Extant Above-Grade
- Buildings / Structures
- Wall
- Gateways
- Overhead Lines
- Fence
- Hay Field
- Mown Lawn
- Ornamental Planting
- Turf Pavers
- Woodland
- Tree

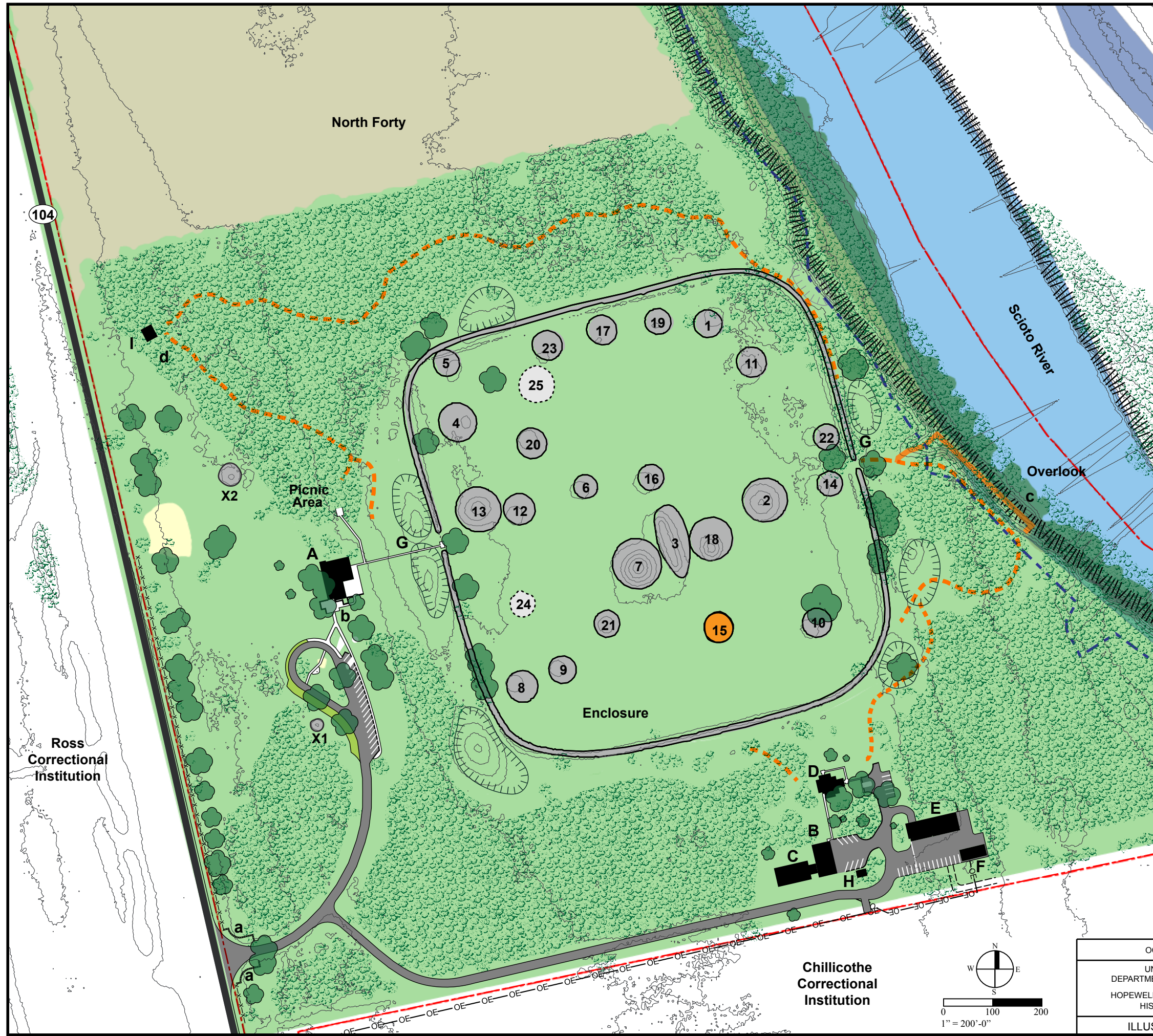
Buildings and Structures

- A Visitor Center
- B Resource Management
- C Collections Storage Building
- D Administration
- E Maintenance
- F Maintenance Storage

Sources:
FEMA Floodplains Map #39141C0200D, 39141C0355D, 39141C0335D, 39141C0175D; <http://www.fws.gov/wetlands/Data/Mapper.html>; 2014 Google Maps; 1978 Mound City Land Use Plan

TIC# 353 128148

OCTOBER 2015	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING MOUND CITY GROUP - EXISTING CONDITION
ILLUSTRATION 3-1	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
	REGION MIDWEST
	COUNTY ROSS
	STATE OHIO
	3-55



Legend

- NPS Boundary
- Water Bodies
- Wetlands
- 100 Year Floodplain
- Embankment
- Highway
- Paved Road
- Unpaved Road
- Paved Trail
- Unpaved Trail
- 1 ft Contours
- Mound - Extant Above-Grade
- Mound - Extant Below-Grade
- Earthen Wall - Extant Above-Grade
- Borrow Pit - Extant Above-Grade
- Borrow Pit - Unverified
- Building Remnant - Extant Above-Grade
- Buildings / Structures
- Wall
- Gateways
- Overhead Lines
- Fence
- Hay Field
- Mown Lawn
- Ornamental Planting
- Turf Pavers
- Shrubland
- Woodland
- Tree

Buildings and Structures

- A Visitor Center
- B Resource Management
- C Collections Storage Building
- D Administration
- E Maintenance
- F Maintenance Storage
- H Flammable Storage
- I Shelter

Small Scale Features

- a Stone Entrance Walls
- b Granite Walls and Planter
- c Stone Retaining Walls
- d Canal Lock Stones

TIC# 353 128148

OCTOBER 2015	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT
UNITED STATES DEPARTMENT OF THE INTERIOR HOPEWELL CULTURE NATIONAL HISTORICAL PARK	TITLE OF DRAWING MOUND CITY GROUP - ENLARGED EXISTING CONDITION
ILLUSTRATION 3-2	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK
	REGION MIDWEST
	COUNTY ROSS
	STATE OHIO
	3-57

Sources:
FEMA Floodplains Map #39141C0200D, 39141C0355D,
39141C0335D, 39141C0175D; <http://www.fws.gov/wetlands/Data/-Mapper.html>; 2014 Google Maps; 1978 Mound City Land Use Plan

Hopeton Earthworks

1 Introduction

2 Hopeton Earthworks is Hopewellian
3 earthwork complex consisting of a large
4 conjoined circle and square, smaller circular
5 enclosures, and parallel walls. The 292 acre
6 park unit is within a bend of the Scioto River,
7 situated on a terrace approximately thirty feet
8 above the river.

9
10 Hopeton Earthworks is one of two park units
11 within Hopewell Culture NHP with no visitor
12 facilities. It is approximately four miles north
13 of Chillicothe, Ohio, and one mile east of the
14 Mound City Group, across the Scioto River (a
15 driving distance of 5.7 miles from the park
16 visitor center). Hopeton Earthworks is west
17 of Ohio Highway 159. Vehicular access to the
18 park is from Hopetown Road.

19
20 The archeological landscape of Hopeton
21 Earthworks is built upon the first terrace
22 of the Scioto River, on its east bank. The
23 earthwork complex is overlooked by a second
24 terrace approximately thirty feet above the
25 first terrace along the eastern edge of the
26 earthwork complex. It occurs on a single
27 parcel of land. Within the park's legislated
28 boundary is a private gravel quarry, Melvin
29 Stone Company.

30
31 Land use to the north and west is primarily
32 agricultural, and a multi-family residential
33 property is located to the south of Hopeton
34 Earthworks, on the south side of Hopetown
35 Road.

36
37 The Hopeton Earthworks is composed
38 of several archeological features: a large
39 circular enclosure-the Great Circle; a Square
40 Enclosure; several smaller enclosures and
41 mounds; and two parallel earthen walls
42 extending from the intersection of the Great
43 Circle and Square Enclosure to the southwest.

44

1 Archeological features include extant earthen
2 walls, some of which have above-grade
3 features; others with only below-grade
4 features; mounds with below-grade features;
5 unverified earthen walls and mounds; and
6 unverified borrow pits and ditches. Some
7 below-grade features were identified using
8 high-resolution magnetic surveys.^{3.37}

9

10 This section presents the existing condition
11 and analysis of Hopeton Earthworks through
12 six landscape characteristics:

13

- 14 • Spatial Organization / Topography /
- 15 Views
- 16 • Archeological Features
- 17 • Circulation
- 18 • Vegetation
- 19 • Buildings and Structures
- 20 • Small Scale Features.

21

22 Since site documentation was completed in
23 October 2014, a parking lot at Hopetown
24 Road and trail between the parking lot and
25 overlook have been designed through a
26 separate project. Therefore, these features
27 are treated as existing conditions in the
28 treatment alternatives and treatment plan
29 included in this CLR/EA, but are not included
30 in the existing conditions documentation for
31 Hopeton Earthworks.

32

33

34

35

36

37

38

39

40

41

42

43

44

3.37 Jarrod Burks, *Large Area Magnetic Gradient Survey at the Hopeton Works Unit, Hopewell Culture National Historical Park, Ross County, Ohio*, (Columbus, OH: Ohio Valley Archaeology, Inc., 2013); and Hopewell Culture NHP Archives, *Hopeton Magnetometry*, 2004.



Figure 3-47. The earthwork complex is relatively flat, with a second terrace rising about thirty feet above the earthworks along the east boundary of the property. View across Square Enclosure looking east, with second terrace in the background, October 2014. (Quinn Evans Architects 2014)



Figure 3-48. View of Hopeton Earthworks looking west from the east side of the NPS property, October 2014. The gravel mining operation is visible in the background. (Quinn Evans Architects 2014)

1 **Spatial Organization / Topography / Views**

2 Existing Condition

3 Hopeton Earthworks is organized in
4 relationship to the Scioto River, within a bend
5 that wraps around the park unit on the north,
6 west, and south. The earthwork complex is
7 located entirely on the first terrace of the
8 river's east bank, the Circleville Outwash
9 terrace. The earthwork complex is located
10 approximately thirty feet above the river bed.

11
12 The earthwork complex is relatively flat and
13 open, with a gradual slope up to the east to
14 the second terrace, the Kingston Outwash
15 terrace. The east, south, and west edges
16 of the earthwork complex are defined by
17 steep slopes. The second terrace east of the
18 earthwork complexes creates a feeling of
19 enclosure. The slopes on the south and west
20 extend down toward the floodplain.

21
22 Mound City Group is located across the Scioto
23 River, and while the Mound City Group is
24 not visible from Hopeton Earthworks, the
25 two park units are spatially related by the
26 orientation of the archeological features.

27
28 Views at Hopeton Earthworks are generally
29 expansive vistas across broad fields. Distant
30 views of hills to the east and west provide a
31 broader reference and feeling of enclosure.
32 Wooded areas to the north, south, and east,
33 of the park unit obscure close range views to
34 agricultural and residential land use beyond
35 the property boundaries. Visible features of
36 the earthwork complex are difficult to see
37 without referencing the archeological features
38 on a plan. The west and south sides of the
39 Square Enclosure are the most apparent
40 features and most visible when viewed
41 from higher ground on the east side of the
42 property. Buildings and structures associated
43 with the gravel quarry are visible from the
44 earthwork complex facing west.

45
46

1 The park unit consists of six distinct spatial
2 areas:

- 3 • Earthwork Complex
- 4 • Open fields to the north and west of the
- 5 earthwork complex
- 6 • Cryder farmstead
- 7 • Gravel quarry
- 8 • Floodplain
- 9 • Dry Run floodplain at the southeast side

10

11 Hopeton Earthworks is spatially organized as
12 a series of overlapping archeological features
13 including the Great Circle, Square Enclosure,
14 Parallel Walls, and several smaller features.
15 Circle A is the northern most feature, located
16 at the northeastern corner of the property.
17 The Great Circle lies to the southwest of Circle
18 A. The south curve of the Great Circle overlaps
19 with the north side of the Square Enclosure.
20 The Parallel Walls extend southwest from
21 the west intersection of the Great Circle and
22 Square Enclosure, aligning with the southern
23 portion of Mound City Group.

24

25 The Great Circle has three gateways, two of
26 which lead into the Square Enclosure. The
27 Square Enclosure has multiple gateways on
28 each side. A small circular enclosure is on the
29 north side of the earthen causeway, near its
30 intersection with the two large enclosures.^{3.38}

31

32 Open fields are north and west of the
33 earthwork complex. These fields are visually
34 separated from the earthwork complex by
35 tree windbreaks.

36

37 The former Cryder farmstead is a spatially
38 distinct area, to the west of the earthwork
39 complex. It is maintained as mown lawn and
40 shaded by maple and non-native Siberian elm
41 trees, and includes remnants of a late 18th to
42 19th century farmhouse foundation.

43

44

45 3.38 Squier and Davis, *Ancient Monuments of the Mississippi*
46 *Valley, Hopeton Work.*



Figure 3-49. View from Cryder Farmstead of buildings at Melvin Stone Company, LLC Plant 2208 / Shelly Materials Chillicothe Facility, October 2014. (Quinn Evans Architects 2014)



Figure 3-50. Though the stream is intermittent, the banks of Dry Run are deeply cut, October 2014. (Quinn Evans Architects 2014)

1 Within the NPS legislated boundary is the
2 privately owned property of the gravel quarry.
3
4 Located west of the earthwork complex,
5 this property includes structures and
6 buildings associated with the gravel mining
7 operation. A large pond previously used by
8 the gravel company as a borrow pit is located
9 immediately to the west of the earthwork
10 complexes. The pond is of interest to NPS
11 as potential bird habitat. Gravel quarry
12 operations increase noise levels at Hopeton
13 Earthworks. While the gravel quarry is
14 located on private property, this space is not
15 visually distinct from the earthwork complex.
16
17 Along the west side of the NPS property is an
18 open field located within the floodplain of the
19 Scioto River. This area has been planted with
20 native grasses and forbs and is on the river
21 floodplain.
22
23 A ruderal forest is located in the southeast
24 portion of the park unit, north of Hopetown
25 Road. The vegetation and topography in this
26 area create a spatially distinct portion of
27 the property. Dry Run, an intermittent but
28 deeply cut stream, is located to the south of
29 the earthwork complexes in this part of the
30 NPS property. The area also includes a walnut
31 grove along Hopetown Road.
32
33 Analysis
34 Since the period of significance, the spatial
35 organization / topography / views at Hopeton
36 Earthworks have been altered. Above-grade
37 archeological features have been damaged
38 by agricultural practices from the eighteenth
39 through twentieth centuries.
40
41 Further damage to the earthwork complexes
42 resulted from the construction of the access
43 road, Pit Road, the utility poles and overhead
44 lines that cross the Parallel Walls and the
45 southern portion of the Square Enclosure.
46

1 Even with these alterations the mass and
2 scale of the earthwork complex remains
3 as does its relationship to the river and
4 surrounding landforms. Due to this, the
5 spatial organization / topography / views
6 at Hopeton Earthworks contribute to the
7 archeological landscape.
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Figure 3-51. View of Square Enclosure at Hopeton Earthworks from east, looking west. A portion of the Square Enclosure is visible to the left of the access road, highlighted by slight variations in vegetation on the earthworks, October 2014. (Quinn Evans Architects 2014)



Figure 3-52. Visible segment of square earthworks, looking east. The orange cone is a marker on the northwest corner of the Square Enclosure, assisting the viewer to discern the form of the earthworks on the landscape, October 2014. (Quinn Evans Architects 2014)

1 Archeological Features

2 Existing Condition

3 The earthwork complex of Hopeton
4 Earthworks is a large multi-component
5 structure made of sand, gravel, and soil that
6 creates large-scale spaces, and individual
7 archeological features of earthen walls,
8 gateways, mounds, and borrow pits.
9 The primary enclosures include a Large
10 Circle, Large Square, and two smaller
11 circle enclosures, and associated mounds
12 and borrow pits. Outside the enclosures,
13 two parallel linear walls form an earthen
14 causeway.^{3.39}

15
16 Archeological features are organized
17 into three categories: extant (visible and
18 above-grade), extant (below-grade), and
19 unverified. All archeological features at
20 Hopeton Earthworks are difficult to discern
21 by the untrained eye due to impacts from
22 agricultural practices, gravel mining, and
23 construction of roads, railroads, utilities,
24 and buildings. However, some above-grade
25 features are visible in high-resolution
26 elevation scans, and some below-grade
27 features are visible on magnetic surveys.^{3.40}

28
29 *Square Enclosure* is approximately 900 feet
30 long on each side, enclosing approximately
31 20 acres. Multiple gateways are on each
32 side and at each of the corners. The Square
33 Enclosure is the most visible feature at
34 Hopeton Earthworks. All but two segments
35 of the Square Enclosure are extant above-
36 grade, though all are difficult to discern.
37 The two below-grade segments of the
38 Square Enclosure are evident on the 2004
39 magnetometer scan of the earthwork
40 complex.^{3.41} The most well-preserved
41 earthwork at Hopeton Earthworks is the
42 northwest corner of the Square Enclosure, at

44 3.39 Blank, 1985, Brose, 1976b
45 3.40 The 2004 magnetometer survey, with locations of the
46 circle and Square Enclosures, are shown in Figure 3-53.
47 3.41 Lynott 2014, Lynott and Mandel 2009, Weymouth et al.
2009.

1 a height of approximately four to seven feet
2 above the surrounding terrace.
3
4 *Great Circle* is a Large Circle enclosure that
5 intersects the north side of the Square
6 Enclosure. It is approximately 1050 feet in
7 diameter, enclosing approximately 20 acres.
8 The Great Circle has three gateways, two of
9 which face into the Square Enclosure, and one
10 on the southeast portion of the circle. While
11 the entire Great Circle is extant below-grade,
12 as indicated on the 2004 magnetometer scan,
13 only segments are extant above-grade.

14
15 *Circle A* is a 300 foot diameter circular
16 enclosure located north of the Great Circle.
17 A single gateway in the circle opens to the
18 east. The circle has no extant above ground
19 features, and was not included in the 2004 or
20 2013 magnetometer surveys. Its location and
21 condition are unverified.

22
23 *Circle B* is a small circular enclosure located
24 to the east of the Square Enclosure. It has a
25 single gateway opening to the west toward
26 the Square Enclosure. Circle B was not visible
27 during the 2014 field investigations, and
28 includes only extant below-ground features
29 identified on the 1938 aerial photograph. The
30 enclosure is not clearly visible on the 2004
31 magnetometer survey or 2012 LiDAR scan. In
32 1846, Squier and Davis identified a ditch on
33 the interior of the enclosure; this feature was
34 not visible on the 1938 aerial photograph,
35 2004 magnetometer survey, or 2012 LiDAR
36 scan. The location and condition of the ditch
37 are unverified.

38
39 *Circle C* is a small circular enclosure located
40 to the east of the Square Enclosure, south
41 of Circle B. It has a single gateway opening
42 onto the Square Enclosure to the west. No
43 features were visible during the 2014 field
44 investigations, and the enclosure is not clearly
45 visible on the 2004 magnetometer survey or
46 2012 LiDAR scan. The location of Circle C is

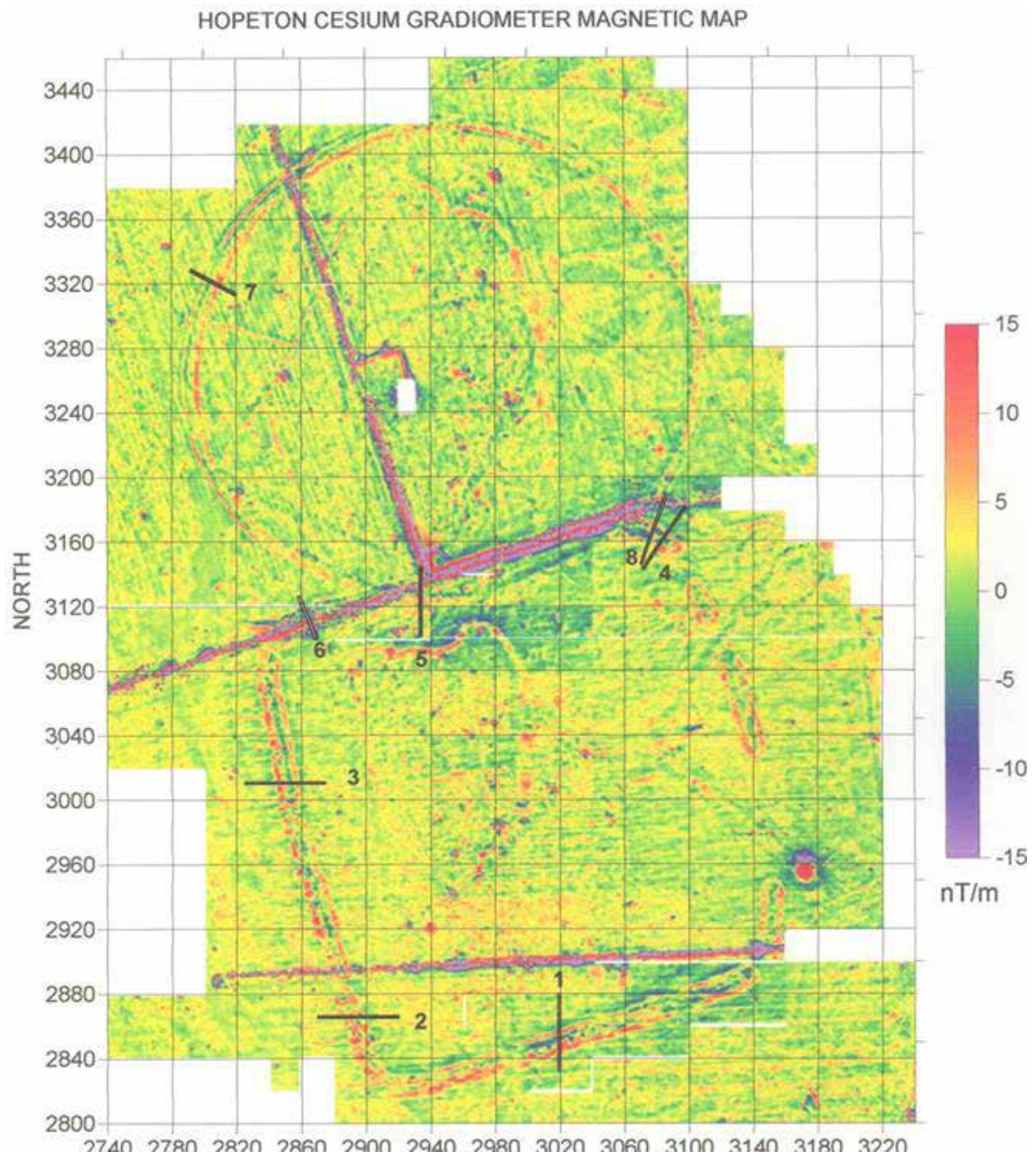


Figure 3-53. 2004 Magnetometer survey of Hopeton Earthworks. (Hopewell Culture NHP Archives 2004).



