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Mammoth Cave National Park
Kentucky

Core Visitor Services Area

Cultural Landscape Report



Cultural Resources

Southeast Region

Mammoth Cave National Park
Core Visitor Services Area

Mammoth Cave, Kentucky

Cultural Landscape Report

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About the front cover: The Historic Entrance to Mammoth Cave, June 19, 2011.

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Mammoth Cave National Park
Core Visitor Services Area

Mammoth Cave, Kentucky

Cultural Landscape Report

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Site History

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Existing Conditions

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96 Regional Map with Features and Transportation Corridors.
97 Character Areas.
98 **Character Area 1: Historic Core**
99 Relatively level topography with gently slopes and expanses of mown lawn.
100 The landscape expands to the hotel parking lot.

101 The character is organized by the expanses of mown lawn surrounded by stands of trees.
102 The same pattern extends to the tennis courts and shuffleboard area.
103 The semi-circular siting of the Deluxe Cottages creates a smaller landscape space.
104 A smaller landscape space is also created by the shuffleboard and tennis courts.
105 The amphitheater is located east of the Deluxe Cottages.
106 The nine-mile Mammoth Cave Railroad Bike and Hike Trail starts within this character area.
107 A yellow post prevents vehicular access to the Mammoth Cave Railroad Bike and Hike Trail.
108 A concrete-paved pedestrian walkway connecting to the hotel parking lot.
109 Concrete-paved walkway providing access to the train exhibit.
110 A portion of the walkway from the camp store and service station parking lot has stone curbing.
111 The walkway divides, with one branch leading to the amphitheater and the other to the train.
112 A portion of the trail around the Deluxe Cottages is paved in concrete.
113 Groups of large trees stand in the grassy landscape.
114 Stands of large cedar and other deciduous trees.
115 There are groves of large cedars and other old individual trees.
116 Large deciduous trees near the site of the second hotel, demolished in 1978–1979.
117 Sugar maples and red maples line the fence separating the historic core and the parking lot.
118 Several of the trees around the shuffleboard court are in poor condition.
119 Yucca and red cedar associated with a cottage.
120 A view of two of the ten Deluxe Cottages.
121 The steel and wood frame pavilion that protects the historic Engine No. 4 and Coach No. 2.
122 Lift station west of the Deluxe Cottages.
123 A view of the amphitheater stage with seating in the foreground.
124 The tennis courts, with the shuffleboard courts in the foreground.
125 A boardwalk crosses a drainage ditch along the Mammoth Cave Railroad Bike and Hike Trail.
126 Boardwalk on the trail between the hotel parking lot and the train exhibit.
127 Recycled plastic plank boardwalk with wood curbs near the amphitheater.
128 Low profile interpretive panel at the train exhibit.
129 Two-panel interpretive sign at the east end of the parking lot.
130 Outdoor movable seating at the Deluxe Cottages.
131 Trash and recycling bins at the Deluxe Cottages.
132 Wood bench and adjacent bike rack near the Mammoth Cave Railroad Bike and Hike Trail.
133 Benches in the amphitheater are organized in descending rows.
134 Hitching post with iron rings near the shuffleboard court.
135 Low level path lighting is present throughout the Core Visitor Services Area.
136 Concrete manhole cover east of the lift station.
137 Large utility pole, wires and boxes is located north of the lift station.
138 Fire hydrant north of the Deluxe Cottages.
139 **Character Area 2: Picnic Area and Woodland Cottages**
140 The picnic area slopes generally to the southeast toward the Green River.
141 The Woodland Cottages area slopes gently toward the visitor center parking lot.
142 The main structures in the character area are sited on the relatively level plateau atop the ridge.
143 Roads through sloping portions of the character area were sited to follow existing contours.
144 The spatial quality of the picnic area is focused inward due to the woodland vegetation.
145 The transparent south edge of the Woodland Cottages site.
146 Topographic modifications were necessary for the road corridor, parking area, and structures.
147 Grading to accommodate picnic shelters, parking, and paths in the picnic area.
148 Grading for paved pathways through the picnic area.
149 A portion of the one-way loop road.
150 Roadway leading west through the picnic area to the Dixon Cave trailhead.
151 A short spur leads from the visitor center loop road to the Woodland Cottages parking area.
152 A low stone wall with a set of stone steps along the south side of the parking area.
153 The second parking area along the south road.
154 Pull-in parking along the one-way loop road.
155 Parking adjacent to the Earth House.

156 The surface of some asphalt paths is cracked and buckling.
157 A social trail west of the Earth House.
158 Social trails leading to picnic tables has led to erosion problems on steeper slopes.
159 The trailhead for the Green River Bluffs Trail is located in this character area.
160 Walkways associated with the buildings and picnic shelters are composed of concrete.
161 Exposed aggregate concrete sidewalk to the Earth House.
162 A concrete walk leads from the Woodland Cottages parking lot, transitioning to asphalt.
163 Dead limbs and other tree debris along a picnic area path.
164 Mown grass with scattered deciduous trees in the picnic area.
165 Mown grass area with a larger degree of canopy.
166 A view of the Earth House.
167 A view of the Earth House.
168 A view of a one-bedroom Woodland Cottage.
169 A view of the comfort station.
170 A view of the enclosed shelter.
171 One of the picnic shelters in the picnic area.
172 A view of the second picnic shelter, near the Earth House.
173 Stop sign and directional sign at the Woodland Cottages entrance spur.
174 Regulatory sign about dumpster use.
175 Directional sign in the picnic area.
176 Directional sign at the Green River Bluffs Trail trailhead.
177 Informational sign at the Green River Bluffs Trail trailhead.
178 Picnic tables scattered among trees.
179 Picnic tables with adjacent upright grills.
180 Ground-level grills are composed of a metal grate over a concrete surface.
181 A mortared stone drinking fountain in the picnic area does not appear to be functional.
182 Litter receptacle and recycling bin in the Woodland Cottages area.
183 A short section of split-rail fence in the picnic area.
184 Pole-mounted light in the Woodland Cottages parking lot.
185 Residential-style lightpost in the Woodland Cottages area.
186 Large rectangular metal grate, part of the storm filter unit.
187 Stone headwall associated with a culvert; a metal utility access hatch is visible in the foreground.
188 Utility panel in the Woodland Cottages area.
189 Utility box and manhole adjacent to the Earth House.
190 Fire hydrant and water valve access in the picnic area.
191 Fire hydrant and water valve access panels adjacent to a gravel path in the picnic area.
192 Blue-painted water hydrant adjacent to a picnic shelter.
193 Trash dumpster along the loop road in the picnic area.
194 Recycling dumpsters in the picnic area.
195 **Character Area 3: Historic Entrance and Old Guide's Cemetery**
196 A wooden bridge is used to cross a small intermittent stream.
197 Overlook at Sunset Point.
198 A black wrought iron fence surrounds the Old Guide's Cemetery.
199 Woodland vegetation borders the paved trail from the visitor center to the Historic Entrance.
200 The woodland vegetation opens up on the north side of the trail at the entrance to the cave.
201 Steep steps lead visitors into the cave.
202 Grading was required along the Heritage Trail.
203 Extensive grading was required to develop the cave entrance.
204 Steps leading from the trail to the cave entrance area.
205 Trails are provided for recreation and access to historic features.
206 Interpretation uses are associated with wayside signs.
207 Organized tours begin at the Historic Entrance.
208 A segment of the Heritage Trail leads to the Old Guide's Cemetery.
209 Portions of the exposed aggregate concrete Heritage Trail are lined with split-rail fencing.
210 The concrete portion of the Heritage Trail widens to accommodate benches.

211 Access to the Echo River Spring Trail from Sunset Point.
212 Stone and gravel surface of the Old Guide's Trail.
213 Stone steps along the Old Guide's Trail.
214 The intersection of the Old Guide's Trail and the Historic Entrance Road.
215 The Historic Entrance area. The Dixon Cave trailhead is visible in the background.
216 The gravel Dixon Cave Trail with waterbars.
217 The Heritage Trail passes through woodland vegetation.
218 Woodland vegetation near the Historic Entrance.
219 Mosses and ferns grow on rocky surfaces at the cave entrance.
220 The Historic Entrance structure.
221 Masonry retaining wall to accommodate the grading for steps and walkway.
222 The first portion of the steps into the cave.
223 The second portion of the steps into the cave are separated by a railing.
224 Stairways and handrails are provided along the entrance to the cave for visitor safety.
225 Bio-security apparatus at the cave exit.
226 View from Sunset Point overlook.
227 Three-sided kiosk along the Heritage Trail.
228 Backless recycled plastic bench with metal supports near the Historic Entrance.
229 Wooden hand rails along the Heritage Trail boardwalk.
230 Split-rail fencing guides visitors to the cave entrance.
231 Metal light bollards set in concrete along the Heritage Trail.
232 Stone culvert headwall with metal grating on the north side of the Historic Entrance Road.
233 Stone culvert headwall on the south side of the Historic Entrance Road.
234 Metal grates cover the drop inlets within the curb gutter.
235 The stone headwall of a culvert near the Historic Entrance.
236 Masonry spillway northwest of the parking area at the Historic Entrance.
237 The masonry spillway empties into the woodland above a stone headwall.
238 Stone headwall at the base of the spillway.
239 **Character Area 4: Campground**
240 Several small intermittent streams run through the woodland in this character area.
241 Much of the understory in the campground has been lost to trampling.
242 Topographic modifications were necessary to accommodate the parking bays and campsites.
243 Erosion damage on the trail leading to the campfire circle.
244 Grading to accommodate gravel areas in the camping loops.
245 The campground entrance road as it passes the campground kiosk.
246 The loop roads branch out from the main spine.
247 Loop C branches off to the southwest of the campground road.
248 Two types of parking bays are available along the asphalt-paved loop roads.
249 Pull-in parking bay and associated campsite along Loop B.
250 Paved parking on the northwest side of the camp store and service station.
251 Parking on the southeast side of the camp store and service station.
252 The small parking lot near the campground kiosk.
253 Grass paver parking is available adjacent to the dumpster and recycling bins.
254 Exposed aggregate concrete path leading to the comfort station in Loop A.
255 The concrete path to the Loop D comfort station has some condition issues.
256 A gravel trail leading from a campsite to a comfort station.
257 A gravel trail with wooden curbing.
258 Some gravel trails function more as social trails and have lost gravel.
259 Exposed aggregate concrete sidewalk adjacent to camp store and service station parking.
260 Gravel trail leading to the amphitheater.
261 White Cave Trail near its intersection with the trail from the campground to the amphitheater.
262 Little undergrowth is present near the campsites.
263 Gravel used to stabilize the soil where grass has eroded.
264 A view of the camp store and service station.
265 A view of the telephone equipment building northwest of the camp store and service station.