Figure 3-54. South portion of the Great Circle at Hopeton Earthworks from the second terrace, looking northwest, October 2014. The line indicates the approximate location of the north side of the Square Enclosure. (Quinn Evans Architects 2014)



Figure 3-55. Within the circular enclosure, looking northwest, October 2014. Edge of the Great Circle is barely perceptible along the dashed line. (Quinn Evans Architects 2014)

1 based on earthen walls visible in the 1938
2 aerial photograph, and it is likely that extant
3 below-grade features are present. In 1846,
4 Squier and Davis identified a ditch on the
5 interior of the enclosure; this feature was not
6 visible on the 1938 aerial photograph, 2004
7 magnetometer survey, or 2012 LiDAR scan.
8 The location and condition of the ditch are
9 unverified.

10
11 *Parallel Walls.* Two parallel earthen walls
12 extend run southwest from approximately
13 the intersection between the Large Circle
14 and Square Enclosures. These earthen walls,
15 forming a 2400 foot causeway, extend toward
16 the Mound City Group across the Scioto River,
17 aligning approximately with its southeastern
18 side. A small circular enclosure was identified
19 by Squier and Davis located on the north side
20 of the Parallel Walls, near the intersection
21 of the Great Circle and Square Enclosure.
22 No above-ground features of the Parallel
23 Walls are extant today. However, a portion
24 of the walls are visible in the 1938 historic
25 aerial photograph, and it is likely that extant
26 below-grade features are still present.^{3.42} The
27 walls are not visible on the 2004 or 2013
28 magnetometer surveys.

29
30 *Borrow Pits.* In 1848, Squier and Davis noted
31 the presence of five borrow pits on the east
32 side of the Square Enclosure, on the first
33 terrace occupied by the large enclosures
34 and on the second terrace to the east. While
35 below-grade features of the borrow pits are
36 likely extant, these areas were not included
37 in the area surveyed by magnetometer in
38 2004 or 2013, and were not visible during the
39 2014 field survey.^{3.43} An historic borrow pit is
40 located southeast of the Square Enclosure.

41
42 *Mounds.* Three mounds are located within
43 the Square Enclosure along its eastern side.
44 The mounds were not visible during the

45
46 3.42 Hopewell Culture NHP Archives, aerial photograph
(1938).

3.43 Squier and Davis, *Hopeton Work* (1846); Hopewell Culture
NHP Archives, 2004.

1 2014 field investigations, though a slight
2 rise is present on the 2012 LiDAR survey
3 in the location of the center mound, and all
4 three mounds are visible on a 1938 aerial
5 photograph of the earthwork complex.^{3.44}
6 Above ground features of the mounds within
7 the Square Enclosure are no longer visible,
8 though it is likely that below-ground features
9 are still present.

10

11 *Analysis*

12 Hopeton Earthworks is one of the finest
13 examples of a monumental Hopewellian
14 geometric enclosure closely associated with
15 the rich archeological record of domestic
16 habitations and specialized activity
17 associated with the surrounding landscape.
18 The earthwork complex exemplifies the
19 geometrical complexity and precision
20 of Hopewell earthen architecture. The
21 earthwork complex was created by a culture
22 that included small and dispersed societies
23 without kings or chiefs, who experimented
24 with agriculture.^{3.45}

25

26 Regardless of almost 200 years of cultivation
27 that have altered the earthwork complexes,
28 some topographic relief is apparent, and
29 when vegetation is mown short most
30 portions of the earthwork can be traced
31 upon the ground.^{3.46} Also, extant below-grade
32 archeological features are extensive and
33 remain intact.

34

35 During the period of significance the
36 archeological features formed a set of
37 geometrically precise earthen walls, including
38 a massive Square Enclosure joined to a Large
39 Circle—the Great Circle. Two smaller circles,
40 Circle B and C, were outside the east wall

41

42 3.44 Hopewell Culture NHP Archives, aerial photograph
(1938); and Hopewell Culture NHP Archives, *Hopeton
Magnetometry*, 2004.

43 3.45 Bret Ruby, *Authenticity and Integrity of the Hopeton
Earthworks*, draft UNESCO World Heritage Nomination
44 (2013), 1.

45 3.46 Ruby, *Authenticity and Integrity Hopeton Earthworks*, 1.

1 of the Square Enclosure, in which Circle C
2 overlapped this wall. A third circle, Circle A,
3 was situated beyond the Great Circle to the
4 north. Two mounds were within the Square
5 Enclosure near its east wall. Parallel Walls
6 extended from the northwest corner of the
7 Square Enclosure to the southwest toward the
8 Scioto River.

9
10 Earth was excavated from the high ground
11 immediate east of the earthwork complexes
12 and within the Square Enclosure, creating
13 borrow pits.

14
15 In 1846, the walls of the Great Circle and
16 Square Enclosure were 50 feet wide at the
17 base and those enclosing the square were
18 two feet tall.^{3.47} Cultivation has reduced the
19 archeological features to less than five feet in
20 height in most places. Approximately one-half
21 of the walls of the Great Circle are not evident
22 above-grade, and the other wall sections
23 are barely apparent to an untrained eye.
24 The most visible portions of the earthwork
25 complex are the west and south walls of the
26 Square Enclosure. Three Small Circles, two
27 Parallel Walls, and one of the mounds are no
28 longer visible. One mound near the east wall
29 of the Square Enclosure is barely apparent.
30 Portions of two borrow pits inside the Square
31 Enclosure are extant but difficult to see.

32
33 Changes since the period of significance
34 include agricultural cultivation, and
35 construction of buildings, roads, fences, and
36 utility lines. Two buildings and an orchard
37 were built within the Great Circle before
38 1846. Additional buildings were built as part
39 of the Cryder farm, to the west of the Great
40 Circle and north of the Parallel Walls. The
41 sandstone foundation of the Cryder house
42 remains, as does a small grove of trees. Pit
43 Road and The access road cut through the
44 Parallel Walls, and The access road truncates

45
46 3.47 Squier and Davis, *Hopeton Works*.

1 the Square Enclosure. Roads and a railroad
2 built immediately to the east of the earthwork
3 complex and a commercial gravel quarry on
4 to the west have disturbed land that most
5 likely included archeological resources.

6
7 Aerial photographs indicate that surface
8 features were clearly evident in 1938.^{3.48} By
9 1964, only slight traces of the archeological
10 features are apparent.^{3.49} A terrain model
11 generated from LiDAR data collected in
12 2012 reveals clear evidence of topographic
13 features associated with the Great Circle
14 and Square Enclosure, but no traces of the
15 Parallel Walls are apparent.^{3.50} The 2004
16 and 2013 magnetic surveys revealed extant
17 below-grade archeological features associated
18 with the Great Circle and Square Enclosure.
19 No evidence of the Parallel Walls were
20 indicated.^{3.51}

21
22 Since their original construction, the portions
23 of the above- and below-grade archeological
24 features at Hopeton Earthworks have
25 been modified due to erosion, agricultural
26 practices, road and building construction, and
27 construction of an adjacent gravel quarry.
28
29 Although extant above- and below-grade
30 archeological features have been damaged
31 since the period of significance, extensive
32 significant features remain intact, retain
33 integrity, and contribute to the significance of
34 Hopewell Culture NHP.

42 3.48 Hopewell Culture NHP Archives, aerial photograph
43 (1938).

44 3.49 Hopewell Culture NHP Archives, aerial photograph
45 (1964).

46 3.50 Hopewell Culture NHP Archives, 2012

3.51 Burks, *Magnetic Gradient Survey at Hopeton*.



Figure 3-56. Entrance to NPS property off of Hopetown Road, October 2014. The entrance to the unit is off of a drive shared with the Melvin Stone Company, LLC Plant 2208 / Shelly Materials Chillicothe Facility / Shelly Materials Chillicothe Facility. (Quinn Evans Architects 2014)



Figure 3-57. Pit Road looking south toward location of parallel earthworks / earthen causeway, October 2014. The Great Circle and Square Enclosure are located to the left. (Quinn Evans Architects 2014)

1 **Circulation**

2 Existing Condition

3 Existing circulation at Hopeton Earthworks
4 are all vehicular routes. There are no
5 dedicated pedestrian routes. Hopeton
6 Earthworks is not open to the public and
7 access to the park unit is restricted to
8 authorized NPS staff and visitors. Primary
9 access to the earthwork complex is via Ohio
10 State Highway 159 to Hopetown Road.

11
12 *Hopetown Road* is an asphalt paved road that
13 extends from the highway to the west along
14 the southern boundary of the park unit.

15
16 *Pit Road* begins at the intersection with
17 Hopetown Road, where a gated entrance
18 provides access to the gravel surface road
19 that extends to the north. Pit Road crosses
20 over the earthen causeway near the southeast
21 corner of the gravel pit pond.

22
23 *Access Road* is a gravel two-track route that
24 intersects Pit Road at the southeast corner
25 of the gravel pit pond, then extends east
26 across a fallow field. The route crosses over
27 the earthen causeway, and the southern
28 portion of the Square Enclosure. The access
29 road extends east beyond the park unit
30 boundary, crosses an active railroad track just
31 outside the eastern boundary, and intersects
32 River Road and Ohio State Highway 159.

33 This entrance to the earthwork complex is
34 maintained as a secondary access route for
35 the Melvin Stone Company. The company
36 primarily utilizes the entrance at Pit Road.

37
38 *Vaughan Road*, an unpaved route, intersects
39 the access road inside the NPS boundary, and
40 extends north on the east side of the Hopeton
41 Earthworks. The dirt road extends along the
42 bottom of the second terrace on its western
43 side. This road passes through the borrow
44 pits east of the Square Enclosure. Vaughan
45 Road may impact portion of Circle A, though
46 the precise location of this feature is not

1 verified. An easement requires that this road
2 remain open to permit private access to the
3 farm fields north of the NPS boundary.

4
5 Other vehicular routes provide access to the
6 gravel mine operations north and west of Pit
7 Road. Most are on private property within the
8 legislated boundary. A short segment of gravel
9 road extends from the gravel mine through
10 the western portion of the NPS property.

11
12 Analysis

13 Modifications to the circulation system at
14 Hopeton Earthworks since the period of
15 significance include installation of roads to
16 access agricultural fields and homesteads,
17 and later, the gravel quarry.

18
19 While a water route may have once connected
20 Mound City Group and Hopeton Earthworks,
21 it no longer exists.

22
23 Pit Road and the access road pass through
24 the earthwork complex, and construction of
25 these roads may have impacted below-grade
26 features. The circulation routes that exist
27 today are not from the period of significance,
28 and are not contributing features.



Figure 3-58. Gravel road and utility lines cross through the south portion of the Square Enclosure, October 2014. (Quinn Evans Architects 2014)



Figure 3-59. Proximity of active railroad to earthwork complex, looking east from west side of Square Enclosure, October 2014. (Quinn Evans Architects 2014)



Figure 3-60. Railroad crossing on east NPS boundary, October 2014. (Quinn Evans Architects 2014)



Figure 3-61. Vaughan Road, located to the east of the earthwork complex, October 2014. (Quinn Evans Architects 2014)



Figure 3-62. Soybean field in the area of the Square Enclosure includes a mix of forbs, grasses, and soybeans, October 2014. (Quinn Evans Architects 2014)



Figure 3-63. Black walnut grove on Hopetown Road, October 2014. (Quinn Evans Architects 2014)

1 **Vegetation**

2 Existing Condition

3 The vegetation present at Hopeton
4 Earthworks includes crop fields, hay fields,
5 grassland, woodland, shrubland, and mown
6 areas. Most of the land within the park unit is
7 active or fallow crop fields in various stages
8 of successional growth. Land within the park
9 unit has been utilized throughout the past
10 two centuries for agriculture, typical of the
11 land use of the surrounding area.

12
13 The earthwork complex is located within
14 open fields that include active agriculture and
15 fallow fields.

16
17 Vegetation in the earthwork complex consists
18 of no-till crops, hay or mown areas, and
19 fallow fields. At the time of the 2014 survey,
20 soybeans were planted in fields occupying
21 approximately the western third of the Large
22 Circle, the entire Square Enclosure, and the
23 eastern half of the earthen causeway, from
24 the Cryder farmstead south to the tree line,
25 and from Pit Road east to the second terrace.
26 Crops in the park unit rotate between no-
27 till soybeans and winter wheat.^{3.52} NPS
28 regulations prohibit the use of industry-
29 standard herbicides therefore, there is a high
30 proportion of weeds in the field.

31
32 A shift in the species present on the
33 earthwork complexes increases the visibility
34 of the form of the Square Enclosure. In some
35 locations, earthen walls located on the edges
36 of fields, where the soil was not tilled during
37 agricultural use, have been partially protected
38 from destructive activities.

39
40 A field occupying the remainder of the Large
41 Circle enclosure and a field located on the
42 second terrace to the east of the Square
43 Enclosure had been cut for hay at the time
44 of the field investigations in October 2014.

45
46 ^{3.52} Vick, *Inventory of Mammals*, 3.

1 Much of the rest of Hopeton Earthworks is
2 a species mix characteristic of fallow hay
3 fields, including fields to the north and
4 west of the Large Circle enclosure. Species
5 present are typically grasses that have been
6 planted or volunteer into old fields, including
7 orchardgrass, Canada goldenrod, meadow
8 fescue, Timothy grass, and black medick.
9 Woody species are limited to successional
10 shrubs and small trees.^{3.53} Several tree lines
11 cross between fields, these may have been
12 established as wind breaks or fence rows.
13 Vegetation on the western half of the Parallel
14 Walls is mown.

15
16 Woodland occupies the edges of the park
17 unit property at its southeast and northeast
18 boundaries. Ruderal species in these areas
19 are indicative of the presence of disturbance,
20 such as clearing or plowing in the past.
21 The species mix contains generalist and
22 exotic species, including invasive plant
23 species.^{3.54} A black walnut grove shades a
24 cleared area of approximately four acres
25 along Hopetown Road west of Dry Run.
26 Along Hopetown Road and Ohio 159, the
27 ruderal woodland transitions to a ruderal
28 shrubland, characterized by a patchy canopy
29 of small trees, and shrubs dominated by early
30 successional species.^{3.55}

31
32 To the west of the gravel mining operation,
33 the park has established native grasses and
34 forbs on approximately 46 acres.

35
36 A small copse of non-native Siberian elms
37 (*Ulmus pumila*) and maples are clustered at
38 the Cryder farmstead. Lawn in this area is
39 mown. Hazard tree conditions in this group
40 include dead wood, cracks, weak branch
41 unions, decay, and poor tree architecture.

42
43
44
45 ^{3.53} Vick, *Inventory of Mammals*, 26-27.
46 ^{3.54} Vick, *Inventory of Mammals*, 21-22.

^{3.55} Vick, *Inventory of Mammals*, 3 and 31-32.



Figure 3-64. Fallow hay field northwest of the earthwork complex, tree line in background, October 2014.
(Quinn Evans Architects 2014)



Figure 3-65. Non-native Siberian elms and maples in poor condition at Cryder Farmstead, October 2014.
(Quinn Evans Architects 2014)

1 Analysis

2 It is unknown what the vegetation was
3 like during the period of significance. It
4 is unknown if the vegetation at Hopeton
5 Earthworks reflects the historic pattern. The
6 1848 maps by Squier and Davis indicate that
7 much of the land surrounding the earthwork
8 complex was cultivated. An orchard was
9 located within the Great Circle. The Square
10 Enclosure and circles B and C were covered in
11 forest as was the slope east of the earthwork
12 complex.^{3.56}

13
14 By 1938, agricultural use had expanded
15 throughout the park unit, and wooded areas
16 were significantly diminished. Trees clustered
17 around structures at the Cryder farmstead
18 and within the Great Circle.^{3.57}

19
20 The vegetation and vegetation patterns at
21 Hopeton Earthworks are non-contributing to
22 the archeological landscape.

23

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3.56 Squier and Davis, *Hopeton Works*.

45 3.57 Hopewell Culture NHP Archives, aerial photograph
46 (1939).



Figure 3-66. Foundation at Cryder Farmstead, looking southeast toward Square Enclosure, October 2014. (Quinn Evans Architects 2014)



Figure 3-67. Entrance to storm cellar or root cellar at foundation at Cryder Farmstead, October 2014. The entrance is constructed of concrete, and may have been added to the structure sometime after its initial construction. (Quinn Evans Architects 2014)

1 **Buildings and Structures**

2 Existing Condition

3 Only one structure is present on the NPS
4 property at Hopeton Earthworks.

5
6 The *Cryder Farmstead* consists of a mortared
7 stone building foundation, roughly measuring
8 21 feet by 35 feet, located approximately in
9 the center of the park unit.^{3.58} On the north
10 side of the foundation concrete wing walls
11 define the former entrance to a crawlspace
12 or root cellar under the building. A concrete
13 stock trough is located in the copse of trees
14 near the center of the Great Circle.^{3.59}

15
16 Gravel quarrying began west of the earthwork
17 complex during the Great Depression and was
18 reopened in 1984.^{3.60} Construction of *quarry*
19 *buildings* on the park unit may have impacted
20 below-grade features.

21
22 A spoil pile of topsoil removed from the
23 quarry pit by the gravel company was
24 previously stored immediately to the north
25 of the Cryder Farmstead. The spoil pile was
26 approximately 30' tall and 1000' long. Most of
27 the spoil pile was removed ca. 2005, however,
28 approximately two to three feet of fill remain
29 in the area north of the Cryder Farmstead.^{3.61}

30
31 Analysis

32 The 1846 maps by Squier and Davis indicate
33 two buildings near of the Cryder farm, west
34 of the Square Enclosure, and north of the
35 Parallel Walls. Two outbuildings were within
36 the Great Circle at the time.^{3.62} The remnants
37 of one building foundation remains at the
38 Cryder farmstead. This building may be
39 historically significant, in its own right, but
40 it does not contribute to the archeological
41 landscape.

42

43 3.58 Brady-Rawlins and Pederson, 2006.

44 3.59 Bret Ruby, correspondence to author, 2015.

45 3.60 Admin History, p. 327.

46 3.61 Bret Ruby, correspondence to author, 2015.

46 3.62 Squier and Davis, *Hopeton Works*.



Figure 3-68. Gate at current entrance to NPS property, October 2014. (Quinn Evans Architects 2014)



Figure 3-69. NPS park identifier sign, Hopeton Earthworks, October 2014. (Quinn Evans Architects 2014)

1 **Small Scale Features**

2 Existing Condition

3 Small scale features present at Hopeton

4 Earthworks include fences, gates,
5 electrical poles, signage, a picnic table, and
6 miscellaneous features.

7
8 *Fences* enclose the park unit on the property's
9 south and west sides. Partial fences are
10 present on the north side, from the western
11 boundary to the intersection with Overly
12 Road, and along the east side from the south
13 property boundary to approximately 800 feet
14 south of the north property boundary. Metal
15 gates control access to the park unit at the
16 south and east entrances. Fence types vary
17 throughout the park unit. On the south side
18 of the property near the entrance, the fence is
19 wire strung over wood and metal posts. Along
20 Hopetown Road, the fence is wood. On the
21 east side of the property, the fence is wood or
22 wire strung on wood posts.

23
24 A Hopeton Earthworks park *identification*
25 *sign* is located to the east of Pit Road, which
26 provides access to the park unit from
27 Hopetown Road. The sign indicates that there
28 are "no public facilities" at the park unit. The
29 sign is in good condition. Additional signage
30 includes regulatory signage at the railroad
31 crossing at the east side of the property.

32
33 Orange *traffic cones* are used to mark the
34 corners of the Square Enclosure to enhance
35 visibility of the earthwork. A picnic table is
36 located at the Cryder farmstead beneath the
37 elm and maple trees.

38
39 *Utility poles* and aerial lines run parallel to
40 the railroad on the east side of the property.
41 Another set of utility poles and aerial lines
42 extend along the north side of the east west
43 gravel road, passing through the southern
44 portion of the Square Enclosure and across
45 the earthen causeway, possibly disturbing
46 below-grade resources. At Pit Road, the

1 overhead lines and utility poles turn north,
2 following Pit Road for a short distance and
3 then turning to the west to provide power to
4 the gravel company.

6 Analysis

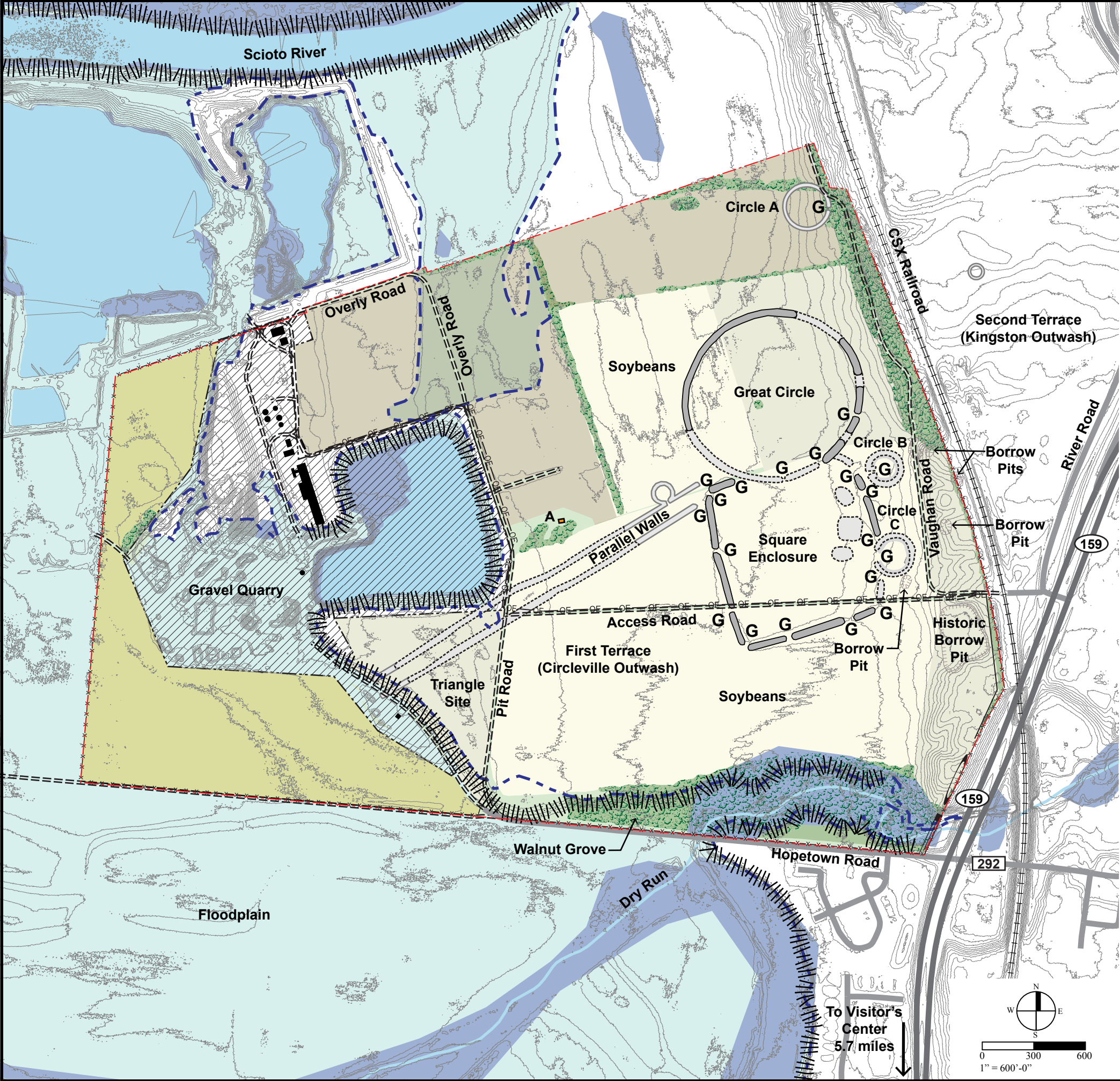
7 Small scale features at Hopeton Earthworks
8 are not from the period of significance,
9 and do not contribute to the archeological
10 landscape. The presence of utility lines within
11 the earthwork complex impacts views of the
12 archeological features, and installation may
13 have disturbed below-grade resources.