266 A view of the campground kiosk at the entrance to the campground.
267 A view a comfort station in the campground area.
268 A view of the lift station.
269 Wood pedestrian bridge with handrail on one side.
270 Plastic plank pedestrian bridge with wood curb edges.
271 The campfire circle.
272 A semi-circular wall with stone stage and fire circle.
273 Wooden kiosk at the dumpster and recycling area.
274 Narrow views are available through open break in the trees.
275 Wood directional sign along the trail to the amphitheater.
276 Regulatory sign along the trail to the amphitheater.
277 Traffic and directional signs at Loop D.
278 Traffic sign at the parking area near the campground kiosk.
279 Campsite marker.
280 Flagpole adjacent to the camp store and service station post office.
281 Concrete picnic table.
282 Wood picnic table with metal supports.
283 A fire pit is placed at each individual campsite.
284 Backless wooden benches in the campfire circle.
285 Wooden benches are placed along the trail between the campground and the amphitheater.
286 Trash receptacles adjacent to a short length of fence near the camp store and service station.
287 Hooked metal post along the route to the campfire circle.
288 Split-rail fencing surrounding a drainage culvert.
289 Split-rail fencing surrounding the dumpster area near Loop A.
290 Metal swing gates on both sides of the entrance to Loop D.
291 Metal swing gate with attached sign.
292 A sanitary waste disposal station east of the camp store and service station.
293 Large storm water runoff grate.
294 **Character Area 5: Mammoth Cave Hotel and Lodging**
295 Trench drain in the large hotel parking lot.
296 Drop inlet adjacent to the Sunset Lodge units.
297 Stone headwall associated with a culvert below the Sunset Lodge access road.
298 The area is characterized by large areas of parking with buildings organized around the edges.
299 The space south of the hotel extends visually into the historic landscape.
300 The character area becomes more enclosed along the upper portion of the access road.
301 Topographic modifications were required for the Heritage Trail Rooms wing.
302 Grading behind the Sunset Lodge units.
303 Grading was also require for the parking and sidewalks associated with the Sunset Lodge units.
304 A gravel/gravel paver road leads to the lift station behind the Sunset Lodge units.
305 A second gravel service road provides access to the concessions dormitory/laundry.
306 The second gravel service road also provides access to the kennel.
307 A large planted median divides the two parking areas south of the hotel.
308 Grass-planted median in the larger of the two asphalt parking areas.
309 Planted medians in the hotel parking area.
310 A small pull-in parking area adjacent to the Heritage Trail entrance point.
311 Concrete sidewalk leading to the main hotel entrance.
312 The concrete sidewalks edge the parking area adjacent to the hotel entrance.
313 Concrete sidewalk at the Heritage Trail Rooms wing.
314 Universally accessible parking adjacent to the sidewalk.
315 Exposed aggregate concrete sidewalk at the Sunset Lodge units.
316 The sidewalk extends along the access road to connect the two building units.
317 The sidewalks lead to the exposed aggregate concrete patios connecting the units.
318 A low concrete planter box along the foundation of the hotel contains ornamental plants.
319 Grass lawn in between the Sunset Lodge units and their associated parking area.
320 A view of the exterior of the restaurant at the Mammoth Cave Hotel.

321 A view of the exterior of the Heritage Trail Rooms wing at the Mammoth Cave Hotel.
322 A view of the pedestrian bridge linking the visitor center to the Mammoth Cave Hotel.
323 A view of the front of one of the buildings at Sunset Lodge.
324 A view of the lift station outbuilding west of Sunset Lodge.
325 Small utility building east of the Sunset Lodge units.
326 A view of the concessionaire dormitory.
327 A pet kennel and storage building is located along the gravel service drive.
328 Views into the historic core to the south of the character area.
329 Views into the historic core are occasionally obscured by parked vehicles.
330 Views to the east of the character area include linear views down paths and a road trace.
331 Chairs on the porches and chairs and tables on the patios at the Sunset Lodge units.
332 Litter and recycling receptacles adjacent to the Sunset Lodge units.
333 Bollard light fixtures adjacent to the hotel.
334 Manhole covers adjacent to the hotel.
335 **Character Area 6: Visitor Center Complex**
336 Mammoth Cave Parkway is one of the major organizing features of the character area.
337 The large parking lot also serves as a major organizing feature.
338 Dense forest vegetation borders the character area to the east, west, and southwest.
339 The asphalt paved road is divided by a large grassy median.
340 Larger parking spaces are provided for RVs, buses, and vehicles towing trailers.
341 An exposed aggregate concrete sidewalk lines the south edge of the parking lot.
342 One of the pedestrian entrances from the parking lot.
343 A second pedestrian entrance.
344 A sidewalk leads to the tour shelters and bus drop-off area.
345 The pedestrian bridge leading to the hotel complex, flanked by stone columns.
346 An oak with some die-off in its upper branches.
347 A view of the visitor center.
348 Metal gates and stone clad masonry wall at the utility enclosure east of the visitor center.
349 A view of the cave tour information kiosk in front of the visitor center.
350 A metal flagpole along the main walkway to the visitor center.
351 A drawing of the wild cave tour shelter.
352 A view of one of the tour shelters outside the visitor center.
353 A view of the lantern tour shelter building.
354 The Woodland Cottages are visible from the visitor center parking lot.
355 Two wood signs stand along the road leading to the hotel and bus drop-off loop.
356 Video screens in the cave tour information kiosk at the visitor center entrance.
357 Commemorative marker honoring Stephen Mather.
358 Recycling bins in the visitor center plaza.
359 Ash, cigarette, and cigar receptacle in the visitor center plaza; adjacent bollards prevent vehicular access.
360 Decorative concrete bollards prevent vehicular access to the visitor center plaza.
361 Pole-mounted lights illuminate the visitor center parking lot.
362 **Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances**
363 Dixon Cave has a bat gate inside the entrance.
364 The YMCA Cave Entrance located on the south side of Green Ferry Road.
365 The Green River serves as the western boundary of the Core Visitor Services Area.
366 River Styx Spring backs up to a steep bluff.
367 Spatial organization is characterized by heavy woodland vegetation surrounding trail corridors.
368 The spatial quality of the trails begins to open, providing a view to the river valley.
369 Topographic modifications for trail construction include the use of stone retaining walls.
370 Grading was required to construct the stone retaining walls on both sides of the ferry crossing.
371 Green River Ferry Road leads from Mammoth Cave Parkway to the ferry crossing.
372 The ferry crossing on Green River Ferry Road.
373 A concrete ditch near the crossing is utilized as canoe storage.
374 The old ferry crossing, accessed from the River Styx Spring Trail.
375 The access trail to the old ferry crossing follows a road trace.

376 The ferry parking lot on Green River Ferry Road.
377 The gravel-paved Green River Bluffs Trail.
378 Benches at a small overlook on the Green River Bluffs Trail.
379 The River Styx Spring Trail.
380 The chlorinator building.
381 Scenic overlook wooden rail structure on Green River Bluffs Trail.
382 Boardwalk to the River Styx Spring.
383 A complex system of boardwalk and platforms at the Dixon Cave Entrance.
384 View of the Green River from the bluffs trail.
385 Typical wooden directional sign.
386 Typical low profile interpretive sign adjacent to web cam installation on Green River Bluffs Trail.
387 Some low profile interpretive signs are mounted on the wooden railings of overlooks.
388 Built-in bench seating at the River Styx Spring overlook.

Analysis and Evaluation

389 Construction at the visitor center in 2011.
390 Ed Bishop at the Historic Entrance to Mammoth Cave.
391 Historic Entrance to Mammoth Cave in 2011.
392 Aerial view of the Core Visitor Services Area in 1929, including Guide House.
393 Aerial view of the Core Visitor Services Area in 1968.
394 Mammoth Cave Parkway looking south from the visitor center parking.
395 Green River Ferry Road corridor with surrounding vegetation.
396 Green River Ferry Road corridor descending to the ferry crossing, with parking to the north.
397 Historic Entrance area along the paved portion of the River Styx Spring Trail.
398 View to the open space of the Old Guide's Cemetery from the Heritage Trail.
399 Green River Bluffs Trail corridor.
400 Historic photograph of the Woodland Cottages.
401 Wooden cottages and paved pathways in 2011.
402 Historic photograph of the second hotel after 1925.
403 Site of the second hotel and associated vegetation in 2011.
404 Historic photograph of the grounds of the original hotel, 1915.
405 View south from the hotel parking lot to the site of the second hotel in 2011.
406 View north from the camp store and service station parking to the old entrance road trace.
407 View south from the hotel parking to the open space, grassed landscape and groves of trees.
408 Deluxe Cottages and associated vegetation in the 1940s.
409 Semi-circular pattern of the Deluxe Cottages and associated vegetation in 2011.
410 Deluxe Cottages and associated vegetation in the 1940s.
411 Deluxe Cottages with grassy open space and associated trees in 2011.
412 Postcard with image of "The Hobson" with a sign Mississippi War Museum.
413 Engine No. 4 and Coach No. 2 Train Exhibit, with the wooden shelter that was built in the 1930s.
414 Engine No. 4 and Coach No. 2 Train Exhibit, with shelter built in 1967.
415 Mixed media drawing of Nick Bransford by J. F. Richardt.
416 1941 photograph of the Green River Ferry, looking west.
417 A similar view in 2011. The concrete gutters and retaining walls are still present.
418 This historic photograph depicts the pre-1926 trail alignment up the slope toward the hotel.
419 A postcard view of the previous Old Guide's Trail, circa 1910.
420 A view of the previous Old Guide's Trail, 1931.
421 Extent of woodland cover, circa 1930.
422 Mammoth Cave entrance road, flanked by eastern red cedars, unknown date.
423 A similar view in 2011 shows that many of the cedars remain extant.
424 Eastern red cedars lining a path between the 1925 hotel and yard, unknown date.
425 A similar view in 2011; four of the trees survive as shown.
426 Deciduous trees in the hotel yard, unknown date.
427 Ornamental vegetation at one of the Deluxe Cottages, unknown date.
428 A similar view in 2011; as shown few of the plantings remain.

429 A view of the amphitheater shortly after opening in 1939.
430 A similar view in 2011; note the differences in the stage and the seating.
431 A view of the Mammoth Cave Hotel shortly after opening in 1965.
432 A similar view of Mammoth Cave Hotel in 2011.
433 An undated view of the pedestrian bridge and visitor center.
434 A similar view of the altered visitor center and pedestrian bridge, 2011.
435 An undated view of the second Mammoth Cave Hotel.
436 View to the Green River Valley from the Green River Bluffs Trail.
437 View to the Bluffs from Sunset Point along the Heritage Trail.
438 View to the site of the 1925 Mammoth Cave Hotel.
439 View north to old entrance road and arch sign, circa 1930s.
440 View to the road trace associated with the arch entrance of the 1920s and 1930s.
441 View to the old entrance road trace through the campground.
442 Photograph showing the newly completed tennis court and fence.
443 Remnant fireplace grills are located north of the Sunset Lodge.
444 Remnant fireplace grills are located north of the Sunset Lodge.
445 Photograph of map cases from a 1939 memo. A log bench is visible in the foreground.
446 Two guides, Matt Bransford and "Dad" Lively, are shown with Dorothy Ranshaw, circa 1911.
447 A tour group at the Historic Entrance, early 1900s.
448 A similar view in 2011.
449 Two log benches and a rustic lamp are visible in a photograph of the Guide House, circa 1940.
450 1939 photo of the amphitheater.
451 The metal railing at the Historic Entrance is visible in this photograph of cave guide Ed Bishop.
452 A group of cave guides; a lantern at the hotel is visible at the right, early 1900s.
453 Another type of gas lantern, visible behind the stagecoach, unknown date.
454 A hanging lantern in the hotel yard, 1916.
455 The rustic lamps at the Woodland Cottages area were manufactured at Mammoth Cave, 1940.
456 The cedar arbor at the intermittent stream was used as a backdrop for photographic portraits.
457 The cedar arbor at the intermittent stream was used as a backdrop for photographic portraits.

Treatment Plan

458 Treatment Recommendations: Character Area 1: Historic Core.
459 Spatial organization within the landscape of the historic core.
460 Current condition of shuffleboard and scoreboard.
461 Tennis courts within the historic core.
462 Asphalt walkway from the parking area of the hotel to the Deluxe Cottages.
463 Trash receptacles and recycling receptacles already in use at the visitor center.
464 Extant paths and tree vegetation at the Deluxe Cottages from 1939 plan.
465 Treatment Recommendations: Character Area 2: Picnic Area and Woodland Cottages.
466 Stone curb/wall and steps associated with parking lot in the picnic area.
467 Stone foundation of the former comfort station.
468 Stone water fountain within the picnic area dates to 1940.
469 Stone water fountain pedal apparatus still present at the extant fountain.
470 Asphalt path is uneven and edges are slumping off.
471 Asphalt surfacing needs to meet grade and swales pulled away from the edge of the path.
472 Pipe under the pathway is exposed and may represent a tripping hazard.
473 Extant paths and tree vegetation at the Woodland Cottages from 1938–1939 plan.
474 Plan illustrates presence of the stone curb/wall from the period of significance.
475 Construction drawings for the fountain dated 1940.
476 Treatment Recommendations: Character Area 3: Historic Entrance and Old Guide's Cemetery.
477 Stone headwall along the Historic Entrance Road.
478 Limb debris in drainage system at the Historic Entrance.
479 Treatment Recommendations: Character Area 4: Campground.
480 Repair needed on sections of the pedestrian paths to the comfort stations.
481 Wooden fence protects the stone headwall in the campground from vehicular or pedestrian traffic.

482 Gravel washout at the interface of the bridge and trails.
483 Gullies have formed in the middle of the gravel trail.
484 Erosion and tree roots are trip hazards for visitors.
485 Wood bench has warping seat elements and needs a stable base and easier access for visitors.
486 Treatment Recommendations: Character Area 5: Mammoth Cave Hotel and Lodging.
487 Grass needs to be removed to clear the culvert and ensure proper drainage.
488 Stone headwall on the access road to the Sunset Lodges.
489 Area west of the hotel and parking should be considered for further parking expansion.
490 Area of asphalt parking that could be considered for removal in order to restore a portion of the landscape.
491 Treatment Recommendations: Character Area 6: Visitor Center Complex.
492 Existing trees at the north entrance to the visitor center.
493 Existing trees incorporated into the new plans for the visitor center.
494 Deciduous tree in poor condition in the parking lot.
495 Tree evaluation necessary for the larger trees when limb damage or disease becomes visible.
496 Treatment Recommendations: Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances.
497 Washout in the middle of the trail surface on the Green River Bluff trail.
498 Wood directional signs are located throughout this character area and in others.
499 Benches in fair to poor condition at the Green River Bluffs overlook.
500 Bench in good condition along the trail.
501 Reinforce the wood supports for the existing structure at the Green River Bluffs overlook.

Appendix B

B-1 Topographic plan, 1935. NPS drawing 135-6002.
B-2 Topographic plan, 1935. NPS drawing 135-6002.
B-3 Site plan of the second Mammoth Cave Hotel and cottages. NPS drawing 135-1063, March 1937.
B-4 Plan of trails and trail markers. NPS drawing 135-1079, dated 1937.
B-5 Topographic plan of the Core Area, 1953. NPS drawing 135-2108.
B-6 Construction of new stairs to the Historic Entrance, 1961. NPS drawing 135-3039A.
B-7 Construction of new stairs to the Historic Entrance, 1961. NPS drawing 135-3039A.
B-8 Plan of the sewer system in the Core Area. NPS drawing 135-41034, dated September 1991.
B-9 Grading plan for Mammoth Cave Parkway, 1958. NPS Drawing No. 135-3030, June 24, 1958.
B-10 Location Plan for Tennis and Shuffleboard Courts. NPS Drawing No. 135-2089, May 1937.
B-11 USGS topographic map, Mammoth Cave, Kentucky, 15 minute quadrangle, 1922.
B-12 USGS map, 1935.

Foreword

Mammoth Cave National Park has been designated as a UNESCO World Heritage Site and International Biosphere Reserve. The Park contains a wide variety of well-preserved cultural resources, both in the cave and above ground, spanning the last 12,000 years. These include evidence of prehistoric cave exploration and mineral mining; American Indian early plant domestication; pioneer settlements and homesteads; sites related to the War of 1812 and saltpeter production; and engineering, design and construction related to 200 years of tourism and park development. The remarkable integrity of cultural resources in the park has and continues to inspire exploration, educational outreach and scientific research. The Core Visitor Services area which is the subject of this study possesses beautifully preserved examples of New Deal and Civilian Conservation Corps (CCC) era architecture and landscaping. This area also contains cultural features dating from the early 19th century when Mammoth Cave became an internationally known tourist destination which lead to the establishment of the area as a National Park. As such, careful consideration must be given to the management of this area to ensure that these resources are preserved for future generations. The guidance offered in this report will allow us to accomplish this goal.