Figure 3-70. Traffic cone marks the northwest corner of the Square Enclosure, October 2014. (Quinn Evans Architects 2014)



Figure 3-71. Utility poles cross the south portion of the Square Enclosure, October 2014. (Quinn Evans Architects 2014)



- Legend**
- NPS Boundary
 - Portion of Earthwork not in NPS Ownership
 - Water Bodies
 - Wetlands
 - Floodplain
 - 100 Year Floodplain
 - Embankment
 - Highways
 - Paved Roads
 - Gravel Road
 - Railroads
 - 1 ft Contours
 - Mound - Extant Below-Grade
 - Earthen Wall - Extant Above-Grade
 - Earthen Wall - Extant Below-Grade
 - Earthen Wall - Unverified
 - Borrow Pit - Unverified
 - Ditch - Unverified
 - Building Remnant - Extant Above-Grade
 - Buildings/Structures
 - G Gateways
 - OE Overhead Lines
 - Fence
 - Crop
 - Active Hay Field
 - Fallow Hay Field
 - Shrubland
 - Native Grassland
 - Woodland

Buildings and Structures

A Cryder Farmstead

Sources:
Burks, Large Area Magnetic Gradient Survey at the Hopeton Works, 2013; GIS HOCU Lidar, 2012; Squier and Davis, Hopeton Work, 1846; State of Ohio Location Based Response System Road Centerlines, 2011; State of Ohio Active Rail Lines; Vegetation Classification for Hopewell Culture National Historical Park, 2004; U.S. Fish and Wildlife Service, National Wetlands Inventory; U.S. Census Inland Waterways, 2013; FEMA Floodplain Map #39141C0200D; HOCU GIS, Aerial Photograph of Hopeton Earthworks, 1938; HOCU CAD Archives, Hopeton Earthworks mowing plan (ccimow.dwg); ESRI World Imagery, 2014; field investigations conducted October, 2014.

TIC# 353 128148

OCTOBER 2015		TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT	
UNITED STATES DEPARTMENT OF THE INTERIOR		TITLE OF DRAWING HOPETON EARTHWORKS - EXISTING CONDITON	
HOPEWELL CULTURE NATIONAL HISTORICAL PARK		NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK	
ILLUSTRATION 3-3		REGION MIDWEST	COUNTY ROSS STATE OHIO 3-83

Hopewell Mound Group

1 Introduction

2 Hopewell Mound Group is a 315-acre park
3 unit with archeological features, consisting
4 of two monumental conjoined earthwork
5 enclosures, the Great Enclosure, in the general
6 shape of a parallelogram, and the other in the
7 shape of a square, several smaller enclosures,
8 approximately thirty to forty mounds, and
9 associated ditches.

10

11 The archeological landscape is situated on
12 the first terrace above the North Fork Paint
13 Creek and the Lattaville Moraine, which rises
14 approximately forty to eighty feet above the
15 first river terrace. It is approximately seven
16 miles northwest of Chillicothe, Ohio, and
17 six miles west of the visitor center. Primary
18 access to the earthwork complex is from
19 Sulphur Lick Road. Near the southern edge
20 of the park unit boundary is a one acre
21 parcel, with a private residence. Two utility
22 easements pass through the earthwork
23 complex. A high voltage power-line extends
24 through the center of the park unit. A second
25 power-line is located along the west edge of
26 the park unit.

27

28 Hopewell Mound Group is one of three park
29 units open to visitors. Amenities include a
30 two and one-quarter mile interpretive trail,
31 a parking area, comfort station, and picnic
32 shelter. A portion of the Adena Recreational
33 Trail bicycle path transects Hopewell Mound
34 Group, parallel to the south side of Sulphur
35 Lick Road.

36

37 Archeological features include extant earthen
38 walls, mounds, and ditches - some visible
39 and others below-grade; unverified earthen
40 walls and mounds; and borrow pits (extant,
41 below-grade). The 2013 high-resolution
42 magnetic survey for Hopewell Mound Group
43 revealed below-grade archeological features
44 including earthen enclosures, mounds, and

1 other features within the Great Enclosure and
2 Square Enclosure. This information was used
3 in this CLR/EA to assist in locating non-visible
4 features, and evaluating the existing condition
5 of the earthwork complexes.

6

7 This section presents the existing condition
8 and analysis of Hopewell Mound Group
9 through six landscape characteristics:

10

- 11 • Spatial Organization / Topography /
- 12 Views
- 13 • Archeological Features
- 14 • Circulation
- 15 • Vegetation
- 16 • Buildings and Structures
- 17 • Small Scale Features

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Figure 3-72. Typical view from the north section of the Great Enclosure, looking south toward Mound 25. Vegetation blocks the view of the first terrace, October 2014. (Quinn Evans Architects 2014)



Figure 3-73. View from overlook at northeast portion of the earthwork complex, facing south. The view is maintained by clearing of vegetation for the utility easement. Vegetation on either side of the easement is encroaching on the view of the complex. October 2014. (Quinn Evans Architects 2014)

1 **Spatial Organization / Topography / Views**

2 Existing Condition

3 Hopewell Mound Group is situated within
4 a valley carved by the North Fork Paint
5 Creek, which flows from west to east south
6 of the earthwork complex. The archeological
7 landscape occurs in association with three
8 topographic terraces. The floodplain defines
9 the south side of the earthwork complex,
10 and is within the 100 year floodplain of the
11 North Fork Paint Creek. A steep embankment
12 defines the north edge of this terrace. It is
13 associated with the North Fork Paint Creek,
14 and is severely eroded near its intersection
15 with Anderson Run. Immediately north, and
16 approximately twenty to thirty feet higher,
17 is the first terrace, on which the majority of
18 the archeological features associated with
19 the Hopewell Mound Group are situated. This
20 edge is delineated by a steep embankment.

21
22 The Lattaville Moraine rises is approximately
23 forty to eighty feet above the first terrace
24 and includes the north wall of the Great
25 Enclosure. In addition to the North Fork
26 Paint Creek, nearby streams, springs and
27 ravines are associated with the physical
28 form and current condition of the earthwork
29 complex. The earthwork is situated between
30 two small streams, to the east and west of
31 the earthwork complex. Anderson Run is an
32 intermittent stream on the east side of the
33 property. A ditch constructed by the Hopewell
34 Culture diverts water to flow outside the west
35 side of the Great Enclosure. Two springs are
36 within the Great Enclosure, inside the walls
37 on the glacial moraine. A third is immediately
38 to the west of the Great Enclosure, and flows
39 into the ditch on the outside of the enclosure.

40
41 Distant views of hills to the east and west
42 provide a broad reference and feeling of
43 enclosure for Hopewell Mound Group.

44 Vegetation screens views of the surrounding
45 land use, limiting visual intrusions into
46 the earthwork complex. One exception is

1 a residential property on the south side of
2 Sulphur Lick Road immediately south of
3 Mound 25. The house, barn and outbuildings
4 associated with this property are clearly
5 visible from the earthwork complex. The
6 earthwork complex on the first terrace is
7 spatially distinct from the rest of the park.

8
9 The park unit includes five distinct spatial
10 areas:

- 11
12 • Earthwork complex
13 • Lattaville Moraine
14 • Parking area and open field east of
15 earthwork complex
16 • Restored native grasslands and Hayfield
17 • Open field west of earthwork

18
19 The Hopewell Mound Group earthwork
20 complex on the first terrace is spatially
21 defined by two monumental archeological
22 features - Great Enclosure and the Square
23 Enclosure. The earthwork complex is oriented
24 length-wise along an east west axis. The Great
25 Enclosure defines the majority of the space,
26 enclosing 111 acres and a large D-Shaped
27 Enclosure, Great Circle, Circle Enclosure, and
28 multiple mounds and borrow pits. The Square
29 Enclosure is adjacent to the east side of the
30 Great Enclosure, sharing its east wall.

31
32 An area of ruderal meadow and woodland/
33 shrubland, is a visually distinct space on the
34 moraine. This area is separated from the first
35 terrace by a steep embankment. Woodlands
36 enclose the space on all sides, except for
37 the clearing maintained for the power-line,
38 which creates a linear corridor through the
39 space. The woodland on the moraine and
40 embankment slope is spatially distinct from
41 the rest of the park unit. Vegetation obscures
42 views to open fields located to the east and
43 south of the space.



Figure 3-74. The Great Enclosure encloses a vast space on the first terrace, defined by treelines and the glacial moraine to the north. View facing north from the Square Enclosure, October 2014. (Quinn Evans Architects 2014)

1 An overlook along the interpretive trail on
2 the moraine offers a higher vantage point
3 from which the patterns associated with the
4 earthwork complex are visible. However,
5 the view does not provide an optimal
6 presentation, as vegetation obstructs part of
7 the view, and high voltage power-lines and
8 towers provide an almost insurmountable
9 distraction from the archeological features.
10
11 A parking area with comfort station and
12 picnic shelter are on the east side of the
13 property. Ornamental plantings buffer the
14 parking area from an open field to the north.
15 The space is defined by woody fencerow
16 vegetation on the east and west. The parking
17 area is visually distinct from the rest of the
18 park unit. The open field north of the parking
19 area and east of the earthwork complex
20 is defined to the east, north, and west by
21 woody vegetation. To the south, ornamental
22 plantings provide a buffer between the open
23 field and the parking area. Views are enclosed
24 within the field except for a low opening,
25 which looks out over the Square Enclosure to
26 the west. The overlook, north of the parking
27 area and directly east of the gateway on the
28 east side of the Square Enclosure, provides a
29 view across the earthwork complex toward
30 the west. The alignment with the earthwork
31 complex and low vantage make it difficult to
32 discern the forms of interest from this point.
33 The overlook is in a key location near the
34 beginning of the trail, and presents visitors
35 their first glimpse of the expanse of the
36 archeological landscape associated with the
37 earthwork complex.
38
39 A field south of the parking area is maintained
40 as a native grassland, which creates a
41 distinct space, though views are open to the
42 earthwork complex on the first terrace to
43 the north and west. A steep embankment
44 separates the native grassland from the
45 floodplain on its south side, and it is defined
46 on the east by a treeline.

1 West of the earthwork complex is a spatially
2 distinct open field. This space is separated
3 from the earthwork complex on the first
4 terrace by a treeline.
5
6 Analysis
7 Since the period of significance, the spatial
8 organization/topography/views at Hopewell
9 Mound Group have been altered. The overall
10 relationship of the earthwork complex to the
11 North Fork Paint Creek and the river terraces
12 and moraine are retained. Above-grade
13 features have been damaged by agricultural
14 practices and construction of Sulphur Lick
15 Road, the Tri-County Trail, a residence and
16 outbuildings and high-voltage overhead
17 utility lines and towers through the Great
18 Enclosure at Hopewell Mound Group.
19
20 Contemporary vegetation and intrusions have
21 altered views and spatial organization. High
22 voltage utility lines and support towers have
23 had a dramatic impact on the visual character
24 of the earthwork complex.
25
26 The large structures and diagonal division of
27 the Great Enclosure by the utility lines create
28 a slice through the archeological landscape
29 that detracts from the views and scale of the
30 earthwork complex.
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Figure 3-75. The Great Enclosure is most visible along its north side, where the earthworks are located in the forest, October 2014. (Quinn Evans Architects 2014)



Figure 3-76. In the autumn the ditch associated with the Great Enclosure is an almost imperceptible dip in the topography, located on the north side of the enclosure. In the spring the ditch holds water in places, creating vernal pools that serve as habitat for breeding amphibians. (Quinn Evans Architects 2014)

Archeological Features

Existing Condition

The archeological features of Hopewell Mound Group consist of a large multi-component earthwork complex built of sand, gravel and soil that define geometric spaces within the landscape, and smaller features including earthen walls, mounds, gateways, and stream channels. The earthwork complex at Hopewell Mound Group is in fair condition.

The majority of the earthwork complex at Hopewell Mound Group is difficult to discern due to impacts from erosion, flooding, agriculture, and development. Despite reduced size and appearance of surface features, the earthwork complex is likely to retain subsurface archeological features.^{3.63}

Hopewell Mound Group has two primary archeological features: the Great Enclosure and Square Enclosure. Small archeological features include smaller enclosures, ditches, mounds, and borrow pits.

The archeological features are organized into three types: extant (visible and above-grade); extant (below-grade); and unverified. A 2013 magnetometer survey for two portions of the Hopewell Mound Group earthwork complex revealed the outlines of some below-grade archeological features. Other features that were mapped in the nineteenth and early twentieth centuries are not visible on the surface or on the 2012 LiDAR survey, but may still be extant. A high-resolution magnetic survey of the remaining portions of the earthwork complex would likely reveal these features.^{3.64}

^{3.63} Jarrod Burks, Large Area Magnetic Gradient Survey at the Hopewell Mound Group Unit, Hopewell Culture National Historical Park, 2013.

^{3.64} Jarrod Burks, Large Area Magnetic Gradient Survey at the Hopewell Mound Group Unit, Hopewell Culture National Historical Park, 2013.

Great Enclosure – a large earthen wall in the shape of a parallelogram, spans the first river terrace and the Lattaville Moraine north of the North Fork Paint Creek. The Great Enclosure is approximately 2800 feet in length from east to west, and 1800 feet long from north to south, enclosing 111 acres. The earthen wall is extant along the north side of the enclosure, following the edge of the moraine. (Fig. 5 enclosure north side 5.jpg) A ditch is along the north side of the enclosure, and is also visible on the 2013 magnetometer scan of the east side of the enclosure.^{3.65} The eastern side of the Great Enclosure is visible as a low rise about three feet tall and sixty feet wide, traversing the entire first terrace from north to south.^{3.66} The western side of the enclosure is visible above-grade, but obscured from view by the western treeline.

West of the Great Enclosure, a ditch diverts a stream from its natural course to a location outside the enclosure walls. The ditch is extant above-grade. The south wall of the Great Enclosure is unverified due to deterioration. It was reportedly originally built using stone.^{3.67} This portion of the enclosure has been significantly impacted by development, agriculture, and erosion by the North Fork Paint Creek. It is noteworthy that the earthen walls of the Great Enclosure traverse the steep slope to the north, as this is not a common practice for Hopewellian earthwork complexes. The same design is repeated at five other earthwork complexes in the Scioto-Paint Creek confluence region.^{3.68}

Square Enclosure. To the east of the Great Enclosure is a smaller square-shaped enclosure. Each side of the square is 850

^{3.65} Jarrod Burks, Large Area Magnetic Gradient Survey at the Hopewell Mound Group Unit, Hopewell Culture National Historical Park, 2013.

^{3.66} Both the wall and ditch have been located by the Burks 2013 magnetometer scan.

^{3.67} Brett Ruby, draft comments.

^{3.68} Brett Ruby, draft comments.



Figure 3-77. A constructed ditch along the west side of the enclosure, facing south, October 2014. (Quinn Evans Architects 2014)



Figure 3-78. The outline of the Square Enclosure is mowed, and surrounding vegetation is not cut. This improves visibility and access to the features, October 2014. (Quinn Evans Architects 2014)

1 feet in length, and all sides have a centrally
2 located gateway. Four mounds are within
3 the Square Enclosure, at the interior of each
4 of the gateways. The Square Enclosure and
5 associated mounds were not visible on the
6 surface during the October 2014 site visit.
7 The location of the earthen walls, and the
8 eastern and southern mounds within the
9 Square Enclosure are identified on historic
10 photographs. Portions of the north and south
11 wall of the Square Enclosure are visible on the
12 2013 magnetometer survey.^{3.69}

13
14 *Small Enclosures.* The Great Enclosure
15 contains several smaller earthen enclosures.
16 A D-shaped earthen wall encompasses Mound
17 25 and several unverified smaller mounds.
18 While not visible on the surface, below-grade
19 features of the D-Shaped Enclosure, including
20 a ditch on the exterior of the enclosure's
21 earthen walls, are evident on the 2013
22 magnetometer scan. A gateway was located
23 on the south side of the D-Shaped enclosure
24 by Squier and Davis in 1848, but is not clearly
25 visible on the magnetometer scan.^{3.70}

26
27 To the east of the D-shaped enclosure is a
28 circular enclosure, the Great Circle, 370 feet
29 in diameter. A gateway is on the northwest
30 side of the Great Circle. The Great Circle does
31 not have above-grade features. However,
32 both the earthen wall and ditch associated
33 with the Great Circle are visible on the
34 2013 magnetometer scan.^{3.71} Small-scale
35 excavations in 2014 revealed that a row of
36 large wooden posts - 18 inches in diameter
37 and up to 16 feet tall - once ringed the inner
38 edge of the Great Circle ditch: A "Hopewell
39 Woodhenge."^{3.72}

41 3.69 Squier and Davis, *North Fork Works* (1848); and Jarrod
42 Burks, *Large Area Magnetic Gradient Survey at the*
43 *Hopewell Mound Group Unit, Hopewell Culture National*
Historical Park (2013).

44 3.70 Squier and Davis, *North Fork Works*; and Burks, *Magnetic*
45 *Survey at Hopewell Mound Group*.

46 3.71 Burks, *Magnetic Survey at Hopewell Mound Group*.

3.72 Ghose, 2014.

1 A 100-foot diameter Circle Enclosure not
2 present on any surveys within the past
3 200 years has also been identified on
4 magnetometer scans and aerial photographs,
5 to the northeast of the D-shaped enclosure.
6 The Circle Enclosure retains below-grade
7 features.

8
9 *Mounds.* Approximately 30 mounds are within
10 the Great Enclosure. Three are connected to
11 form the largest known Hopewellian mound,
12 Mound 25. This mound stands eight to eleven
13 feet above the surrounding terrace, and is
14 maintained as mown lawn.^{3.73} Mound 25
15 is vegetated as mown lawn to increase its
16 visibility on the landscape.

17
18 Four smaller mounds are extant above-grade
19 within the Great Enclosure: Mounds 2, 3, 23,
20 and 24. Mound 2, north of Mound 25, and
21 Mound 23, east of Mound 25, are maintained
22 as mown lawn. Extant below-grade features
23 of three mounds within the eastern half of the
24 Great Enclosure exist, however, above-grade
25 features are not visible.^{3.74} Mound 35, on the
26 moraine to the east of the Great Enclosure, is
27 extant above-grade.^{3.75} A borrow pit northeast
28 of Mound 35 is also extant.

29
30 *Analysis*

31 Hopewell Mound Group serves as the type-
32 site for Hopewell Culture. The archeological
33 features associated with this archeological
34 landscape remain similar to their appearance
35 as documented in the nineteenth and early
36 twentieth Centuries. Extensive excavation
37 of the earthwork complex in the 1890s
38 by Moorehead revealed an abundance of
39 exquisite artifacts that led to the concept of
40 the "Hopewell Culture." The Hopewell Mound
41 Group earthwork complex exemplifies the

43 3.73 Squier and Davis, *North Fork Work*.

44 3.74 Burks, *Magnetic Survey at Hopewell Mound Group*; and
45 Hopewell Culture NHP Archives, *LiDAR scan* (2012).

46 3.75 Burks, *Magnetic Survey at Hopewell Mound Group*; and
Hopewell Culture NHP Archives, *LiDAR scan* (2012).



Figure 3-79. View southeast from Mound 25 toward the Great Circle. The Great Circle, D-Shaped Enclosure, and unverified mounds are not visible, October 2014. (Quinn Evans Architects 2014)



Figure 3-80. East wall of Great Enclosure is mown lawn to increase visibility. Looking north, October 2014. (Quinn Evans Architects 2014)

1 monumental scale of Hopewell earthen
2 architecture. Objects placed with ceremonial
3 deposits and human burials within the
4 mounds express Hopewell artistry and
5 provide evidence of the wide-ranging inter-
6 regional trade networks utilized by the
7 Hopewell Culture.

8
9 Nineteenth and early twentieth century
10 documentation of Hopewell Mound Group
11 provided descriptions and surveys from
12 investigations undertaken in the 1820s,
13 1840s, 1890s, and 1920s. All generally agree
14 on the large scale features at the earthwork
15 complex, but vary in their accounts of smaller
16 features. This CLR/EA relies upon 1926
17 Shetrone survey for the analysis related to
18 archeological features.

19
20 A recent magnetic survey indicates that
21 extensive below-grade archeological
22 resources are extant, and retain integrity.
23 Walls and associated ditches are clearly
24 evident for the Great Enclosure, D-Shaped
25 Enclosure, Great Circle, Circle Enclosure,
26 and two mounds. Only traces of the Square
27 Enclosure are visible on the magnetometer
28 survey, though the earthen wall was visible on
29 a 1951 aerial photograph. The magnetometer
30 investigation also detected clusters of four pit
31 features associated with small and medium-
32 sized circles and portions of a post circle
33 found within the medium sized circle. This
34 is one of the largest Hopewell post circles
35 known.^{3.76}

36
37 Unverified mounds were identified within
38 the Great Enclosure and Square Enclosure
39 by nineteenth and early twentieth century
40 archeological surveys. These mounds do not
41 have extant above-grade features, and are not
42 visible on the LiDAR or magnetometer scans.
43 Historic archeological surveys identified

44
45 3.76 Burks, *Magnetic Survey at Hopewell Mound Group*;
46 Hopewell Culture NHP Archives, 1951 aerial photograph
of Hopewell Mound Group; Ghose, 2014.

1 eight additional mounds on the moraine, two
2 mounds north of the Square Enclosure, and
3 one mound south of the Square Enclosure.
4 No above or below-grade features have been
5 identified, and locations are unverified.^{3.77}

6
7 Two habitation sites may be present within
8 the earthwork complex but they have not
9 been verified.^{3.78}

10
11 Changes have occurred within the earthwork
12 complex, including alterations due to erosion,
13 excavation, cultivation, and construction
14 of utilities, buildings, roads, and railroads
15 on top of portions of the earthwork. The
16 most dramatic of these are impacts from
17 cultivation, road construction, and high
18 voltage utility lines and support towers.
19 Cultivation has resulted in eradication
20 of numerous small scale, above-ground
21 enclosures and mounds, and reduction of
22 large scale features.

23
24 In 1926, Shetrone indicated the presence of
25 28 mounds within the Great Enclosure. Of
26 these only five remain extant, Mounds 2, 3,
27 23, 24, and 25. Beyond the Great Enclosure
28 only one of the ten mounds noted by Shetrone
29 remains, Mound 35.