This project would not have been possible without the attention and knowledge of the park staff. Given the collective years of experience contained within the staff, finding answers to difficult questions was usually never more than a conversation away. A number of individuals contributed to the successful completion of this work, but we would particularly like to thank the Project Team who authored the report and the staff at Mammoth Cave National Park , including Superintendent Sarah Craighead, Former Superintendent Patrick Reed, Deputy Superintendent Bruce Powell, Chief of Science and Resource Management Bobby Carson, Chief of Interpretation Mike Adams, Chief of Program Services, Joy Lyons, Chief of Facilities Management Steve Kovar, Program Coordinator Ken Kern, and Museum Curator Terry Langford for their assistance throughout the process. The park would like to give special recognition to the significant contribution of Joy Lyons to this report. Ms. Lyons, now deceased, led the interpretive staff at Mammoth Cave and insisted they conduct their own research for presentations on cave tours and nature walks. More than a professional interest, Ms. Lyons' personal passion to know the people and the culture of Mammoth Cave uncovered a wealth of information that contributed to this report and enriched it.

We would like to thank the staff of Wiss, Janney, Elstner Associates, Inc., in particular project leader Deborah Slaton, and researchers/architects/historians Ken Itle, Mike Ford, and Tim Penich, as well as landscape architects Jane Jacobs, Laura Knott, and Christina Osborn of John Milner Associates, Inc., and Liz Sargent of Liz Sargent HLA, for their thorough research, rigorous existing conditions documentation, carefully considered recommendations, and patience dealing with the numerous review comments on the various drafts of this report and the slow completion of tasks while the park handled its daily duties in addition to providing review comments and supporting documentation, and resolving conflicting information.

Additionally, the park would like to recognize the Southeast Regional Cultural Resource Division for all of their expert opinions and comments that they gave to this project. Perhaps their most important contribution was their coordination between the park and the contractor. David Hasty and Beth Byrd, among a few, helped to keep this project on track as we moved forward. The park would like to thank former Southeast Regional Office Cultural Landscapes Branch Chief and current Congaree Swamp Superintendent Tracy Stakely for his work in getting Cultural Landscape studies underway. Together, the synergy of this group produced a document that will assist park managers and resource preservationists for years to come.

Sarah Craighead
Superintendent
Mammoth Cave National Park

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Mammoth Cave National Park

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Laura Knott, Principal Historical Landscape Architect
Jane Jacobs, Project Landscape Architect
Christina Osborn, Landscape Designer

Liz Sargent HLA

Liz Sargent, Historical Landscape Architect

Introduction

Management Summary

Mammoth Cave National Park, which encompasses 52,830 acres, is located in south-central Kentucky, primarily in Edmonson County northwest of Park City, and falling approximately midway between Louisville, Kentucky, and Nashville, Tennessee. It was established as a national park on July 1, 1941, for the purpose of preserving Mammoth Cave, which, with more than 400 miles of surveyed cave passages, is the longest known cave system in the world. The park also protects the landscape setting of the cave system, with its scenic river valleys and karst topography. Mammoth Cave became a World Heritage Site on October 27, 1981, and an International Biosphere Reserve on September 26, 1990.Since then, concern over development pressures outside park boundaries led to an expansion of the Biosphere Reserve area to its current 909,295 acres.

The idea of creating a park to conserve the magnificent caves dates back to the nineteenth century. The movement gained support in 1924 with the founding of the Mammoth Cave National Park Association. Through the efforts of this group and others, the establishment of a national park at Mammoth Cave was authorized in 1926 under enabling legislation of the U.S. Congress (56 Statute 317), contingent on acquisition of necessary park property. The enabling legislation noted three distinctive features of national significance: extensive limestone caverns and associated karst topography, scenic river valleys, and hilly country representative of south central Kentucky. The landscape containing these features was primarily rural and kept in small farmsteads. Donated funds were used to purchase some of these farmsteads, but other tracts were acquired by right of eminent domain and residents were relocated. After initial creation of the park, additional properties and features continued to be incorporated into its boundaries, including, in 1960 and 1961, two remaining inholdings: Great Onyx Cave and Crystal Cave. The park has secured additional land parcels as recently as the 1990s.

The area of study for this cultural landscape report, the Core Visitors Services Area, lies at the heart of the park. The Core Visitor Services Area includes layers of significant cultural landscapes that precede the development of the national park, including the original natural entrance to Mammoth Cave (Historic Entrance), first surveyed and registered in 1798.

The desire to visit and economically exploit Mammoth Cave brought significant transformations and impacts through time to the surrounding landscape (Figure 1 through Figure 4). These transformations included historic roads and rail transportation as well as structures, vegetation, and river crossings. There were also dramatic transformations to the landscape after the park was established. There were four Civilian Conservation Corps (CCC) camps in the park from May 22, 1933, to July 1942. The CCC removed existing structures such as farmsteads, houses, barns, outbuildings, and fences; added a number of new buildings to the park; completed renovation projects involving the hotel; and accomplished many infrastructure improvements on roads and cave trails, as well as natural resource conservation, restoration and stabilization projects. The CCC furthered its conservation mission and assisted in restoring a “natural” appearance to the park by planting trees in fields

previously cleared for agricultural purposes.[1] The work of the CCC significantly changed the overall appearance of the park.

> Not only did the CCC work foster radical landscape changes by removing the vast majority of the buildings constructed prior to the park era and replacing them with a restored 'natural' appearance, but also the CCC began developing a system of roads, trails, buildings, and utilities which comprised the initial NPS infrastructure in the park.[2]



FIGURE 1. Historic Entrance to Mammoth Cave.



FIGURE 2. Remnants of historic cedar grove and road trace at the site of the second (1925) hotel.



FIGURE 3. Site of the second hotel.



FIGURE 4. Green River Bluffs trail with views to the Green River.

The present-day Core Visitor Services Area remains the heart of the park due to the historical significance of cultural and natural resources and the present land uses associated with the establishment of the park. Resources in the Core Visitor Services Area include the visitor center and associated parking, tour shelters and circulation, and the hotel, cottages, motor lodge, and restaurants provided for visitor lodging and comfort. Additional resources include the picnic area; campground and associated post office and store; hiking trails in the area bounded on the north by the Green River bluffs and on the south by Echo Spring, and the beginning segment of the

1. Cecil E. Goode, *World Wonder Saved*, (Mammoth Cave, Kentucky: Mammoth Cave National Park Association, 1986), 43–44; Kelly A. Lally, draft National Register nomination context documentation, "Development of the Mammoth Cave Area into a National Park (1926–1942)," 27–29.

2. Kelly A. Lally and the Kentucky Heritage Council, "National Register Nomination for Mammoth Cave National Park Historic Resources," May 8, 1991, D-14.

Mammoth Cave Railroad Bike and Hike Trail to Park City; the Historic Entrance and the entrances to two other caves, Dixon Cave and White Cave; the Green River Ferry crossing and the old ferry crossing and road trace at River Styx; the Old Guide's Cemetery; Engine No. 4 and Coach No. 2 interpretive exhibit and remnant railroad bed; chlorinator house and other water treatment facilities; trails, roadways, and associated structures providing access to the features of the site; and other landscape features from various historic periods.

Over the years, routine maintenance and evolving park management, maintenance, and visitor use needs have led to proposals for change within the Core Visitor Services Area. The Mammoth Cave General Management Plan (NPS 1983) includes a long term planning framework that continues to guide park decision making for management of the caves, rivers, and other natural and cultural resources in the park. The park completed a Foundation Document in June 2014 that updates the 1983 General Management Plan and will serve as a key document for future park planning.

The park has recently evaluated the need for modifications to the lodging facilities. The preferred alternative includes upgrades to utilities and mechanical systems, the removal of the Heritage Trail Wing, rehabilitation of the Sunset Lodge, renovation of the food service and retail facilities, improved site circulation and accessibility, expanded hotel parking (from 190 to 240 spaces), and renovation of the hotel with a new exterior design matching the recently completed visitor center renovation and expansion.[3] In addition the park recently completed the planning phase for the Green River Crossing Rehabilitation. The park is also in the process of planning for the rehabilitation of the historic portion of the Cave Tours Trail.

The National Park Service has recently completed the renovation of, and additions to, the original Mission 66 visitor center and the construction of new tour shelters and the associated circulation and parking around the visitor center.

Additional significant projects that have occurred in the past ten to fifteen years in the Core Visitor Services Area include completion of the sewer system (late 1990s); modifications to the camp store and service center (2001); installation of oil and grit separators (2004); rehabilitation of the road to the Historic Entrance (2004); campground entrance road and building replacement (2004); other road improvements, including changes to the access road to the hotel and a new bus loop, (circa 2005); installation of the cave electric system, particularly surface features such as generators (2007); amphitheater upgrades (2010); completion of the Mammoth Cave Railroad Bike and Hike Trail (2007); construction of the Big Hollow Trail (2013); and expanded parking at the Maple Spring Trailhead (2014). The park is currently in the planning process for the rehabilitation of the historic portion of the Cave Tours Trail.

In order to appropriately manage the developed Core Visitor Services Area within Mammoth Cave National Park, the National Park Service engaged the team of preservation professionals, including Wiss, Janney, Elstner Associates, Inc. (WJE) of Northbrook, Illinois, and John Milner Associates, Inc. (JMA) of Charlottesville, Virginia, to prepare a Cultural Landscape Report (CLR) for the area to help guide the design and implementation of proposed changes, as well as the repair and rehabilitation of features now and in the future. In support of this goal, this CLR identifies the character-defining features of the Core Visitor Services Area site, documents historic and existing conditions, and evaluates significance and assesses integrity in accordance with the National Register

3. *Mammoth Cave National Park: Improvements to Concession Facilities Environmental Assessment* (Mammoth Cave National Park, November 2013), with "Finding of No Significant Impact," January 2014.

of Historic Places. The report also conveys resource-specific treatment recommendations intended to assist park staff in improving the condition of park resources while furthering planned improvements.