30
31 The construction of Sulphur Lick Road
32 between 1833 and 1845 truncated the Great
33 Enclosure, D-Shaped Enclosure, and Great
34 Circle, and obliterated five mounds within the
35 D-Shaped Enclosure. A private residence and
36 outbuildings built at this time resulted in the
37 eradication of an additional seven mounds
38 south of the road. Squier and Davis' 1840s
39 survey indicated the archeological landscape
40 had been divided into approximately 18

41
42 3.77 Shetrone, 1926; and Cowan, 1892

43 3.78 Shetrone, 1926; Burks, *Magnetic Survey at Hopewell*
44 *Mound Group*; and Jarrod Burks and Jennifer Pederson,
45 *The Place of Nonmound Debris at Hopewell Mound Group*
46 *(33Ro27)*, Ross County, Ohio, in *Recreating Hopewell*,
edited by D.K. Charles and J.E. Buikstra (Gainesville:
University Press of Florida, 2006), 376-401.



Figure 3-81. Mound 25, a long, low mown rise, is approximately eight to eleven feet above the terrace, looking east, October 2014. (Quinn Evans Architects 2014)



Figure 3-82. Selected mounds within the Great Enclosure are mown, making them more visible. October 2014. (Quinn Evans Architects 2014)

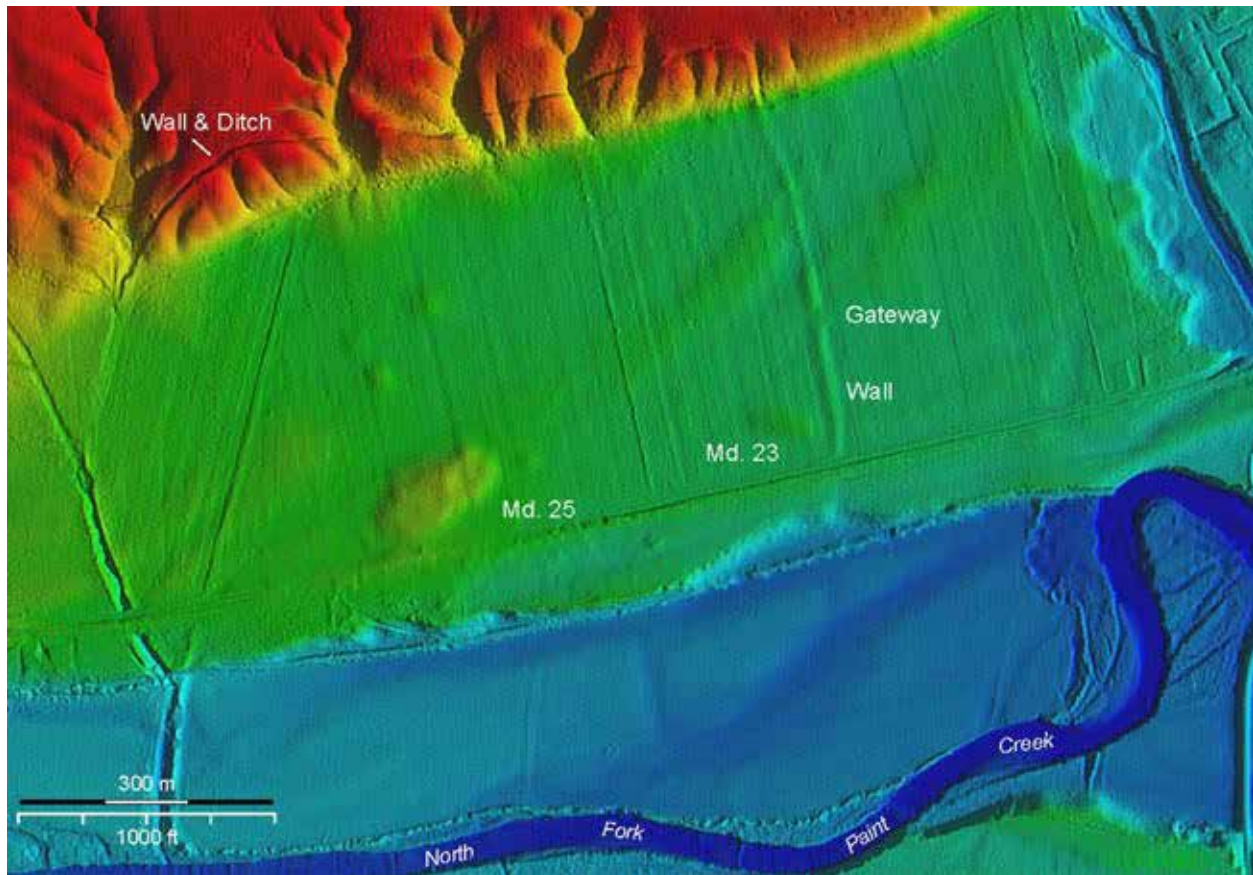


Figure 3-83. The 2008 LiDAR survey of Hopewell Mound Group indicates the topographic forms of the Great Enclosure, Square Enclosure and mounds. (Jarrod Burks and William Romain, "Lidar Analyses of Prehistoric Earthworks in Ross County, Ohio," Ohio Archaeological Council, 2008, accessed July 9, 2015, <http://www.ohioarchaeology.org/39-resources/research/articles-and-abstracts-2008/262-lidar-analyses-of-prehistoric-earthworks-in-ross-county-ohio>)

1 parcels, ten north and eight south of the road.
2 It is likely that other archeological resources
3 were impacted as a result of this road and
4 building construction.

5
6 Although impacts from erosion, agricultural
7 practices, road construction, and utilities have
8 impacted extant above-ground features at the
9 Hopewell Mound Group, extensive significant
10 features remain intact. Recent investigations
11 confirm extensive extant below-ground
12 features.

13
14 The extant above- and below-grade features
15 retain integrity, and contribute to the
16 significance of the Hopewell Culture NHP.

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Figure 3-84. Maintenance road, on east side of NPS property looking east toward Maple Grove Road, October 2014. (Quinn Evans Architects 2014)



Figure 3-85. Gravel interpretive trail along the Lattaville Moraine, facing west, October 2014. (Quinn Evans Architects 2014)



Figure 3-86. Accessible sidewalk and low overlook along east side of earthwork complex, facing north, October 2014. (Quinn Evans Architects 2014)

1 **Circulation**

2 Existing Condition

3 The existing circulation system of the
4 Hopewell Mound Group consists of vehicular,
5 pedestrian, and bicycle routes. Vehicular
6 routes include county roads and internal
7 access routes. The pedestrian system consists
8 of paved sidewalks, gravel and bare dirt trails,
9 and mown lawn trails. The bicycle route is a
10 rails-to-trails pathway through the park.
11

12 Vehicular routes include county roads
13 Sulphur Lick Road, Maple Grove Road, and
14 Cydrus Lane. Park roads are a maintenance
15 road, and parking area.
16

17 *Sulphur Lick Road* is the primary vehicular
18 access to the earthwork complex. It is a two-
19 lane asphalt paved highway that extends
20 from east to west, and transects the Great
21 Enclosure. It is in good condition.
22

23 *Maple Grove Road* is a two-lane asphalt paved
24 road, adjacent to the east park boundary.
25 It extends north along the inside of the
26 boundary, providing access to residences
27 and farms north of the park. It is in good
28 condition. To the east of Maple Grove Road
29 is Anderson Run, a creek that joins Paint
30 Creek at the southeast corner of the Hopewell
31 Mound Group park boundary.
32

33 *Cydrus Lane* is an asphalt paved road east of
34 Anderson Run. It provides vehicular access
35 from Maple Road south to its intersection
36 with Sulphur Lick Road via a bridge over
37 Paint Creek. The road is parallel to Maple
38 Grove Road, and is outside of the NPS
39 property. It is in good condition.
40

41 *A gravel road*, used as a maintenance access
42 road, connects Maple Grove Road with the
43 interpretive trail in the northeast corner of
44 the park. The road is rarely used, and is in fair
45 condition.
46

1 *A parking area* is on the north side of Sulphur
2 Lick Road in the southeast portion of the
3 park unit. The parking area has 48 spaces
4 and four bus spaces. From the parking area,
5 concrete paved sidewalks provide access to
6 restroom facilities, picnic shelter, waysides,
7 and an overlook. The parking pavement and
8 sidewalks are in good condition.
9

10 Pedestrian circulation is a two and one-
11 quarter mile *interpretive trail* network. It
12 provides pedestrian access to the earthwork
13 complex, with interpretive and wayfinding
14 signs along the path. Bicycles are not allowed
15 on this interpretive trail.^{3.79}
16

17 The trail begins as a concrete paved walkway
18 extending north from the parking area on the
19 east side of the earthwork complex. It is in
20 good condition.
21

22 Beyond the wayside and overlook, the trail
23 surface is gravel. It climbs the slope from
24 the first terrace, and turns to the west along
25 the top of slope. The trail is in fair condition.
26 An overlook is on the south side of the trail,
27 providing views of the earthwork complex
28 to the south. West of the overlook, the trail
29 surface becomes dirt and is in fair condition.
30

31 Wood bridges and stairs occur periodically
32 along the trail to navigate steep topography,
33 and wet areas. Bridges and stairs are new,
34 and are in good condition. This section of
35 the interpretive trail follows the outside of
36 the Great Enclosure down the slope to the
37 first terrace. It turns into the enclosure at
38 the bottom of the slope. The trail is in good
39 condition.
40

41 Inside the enclosure, the trail is mown lawn
42 in good condition. Its precise location varies
43 from season to season. At the time of the
44

45 ^{3.79} National Park Service, "Hopewell Mound Group," updated
46 January 7, 2014, <http://www.nps.gov/HopewellCultureNHP/historyculture/hopewell-mound-group.htm>.



Figure 3-87. Parking area at Hopewell Mound Group, October 2014. (Quinn Evans Architects 2014)



Figure 3-88. Mown lawn path within the Great Enclosure, October 2014. (Quinn Evans Architects 2014)

1 2014 site visit, the trail extended through the
2 center of the enclosure, allowing pedestrians
3 to walk on Mound 25. At the east end of
4 the enclosure, the mown lawn trail follows
5 the top of the square archeological feature,
6 exiting on the east end of the square, where it
7 reconnects to the concrete paved walkway at
8 the wayside and overlook.

9
10 A *bicycle path* is managed as a portion of the
11 Adena Recreational Trail. The asphalt paved
12 path parallels the south side of Sulphur Lick
13 Road and is in good condition. Access from
14 the interpretive trail is at two crosswalks
15 across Sulphur Lick Road, at the east and west
16 ends of the park. Interpretive waysides and
17 benches are near these crosswalks along the
18 bicycle path.

19

20 Analysis

21 While the circulation system associated
22 with the Hopewell Mound Group during the
23 period of significance is unknown, it is likely
24 that there was some access to the earthwork
25 complex from the North Fork Paint Creek.

26

27 The 1848 map by Squier and Davis indicates
28 two gateways in the southern wall of the
29 Great Enclosure facing toward the creek.^{3.80}
30 There is no longer an established water route
31 to access the earthwork complex.

32

33 Modifications to the circulation system at the
34 earthwork complex include the construction
35 of vehicular and pedestrian routes, including
36 Sulphur Lick Road, Maple Grove Road,
37 interpretive trails, a bicycle path, and a
38 maintenance road. The circulation routes
39 that exist today are not from the period of
40 significance and are not contributing features.

41

42

43

44

45

46 3.80 Squier and Davis, 1848.



Figure 3-89. Sulphur Lick Road and a bicycle path cross through the south portion of the Great Enclosure, facing west, October 2014. (Quinn Evans Architects 2014)



Figure 3-90. Wood staircase and bridge along interpretive trail, on the west side of the unit. In wooded areas, the interpretive trail has a dirt surface, October 2014. (Quinn Evans Architects 2014)



Figure 3-91. Fall hay field vegetation within the Great Enclosure. Goldenrod is a dominant species, October 2014. (Quinn Evans Architects 2014)



Figure 3-92. Native grassland vegetation on the moraine. The area was formerly grazed, and retains woody species including honey locust, October 2014. (Quinn Evans Architects 2014)



Figure 3-93. Vernal wetland on the moraine, October 2014. (Quinn Evans Architects 2014)

1 **Vegetation**

2 Existing Condition

3 The vegetation of Hopewell Mound Group
4 includes hay fields, woodland, shrubland,
5 wetlands, native grassland, crop, mown lawn,
6 and ornamental plantings.

7
8 Vegetation in the area of the earthwork
9 complex on the first terrace is primarily
10 fallow hay field, a mix of orchard grass,
11 Timothy grass, fescue species (*Festuca spp.*),
12 goldenrod (*Solidago spp.*), and associated
13 species such as barnyard grass (*Echinochloa*
14 *crus-galli*), horseweed (*Conyza canadensis*),
15 and Queen Anne's lace (*Daucus carota*).
16 The field was cultivated throughout the
17 nineteenth and twentieth centuries. The
18 area was cut for hay one to three times per
19 year until NPS took ownership of the park
20 unit, after which the frequency dropped to
21 every two or three years between 2002 and
22 2011. Currently, the field is cut annually.^{3.81}
23 A treeline separates the earthwork complex
24 from the parking area and trail to the east.
25 Fallow hay field vegetation occurs on the east
26 side of this treeline near the parking area.

27
28 Vegetation on the moraine is a mix of
29 ruderal and dry-mesic oak woodland,
30 native grassland, and shrubland. In general,
31 native grassland and shrubland occupy
32 the flat expanses, and native grassland is
33 near the overlook. The native grassland,
34 formerly grazed grassland, is a mix of tall
35 fescue (*Festuca elatior*), common goldenrod,
36 common blackberry (*Rubus allegheniensis*),
37 and a few woody species including honey
38 locust (*Gleditsia triacanthos*), white ash,
39 multiflora rose, hawthorn (*Crataegus*
40 *punctata*), and Russian olive (*Elaeagnus*
41 *angustifolia*).^{3.82} Small vernal wetlands dot
42 the moraine, and a small man made pond is
43 northwest of the Great Enclosure.

44

45 3.81 Vick, *Inventory of Mammals*, 3; Diamond, *Vegetation*
46 *Classification and Mapping*, 26-27.

3.82 Vick, *Inventory of Mammals*, 4.

1 Woodlands occupy areas on the moraine to
2 the south and west of the native grassland
3 and shrubland, primarily steeper slopes.
4 A transitional zone, between the native
5 grassland and dry-mesic oak woodland, is
6 occupied by ruderal woodland and shrubland.
7 It is characterized by a patchy canopy
8 of small trees and shrubs dominated by
9 early successional species. The vegetation
10 communities in this location evidence
11 disturbance and heavy human use such as
12 previous clearing and plowing.^{3.83}

13

14 In the northwest portion of the park unit,
15 ruderal woodlands transition to a high-
16 quality, maturing dry-mesic oak woodland.
17 Limited encroachment of invasive species
18 occurs along edges and in openings,
19 particularly along the west power-line.
20 Species include sugar maple, chinkapin oak,
21 white oak, pawpaw, common hackberry,
22 and white ash. Invasive species including
23 multiflora rose and Japanese honeysuckle
24 are encroaching along the power-line to the
25 west.^{3.84}

26

27 In the southeast corner, along the North Fork
28 Paint Creek, four acres of native grassland
29 vegetation have been planted by the park
30 in an area formerly dominated by fallow
31 field species. Species include big bluestem,
32 sideoats grama, black-eyed and brown-eyed
33 Susan, bergamot, and goldenrod. Woody
34 species include Pennsylvania blackberry
35 (*Rubus pensilvanicus*), American elm,
36 multiflora rose, and slippery elm (*Ulmus*
37 *rubra*).^{3.85}

38

39 Along the bicycle path, and near the
40 parking area, vegetation is characterized by
41 ornamental plantings and mown lawn. South
42 of Sulphur Lick Road and west of the native

43

44 3.83 Vick, *Inventory of Mammals*, 4; and Diamond, *Vegetation*
45 *Classification and Mapping*, 31-32.

46 3.84 Diamond, *Vegetation Classification and Mapping*, 22.

3.85 Diamond, *Vegetation Classification and Mapping*, 28-29.



Figure 3-94. Vegetation on the north side of the NPS property transitions from native grassland vegetation to a ruderal shrubland, October 2014. (Quinn Evans Architects 2014)



Figure 3-95. High-quality woodland in the northwest portion of the NPS property. Understory species are limited (note the pawpaw, *Asimina triloba*, in this image) with few invasive species, October 2014. (Quinn Evans Architects 2014)

1 grassland planting is an active hay field.
2 Riparian species are present along the North
3 Fork Paint Creek.

4

5 Analysis

6 The vegetation that characterized the
7 Hopewell Mound Group during the period
8 of significance is not known, therefore it is
9 unknown if the current vegetation reflects the
10 historic vegetation patterns.

11

12 The 1848 map by Squier and Davis indicated
13 that the moraine was wooded, the first
14 terrace was cultivated, and the floodplain
15 was characterized by herbaceous and shrub
16 species.^{3.86}

17

18 By 1891, most of the future NPS land was
19 cleared for cultivation, with the exception of
20 the northwest corner of the park unit, which
21 remained wooded.^{3.87}

22

23 Woody vegetation has increased significantly
24 since 1951, particularly on slopes.

25

26 The vegetation and vegetation patterns of
27 Hopewell Mound Group do not contribute to
28 the archeological landscape.

29

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45 ^{3.86} Squier and Davis, *North Fork Works*.

46 ^{3.87} 1891 Moorehead photographs



Figure 3-96. Native grassland vegetation planted by NPS south of Sulphur Lick Road, October 2014. (Quinn Evans Architects 2014)



Figure 3-97. Comfort Station at Hopewell Mound Group parking area, October 2014 (Quinn Evans Architects 2014)



Figure 3-98. Picnic shelter at Hopewell Mound Group parking area, October 2014. (Quinn Evans Architects 2014)

1 **Buildings and Structures**

2 Existing Condition

3 Buildings and structures at Hopewell
4 Mound Group include a comfort station
5 and picnic shelter associated with the
6 park, two structures associated with a
7 nineteenth century farmstead, a building
8 ruin on the base of the slope within the
9 Great Enclosure, two structures on private
10 property, and transmission towers for the
11 power-line. Construction of all structures may
12 have disturbed archeological resources at
13 Hopewell Mound Group.

14
15 A *comfort station* occurs immediately to the
16 north of the parking area, providing restroom
17 facilities for visitors. The structure was built
18 after 2009 and is in good condition.

19
20 A *picnic shelter* is situated east of the parking
21 area. The structure was built after 2009 and is
22 in good condition.

23
24 A *corn crib* is on the south side of Sulphur
25 Lick Road, immediately to the west of the
26 private garage. It was likely built in the
27 late nineteenth or possibly early twentieth
28 century. The corn crib is in poor condition
29 and in need of immediate stabilization.^{3.88}

30
31 The *Hopewell barn* is west of the corn crib on
32 the south side of Sulphur Lick Road. The barn
33 is a significant example of the architectural
34 and agricultural history of Ohio. It was built
35 in the late eighteenth or early nineteenth
36 century using nontraditional carpentry
37 methods. (Fig. 28 barn 3.jpg) The barn is
38 in poor condition, in need of immediate
39 stabilization.^{3.89}

40
41 *Remnants of cow shed* are within the Great
42 Enclosure, at the base of the slope below the

44 3.88 Rudy Christian, "Corn Crib Evaluation," September 11,
45 2014.

46 3.89 Rudy Christian, "Large Barn Evaluation," September 11,
2014.

1 north wall of the enclosure. The cow shed is
2 in poor condition.

3
4 A high-voltage power-line extends from
5 northeast to southwest through the Hopewell
6 Mound Group earthwork complex. Four steel
7 lattice transmission towers associated with
8 this power-line are located within the park
9 unit. The power-line cuts directly through
10 the earthwork enclosure, likely impacting
11 mounds and other historic resources. Clearing
12 for the power-line also opened up views of
13 the first terrace from the moraine above.

14
15 Analysis

16 All existing buildings and structures at
17 Hopewell Mound Group were built after the
18 period of significance.

19
20 The earliest extant structure is the Hopewell
21 barn, likely built in the late eighteenth or early
22 nineteenth century. The corn crib and cow
23 shed were built later, in the late nineteenth
24 and twentieth centuries. The Hopewell barn
25 is of particular historic interest, and may
26 be historically significant based on year of
27 construction and nontraditional carpentry
28 construction. None of the buildings and
29 structures within the legislated boundary
30 contribute to the archeological landscape.



Figure 3-99. Corn crib south of Sulphur Lick Road, October 2014. (Quinn Evans Architects 2014)



Figure 3-100. Hopewell barn south of Sulphur Lick Road, October 2014. (Quinn Evans Architects 2014)



Figure 3-101. Proximity of transmission tower to overlook on the north side of the Great Enclosure, October 2014. (Quinn Evans Architects 2014)



Figure 3-102. Views are open along the power-line that cuts through the Hopewell Mound Group Unit from northeast to southwest. The earthwork complex is visible from this vantage point, however, views are also opened up to the gravel quarry south of the park unit, October 2014. (Quinn Evans Architects 2014)



Figure 3-103. NPS park identifier sign at Hopewell Mound Group, located at the intersection of Sulphur Lick Road and Maple Grove Road, October 2014. (Quinn Evans Architects 2014)



Figure 3-104. Small scale features in the Hopewell Mound Group parking area include bicycle racks, trash receptacles and signs. October 2014. (Quinn Evans Architects 2014)



Figure 3-105. This sign, on the north side of the Great Enclosure along the interpretive trail, does not relate to archeological features or views. (Quinn Evans Architects 2014)



Figure 3-106. Wood and composite fence at overlook on interpretive trail, October 2014. (Quinn Evans Architects 2014)

1 **Small Scale Features**

2 Existing Condition

3 Small scale features present at Hopewell
4 Mound Group include signs, benches, trash
5 receptacles, electric power poles, picnic
6 tables, bike racks, light posts, fences, and
7 seven blue bird boxes. In general, small scale
8 features are along the interpretive trail,
9 bicycle trail, and parking area. Regulatory
10 signs include traffic signage primarily located
11 within the parking area and along Sulphur
12 Lick Road.

13
14 Signs at Hopewell Mound Group include a
15 park identification sign, waysides, wayfinding
16 signs, and regulatory signage. The park
17 identification sign is at the northwest corner
18 of the intersection of Sulphur Lick Road
19 and Maple Grove Road. Its position does not
20 clearly indicate which road accesses to the
21 park unit.

22
23 Interpretive panels along the interpretive trail
24 are in good condition, but do not all clearly
25 relate to nearby features. Wayfinding signs
26 are small posts moved when the routes of the
27 mown lawn trails are adjusted. Other features
28 associated with the interpretive trail include
29 benches at the overlooks and west side of
30 the enclosure. These benches are composite
31 lumber with metal posts, in good condition.
32 At the western side of the enclosure is a
33 wood bench. A wood and composite fence is
34 also located along the trail at the northern
35 overlook, it is in good condition.

36
37 Wayfinding signs and interpretive panels
38 are along the bicycle trail include a wayside
39 with a wood kiosk with interpretive panels,
40 a bench, and a brass plaque from The
41 Archaeological Conservancy, placed October
42 27, 1980. Two waysides are along the bicycle
43 trail overlooking specific features of the
44 earthwork complex. A wayside and bench are
45 located on the bicycle path at the west end of
46 the park unit.

1 Small scale features associated with the
2 parking area are regulatory signs, bike racks,
3 trash receptacles, lights, picnic tables, and a
4 bird house. They are in good condition.

5
6 A power-line extends along the west
7 boundary, roughly parallel to the Great
8 Enclosure. North of the first terrace, the
9 lines are set into the woodland, not readily
10 visible from the interpretive trail. On the first
11 terrace, the lines are visible to the west of the
12 earthwork complex, extending parallel to the
13 property boundary. As the utility poles and
14 aerial lines cross through the enclosure, and
15 within close proximity to several mounds,
16 it is likely that installation of these utilities
17 disturbed below-grade resources.

18
19 A gate is located in the northeast portion
20 of the park unit near the maintenance road
21 accessed from Maple Grove Road. The fence is
22 in poor condition.

23
24 Analysis

25 The small scale features are not from the
26 period of significance, and do not contribute
27 to the archeological landscape.



Figure 3-107. Movable wayfinding signs are located within the Great Enclosure and Square Enclosure to direct visitors along the interpretive trail. (Quinn Evans Architects 2014)



Figure 3-108. Wayside and bench at the bicycle path near the unit parking area. (Quinn Evans Architects 2014)



Figure 3-109. Interpretive waysides and bench at the east overlook. The overlook emphasizes views to the west toward the Square Enclosure. (Quinn Evans Architects 2014)



Figure 3-110. Utility poles and overhead lines along Sulphur Lick Road on the southwest side of the property facing west. (Quinn Evans Architects 2014)

Buildings and Structures

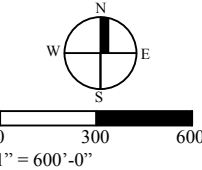
- A Comfort Station
- B Picnic Shelter
- C Large Barn
- D Corn Crib
- E Remnants of Cow Shed

Legend

- NPS Boundary
- Portion of Earthwork not in NPS Ownership
- Water Bodies
- Wetlands
- Lower River Terrace
- 100 Year Floodplain
- Embankment
- Roads
- Gravel Road
- Railroads
- Paved Trail
- Unpaved Trail
- Mown Trail
- 1 ft Contours
- Mound - Extant Above-Grade
- Mound - Extant Below-Grade
- Mound - Unverified
- Earthen Wall - Extant Above-Grade
- Earthen Wall - Extant Below-Grade
- Earthen Wall - Unverified
- Borrow Pit - Extant Above-Grade
- Habitation Site - Unverified
- Ditch - Extant Above-Grade
- Ditch - Extant Below-Grade
- Ditch - Unverified
- Post Hole (within Great Circle) - Extant Below-Grade
- Post Hole (within Great Circle) - Unverified
- Building Remnant - Extant Above-Grade
- Buildings/Structures
- Gateways
- Overhead Lines
- Fence
- Hay Field
- Mown Area
- Shrubland
- Native Grassland
- Woodland

Sources:
Burks, Large Area Magnetic Gradient Survey at the Hopewell Mound Group, 2013; GIS HOCU Lidar, 2012; Squier and Davis, North Fork Works, 1846; State of Ohio Location Based Response System Road Centerlines, 2011; State of Ohio Active Rail Lines; Vegetation Classification for Hopewell Culture National Historical Park, 2004; U.S. FWS, National Wetlands Inventory; U.S. Census Inland Waterways, 2013; FEMA Floodplain Map #39141C0200D; HOCU GIS, Aerial Photograph of Hopewell Mound Group, 1951; Shetrone, 1926; Cowan, 1892; Seeman, 1981; ESRI World Imagery, 2014; field investigations conducted October, 2014.

TIC# 353 128148



OCTOBER 2015	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT		
UNITED STATES DEPARTMENT OF THE INTERIOR	TITLE OF DRAWING HOPEWELL MOUND GROUP - EXISTING CONDITON		
HOPEWELL CULTURE NATIONAL HISTORICAL PARK	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK		
ILLUSTRATION 3-4	REGION MIDWEST	COUNTY ROSS	STATE OHIO 3-115

Seip Earthworks

1 Introduction

2 Seip Earthworks is a geometric earthwork
3 complex of Hopewellian mounds, earthen
4 walls, and borrow pits, set within a horseshoe
5 bend of Paint Creek. Built at a monumental
6 scale, the earthwork complex includes a
7 large circle, connected to a smaller circle
8 and a Large Square that enclose more than
9 100 acres. Two mounds are visible within
10 the space. The 236-acre park unit is open to
11 visitors, and is approximately 16 miles west
12 of Chillicothe, Ohio.

13
14 This archeological landscape is set along the
15 north terrace of Paint Creek. It consists of
16 several archeological features on NPS-owned
17 land, with a portion of the earthwork complex
18 on privately owned land.^{3.90}

19
20 Seip Earthworks is comprised of a Large
21 Circle, Large Square, Small Circle, Seip-Pricer
22 Mound, Seip-Conjoined Mound, and borrow
23 pits. Archeological features are primarily
24 extant earthen walls and mounds—some
25 visible and others extant below-grade;
26 unverified earthen walls; and borrow
27 pits (extant, below-grade).^{3.91} Significant
28 ceremonial deposits have been discovered
29 below-grade.

30
31 This section evaluates the existing condition
32 and analysis of Seip Earthworks by evaluating
33 five landscape characteristics:

- 34
35 • Spatial Organization/Topography/Views
36 • Archeological Features
37 • Circulation
38

39 3.90 Privately owned land was not reviewed or evaluated as
40 part of this study.

41 3.91 A 2012 LiDAR survey for Seip Earthworks has assisted in
42 revealing large, below-grade archeological features. Most
43 of the Large Square and both circles are visible on the
44 LiDAR survey, but none of the little mounds, gateways or
borrow pits are visible. However, these features may still
be extant below-grade.

- 1 • Vegetation
2 • Buildings and Structures
3 • Small Scale Features
4

5 Spatial Organization / Topography / Views

6 Existing Condition

7 Seip Earthworks is built upon the terrace
8 above Paint Creek. The earthwork complex
9 is located at a horseshoe bend in the creek,
10 situated within the wide floodplain.

11
12 The topography gradually rises away from
13 the creek, with the highest portions at the
14 north and east. There are steep embankments
15 on both side of the creek. Little Copperas
16 Mountain is the landform to the south. Views
17 from the earthwork complex are up and down
18 the valley floor, to the hills on either side of
19 the valley, and the rocky bluffs across the
20 creek.

21
22 The park unit consists of four spatially
23 distinct spaces.

- 24
25 • Earthwork complex and fields
26 • Visitor area (parking / picnic)
27 • Blackstone House
28 • Creek edge / overlook / canoe and kayak
29 stop
30

31 The earthwork complex is framed by the bend
32 of the creek. The tripartite formation of the
33 Large Circle, Large Square, and Small Circle
34 create a vast enclosure framed by the earthen
35 walls. The Large Circle is located at the center,
36 the Large Square is to the southeast, and
37 the Small Circle is to the west, connected by
38 narrow gateways.

39
40 These are the primary archeological features:
41 massive in scale, and built of earthen walls—
42 some extant (visible and above-grade), and
43 others that are extant (below-grade)—that
44 form the outline of the shape and define the
45 form of each archeological features.



Figure 3-111. Seip Earthworks is organized in relationship to Paint Creek and was built upon the terrace above the creek. (Mundus Bishop 2014)



Figure 3-112. Looking south toward the Seip-Pricer Mound with Little Copperas Mountain in the background. (Mundus Bishop 2014)

1 These earthen walls, and large interior open
2 spaces form three separate but connected
3 enclosures that span many acres. The spaces
4 intersect, connected by narrow gateways.
5
6 Additional openings or gateways occur
7 within the earthen walls of the earthwork
8 complex. Within the vast interior open spaces
9 are views to the surrounding hills. Within
10 the Large Circle, two mounds rise above the
11 otherwise level topography of the enclosure.
12 The Seip-Pricer Mound is near the center of
13 the circle, and the Seip-Conjoined Mound
14 is northeast of the Seip-Pricer Mound. The
15 Seip-Pricer Mound, a large elliptical, domed
16 structure, is the most visible feature at Seip
17 Earthworks.
18
19 The visitor area includes a parking area and
20 picnic areas, and is a semi-enclosed space.
21 Mature trees and a mown lawn create a
22 park-like appearance and contrast with the
23 openness of the adjacent hay fields. Views
24 from the visitor area are directed towards the
25 Seip-Pricer Mound.
26
27 The area around the Blackstone House and
28 outbuildings is spatially distinct, separated
29 from the rest of the park unit by an asphalt
30 drive, fence row and trees. Trees and unmown
31 grasses cluster around the Blackstone House,
32 which stands out against the terrain. The
33 house was built on top of the Large Circle, and
34 views are towards the river.
35
36 The creek edge is spatially distinct from the
37 earthwork complex. The wooded creek edge
38 creates an enclosed space, except where a
39 mown lawn clearing occurs at the overlook
40 at Paint Creek. A steep slope descends to the
41 creek. This area is mostly wooded except for
42 the small clearing.
43
44
45
46

1 Analysis
2 The monumental scale and geometric
3 complexity of Hopewellian earthwork
4 construction is best expressed at Seip
5 Earthworks. Since the period of significance,
6 the spatial organization, topography, and
7 views at Seip Earthworks have been altered.
8
9 Agricultural practices in the eighteenth
10 through twentieth centuries, the Blackstone
11 House built on top of the Large Circle, c. 1840,
12 and Dill Road built across the Large Square all
13 damaged above-grade archeological features,
14 impacting the spatial organization.
15
16 In the twentieth century portions of the
17 Large Circle and Seip-Pricer Mound were
18 reconstructed, which assist in recreating the
19 historic spatial organization.
20
21 The spatial organization, topography, and
22 views at Seip Earthworks contribute to the
23 archeological landscape.
24
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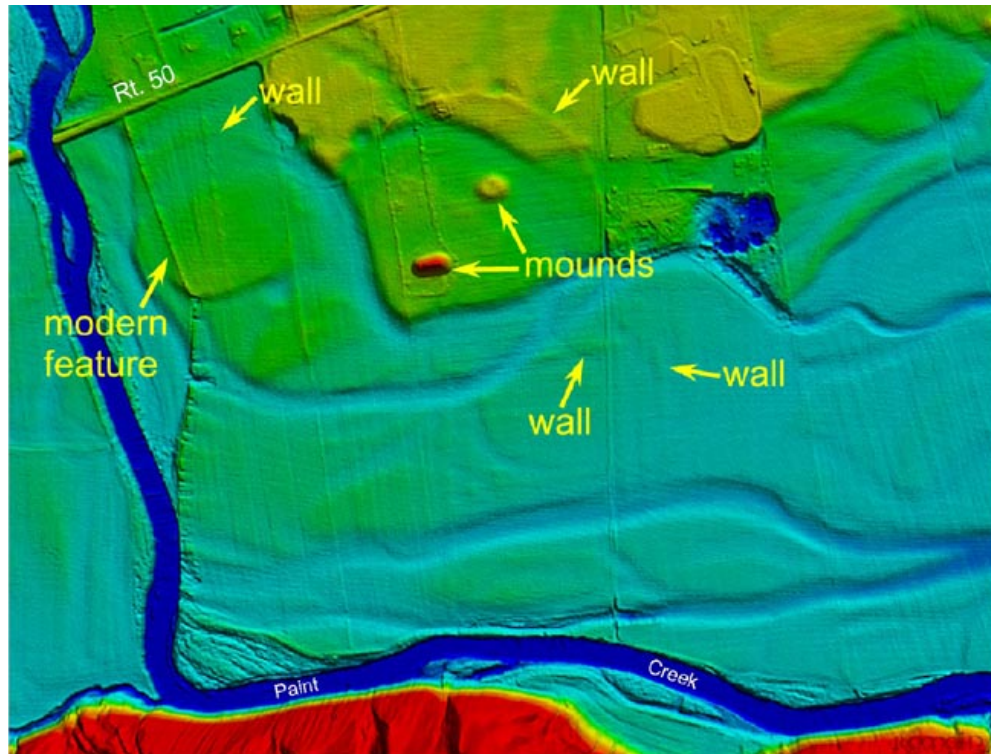


Figure 3-113. The 2012 LiDAR depicts the topographic expression of portions of the earthen walls, the Seip-Pricer Mound, and the Seip-Conjoined Mound. (Romain and Burks 2008)



Figure 3-114. Only a small portion of the Large Circle is visible because it was reconstructed in 1927. The remainder of the Large Circle is evident on the LiDAR survey but difficult to discern from ground level. (Mundus Bishop 2014)

Archeological Features

Existing Condition

The archeological features of Seip Earthworks include large multicomponent structures made of sand, gravel, and soil. The earthwork complex includes walls, gateways, mounds, and borrow pits, both above and below-grade. Some features are not easily observable on the surface, but are clearly visible in the 2012 LiDAR survey.

Seip Earthworks has five main archeological features: Large Circle with associated borrow pits; Large Square; Small Circle; the Seip-Pricer Mound; and the Seip-Conjoined Mound. Smaller archeological features include small mounds, borrow pits, building remnants, and other below-grade features.

The archeological features are organized into three types: extant (visible) above-grade; extant below-grade; and unverified. Some features mapped in the mid 1800s are not visible on the surface or on the LiDAR survey but may still be extant.^{3.92}

Some archeological features are difficult to discern to the untrained eye, while others are visible. Some have been reconstructed or partially reconstructed. All archeological features have been modified by land use practices, specifically agricultural crop production, and construction of contemporary elements over and near them. The condition of below-grade archeological features is unknown.^{3.93}

Large Circle is the largest feature at Seip Earthworks, composed of an earthen wall that forms the outline of the circle. Only a small portion of the Large Circle is visible,

^{3.92} A high-resolution magnetic survey would likely reveal these features.

^{3.93} Contemporary elements build over portions of Seip Earthworks include roads, fences, Blackstone House, and outbuildings.

but the extant below-grade circle is evident on the LiDAR survey. A small segment of the north wall of the Large Circle was rebuilt after excavation in the 1920s and is the most visible portion. Most of the circle is a mown hay field.

Portions of the circle have been flattened in height by on-going agricultural practices, and are no longer visible. Historic maps from 1848 note four gateways along the perimeter of the wall, but these are neither visible on the surface or on the LiDAR survey. The Old Seip House / Blackstone House and outbuildings were built on top of the earthen wall circa 1840.

The extant above-grade features of the Large Circle are in poor condition, due to agricultural practices that have negatively impacted the condition of the earthwork.

Seip-Pricer Mound is the largest mound within the earthwork complex, and the most visible feature. Seip-Pricer Mound is located at the approximate center of the Large Circle. It consists of a large elliptical, domed structure of sand, gravel, and soil, with a flat area on top of the mound. It is the third largest burial mound the Hopewell are known to have built and it measures 240 feet by 160 feet, and 30 feet high. The Seip-Pricer Mound is maintained with mown lawn. The Seip-Pricer Mound was reconstructed after extensive excavation in the past. Below-grade features are likely extant. The reconstructed mound is in good condition. The condition of the below-grade archeological features is unknown.



Figure 3-115. Seip-Pricer Mound is the largest mound within Seip Earthworks and the most visible feature. (Mundus Bishop 2014)



Figure 3-116. The Seip-Conjoined Mound, maintained as mown lawn, is four feet tall. (Mundus Bishop 2014)



Figure 3-117. Dill Road is a north south route that connects ends at the edge of Paint Creek. The dirt road is eight feet wide and crosses the Large Square earthwork, shown as a dashed line. (Mundus Bishop 2014)

1 The *Large Square* is to the south of the Large
2 Circle, set in a mown hay field. Dill Road
3 transects the earthwork from north to south.
4 The Large Square is of a series of unconnected
5 earthen walls that form a perfect square of 27
6 acres. The square is broken by eight gateways
7 or openings in the walls, at corners and mid-
8 points of the four sides. Portions of the earth
9 wall are evident where it intersects Dill Road.
10 Generally, the Large Square is not visible on
11 the surface.

12
13 According to investigation in 1848, the Large
14 Square originally had four small mounds
15 in its the enclosure, corresponding to each
16 gateway. These four small mounds were not
17 documented by the LiDAR survey.

18
19 The above-grade features of the Large Square
20 are in fair to poor condition. Agricultural
21 practices and the construction of Dill Road
22 across the earthwork have negatively
23 impacted the condition of the above-grade
24 resources. The condition of extant below-
25 grade features is unknown.

26
27 The *Small Circle* is conjoined with the
28 Large Circle on the Large Circle's west side,
29 connected by a narrow gateway. The Small
30 Circle is built of earthen walls, below-grade,
31 that form a continuous, perfect circle. The
32 Small Circle is a large mown hay field. The
33 portion of the Small Circle's earthen wall,
34 above-grade is not visible. The extant below-
35 grade walls were identified in the LiDAR data,
36 showing its intact topographic outline below-
37 grade. The condition of these below-grade
38 features are unknown. Above-grade features
39 are in poor condition as the features are no
40 longer visible on the surface due to extensive
41 previous agricultural practices that have
42 flattened these features.

43
44 The *Seip-Conjoined Mound* is the second
45 largest mound within this earthwork
46 complex. It is located within the enclosure of

1 the Large Circle, northeast of the Seip-Pricer
2 Mound. This mound is actually three mounds
3 of similar size that were connected with
4 an overlaying mound. The Seip-Conjoined
5 Mound is a mown lawn that appears as
6 one singular mound and no longer reads as
7 three. The mound measures four feet above
8 adjacent grade, and is approximately 250 feet
9 in diameter at the base. The Seip-Conjoined
10 Mound is indicated on the LiDAR survey.

11
12 The above-grade features of the Seip-
13 Conjoined Mound are in fair condition.
14 Past agricultural practices have negatively
15 impacted the earthwork. The condition of
16 the below-grade archeological features is
17 unknown.

18
19 According to the 1848 map by Squier and
20 Davis, the Large Circle is surrounded by 15
21 *borrow pits*, outside of the enclosure on the
22 north edge of the earthen walls. None of the
23 borrow pits are visible, and are not indicated
24 on the LiDAR survey. The condition of the
25 borrow pits is unknown.

26
27 Other archeological features include remains
28 of four *structures* in the enclosure of the Large
29 Circle, to the north of the Seip-Pricer Mound.
30 The foundations are subtle, but have been
31 outlined with timbers for interpretation.
32 Evidence has recently revealed additional
33 structures in this area, including a possible
34 post circle.^{3.94}

35
36 A high-resolution magnetic survey would
37 reveal extant below-grade features including
38 the extents of the earthen walls, borrow pits,
39 mounds, gateways, and might reveal building
40 footprints, post-holes, floors, or burial pits.

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3.94 Speilmann and Burks, 2011.

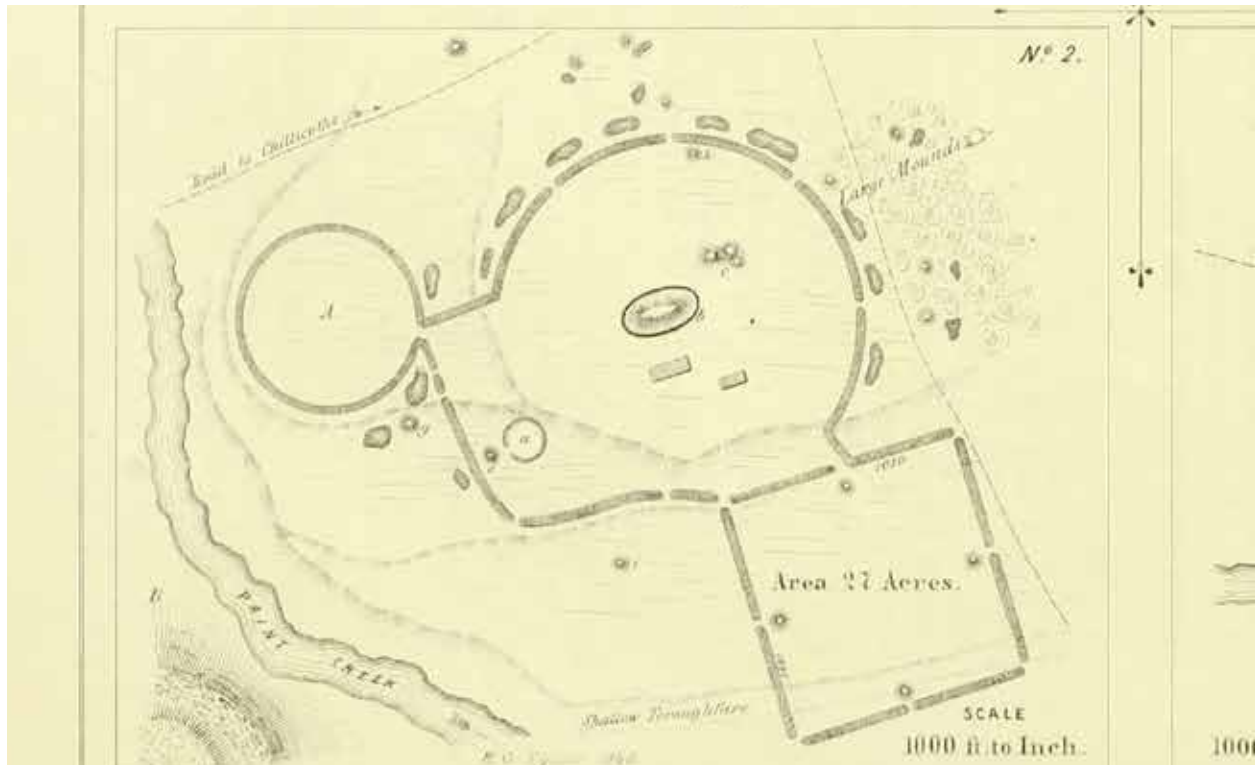


Figure 3-118. The 1848 Squire and Davis plan depicts a large tripartite earthwork with a Large Circle conjoined with a square and smaller circle. (Hopewell Culture NHP Archives)

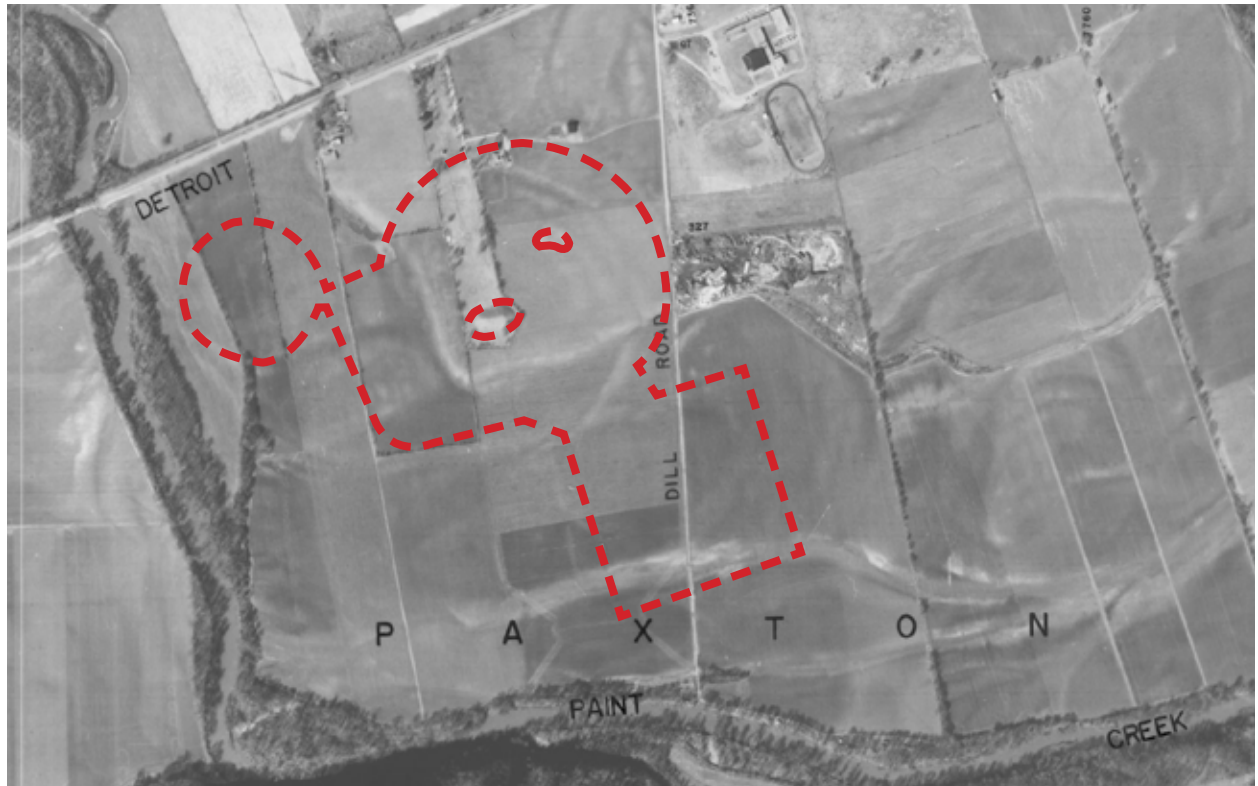


Figure 3-119. The 1976 aerial with a red dashed line depicts the Seip-Pricer Mound and Seip-Conjoined Mound, and portions of the tripartite earthwork. (Hopewell Culture NHP Archives)

1 Analysis

2 The archeological features of Seip Earthworks
3 remain similar to their original construction.
4 During the period of significance the
5 Hopewell built a large tripartite earthwork
6 with a Large Circle conjoined with a Square
7 and Smaller Circle. Two large mounds were
8 built within the Large Circle for ceremonies
9 and burials.