Description of Study Boundaries

See Figure 5, context map, Figure 6, location map, and Figure 7, detail map.

The Core Visitor Services Area of Mammoth Cave National Park is located in the east/central portion of the park and is the primary above ground visitor contact site within the park. It is generally bounded by the Green River Ferry Road (south), South Entrance Road or Mammoth Cave Parkway (east), Green River Bluffs Trail (north) and Green River (west). The area contains approximately 500 acres and is entirely within the Edmonson County portion of the park. The Core Visitor Services Area is accessed from the north from Exit 53 (Cave City Exit) off Interstate 65. Kentucky State Highway 70 intersects with Kentucky State Highway 255 at Turley's Corner, outside the park. Kentucky 255 travels to the north and becomes the Cave City Road within the park. Kentucky 70 and 255 travel together to the south, where 70 becomes the Mammoth Cave Parkway, which continues to I-65, exit 48.

Other access from north of the park is from Kentucky State Highway 1352 until it enters the park and becomes the North Entrance Road. The North Entrance Road leads to the Green River and the Green River Ferry Crossing. Automobiles are ferried across the river and exit onto Green River Ferry Road. This road leads to the Mammoth Cave Parkway. The river, the Green River Ferry Road, and the Mammoth Cave Parkway form three of the boundaries of the Core Visitor Services Area.

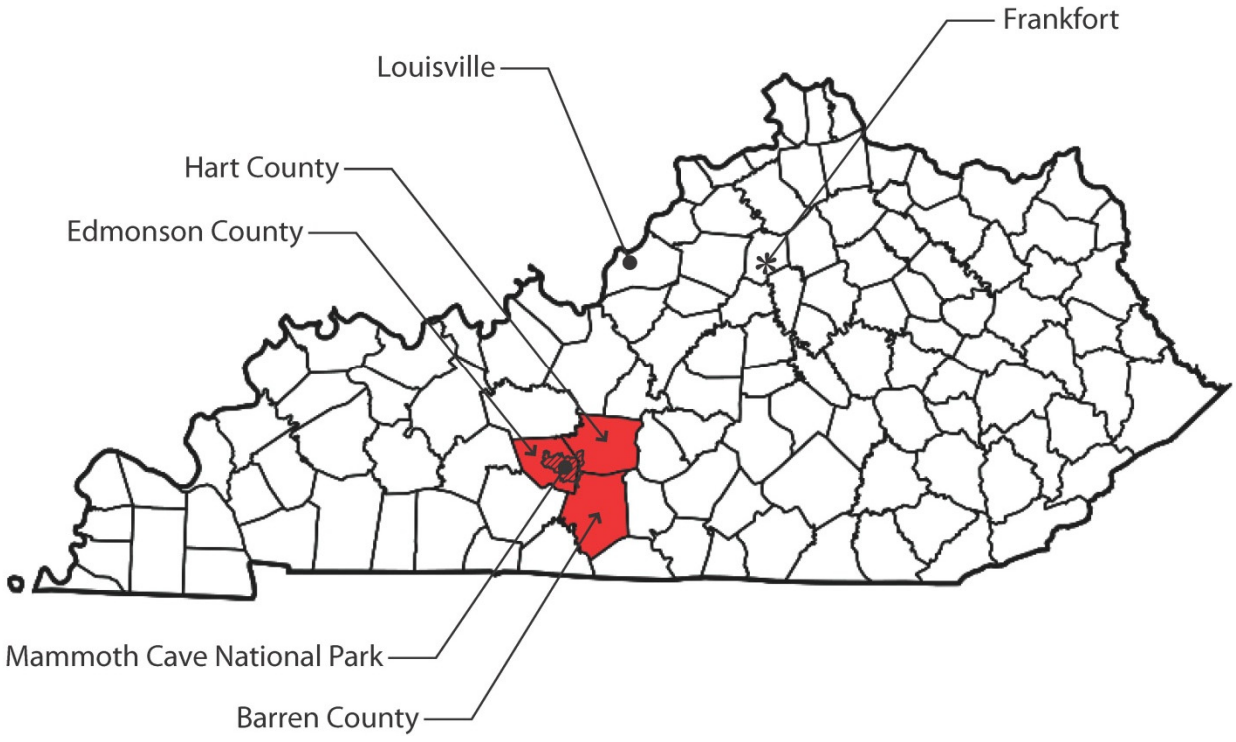


FIGURE 5. Mammoth Cave National Park Context Map (not to scale).

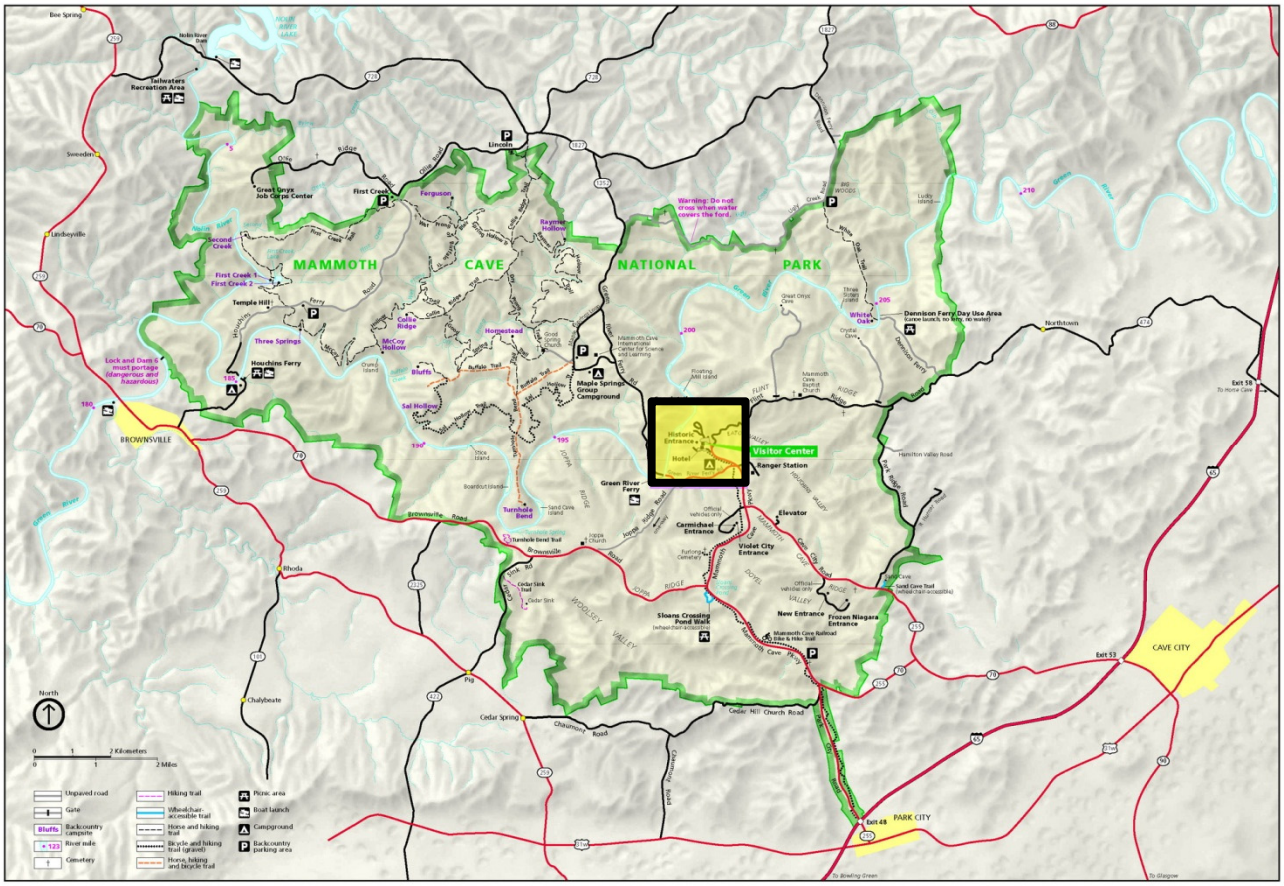


FIGURE 6. Map showing the location of the Core Visitor Services Area within Mammoth Cave National Park.

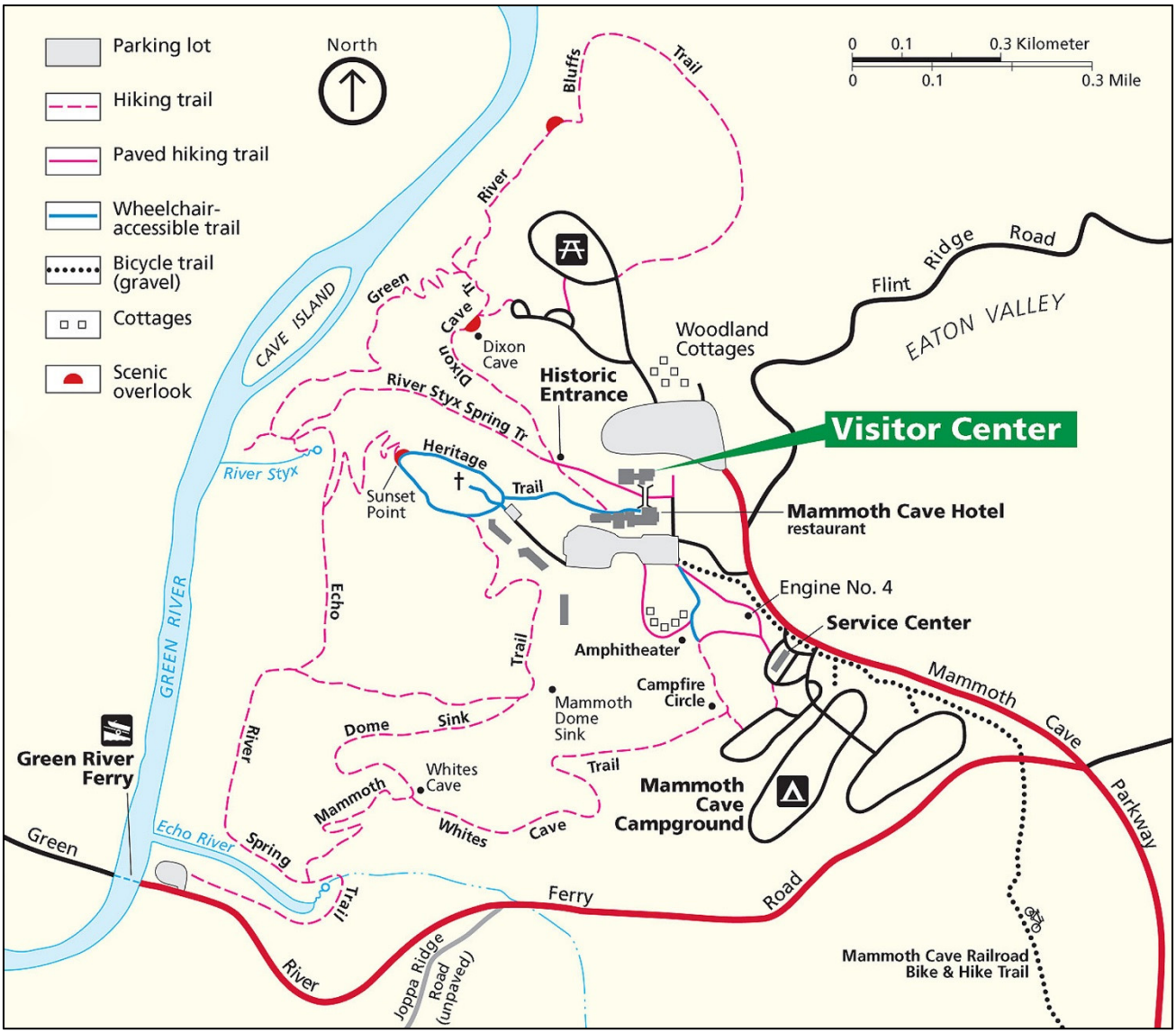


FIGURE 7. Detail map of the Core Visitor Services Area. Source: Mammoth Cave National Park.

Historical Summary

Mammoth Cave was known to prehistoric peoples, and according to folklore, it was rediscovered by John Houchin, a hunter who allegedly shot a bear in the vicinity and proceeded to follow it to the cave entrance. While the exact date of the rediscovery of the cave is unknown, it was known to pioneer settlers by 1798.

During the early nineteenth century, around the time of the War of 1812, mineral deposits in Mammoth Cave were mined to extract saltpetre (potassium nitrate), which is used for the production of gunpowder. With the end of the war, tourists began to visit in response to discoveries made inside the cave, including prehistoric human remains. Franklin Gorin purchased the Mammoth Cave property in 1838, bringing slaves from his home in Glasgow, Kentucky, to the site. Among these slaves was Stephen Bishop, who would become renowned as a guide for visitors to the cave.

In 1839, Dr. John Croghan purchased the cave and the surrounding property. Croghan built an addition to an existing inn at the site and had several new roads constructed to better facilitate travel to Mammoth Cave. In 1842, he arranged for thirteen individuals suffering from tuberculosis and members of their families to live in Mammoth Cave. Croghan's experiment lasted only until 1843, by which time seven patients had died. Dr. Croghan himself died of tuberculosis in 1849.

The popularity of Mammoth Cave as a tourist destination began to grow in the mid-nineteenth century and transportation to the site significantly improved beginning in the 1850s. In 1859, the Louisville and Nashville Railroad brought travelers to nearby Bell's Tavern (present-day Park City, Kentucky), where they could board stagecoaches that travelled to Mammoth Cave. Following the Civil War, the number of visitors to Mammoth Cave grew substantially. As the number of tourists travelling to the cave increased, the stagecoach line was replaced by the new Mammoth Cave Railroad. The first passengers of the Mammoth Cave Railroad arrived at the site on November 8, 1886.

The original hotel was renovated and expanded throughout the nineteenth century and remained in use until 1916, when it was destroyed by fire. A second hotel was constructed in several phases starting in 1925, near the site of the original hotel. The new two-story, gable-roofed, wood-sided structure had a covered porch on one side and housed forty-three guest rooms. In 1938, tennis and shuffleboard courts were constructed west of the hotel by the CCC. In 1936–1937, ten hotel cottages (the "Deluxe Cottages") were constructed southeast of the hotel. In 1938–1939, sixteen Woodland Cottages were constructed north of the existing hotel, with five additional cottages added in 1949.

The number of tourists visiting Mammoth Cave continued to grow in the late nineteenth century. In attempt to capitalize on the popularity of Mammoth Cave, several local residents began searching for other caves in the area that might attract tourists. By the turn of the twentieth century, approximately ninety caves had been discovered near Mammoth Cave. In 1921, George Morrison, a nearby land owner, constructed a manmade entrance to Mammoth Cave approximately 2-1/2 miles from the Historic Entrance.

The idea of establishing a national park at Mammoth Cave was first broached in the late 1880s by representatives of the Louisville and Nashville Railroad, who thought that a national park would result in increased business for the railroad. Members of Congress began showing interest in creating a national park at Mammoth Cave as early as 1905. The Southern Appalachian National Park Commission visited Mammoth Cave in May 1925 and recommended establishing a national park. Legislation to authorize the park was enacted in 1926; however, no federal funds were available at that time for land acquisition.

The Louisville and Nashville Railroad donated more than 3,000 acres to the Mammoth Cave National Park Association in 1929. At the same time, the Association purchased a two-thirds

ownership of the Mammoth Cave estate. Finally, in May 1934, new legislation allowed the Secretary of Interior to accept monetary donations for land purchases. This allowed the National Park Service to take the lead in acquiring land. On May 22, 1936, the Secretary of the Interior formally accepted deeds to 27,561 acres of land, allowing Mammoth Cave to be formally designated a national park. By the late 1930s, land acquisition began to proceed at a more rapid pace. In 1941, the amount of park-owned land surpassed the 45,310 acre minimum required by the 1926 legislation, allowing Mammoth Cave to be fully established as a national park. The National Park Service assumed full responsibility for the administration, protection, and development of Mammoth Cave National Park on July 1, 1941. Despite receiving full designation as a national park in 1941, official dedication of the park was postponed until 1946 due to the involvement of the United States in World War II.

Although federal funds were not immediately available for the development of the park, some work was able to begin in the mid-1930s. Funding was provided by the over $400,000 in profits realized by the Mammoth Cave Joint Operating Committee from park visitors who rented hotels rooms and paid for guided cave tours between1934 and 1940. The Committee turned this money over the National Park Service, which subsequently used the money to fund improvements to the new park land which was undertaken by the Civilian Conservation Corps (CCC).

Four CCC camps operated at the park between 1933 and 1942. Members of the CCC razed buildings on land acquired by the government and constructed a park maintenance complex, a six-building housing complex for park employees, a home for the Park Superintendent, a chlorinator house and sewer system, and ranger station facilities. The CCC also completed small renovation projects at the hotel, while making improvements to the cave that included adding handrails and bridges. The CCC was also responsible for improvements to the cave trails and construction of Green River Ferry Road as well as other roads. Other developments in the 1930s included a new picnic area and campground with comfort station and laundry building and an amphitheater. The CCC also installed many shade trees, flowering trees, and shrubs in the area around the 1925 hotel, its parking lot, and the tennis and shuffleboard courts, as well as around the newly-constructed Woodland Cabins and Deluxe Cottages.

Following World War II, five additional Woodland Cottages and the Sunset Lodge were constructed. Further development to the site occurred during the Mission 66 era, including a new visitor center and hotel with adjacent parking lot, walkways, plazas, and pedestrian bridge; a new camp store and service station building; a new campground; and a new Mammoth Cave Hotel.[4] Also during this period, the walkway and stairs leading to the Historic Entrance were improved, electric lighting was apparently extended into the cave, and a shelter was constructed to protect the Engine No. 4 and Coach No. 2 exhibit.

In 1979, the 1925-era Mammoth Cave Hotel was demolished. A new employee dormitory was constructed in 1985. In the 1990s, improvements and additions were made to some of the other lodging facilities at the park.

In 2007, construction began on a new visitor center on the foundations of the Mission 66-era visitor center. The former administrative wing was dismantled and reconstructed first and was completed in 2010. In 2010, work began to reconstruct the former museum wing. New open-air shelters were constructed adjacent to the renovated visitor center to serve as meeting places

4. The former camp store and service station is now known as the camp store and service center, as it no longer sells fuel or repairs/services automobiles.

for tour groups. The new visitor center opened in 2012.