10

11 Since the period of significance, the
12 archeological features at Seip Earthworks
13 have been altered due to erosion, excavation,
14 and agricultural practices.

15

16 The construction of Blackstone House, c.
17 1840, on top of the Large Circle, and Dill
18 Road across the Large Square in the 1800s
19 negatively impact the archeological features.
20 In addition, extensive excavation of the Seip-
21 Pricer Mound removed all but a small portion
22 on the extreme eastern end. After this work
23 the mound was reconstructed. A portion of
24 the Large Circle was reconstructed in the
25 1920s by the Ohio Historical Society.

26

27 Based on the magnetic survey completed
28 2009 to 2012, extant below-grade
29 archeological features of the enclosure and
30 mounds are intact, the reconstructed mounds
31 are located in the correct positions.

32

33 The condition of extant below-grade
34 archeological features is unknown, but it
35 is likely that these features retain integrity.
36 Above-grade archeological features have
37 been damaged, but the Seip-Pricer Mound,
38 Seip-Conjoined Mound, and portions of the
39 Large Circle retain integrity. The archeological
40 features of Seip Earthworks are contributing
41 features to the archeological landscape.

42

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Figure 3-120. The parking area is asphalt paved with unmarked parking available at the perimeter of the drive. (Mundus Bishop 2014)



Figure 3-121. Dill Road crosses the Large Earthwork. (Mundus Bishop 2014)



Figure 3-122. A five foot wide asphalt paved trail connects the parking area to two interpretive panels. (Mundus Bishop 2014)



Figure 3-123. Informal mown routes connect the parking area with earthworks. (Mundus Bishop 2014)

1 **Circulation**

2 Existing Condition

3 The circulation system of Seip Earthworks is
4 composed of vehicular and pedestrian routes.
5 The vehicular system includes access roads
6 and internal routes that connect to the creek
7 and to the Blackstone House. The pedestrian
8 system includes paved sidewalks, informal
9 mown lawn paths, and dirt / gravel trails.

10

11 Vehicular access to Seip Earthworks is via U.S.
12 Highway 50, a two-lane highway oriented east
13 to west that connects the towns of Chillicothe
14 and Bainbridge, Ohio. This route passes the
15 north edge of Seip Earthworks.

16

17 *Dill Road* is a north south route that connects
18 to Highway 50 at the north and ends at the
19 edge of Paint Creek. The dirt road is eight feet
20 wide and crosses the Large Square earthwork.

21

22 The *parking area* is asphalt paved, with
23 unmarked parking at the perimeter of the
24 drive. The parking area forms a loop drive,
25 approximately 24 feet wide, connecting on
26 either end to Highway 50. The parking area
27 has pot holes and is in fair to good condition.

28

29 An *asphalt-paved drive* from Highway 50 leads
30 to the south, ending at the north edge of the
31 earthwork complex. This drive is in good to
32 fair condition.

33

34 A remnant *gravel drive* trace is in front of the
35 Blackstone House. This route connects with
36 the asphalt drive on the west. The drive is
37 approximately 20 feet wide, and is in poor
38 condition.

39

40 A *service / access road* is west of the parking
41 area, extending roughly north south. It
42 extends from Highway 50 on the north to the
43 creek and overlook at the south. It is in fair
44 condition.

45

46

1 A network of *paths* provides access to the
2 picnic area, earthwork complex, and natural
3 areas including the creek edge.

4

5 A five foot wide *asphalt-paved trail* connects
6 the parking area to two interpretive panels
7 and a drinking fountain, and is in fair
8 condition. A five foot wide asphalt-paved trail
9 connects the visitor parking area to the picnic
10 shelter. This trail is in fair condition, with
11 pavement heaving in places.

12

13 A mown trail leads to a *canoe and kayak stop*
14 on Paint Creek, near the overlook.

15

16 Informal routes link the parking area to
17 the earthwork complex. These routes are
18 maintained as mown lawn.

19

20 Analysis

21 Modifications to the circulation system at Seip
22 Earthworks since the period of significance
23 include Dill Road, added by the mid-1800s,
24 a parking area and pedestrian paths in the
25 1920s, and loop drive added around the Seip-
26 Pricer Mound in the 1960s, which has
27 since been removed.

28

29 Over time, travel by water decreased and
30 the road network increased. The canoe
31 launch at Seip Earthworks provides the only
32 access point for water-based travel, which is
33 reflective of the historic pattern of movement.

34

35 The circulation routes that exist today are not
36 from the period of significance and are non-
37 contributing features.

38

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Figure 3-124. The mown lawn includes the Seip-Pricer Mound and portions of the Large Circle. In these locations, the visitor areas and the earthworks are maintained the same, as regularly mown lawn. (Mundus Bishop 2014)



Figure 3-125. Most earthworks are covered with fallow fields that are periodically mown. This vegetation may obscure the visibility of features. (Mundus Bishop 2014)

1 **Vegetation**

2 Existing Condition

3 The vegetation of Seip Earthworks includes
4 mown lawn, riparian forest, and hay fields.
5 Most of the land is cleared, with mown hay
6 fields on the earthwork complex, mown lawn
7 at the picnic area and around the Blackstone
8 House. The riparian forest occurs along the
9 bank of Paint Creek.

10

11 The vegetation at the picnic area includes
12 mown lawn with trees, including white ash,
13 maple and oaks species, and red buckeye.
14 Vegetation at the Blackstone House includes
15 mown lawn and trees placed in the lawn area.
16
17 The mown lawn area includes the Seip-Pricer
18 Mound and portions of the Large Circle. In
19 these locations, the visitor areas and the
20 earthwork complex are maintained the same,
21 as regularly mown lawn.

22

23 The hay fields are a mixture of pasture
24 grasses. A tree line of hackberries outline the
25 edges of the central parcel (once owned by
26 the Ohio Historical Society) that extends from
27 the picnic area to the Seip-Pricer Mound.

28

29 A woodland group occurs in a narrow strip
30 along the park unit's west edge. This group
31 includes plant communities that show
32 evidence of heavy human use (clearing,
33 plowing) in the past. Woody species have
34 volunteered into these areas. Tree species
35 include honeylocust (*Gleditsia triacanthos*),
36 black cherry, white ash, autumn olive.

37

38 Prairie species occurs on the majority of the
39 earthwork complex, and is periodically mown.
40 This vegetation may obscure the visibility of
41 features.

42

43 A riparian area occurs along the bank of Paint
44 Creek. The riparian edge at Seip Earthworks
45 is composed of very large American
46 sycamores, green maple (*Acer spp.*), and green

1 ash (*Fraxinus pennsylvanica*). Other plants in
2 on the riparian floor includes garlic mustard,
3 common blue violet, smooth sweet cicely, and
4 tall fescue.^{3.95}

5

6 Analysis

7 It is unknown what the vegetation was during
8 the period of significance. It is unknown if
9 the vegetation at Seip Earthworks reflects the
10 historic pattern.

11

12 The 1848 maps by Squier and Davis indicate
13 that Seip Earthworks was cleared of trees.
14 Extant vegetation includes trees planted at
15 the Blackstone House and around the picnic
16 area.

17

18 The vegetation and vegetation patterns of
19 Seip Earthworks are non-contributing to the
20 archeological landscape.

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3.95 Vick, *Inventory of Mammals*, 3.



Figure 3-126. The Blackstone House is on top of a portion of the Large Circle, and is in fair condition. (Mundus Bishop 2014)



Figure 3-127. Two outbuildings south of the Blackstone House, both are in fair to poor condition. (Mundus Bishop 2014)

1 **Buildings and Structures**

2 Existing Condition

3 The buildings and structures at Seip
4 Earthworks are for visitor uses and those
5 remaining from previous uses.

6
7 The *Blackstone House* is a two-story brick
8 house with a stone foundation. It is north of
9 the earthwork complex, oriented toward the
10 highway with the front facade on the north.
11 The building is on top of a portion of the
12 Large Circle and is in fair condition.

13
14 Two *outbuildings* are south of the Blackstone
15 House. They are green painted brick with
16 openings for doors on the north facade
17 but have no doors and small openings for
18 windows. The buildings are approximately
19 16 feet by ten feet and have corrugated metal
20 roofs with gutters and drains. These buildings
21 are in fair to poor condition.

22
23 A wood frame *picnic shelter* is near the
24 parking area. The structure has turned
25 log posts and beams, wood shingles and
26 a concrete floor. Portions of the roof are
27 buckling. A painted wooden bench is located
28 on the outer edge. A three foot gravel edge is
29 on the southeast and south sides. An asphalt
30 edge on the east side is less than four foot
31 wide. The concrete floor is cracked, and
32 two posts area losing wood at the base. The
33 structure is in good to fair condition, but the
34 concrete floor is in poor condition.

35
36 A temporary *portable restroom* is in the turn
37 around at end of the entry drive. An unstained
38 wood deck is located at the overlook at Paint
39 Creek. The deck has a railing and vertical
40 slats. The deck is t-shaped, and is at an
41 elevation of 30 to 40 inches off grade.

42
43 A white, wood framed *fish camp building* is on
44 a ridge above Paint Creek. It has a concrete
45 floor and asphalt shingle roof. The building
46 has three rooms with a lean-to. The doors are
47 missing, and the building is in poor condition.

1 A gray cedar wood framed *privy* with a wood
2 roof is part of the fish camp. The shed has
3 no shingles, and no door, but has an interior
4 bench. This building is in poor condition.

5
6 A *building remnant* is near the fish camp. The
7 building has shifted off to the side, and has
8 nearly fallen over. The chimney is in place,
9 but it is damaged. This building is in poor
10 condition and hazardous.

11
12 Analysis

13 Since the period of significance, any
14 Hopewellian buildings and structures have
15 disappeared. Buildings were added to the
16 landscape during settlement by European
17 Americans, including the Blackstone House,
18 c. 1840, and the fish camp building, dates
19 unknown. The Blackstone House is listed in
20 the NRHP, and is historically significant in
21 its own right, but does not contribute to the
22 significance of the archeological landscape.
23 The fish camp buildings and picnic shelter
24 might be of historic interest, but do not
25 contribute to the archeological landscape.



Figure 3-128. The wood framed picnic shelter has turned log posts and beams, wood shingles and a concrete floor. (Mundus Bishop 2014)



Figure 3-129. A white, wood frame fish camp building has three rooms with a lean-to. The building is in poor condition. (Mundus Bishop 2014)



Figure 3-130. A gray cedar wood frame privy with a wood roof is part of the fish camp. The shed has no shingles, no door, but an interior bench. (Mundus Bishop 2014)



Figure 3-131. A building remnant near the fish camp is in poor condition and may be hazardous. (Mundus Bishop 2014)



Figure 3-132. The identification sign is south of the parking area. Two interpretive panels are near the shelter. (Mundus Bishop 2014)



Figure 3-133. There are five picnic tables at the picnic area. Three are wood, and two are of Trex. (Mundus Bishop 2014)

1 **Small Scale Features**

2 Existing Condition

3 The small scale features within Seip
4 Earthworks include signs and interpretive
5 panels, outdoor furniture and visitor
6 amenities, fences, and utilities.

7
8 *Signs* at Seip Earthworks include a park
9 identification sign, waysides, wayfinding
10 signs, and regulatory signage. The
11 identification sign is south of the parking area
12 and picnic shelter. Five interpretive panels
13 are in the park unit, all set on powder-coated
14 steel posts. Two are near the parking area,
15 one is near Seip-Pricer Mound, and two are at
16 the Paint Creek overlook. A commemorative
17 brass plaque on a concrete base is at the base
18 of an Ohio Buckeye near the parking area.
19 Signs are in good condition.

20
21 Five *picnic tables* are at the picnic area. Two
22 are wood, and two are of Trex. The picnic area
23 also has an accessible drinking fountain, and
24 trash and recycle receptacles.

25
26 An unstained *wood deck* is at the overlook
27 at Paint Creek. The deck has a railing with
28 vertical slats. The deck is t-shaped, and is set
29 approximately 30 inches to 40 inches above
30 adjacent grade. The wood deck has one wood
31 picnic table, and two benches made of steel
32 with wood slats. Near the deck is a canoe /
33 kayak launch on Paint Creek.

34
35 *Fences* are of two types. A split-rail
36 fence with a gate is on the west edge of the
37 Blackstone House. It is a three-rail fence
38 of unpainted cedar. A galvanized steel gate
39 is located at the north end of the fence. A
40 welded wire fence is along portions of the
41 property boundary. Thirty-five painted wood
42 bollards are at the edge of the parking area.
43 They are set in a regular pattern, one is
44 damaged.

45
46



Figure 3-134. Overhead powerline at Dill Road.
(Mundus Bishop 2014)

1 Three *overhead power-lines* are at Seip
2 Earthworks. One is along Paint Creek. Another
3 with wood posts is from Blackstone House to
4 the west, and a power pole is at Dill Road.

5
6 *Trash*, debris, and an informal dump site are
7 at the Fish Camp.

8
9 A silver painted *propane tank* and a
10 stand pipe connection are adjacent to the
11 Blackstone House.

12
13 Analysis

14 The small scale features are not from the
15 period of significance and do not contribute
16 to the archeological landscape.

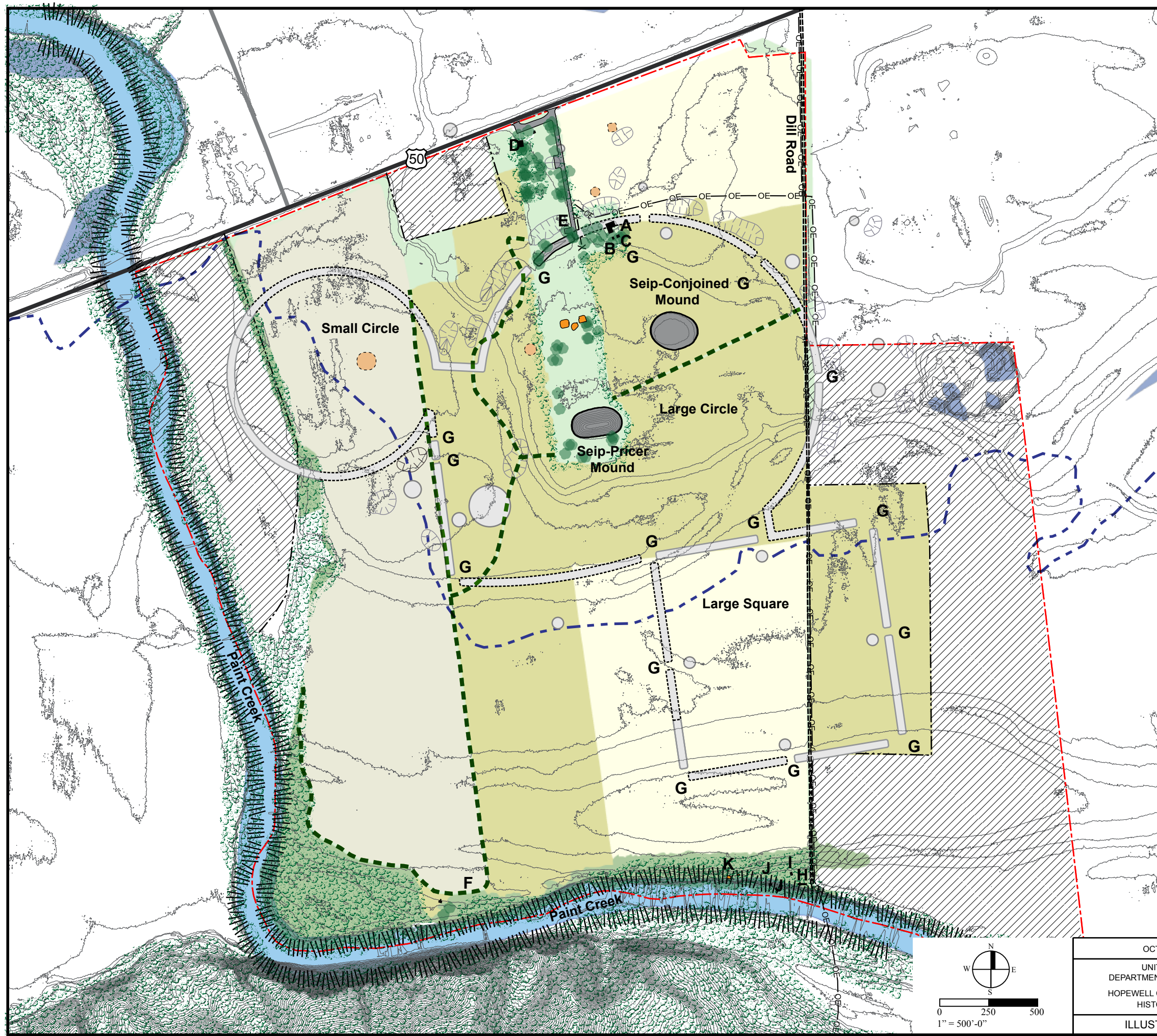
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Figure 3-135. The deck at Paint Creek is t-shaped, set approximately 30 to 40 inches above adjacent grade. (Mundus Bishop 2014)



Figure 3-136. A split-rail fence with a gate is on the west edge of the Blackstone House. (Mundus Bishop 2014)

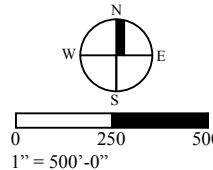


- Legend**
- NPS Boundary
 - Portion of Earthwork not in NPS Ownership
 - Water Bodies
 - Wetlands
 - 100 Year Floodplain
 - Embankment
 - Highway
 - Paved Road
 - Unpaved Road
 - Paved Trail
 - Mown Trail
 - 1 ft Contours
 - Mound - Extant Above-Grade
 - Mound - Unverified
 - Earthen Wall - Extant Above-Grade
 - Earthen Wall - Extant Below-Grade
 - Earthen Wall - Unverified
 - Borrow Pit - Extant Below-Grade
 - Borrow Pit - Unverified
 - Building Remnant - Extant Above-Grade
 - Remnant - Extant Below-Grade
 - Buildings/Structures
 - G Gateways
 - OE Overhead Lines
 - Fence
 - Crop
 - Hay Field
 - Mown Lawn
 - Native Grasses
 - Shrubland
 - Woodland
 - Tree

- Buildings and Structures**
- A Blackstone House
 - B Outbuilding
 - C Outbuilding
 - D Picnic Shelter
 - E Porta Potty
 - F Wood Deck
 - H Fish Camp Building
 - I Shed Privy
 - J Privy
 - K Building Remnant

Sources:
Magnetic Survey 2015, GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; Seip Marshall NAD83; <https://m-sc.fema.gov/portal/search?AddressQuery=chillicothe>; <http://www.fws.gov/wetlands/Data/Mapper.html>; 2014 Google Maps

TIC# 353 128148



OCTOBER 2015	TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT		
UNITED STATES DEPARTMENT OF THE INTERIOR	TITLE OF DRAWING SEIP EARTHWORKS - EXISTING CONDITION		
HOPEWELL CULTURE NATIONAL HISTORICAL PARK	NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK		
ILLUSTRATION 3-5	REGION MIDWEST	COUNTY ROSS	STATE OHIO 3-137

High Bank Works

1 Introduction

2 High Bank Works is a monumental
3 Hopewellian earthwork complex consisting of
4 a conjoined circle and octagon, parallel walls,
5 and interlocking circles, set on a terrace 60
6 feet above the confluence of the Scioto River
7 and Paint Creek. The 197-acre park unit is
8 one of two park units with no visitor facilities.
9

10 High Bank Works is located approximately
11 five miles south of Chillicothe, Ohio, and
12 nine miles from the park visitor center. It is
13 on the west side of U.S. Highway 35 and the
14 Baltimore and Ohio / Chesapeake and Ohio
15 railroads, accessed by old US Route 35 /
16 County Road 900.
17

18 This archeological landscape is built upon the
19 upper terrace of the east bank of the Scioto
20 River. It occurs on two discontinuous NPS
21 owned parcels, and the privately owned land
22 between them. (The private land was not
23 reviewed or evaluated as part of this study).
24

25 High Bank Works is comprised of several
26 geometric archeological features: the Great
27 Circle and Octagon, Parallel Walls, and the
28 South Earthworks (Turpen Tract Works), with
29 specific astronomical alignments.
30

31 Archeological features are primarily extant
32 earthen walls—some visible and others
33 below-grade; unverified earthen walls; and
34 borrow pits (previously identified and extant,
35 below-grade).^{3.96}
36
37
38
39

40 3.96 The 2013 high-resolution magnetic survey for High Bank
41 Works revealed below-grade archeological features of
42 the Great Circle and Octagon, and the South Earthwork.
43 This information was used during the 2014 CLR field
44 investigations to assist in locating non-visible features
and evaluating the existing condition of the earthwork
complex.

1 This section evaluates the existing condition
2 and analysis of High Bank Works through five
3 landscape characteristics:
4

- 5 • Spatial Organization / Topography /
6 Views;
- 7 • Archeological Features;
- 8 • Circulation;
- 9 • Vegetation;
- 10 • Small Scale Features
11

12 Spatial Organization / Topography / Views 13 Existing Condition

14 High Bank Works is organized in relationship
15 to the confluence of the Scioto River with
16 Paint Creek. It is entirely built upon the river's
17 east terrace, more than 60 feet above the
18 lower river terraces, and out of the 100 year
19 floodplain of the two streams. A steep slope
20 separates this upper terrace from the lower
21 terrace.
22

23 This spatial arrangement gives the earthwork
24 complex its name—High Bank Works—set
25 above the river on a high bank. Views are
26 to the Appalachian foothills in the distance,
27 with individual earthwork elements oriented
28 towards prominent peaks. Other views from
29 the earthwork complex are to the river valley.
30

31 This earthwork complex is oriented length-
32 wise along the river's edge. At the north end
33 of the earthwork complex, on NPS owned
34 land, are the archeological features of the
35 Great Circle and Octagon. Near the south
36 end, also on NPS owned land, is the South
37 Earthworks comprised of a series of smaller
38 circles. Between these archeological features
39 are the Parallel Walls, on privately owned
40 land, that connect the two spaces.
41
42
43



Figure 3-137. Views are to the Appalachian foothills in the distance, with individual earthwork elements oriented towards prominent peaks. (Mundus Bishop 2014)



Figure 3-138. The earthen walls of the Great Circle enclose 20 acres, at right, and the Octagon encloses 18 acres, at left. An access road runs through the Great Circle. (Mundus Bishop 2014)

1 The Great Circle and Octagon are the primary
2 archeological features: massive in scale, and
3 built of earthen walls—some extant (visible
4 and above-grade), and others that are extant
5 (below-grade)—that form the outline of the
6 shape and define the form of each earthwork.
7 These earthen walls and large interior open
8 spaces form two separate but connected
9 enclosures that span several acres. The
10 earthen walls of the Great Circle enclose 20
11 acres and the Octagon encloses 18 acres.

12
13 The two spaces intersect, connected by a
14 narrow gateway. Additional openings or
15 gateways occur within the earthen walls of
16 both archeological features. The Great Circle
17 has two gateways, one at the south edge
18 and another at the east. Eight gateways are
19 associated with the Octagon, located at the
20 vertices.

21
22 The Parallel Walls, on private property,
23 connect the two NPS owned parcels. Oriented
24 roughly north south, these features are
25 approximately 1/4 mile long and linear. The
26 Parallel Walls extend from the south corner
27 of the Octagon to the north edge of the South
28 Earthworks, and create a narrow corridor
29 between the two larger, open areas at the
30 north and south.

31
32 The South Earthworks are in an open
33 field, on the high bank above the river. The
34 archeological features are not visible on
35 the surface, however below-grade features
36 include three interlocking circles of different
37 sizes. The largest circle is in the shape of a
38 large 'C' due to the adjacent riverbank, and
39 encloses an area of approximately 12 acres.
40 Smaller circles are to the east and the south,
41 each with open interior spaces that have
42 gateways within the earthen walls.

43
44
45
46

1 Analysis

2 The geometrical complexity, precision and
3 astronomical alignment of Hopewell earthen
4 architecture is best expressed at High Bank
5 Works. The alignment of the earthwork
6 complex is thought to be based on celestial
7 events, with the orientation of the sun and
8 moon as organizing principles. Research in
9 1984 discovered that the earthen walls and
10 gateways within the Great Circle and the
11 Octagon align with solar sunrise and sunset
12 points at the winter and summer solstices.
13 They also align with the moon rise and moon
14 set, based on the 18.6 year lunar cycle. Other
15 gateways align and frame celestial events.^{3.97}

16
17 Since the period of significance, the spatial
18 organization, topography, and views at High
19 Bank Works have been altered. Agricultural
20 practices in the eighteenth through twentieth
21 centuries have damaged above-grade
22 archeological features, making the spatial
23 organization less visible. Roads, railroads,
24 buildings, and utility lines have further
25 damaged the spatial organization and views.
26 The private gravel road across the Great Circle
27 and Octagon and railroad across the Parallel
28 Walls disrupt the historic organization.

29
30 Although the archeological landscape has
31 eroded, significant archeological features and
32 their distinctive spatial arrangement remain.
33 The spatial organization, topography, and
34 views at High Bank Works are contributing
35 features to the archeological landscape.

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44

45 3.97 Ray Hively and Robert Horn, "Hopewellian Geometry and
46 Astronomy at High Bank," *Archaeoastronomy Supplement
to Journal for the History of Astronomy* (1984).

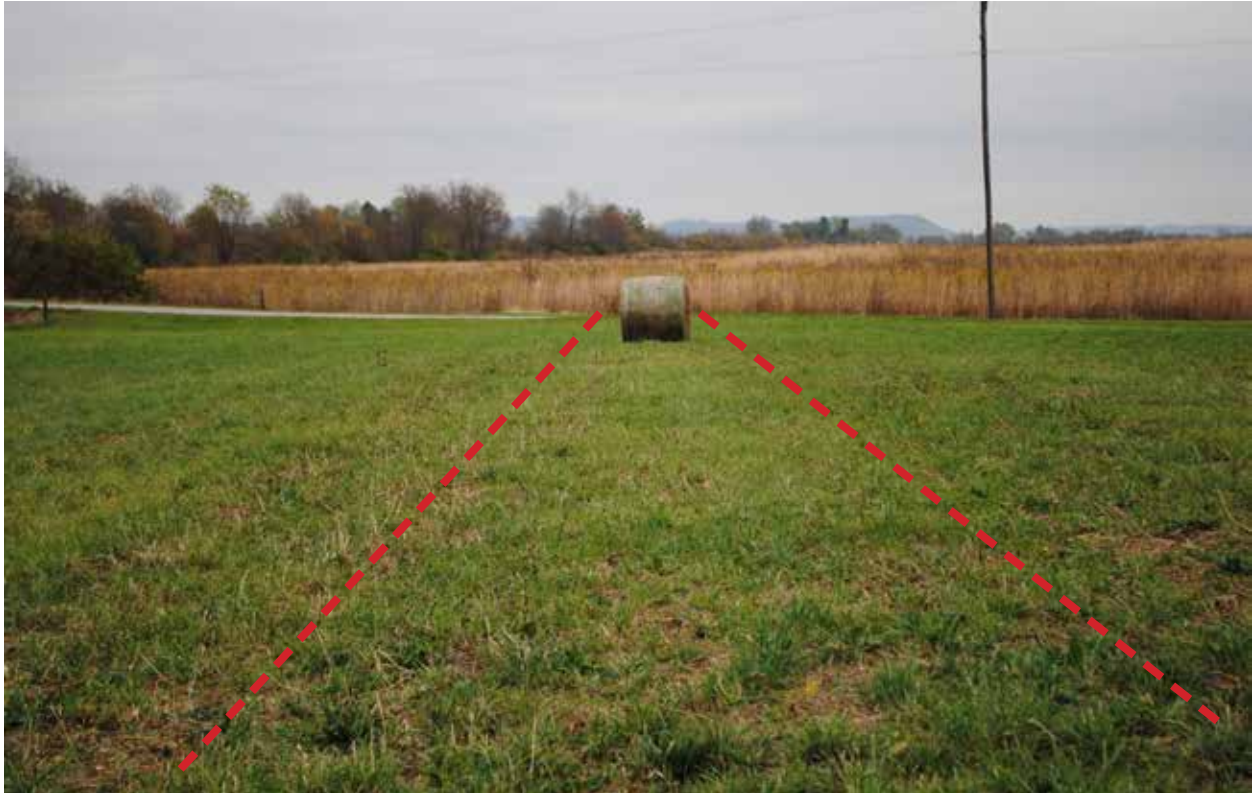


Figure 3-139. The Great Circle earthen wall, shown as a dashed line, is difficult to discern to the untrained eye. (Mundus Bishop 2014)



Figure 3-140. The gateway neck between the Octagon and Great Circle. Shown as a dashed line, is most visible at the gravel road. (Mundus Bishop 2014)

Archeological Features

Existing Condition

The archeological features of High Bank Works consist of the earthwork complex—large multi-component structures made of sand, gravel, and soil—that create space, and the individual features of each earthwork—earthen walls, gateways, and borrow pits.

High Bank Works has four archeological features: the Great Circle with associated borrow pits and a smaller circle; the Octagon; Parallel Walls with smaller circles; and the South Earthwork, a series of smaller interlocking circles and borrow pits.

The archeological features are organized into three types: extant (visible and above-grade); extant (below-grade); and unverified. In 2012 a LiDAR survey of High Bank Works clearly showed considerable integrity of above-grade features. In 2013, High Bank Works was magnetically mapped which revealed below-grade archeological features. Some below-grade features are visible on the magnetic survey but have no topographic expression on the surface.

All archeological features are difficult to discern to the untrained eye, and have been modified by land use practices, specifically agricultural crop production, and construction of contemporary elements over and near them. Below-grade archeological features appear to be in good condition.^{3.98}

The *Great Circle* is the northernmost earthwork, and consists of a monumental circle, a Small Circle, and borrow pits. The monumental circle is an extant earthen wall (above-grade) set within a large mown hay field, with most of the wall visible.

^{3.98} Contemporary elements built over portions of High Bank Works include a gravel road, fences, Baltimore and Ohio / Chesapeake and Ohio railroad, mown agricultural fields, and revegetation.

With a diameter of 1,050 feet and circumference of 3,298 feet, it is nearly a perfect circle.^{3.99}

The earthen wall of the circle varies in height from one to three feet tall, in relationship to adjacent grade. A portion occurs on private property. This portion was not reviewed or evaluated for this CLR/EA, and the extent of a visible form is unknown. Another portion occurs on NPS owned land within an area of tall grass prairie that obscures the earthen wall. The highest point of the monumental circle is on its north side, directly across from the neck. The wall is broken in two places—for two gateways, one at the neck, and the other facing east toward the Small Circle.

The *Small Circle* is an extant earthen wall (below-grade) with a diameter of 250 feet, not visible on the surface. A borrow pit is located between the Great Circle and the Small Circle. It is visible, and is approximately 100 feet in diameter, and two feet in depth.

The below-grade features of the Great Circle are extant. The above-grade features are in fair condition due to a portion of the gravel road that cuts through the south edge of the Great Circle, impacting the condition of the earthwork. The gravel road has eliminated the monumental circle wall at its south edge. Contemporary buildings, structures and features within the private property have been built on top of a portion of the monumental circle.^{3.100}

^{3.99} Thomas (1889); The circle has been magnetically mapped — a 2013 high-resolution magnetic survey was completed for High Bank Works that revealed below-grade archeological features of the Great Circle, Octagon, and South Earthwork.

^{3.100} The magnetic survey reveals the extent of the extant below-grade Great Circle and the damage incurred by the gravel road.



Figure 3-141. Due to the height and density of the native grassland vegetation, most portions of the Octagon are not visible. (Mundus Bishop 2014)



Figure 3-142. The South Earthworks are not visible on the surface, but below-grade features were depicted in the magnetic survey. (Mundus Bishop 2014)

1 The *Octagon* is conjoined with the Great
2 Circle on the Octagon's north side, at a
3 gateway neck. The Octagon is built of a series
4 of unconnected extant earthen walls (above-
5 grade) that form an octagon, broken by eight
6 gateways or openings in the walls, located
7 at the vertices. The Octagon is primarily set
8 in tall native grasslands vegetation, with a
9 small portion set within the same large mown
10 hay field as the Great Circle. The portion of
11 the Octagon's extant earthen wall (above-
12 grade) in the mown hay field is visible. The
13 remainder of the Octagon's walls are not
14 visible, due to the height and density of
15 the prairie vegetation. According to 1848
16 investigations by Squier and Davis, the
17 Octagon originally had eight small mounds
18 within the enclosure, corresponding to each
19 gateway. These eight small mounds were
20 not observed, and were not documented by
21 the recent magnetic survey. A portion of the
22 Neck, and one gateway—on the north vertex
23 of the Octagon—are extant and visible. The
24 others are not, due to the tall vegetation. The
25 gateways are extant below-grade, as they
26 were identified in the magnetic survey as
27 were the extant earthen walls of the Octagon.
28 These archeological features may be visible
29 if the prairie is mown or the vegetation
30 modified.

31
32 The above and below-grade features of the
33 Octagon are in good condition; however a
34 portion of the gravel road extends through the
35 north corner of the Octagon. It has eliminated
36 the portion of earthen walls where the road
37 crosses the Octagon, impacting the condition
38 of the earthwork.^{3.101}

39
40 The center earthwork is formed of earthen
41 *Parallel Walls*. These features are located on
42 private property between the two NPS owned
43

44 3.101 The magnetic survey reveals the extent of the extant
45 below-grade Octagon, including the gateways and the
46 damage incurred by the gravel road. It does not show any
indication of the mounds.

1 parcels. The earthwork is approximately
2 one-third of a mile in length. It consists of two
3 parallel unverified earthen walls, oriented
4 southwest, two circles on its north end,
5 and another on the south end. Due to the
6 earthwork's location on private property, it
7 was not reviewed or evaluated during this
8 study, and was not part of the recent magnetic
9 survey. An abandoned railroad line of the
10 Baltimore and Ohio Railroad occurs across
11 a portion of the earthwork, visible in aerial
12 photographs, and likely impacts the individual
13 archeological features of this earthwork.
14 The condition of the above and below-grade
15 features of the Parallel Walls is unknown.

16
17 The *South Earthworks*, located on the 'Turpen
18 Tract,' is the southernmost portion of the
19 earthwork complex. The setting is a mown
20 field on the high bank of the Scioto River and
21 Paint Creek confluence.

22
23 A series of individual archeological features
24 appear to form small interlocking circles.
25 Some are extant earthen walls (below-grade)
26 and others are borrow pits (below-grade).
27 These features are not visible. However, these
28 archeological features are documented in
29 the recent magnetic survey that indicates the
30 features are extant below-grade.

31
32 Other below-grade archeological features
33 include postholes near the center of the Great
34 Circle and the Octagon. Other features and
35 artifacts likely exist throughout the earthwork
36 complex, but are too small to appear on
37 the magnetic survey. These might include
38 building footprints and structure floors,
39 cooking or processing pits, and artifacts
40 associated with Hopewell activities.

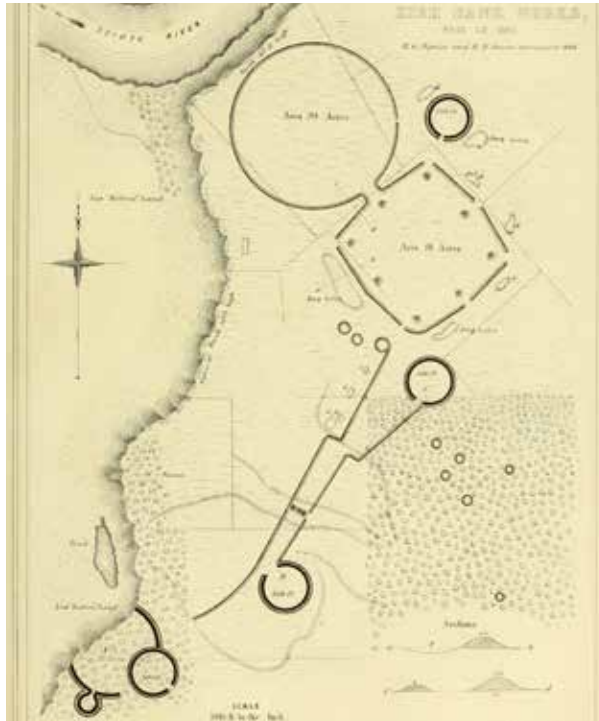


Figure 3-143. The 1848 Squier and Davis map indicates archeological features that are no longer visible. (Hopewell Culture NHP Archives)



Figure 3-144. 2013 Magnetic survey revealed the extent of extant below-grade archeological features. (Hopewell Culture NHP Archives)



Figure 3-145. In 1938, the Great Circle, Octagon, and South Earthworks were visible. Over time, these features became deteriorated from agricultural practices. Today, only the Great Circle and portions of the Octagon remain visible. (Hopewell Culture NHP Archives)

1 Analysis

2 The above-grade archeological features of
3 High Bank Works have been altered since the
4 period of significance. Extant below-grade
5 archeological features remain similar to
6 their original construction, and reflect the
7 construction of these features during period
8 of significance.

9
10 During the period of significance,
11 archeological features at High Bank Works
12 formed a geometrically precise earthwork
13 complex, aligned to astronomical events
14 of the sun and moon. The monumental
15 architecture was designed to encompass vast
16 sacred / ceremonial spaces.

17
18 Changes since the period of significance
19 include cultivation, construction of railroad
20 lines and roads adjacent to and on top of the
21 archeological features, and buildings built
22 adjacent to or on top of the features.

23
24 The Squier and Davis map of 1848 indicates
25 archeological features that are no longer
26 visible, including the Parallel Walls, mounds
27 within the Octagon, borrow pits outside
28 the Octagon, the Small Circle, and the South
29 Earthwork. At that time, the walls of the
30 Octagon stood almost two feet high, and the
31 earthen wall of the Great Circle was more
32 than three feet high. The Chesapeake and
33 Ohio Railroad was built east of the earthwork
34 complex before 1875. The nearby farmstead
35 and gravel road were built prior to 1891.

36
37 The last 200 years of agricultural use have
38 damaged extant above-grade archeological
39 features, resulting in the earthwork complex
40 being flattened and widened by plowing.

41
42 Based on the magnetic survey of 2013, the
43 extant below-grade archeological features of
44 the Great Circle and Octagon are intact and
45 have retained integrity. A portion of the extant
46 below-grade features were damaged by the

1 construction of the gravel road. Although
2 not confirmed by the magnetic survey, it
3 is likely that the railroad grade across the
4 Parallel Walls damaged extant below-grade
5 archeological features.

6
7 The above-grade archeological features at
8 High Bank Works have been modified since
9 the period of significance.

10
11 Extant below-grade archeological resources
12 remain and retain integrity. Extant above and
13 below-grade features retain integrity, and
14 contribute to the significance of the Hopewell
15 Culture NHP.



Figure 3-146. A gravel road provides egress / ingress for the private property. (Mundus Bishop 2014)



Figure 3-147. The gravel road bisects the Octagon and a portion of the Great Circle. (Mundus Bishop 2014)



Figure 3-148. The gravel / dirt road provides access to the South Earthworks. (Mundus Bishop 2014)



Figure 3-149. Railroad tracks are located just east of the complex on the northeast side. (Mundus Bishop 2014)

1 **Circulation**

2 Existing Condition

3 The circulation system of High Bank Works
4 is primarily vehicular-based, with only one
5 pedestrian route in the south NPS parcel.

6
7 Vehicular access to the earthwork complex
8 is via U.S. Highway 35 to County Road 900,
9 an asphalt paved road that extends along the
10 east boundary of the park unit, and ends in a
11 small informal gravel parking area. From this
12 route, a narrow gravel road crosses railroad
13 tracks and extends into the earthwork
14 complex for its entire width, ending within
15 the adjacent private property. The gravel road
16 bisects the Octagon and a portion of the Great
17 Circle. The road provides egress / ingress for
18 the private property.

19
20 A *dirt road* extends south from the private
21 property, to and across portions of the
22 Parallel Wall earthwork, accessing a barn, and
23 ending in a turn-around in the center of the
24 earthwork.

25
26 Access to the South Earthworks is via a
27 *private gravel / dirt road* that connects to
28 Old U.S. Route 35. The vehicular route ends
29 on the lower terrace of the Scioto River and
30 Paint Creek. From this point a steep dirt
31 path extends to the earthwork complex for
32 pedestrian access.

33
34 *Railroad tracks* for the Baltimore and Ohio /
35 Chesapeake and Ohio railroad, are just east of
36 the earthwork complex on the northeast side.
37 An abandoned railroad grade extends through
38 the middle of the earthwork complex.

39
40 Analysis

41 The circulation routes that exist today are not
42 from the period of significance.

43
44 Modifications to the circulation system
45 at High Bank Works since the period of
46 significance include the gravel road across the

1 Octagon and Great Circle in the nineteenth
2 century, and railroads built after the 1850s.

3 The gravel road traverses the earthwork
4 complex and damages the archeological
5 features; railroads distract from the
6 archeological landscape.

7
8 The circulation routes that exist today are not
9 from the period of significance and are non-
10 contributing features.

11
12 **Vegetation**

13 Existing Condition

14 The vegetation of High Bank Works includes
15 hay fields, native grasslands, and some
16 manicured vegetation at private residential
17 land. A native, hardwood forest thrives along
18 the east bank of the Scioto River, and provides
19 important habitat as a riparian edge.

20
21 On the north parcel of NPS land, most of the
22 land is cleared. A mown hay field occurs on
23 most of the Great Circle and portions of the
24 Octagon. Both sides of the gravel road are
25 maintained as mown lawn. Immediately to
26 the south is a restored native grassland. The
27 native grassland covers much of the Octagon.
28 It was installed in 2012 with a combination
29 of native warm season grasses and forbs. The
30 vegetation is still becoming established but
31 appears to be in a healthy condition.

32
33 The portion of the earthwork in private
34 ownership, at the Parallel Walls, is under
35 cultivation. Around the private dwellings is
36 manicured vegetation.

37
38 Cropland is maintained at the South
39 Earthworks. This is composed of alfalfa /
40 orchard grass.

41
42 The canopy in the riparian area, as mapped
43 in 2004, is composed of American sycamore,
44 cottonwood, and silver maple. Hackberry
45 and boxelder dominate the sub-canopy,
46 with some Ohio buckeye and silver maple.



Figure 3-150. Mown lawn is on either side of the gravel drive; native grasslands is on the left. (Mundus Bishop 2014)



Figure 3-151. On the north parcel of NPS land, most of the land is cleared hay fields. (Mundus Bishop 2014)

1 The herbaceous layer is mostly tall fescue,
2 Canadian woodnettle (*Laportea canadensis*),
3 jewelweed (*Impatiens capensis*), and garlic
4 mustard.

5
6 Exotic vegetation control actions have been
7 recently undertaken along the riparian edge.

8 Analysis

10 It is unknown what the character or
11 composition of the vegetation was during
12 the period of significance. The Squier and
13 Davis maps of 1848 indicate that portions of
14 High Bank Works were cleared of trees, and
15 other portions were forested. It is unknown
16 if the vegetation at High Bank Works reflects
17 the pre-historic pattern. The vegetation and
18 vegetation patterns of High Bank Works
19 are non-contributing to the archeological
20 landscape.



Figure 3-152. Mown hay field in the south tract. (Mundus Bishop 2014)



Figure 3-153. Vegetation at the south tract includes mown hayfields edged with hardwood forest. (Mundus Bishop 2014)

1 **Small Scale Features**

2 Existing Condition

3 Small scale features include fences, electric
4 poles, and miscellaneous features.

5
6 *Utility poles* and aerial lines run the length of
7 the gravel entrance road, providing power to
8 the private residence. The poles extend from
9 the county road, across the railroad tracks,
10 and along the north side of the gravel road.
11 At the midpoint, the lines cross to the south
12 side of the gravel road and extend to the
13 private residence. The utility poles and aerial
14 lines bisect the Great Circle and the Octagon,
15 possibly disturbing below-grade resources.