Scope of Work and Methodology

Project Scope

Cultural Landscape Reports (CLRs) serve as both principal treatment documents and primary tools for long-term management of cultural landscapes. Treatment and management decisions for the physical features, biotic systems, and use of the landscape are guided by the comprehensive description of the entire landscape presented in a CLR. The document establishes preservation goals for cultural landscapes based on historical research, inventory and documentation of existing conditions, and evaluation of the historical significance of landscape characteristics and features according to National Register criteria. The documentation included in the CLR forms the basis for management, maintenance, treatment, use, and interpretation of the landscape consistent with the historical significance of the site.

The CLR for the Mammoth Cave Core Visitor Services Area is intended to:

- Describe the historical development of the Core Visitor Services Area
- Document existing site conditions
- Analyze the landscape's potential National Register significance to confirm the primary period of significance, and identify other potential periods of significance
- Assess the landscape's integrity by comparing the existing condition to the condition during the period(s) of significance
- Identify the site's character-defining features
- Identify a preferred treatment alternative and appropriate treatment recommendations and guidelines that balance preservation of park resources with contemporary needs of park operations
- Provide strategies for landscape restoration

The CLR also includes a prioritized list of possible National Park Service Project Management Information System (PMIS) statements for landscape preservation/rehabilitation projects. These projects will be generated directly from the treatment recommendations/guidelines developed in the treatment section of the CLR. The prioritized list is intended to provide a general outline for the work needed at the site in order to fully implement the recommended treatment. Upon finalization of the CLR and draft PMIS project list, park staff may further develop the projects, generate cost estimates, enter them into PMIS, and submit them for funding following National Park Service requirements.

Project Methodology

The CLR for the Mammoth Cave Core Visitor Services Area has been prepared in accordance with the guidance offered in the most recent versions of various federal standards documents, including:

- *A Guide to Cultural Landscape Reports: Contents, Process, and Techniques*
- *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*
- NPS Director's Order 10A: *Design and Construction Drawings*
- NPS Director's Order 28: *Cultural Resources Management*
- NPS Director's Order 77—Reference Manual 77: *Natural Resource Management*
- *NPS-SER-82: Biotic Cultural Resources: Management Considerations for Historic Districts in the National Park System, Southeast Region*

- *The Uniform Federal Accessibility Standard* (UFAS)and *Americans with Disabilities Act Accessibility Guidelines* (ADAAG)
- *The National Park Service's Guiding Principles of Sustainable Design*
- National Register Bulletin*: How to Apply the National Register Criteria for Evaluation*
- National Register Bulletin*: How to Evaluate and Nominate Designed Historic Landscapes*
- National Register Bulletin*: Guidelines for Documenting and Evaluating Rural Historic Landscapes*
- National Register Bulletin: *Guidelines for Evaluating and Registering Cemeteries and Burial Places*
- National Register Bulletin: *Telling the Stories: Planning Effective Interpretive Programs for Properties Listed in the National Register of Historic Places*

The methodology used to prepare each component of this study is described in detail below.

Background Research and Data Collection

Prior to visiting the site in August 2011, CLR project team members from WJE and JMA began to collect documents and other materials pertaining to the project and site. These included various NPS reports, secondary sources addressing the history of the site and region, and information available from the National Park Service Technical Information Center (TIC) in Denver, Colorado. In preparation for field investigations, project personnel requested GIS files from the park and the NPS Southeast Regional Office for use in developing base maps for field inventory.

Start-up Meeting

On August 16, 2011, WJE and JMA project team members met with park and regional NPS personnel at Mammoth Cave National Park (MACA) to initiate work on the CLR and an associated historic structures report (HSR) for the MACA Superintendent's Residence. Those participating in the meeting included:

Southeast Regional Office of the National Park Service

- Tommy Jones, Historian and Section 106 Coordinator

Mammoth Cave National Park

- Patrick Reed, Superintendent
- Bruce Powell, Deputy Superintendent
- Ken Kern, Management Assistant
- Bobby Carson, Acting Chief, Science and Resource Management
- Mike Adams, Chief of Interpretation
- Joy Medley Lyons, Chief of Program Services
- Vickie Carson, Public Information Officer
- Terry Langford, Curator
- Rick Toomey, Research Coordinator
- Eddie Wells, Volunteer Coordinator/ATR
- Johnny Merideth, Park Ranger
- Lillian Scoggins, Cumberland Piedmont Network and MACA GIS Specialist

Wiss, Janney, Elstner Associates, Inc.

- Deborah Slaton, Project Manager/Historian
- Mike Ford, Project Intern Architect/Historian
- Tim Penich, Project Intern Architect/Historian

John Milner Associates, Inc.

- Laura Knott, Principal Historical Landscape Architect
- Jane Jacobs, Project Landscape Architect
- Liz Sargent, Historical Landscape Architect

During the meeting, the purpose, goals, and methodology of the CLR were reviewed by

Tommy Jones and project team members. The CLR study area consists of the primary surface visitor contact area in the park, generally bounded by Green River Ferry Road (south), Mammoth Cave Parkway (east), Green River Bluffs (north), and the Green River (west). Specific resources to be assessed in the study area were: the Mammoth Cave Hotel, Woodland and Deluxe Guest cottages, Sunset Lodge, concessions dormitory, and adjacent grounds surrounding hotel facilities; visitor center, tour shelters, and pedestrian bridge; picnic area and associated structures and features; parking lots and adjacent road segments; hiking trails in the immediate area bounded on the north by the Green River bluffs and on the south by Echo Spring, and the beginning segment of the Mammoth Cave Railroad Bike and Hike Trail to Park City; cave entrances including Historic Entrance, Dixon Cave, and White Cave; the Green River ferry crossing, old ferry crossing and road trace (at River Styx); other road traces; the Old Guide's Cemetery; campground facilities including the store, post office, and amphitheater; the Engine No. 4 and Coach No. 2 interpretive exhibit and remnant railroad bed; the chlorinator house; miscellaneous landscape features from various historic periods such as stone walls, remnant steps, abandoned road traces, etc.; and other landscape features identified during the field survey. Recent and anticipated work at the park and issues of concern were also discussed during the meeting.

Research sources available to the project team were discussed during the meeting, including park planning documents, maps and drawings, aerial photographs, and other sources at the park and at Western Kentucky University. Park personnel also suggested persons associated with the park as an additional source of information, for possible follow up by the project team.

A tour of the study area followed, conducted by NPS personnel with project team members. Specific projects and issues of interest discussed during the tour included the evaluation of the significance of the Mission 66-era features, especially in light of the planned rehabilitation of the hotel; evaluation of significance of CCC-era features, as well as the distinction between these resources and those constructed by the Job Corps Center; the need to protect archeological resources; the unique character of the natural resources of Mammoth Cave; the significance of man-made features associated with the cave; the cedar glades, important features of the 1890s hotel setting; and the need to provide and appropriately locate additional parking on site.

In addition to conducting research and site work, members of the project team also had the opportunity to participate in the "historic tour" of Mammoth Cave during the research visit.

Field Investigations

Beginning on August 15, 2011, CLR team members conducted preliminary field investigations, documenting landscape resources associated with the site. Team members photographed primary and representative landscape features, both cultural and natural, and annotated copies of base maps with observations about materials, resource condition, and information to be used to update the mapping files. The location and orientation of photographs were noted on the field maps. Where available mapping was lacking in detail, team members prepared sketch maps in the field which were later used to enhance the electronic files.

Historical Landscape Documentation and Site Physical History

At the start of the present study, additional research was conducted at the park archives, focusing on archival documents and photographs related to the history of the region and the park. Among the park collection are numerous written documents and photographs related to the discovery of Mammoth Cave, the growth of tourism to the site, and establishment and evolution of the park.

Secondary documents and NPS and park planning documents were used for reference during the study. Of particular interest was the report entitled, *Cultural Resources Management in Mammoth Cave National Park*, prepared by the National Park Service and the Kentucky Heritage

Council(September 1991). Also of interest is the Mission 66 prospectus for the park (available in the park archives) and various park planning documents provided by NPS for review including the General Management Plan (1983), Draft Environmental Assessment for Hotel Improvements (2011), and the Comprehensive Trail Plan (2008).[5] The Consensus Determination of Eligibility for Thirty-Three New Deal-Era Buildings at Mammoth Cave National Park, prepared by Southeast Regional Office circa 2009, was also of particular interest.

During the site visit, project team members conducted archival research at the MACA Museum collections with assistance from Terry Langford, Curator, and the collection of MACA Program and Interpretation Services with assistance from Joy Lyons, Chief of Program Services. Project team members also met with Steve Kovar, Chief of Facilities Management, to discuss ongoing repair and maintenance programs at the park, and with Teresa Leibfreid, Program Manager for the Cumberland Piedmont Network to discuss the Superintendent's Residence (which Network staff occupies).Team members also visited the archives at Western Kentucky University.

Following the site visit, additional research was conducted at the National Archives at College Park, Maryland, and by correspondence with other archives.

Base Mapping

An AutoCAD base map of the project area was developed by compiling information derived from GIS data provided by the NPS MACA and aerial photographs. These base maps were ground-truthed and augmented by measurements of landscape features taken in the field.

Historic Period Plan Preparation

Historic period plans of the Mammoth Cave National Park Core Visitor Services Area cultural landscape were prepared to represent the site during phases of its evolution to the present. The team developed the historic period plans through registration of historic mapping sources with existing conditions information; thus preparation of the existing conditions base map preceded work on the historical base maps. The project team then utilized primary source materials to create a skeletal map. Examples of the primary sources consulted to prepare the skeletal map included historical aerial photographs, atlases, plats, archeological investigation maps, and USGS mapping. Through review of historic photographs and written descriptions of the landscape found in the research materials collected for the project, the team refined the skeletal maps to reflect a series of snapshot moments in the history of the landscape. Limited secondary sources were also used to corroborate information and to generate queries for primary sources. Secondary sources were evaluated for their credibility and utilized with caution.