16
17 A *barbed wire fence* parallels a portion of the
18 gravel entrance road. It continues adjacent to
19 the railroad tracks and along property lines.
20 The fence has wooden posts with barbed
21 wire.

22
23 The gravel / dirt road that provides access
24 to the South Earthwork is gated. The *gate* is
25 metal and is located at the southwest corner
26 of South Earthwork for vehicular access.

27
28 *Signs* include a brown park sign and
29 regulatory signage. The park sign is located
30 on the east side railroad tracks at the end of
31 the county road at the small parking area.
32 It indicates that the area is “closed to the
33 public.” The sign is in fair condition, as the
34 name of the park is not accurate. Additional
35 signage includes regulatory signage at
36 railroad crossing.

37
38 Analysis

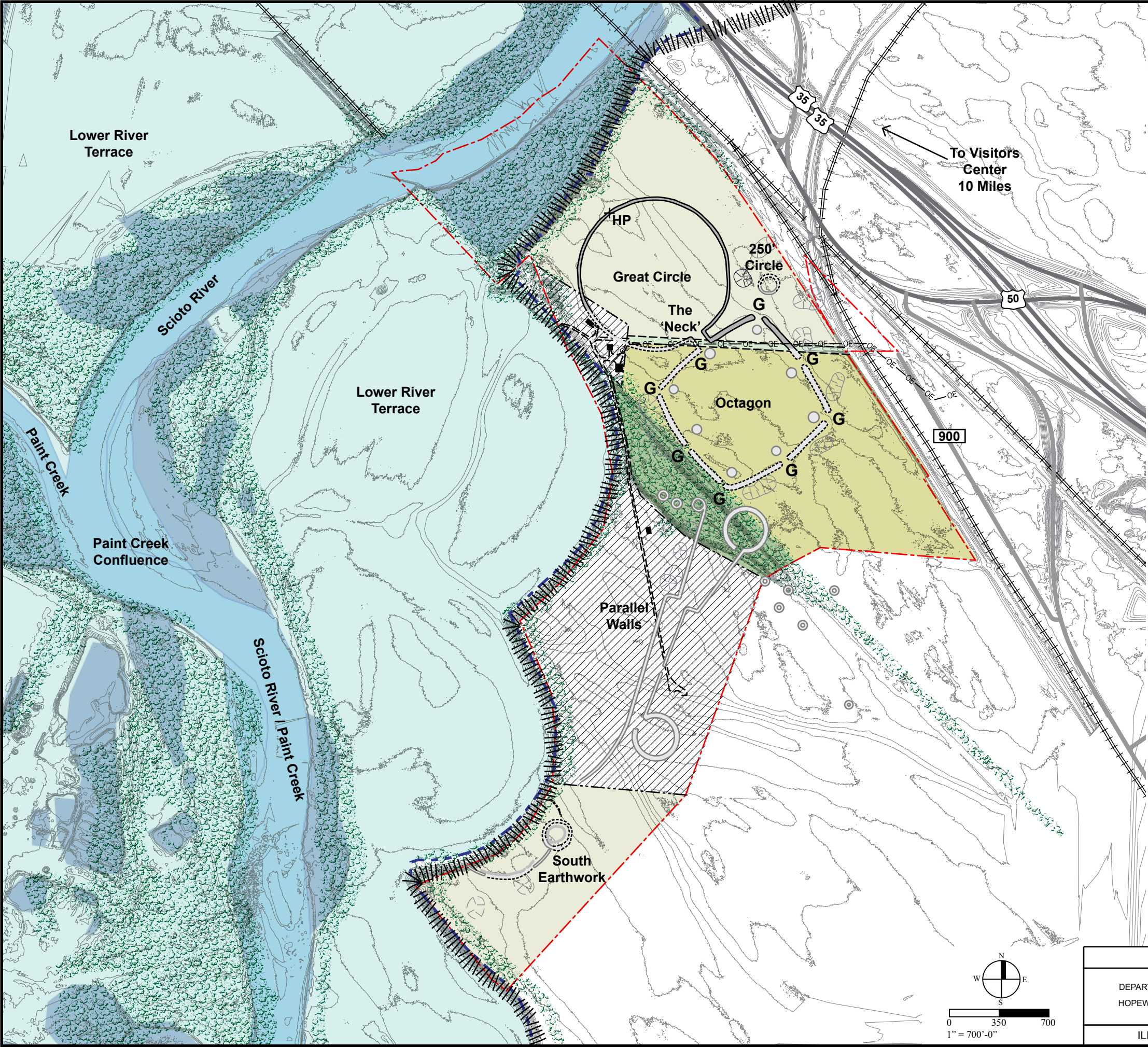
39 The small scale features that exist today are
40 not from the period of significance and are
41 non-contributing features to the archeological
42 landscape.



Figure 3-154. A barbed wire fence parallels a portion of the gravel entrance road. It continues adjacent to the railroad tracks and along property lines. (Mundus Bishop 2014)



Figure 3-155. Access to the South Earthwork is via a metal gate at the southeast corner of the park unit. (Mundus Bishop 2014)



- Legend**
- NPS Boundary
 - Portion of earthwork not in NPS Ownership
 - Water Bodies
 - Wetlands
 - Lower River Terrace
 - 100 Year Floodplain
 - Embankment
 - Highway
 - Paved Road
 - Unpaved Road
 - Railroads
 - 1 ft Contours
 - Mound - Unverified
 - Earthen Wall - Extant Above-Grade
 - Earthen Wall - Extant Below-Grade
 - Earthen Wall - Unverified
 - Ditch - Extant Below-Grade
 - Borrow Pit - Extant Above-Grade
 - Borrow Pit - Extant Below-Grade
 - Borrow Pit - Unverified
 - Buildings/Structures
 - Gateways
 - Overhead Lines
 - Hay Field
 - Mown Area
 - Native Grasses
 - Shrubland
 - Woodland
 - HP High Point

Sources:
Burks 2013 High Bank Works Magnetic Survey; Burks 2013 Turpen Tract-High Bank Works Magnetic Survey; GIS HOCU 2012 LiDAR; 1848, High Bank Works, Davis and Squire; <http://www.fws.gov/wetlands/Data/Mapper.html>; <https://m-sc.fema.gov/portal>; 2014 Google Maps

TIC# 353 128148

OCTOBER 2015		TITLE OF PROJECT CULTURAL LANDSCAPE REPORT AND ENVIRONMENTAL ASSESSMENT	
UNITED STATES DEPARTMENT OF THE INTERIOR		TITLE OF DRAWING HIGH BANK WORKS - EXISTING CONDITION	
HOPEWELL CULTURE NATIONAL HISTORICAL PARK		NAME OF PARK HOPEWELL CULTURE NATIONAL HISTORICAL PARK	
ILLUSTRATION 3-6		REGION MIDWEST	COUNTY ROSS
		STATE OHIO	3-153

Affected Environment

1 Cultural Resources

2 Cultural Landscapes and Archeological Sites

3 Detailed information on cultural landscapes
4 and archaeological sites in the Hopewell
5 Culture National Historical Park is provided in
6 Chapter 2 and previous sections of Chapter 3.

8 Vegetation

9 The five park units are situated near
10 river floodplains, on the north edge of the
11 Allegheny Plateau, just south of the till
12 plains.^{3.102} The majority of the park units have
13 been clear-cut in the past and cultivated with
14 agricultural activities. The use of agriculture
15 on the properties has had the greatest impact
16 on native plant communities and the park
17 has been trying to establish sections of the
18 properties to native grassland. Control of
19 invasive species through hand-pulling has
20 been conducted on the properties in recent
21 years for species including Canada thistle,
22 garlic mustard, bush honeysuckle (*Lonicera*
23 *sp.*), multiflora rose, and autumn olive.

24
25 A vegetation survey was completed in
26 2014 for the park, which identified seven
27 vegetation types.^{3.103} Most of the park units
28 were mapped as ruderal grasslands and
29 former croplands. Non-native meadows occur
30 on all park units, and make up more than 70%
31 of the non-developed area of the park.^{3.104}
32 These non-native meadows were classified as
33 Orchardgrass-Timothy grass-Fescue species-
34 Goldenrod species Herbaceous Vegetation.
35 Dominant vegetation within this community
36 includes orchardgrass, Canada goldenrod,
37 meadow fescue, Timothy grass, and black
38 medick. These species are all typical of moist
39 old fields in the eastern United States.
40 The most “semi-natural” and significant
41 communities identified were (1) an upland

1 limestone forest at Hopewell Mound Group,
2 (2) floodplain forests at the Seip Earthworks,
3 High Bank Works, and Mound City Group,
4 and (3) a small prairie restoration on the
5 Hopewell Mound Group.

6
7 The Appalachian Sugar Maple-Chinkapin Oak
8 Limestone Forest occurs on a small area of
9 upland, low, rolling hills on the northwest
10 corner of the Hopewell Mound Group.
11 Sugar maple is the dominant overstory tree,
12 followed by chinkapin oak and white oak.
13 Pawpaw, common hackberry, and white ash
14 are common small trees in the understory.
15 Several weedy species, including multiflora
16 rose, Japanese honeysuckle, and honeylocust
17 are also represented in the shrub layer.
18 Common herbaceous components include
19 white snakeroot (*Ageratina altissima*),
20 Canadian honeysuckle (*Cryptotaenia*
21 *canadensis*), nodding fescue (*Festuca*
22 *subverticillata*), stickywilly (*Galium aparine*),
23 spring avens (*Geum vernum*), clustered black
24 snakeroot (*Sanicula odorata*), and bristly
25 greenbrier (*Smilax tamnoides*).

26
27 The Silver Maple-Green Ash-Sycamore-
28 Hackberry Floodplain occurs in small linear
29 patches on floodplains along streams at the
30 Seip Earthworks, High Bank Works, and
31 Mound City Group. Representative patches
32 of this type are generally forests with an
33 open understory and typical floodplain
34 microtopography. Dominant species include
35 common hackberry, American sycamore,
36 silver maple, and boxelder. Boxelder and
37 common hackberry are also important in
38 the shrub layer, along with Ohio buckeye and
39 Amur honeysuckle (*Lonicera maackii*). Vines
40 are common, including eastern poison ivy
41 (*Toxicodendron radicans*), Virginia creeper
42 (*Parthenocissus quinquefolia*), and frost grape
43 (*Vitis vulpina*). Common herbaceous species
44 include white snakeroot, garlic mustard,

3.102 NPS, *Geological Resources*.

3.103 Diamond, *Vegetation Classification and Mapping*.

3.104 Diamond, *Vegetation Classification and Mapping*.

1 Virginia wildrye (*Elymus virginicus*), Canadian
2 woodnettle, and clustered black snakeroot.
3
4 The Hopewell Mound Group also contains
5 a small patch of the Restored Tallgrass
6 prairie community. Big bluestem and Canada
7 goldenrod are the prevailing, and often
8 overwhelming, dominant species within this
9 community. Other important species include
10 sideoats grama, black-eyed and brown-eyed
11 Susan, wild bergamot, and stiff goldenrod.
12 Shrubs and small trees include Pennsylvania
13 blackberry, American elm (*Ulmus americana*),
14 multiflora rose, and slippery elm.
15
16 Other communities identified within the park
17 include the Eastern North American Wet
18 Meadow Group, the Ruderal Low Woodland/
19 Shrubland, and the Ruderal Woodland. The
20 Eastern North American Wet Meadow Group
21 community was identified at Hopewell
22 Mound Group and consists of five small, oval
23 or nearly circular depressional wetlands.
24 Vegetation varies due to water depth, with
25 ovate spikerush (*Eleocharis ovata*) the most
26 dominant species. Sedges (*Carex stipata*,
27 *Carex spp.*) and smartweeds (*Polygonum spp.*)
28 are important in all five wetlands.
29 The Ruderal Low Woodland/Shrubland
30 occurs on a variety of soil types and land
31 positions within the park. This type is
32 characterized by a patchy canopy of small
33 trees and shrubs with weedy species
34 dominating. Honeylocust is the most
35 important tree species, followed by black
36 cherry, and white ash. Autumn olive is present
37 with fairly high cover, while hawthorns
38 (*Crataegus spp.*) were dominant in patches.
39 Vines, including Japanese honeysuckle,
40 Virginia creeper, eastern poison ivy, and
41 frost grape are common important species.
42 Important herbaceous species include white
43 snakeroot, western panicgrass (*Dichanthelium*
44 *acuminatum*), fragrant bedstraw (*Galium*
45 *triflorum*), oxeye daisy (*Leucanthemum*
46 *vulgare*), Canada goldenrod, meadow fescue,
47 and Kentucky bluegrass (*Poa pratensis*).

1 The Ruderal Woodland community also
2 occurs in a variety of soils and land positions
3 in all park units except Seip Earthworks.
4 The general aspect of these communities
5 represents rather open, low, young
6 woodlands, but the canopy is closed in some
7 places. Dominant trees include common
8 hackberry, black walnut, sugar maple, and
9 black locust. The shrub layer varies across
10 mapped patches, and important species
11 include sugar maple, common hackberry,
12 Amur honeysuckle, multiflora rose, and
13 slippery elm. Common forbs include white
14 snake root, garlic mustard, hairy wildrye
15 (*Elymus villosus*), and Virginia wildrye.
16
17 At least four species listed as threatened or
18 endangered by the state of Ohio have been
19 documented in the park - eastern white cedar
20 (*Thuja occidentalis*), ovate spikerush, reflexed
21 sedge (*Carex retroflexa*), and October lady's
22 tresses (*Spiranthes ovalis*).^{3.105}
23

24 **Wildlife**

25 A variety of wildlife inventories at the park
26 were conducted in 2004 and 2005, including
27 mammals, fish, birds, bats, and amphibian and
28 reptile surveys. The studies found a variety
29 of wildlife occurring throughout the five park
30 units. The mammal inventory documented 28
31 mammals within the park, representing 76
32 percent of the mammals documented within
33 Ross County, Ohio.^{3.106} Species abundant and
34 common to the park include Virginia opossum
35 (*Didelphis virginiana*), striped skunk (*Mephitis*
36 *mephitis*), eastern cottontail (*Sylvilagus*
37 *floridanus*), fox squirrel (*Sciurus niger*),
38 woodchuck (*Marmota monax*), coyote (*Canis*
39 *latrans*), raccoon (*Procyon lotor*), red fox
40 (*Vulpes vulpes*), white-tailed deer (*Odocoileus*
41 *virginianus*), and several types of mice and
42 voles. Raccoons are adaptable to a wide range
43 of habitats, including shallowly inundated
44

45 3.105S.A. Middlemis-Brown and C.C. Young, *Heartland Invasive*
46 *Plant Management Plan and Environmental Assessment*
(Philadelphia, PA: 2012).

47 3.106Vick, *Inventory of Mammals*.

1 areas to uplands, while opossum, skunk, and
2 coyote are mostly associated with upland
3 areas, which are abundant within the park.
4 The eastern harvest mouse (*Reithrodontomys*
5 *humulis*) is documented in the park and
6 is an Ohio state threatened species. Three
7 additional rodent species documented in the
8 park are Ohio state species of concern: deer
9 mouse (*Peromyscus maniculatus*), prairie vole
10 (*Microtus ochrogaster*), and woodland vole
11 (*Microtus pinetorum*).
12

13 Eight bat species were documented in
14 the park during bat inventories, with the
15 tri-colored bat (*Perimyotis subflavus*), big
16 brown bat (*Eptesicus fuscus*), eastern red bat
17 (*Lasiurus borealis*), and northern long-eared
18 bat (*Myotis septentrionalis*) the most common
19 species found.^{3.107} The northern long-eared
20 bat is a federally threatened species and
21 Ohio state species of concern. Six other bat
22 species documented in the park are Ohio state
23 species of concern: tri-colored bat, eastern
24 red bat, hoary bat (*Lasiurus cinereus*), silver
25 -haired bat (*Lasionycteris noctivagans*), little
26 brown bat (*Myotis lucifugus*), big brown bat
27 (*Eptesicus fuscus*).
28

29 The reptile and amphibian study documented
30 twelve amphibian species (*five salamanders*
31 *and seven anurans*) and eleven reptilian
32 species (*five turtles and six snakes*) within the
33 park.^{3.108} Common species include American
34 toad (*Bufo americanus*), gray treefrog (*Hyla*
35 *chrysoscelis/versicolor*), bullfrog (*Rana*
36 *catesbeiana*), black rat snake (*Elaphe*
37 *obsoleta*), common garter snake (*Thamnophis*
38 *sirtalis*), and the eastern box turtle (*Terrapene*
39 *carolina*).
40
41

42 3.107Lynn Robbins, *Inventory of Distribution, Composition, and*
43 *Relative Abundance of Bats at Hopewell Culture National*
44 *Historical Park, Ohio* (Springfield, Missouri: Southwest
Missouri State University, 2005).

45 3.108Christina Wieg, *A Herpetofaunal Inventory of Hopewell*
46 *Culture National Historical Park, Ross County, Ohio*
47 (Republic, Missouri: Heartland Network Inventory and
Monitoring Program, 2004).

1 The park's bird surveys have recorded 172
2 species of birds within the park.^{3.109} The most
3 common species recorded were American
4 crow (*Corvus brachyrhynchos*), red-winged
5 blackbird (*Agelaius phoeniceus*), eastern
6 meadowlark (*Sturnella magna*), northern
7 cardinal (*Cardinalis cardinalis*), and European
8 starling (*Sturnus vulgaris*). Bald eagles have
9 been observed within the park; however
10 no known active bald eagle nests occur
11 within the park. Five Ohio state endangered
12 species were recorded in the park including
13 the lark sparrow (*Chondestes grammacus*),
14 northern harrier (*Circus cyaneus*), osprey
15 (*Pandion haliaetus*), golden-winged warbler
16 (*Vermivora chrysoptera*), American bittern
17 (*Botaurus lentiginosus*), and yellow-bellied
18 sapsucker (*Sphyrapicus varius*). Four Ohio
19 state threatened species documented include
20 the dark-eyed junco (*Junco hyemalis*), hermit
21 thrush (*Catharus guttatus*), upland sandpiper
22 (*Bartramia longicauda*), and least flycatcher
23 (*Empidonax minimus*). The northern long-
24 eared bat is a federally threatened species.
25

26 Surveys within and abutting the park units
27 have documented 91 fish species. Dry Run, an
28 intermittent stream at Hopeton Earthworks
29 contained 14 different species with the
30 blacknose dace (*Rhinichthys atratulus*)
31 and northern creek chub (*Semotilus*
32 *atromaculatus*) the most abundant species
33 observed. The Scioto River, Paint Creek, and
34 North Fork Paint Creek are adjacent to park
35 units and high fish species diversity, with 54
36 to 62 different species documented along the
37 drainages. Six species of management concern
38 were observed in these adjacent drainages
39 including the Ohio state endangered goldeye
40 (*Hiodon alosoides*), Ohio state threatened
41 bluebreast darter (*Etheostoma camurum*)
42 and Tippecanoe darter (*E. tippecanoe*), and
43 Ohio state species of concern river herring
44

45 3.109Myra Vick, *Inventory of Distribution, Composition, and*
46 *Relative Abundance of Birds at Hopewell Culture National*
47 *Historical Park* (Republic, Missouri: Heartland Network
Inventory and Monitoring Program, 2004).

1 (*Moxostoma carinatum*), Eastern sand darter
2 (*Etheostoma pellucidum*), and least darter
3 (*Etheostoma microperca*).
4

5 **Visitor Use**

6 Currently, visitors have access to Mound
7 City Group, Hopewell Mound Group, and
8 Seip Earthworks. Public visitation is not yet
9 allowed at Hopeton Earthworks and High
10 Bank Works. A visitor center is located at
11 Mound City Group, which is open seven days
12 a week, excluding holidays. The grounds at
13 the park units are open from dawn to dusk,
14 with interpretive trails located at Mound
15 City Group which are handicap accessible.
16 Hopewell Mound Group has a 2.5 mile trail
17 that is partially paved, gravel and mown
18 lawn, a covered picnic shelter, and accessible
19 restrooms. Seip Earthworks has no paved
20 trails but does have a portable restroom
21 and covered picnic area. Between 2009 and
22 2013, visitation was fairly steady and ranged
23 from 32,206 to 39,462.^{3.110} Visitation occurs
24 primarily between March and October. The
25 GMP estimated that 80% of the use of the
26 park is from local and regional visitors, with
27 20% of the visitors from outside Ohio.^{3.111}
28

29 **Park Operations**

30 Currently, all park operations, including
31 maintenance facilities and equipment,
32 are located at Mound City Group. Three
33 permanent staff perform maintenance
34 duties in the park units. The park currently
35 has a chief ranger and six park rangers,
36 visual information specialist, administrative
37 assistant, chief of resource management,
38 curator, and biologist. The park actively
39 manages archeological resources at Mound
40 City Group, Hopewell Mound Group, and
41 Seip Earthworks. Activities include trail
42

43 3.110NPS, "Park Statistics" *Hopewell Cultural National Historical*
44 *Park Website*. Available online at <http://www.nps.gov/hocu/parkmgmt/statistics.htm>, Accessed January 21,
45 2015.

46 3.111NPS, 1997.

1 maintenance, mowing, general maintenance,
2 ranger patrols and curation of artifacts.
3 Park staff make periodic visits to the High
4 Bank Works and Hopeton Earthworks to
5 monitor resource conditions and potential
6 threats, and also works closely with the
7 owners of privately owned parcels within the
8 jurisdictional boundary.
9

10 **Visual Resources**

11 Mound City Group is a 120-acre area
12 consisting of the visitor facilities, a mowed
13 grassland area containing the mounds, and
14 surrounding hardwood forest, agricultural
15 land, and riparian vegetation along the
16 adjacent Scioto River. The majority of the
17 earthwork complex is fairly flat, with the
18 wooded areas on the north, east, and south
19 visually enclosing the earthwork complex.
20

21 Hopewell Mound Group is 300 acres and
22 consists mainly of fields containing the
23 mounds on the southern section of the
24 property and a low bluff with woodlands/
25 forest on the northern section of the property.
26 The earthwork complex slopes gently upward
27 from south to north and rises abruptly into
28 forested hills along the northern boundary.
29

30 Seip Earthworks is 336 acres, with US 50
31 bordering the property to the north and Paint
32 Creek bordering it to the south. The majority
33 of the property is fallow fields with forests
34 enclosing the property on the west and south.
35

36 Hopeton Earthworks is located on a terrace
37 east of the Scioto River. The earthwork
38 complex is fairly flat and open, with some
39 elevation gain eastward from the river.
40 Dry Run, an intermittent stream, occurs
41 in the southeast corner of the property.
42 A hardwood forest and black walnut
43 orchard occur near the stream. A private
44 residence and gravel mining operation occur
45 adjacent to the earthwork complex. Due to
46 previous cultivation in the area, some of the

1 archeological features are now less than 5 feet
2 in height and are difficult to see.
3
4 High Bank Works also occurs on a terrace
5 above the Scioto River. Three different
6 railroad tracks traverse through the
7 earthwork complex, and agricultural land and
8 three private residences occupy the 197-acre
9 earthwork complex. U.S. 35 occurs to the east
10 of the property and hardwood forests occur
11 along the northern and western boundaries of
12 the property.

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