Existing Conditions Documentation

Existing conditions documentation was organized in accordance with the framework established in NPS guidelines and National Register bulletins listed above. It was developed through preparation of cross-referenced narrative, graphic, and photographic materials compiled from existing conditions base mapping, field investigation, field photography, and review of park planning

5. A partial copy of the Mission 66 prospectus was available for review from the NPS Technical Information Center, and appears to be the same partial copy as is in the collection at Mammoth Cave National Park. Park staff conducted further research at the park and the project team conducted further research at the National Archives, but a complete copy has not been located to date.

documents, park files, and other relevant cultural and natural resource documents received from NPS or acquired through research. It also relies on photographs of representative landscape features taken in the field, which are used to support narrative description of site features. Documents such as the soil survey for Mammoth Cave National Park were helpful in establishing a geographic and geologic context for the study area and in understanding local conditions.

The narrative description and existing conditions plan resulting described the following cultural landscape features:

- Natural Systems and Features
- Response to Natural Resources
- Patterns of Spatial Organization
- Land Uses and Activities
- Topography and Topographic Modifications
- Circulation
- Cultural Vegetation
- Buildings and Structures
- Views and Vistas
- Small-scale Features
- Known and Potential Archeological Resources

The team also prepared an inventory of existing landscape features based on the documentation of the site and an understanding of historic conditions. The inventory was used to ensure that each feature was discussed in the text and served as the basis for condition assessments. Feature condition assessments were made using the categories suggested by the *Guide to Cultural Landscape Reports*: Good, Fair, Poor, and Unknown. These categories are defined as follows:

- **Good**: indicates the cultural landscape shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. The cultural landscape's historical and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

- **Fair**: indicates the cultural landscape shows clear evidence of minor disturbances and deterioration by natural and/or human forces, and some degree of corrective action is needed within three to five years to prevent further harm to its historical and/or natural values. The cumulative effect of the deterioration of many of the significant characteristics and features of the cultural landscape, if left to continue without the appropriate corrective action, will cause the landscape to degrade to a poor condition.

- **Poor**: indicates the cultural landscape shows clear evidence of major disturbance and rapid deterioration by natural and/or human forces. Immediate corrective action is required to protect and preserve the remaining historical and natural areas.

- **Unknown**: indicates that not enough information is available to make an evaluation.[6]

The condition ratings were annotated as possible to include specific condition-related observations made in the field that help to justify the ratings.

Evaluation of Significance

The *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study* (MPD-HRS) was entered into the National Register on May 8,

6. Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports: Contents, Processes, and Techniques* (Washington, D.C.: Department of the Interior, 1998), 67.

1991.[7] A National Register nomination was also prepared for the Mammoth Cave Historic District, with the same date given for listing in the National Register.[8] Documentation from these nomination forms was reviewed and compared with the detailed historic documentation of the site developed for the CLR.

As part of the evaluation of significance for the Core Visitor Services Area, the CLR summarizes findings of the MPD-HRS relative to the historical contexts and period of significance for Mammoth Cave National Park, with additional commentary specific to the Core Visitor Services Area. The existing National Register documentation for resources associated with the core area was reviewed in terms of relevant National Register criteria and the guidance provided in the National Register Bulletin *How to Apply the National Register Criteria for Evaluation*.[9]

Comparative Analysis of Historic and Existing Conditions

To better understand the relationship between the existing landscape and the character of the landscape during the period of significance identified in the CLR, the project team prepared a comparative analysis of historic and existing landscape conditions. The analysis, which includes narrative discussion and graphic illustration, focused on extant features and their dates of origin. The three primary goals of the comparative analysis were to:

- Understand which features survive from the period of significance;
- Establish the basis for an integrity assessment; and
- Provide an understanding of the similarities and differences between historic and existing conditions that would contribute to the development of a well-grounded treatment plan for the cultural landscape.

The analysis narrative is illustrated with comparative photograph pairs that compare historic with existing conditions within the study area, and other graphics.

Identification of Character-Defining Features

As part of the development of the comparative analysis of historic and existing landscape conditions, the CLR identified character-defining qualities and characteristics of the site's historic landscape. Character-defining qualities are the prominent or distinctive aspects or characteristics of a cultural landscape that contribute significantly to its physical character. The analysis also identifies whether individual features contribute to the significance of the historic landscape. Contributing features are those surviving from the period of significance with integrity that can be tied to the site's associated historic contexts; non-contributing features are those that originated after the period of significance, have lost integrity, or are not associated with significant historic contexts for the developed area. Also identified are those features that are missing; these are features that are known or thought to have existed on the site during previous periods but that are no longer evident except possibly in the archeological record.

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7. Kelly A. Lally, *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study* (Kentucky Heritage Council, October 1, 1990,entered into the National Register, May 8, 1991.
8. Kelly A. Lally, *National Register of Historic Places Registration Form, Mammoth Cave Historic District*(Kentucky Heritage Council, June 1989,listed in the National Register, May 8, 1991).
9. Patrick W. Andrus and Rebecca H. Shrimpton, eds., *How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: National Park Service, 1990, revised 2002 for internet).

Assessment of Integrity

In addition to assessing the integrity of individual resources, the CLR addresses the overall integrity of the Core Visitor Service Area as well as its integrity in accordance with the seven aspects—location, design, setting, materials, workmanship, feeling, and association—described in the National Register Bulletin, *How to Apply the National Register Criteria for Evaluation*.

Treatment Plan

The CLR treatment plan is based on needs, goals, and issues derived from three sources:

- the project scope of work;
- the project kick-off meeting held at Mammoth Cave National Park in August 2011;
- the findings derived from the comparative analysis.

The treatment plan first documents the goals, needs, and objectives to be addressed by its guidelines and recommendations. The treatment plan then suggests an overarching treatment approach to support preservation and enhancement of the park's historic landscape character, as well as its interpretation. With the overarching approach in place, the treatment plan presents a treatment concept narrative to guide the development of specific treatment guidelines and recommendations that respond to each of the goals, need, and objectives. Treatment guidelines and recommendations were developed to respond to the specific management issues and concerns conveyed to the project team by the National Park Service during project meetings and in the project scope of work, the condition assessments of site resources developed through field investigations, and best management and stewardship practices relating to historic preservation and sustainability goals.

Summary of Findings

The *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study* (MPD-HRS) was prepared in 1990 and entered in the National Register of Historic Places on May 8, 1991. A number of other park resources were listed in the National Register at the same time, including the Mammoth Cave Historic District, which was listed based on a discrete nomination form. The MPD-HRS identifies for historical context for Mammoth Cave National park: Context A, Exploration and Settlement in the Mammoth Cave Area, circa 1754–1927; Context B, Discovery and Early Uses of Mammoth Cave, 1798–1849; Context C, Commercial Cave Development and the Growth of Tourism in the Mammoth Cave Area, 1849–1926; and Context D, Establishment of Mammoth Cave National Park, 1924–1941. The CLR study recommends that this last historic context be extended to 1972 to incorporate further development of Mammoth Cave National Park through the Mission 66 Era. Individual resources and districts within the park could be considered eligible for listing in the National Register under this context if they represent significant components of the evolution of Mammoth Cave National Park or exemplify the design, planning, and interpretation qualities that characterized the Mission 66 program.

There are currently nine historic districts and six individual resources listed in the National Register of Historic Places located within Mammoth Cave National Park. Of these listed resources, Engine No. 4 and Coach No. 2, the Mammoth Cave Historic District, and the Old Guide's Cemetery fall within the area addressed by this CLR. The Mammoth Cave Historic District is significant under criterion A based on historic associations with the areas of Entertainment/Recreation (tourism), Industry (saltpetre mining), Commerce (tourism, saltpetre mining, and mushroom beds), and Health/Medicine (tuberculin huts). Based on its importance in these contexts and its excellent state of preservation, the historic district is considered nationally significant.

Based on consideration of the collection of resources in the Core Visitor Services Area, their integrity, and association with significant historic contexts, it appears that the core area landscape as a whole does not represent a single coherent historic district. It is likely, however, that a smaller historic district may exist within it, consisting of visitor accommodations resources, as further discussed below. Individual historic resources located within the Core Visitor Services Area that are not currently listed in the National Register, but which warrant further research and consideration, include the Dixon Cave Entrance and White Cave Entrance.

The visitor center, hotel, and pedestrian bridge, as originally constructed, served as important components of the visitor services area that also included associated roads, parking lots, and trails, Additions to the hotel in 1992 and the recent major renovation of the visitor center have significantly diminished the integrity of the complex as a whole. The visitor center was demolished down to the metal framing on the first floor and most of the basement was retained. The visitor center was reconstructed in two phases beginning in 2007 and in 2010 respectively. Following this work, little to no evidence of its original 1961 design or materials remains. The modifications to the visitor center have eliminated or obscured the character of the Mission 66 structure and due to a loss of integrity, the visitor center was determined not eligible for National Register listing in 1999.[10]

The existing hotel, completed in 1965 as part of the Mission 66 program, was modified by additions and renovations in 1992. These modifications changed the footprint, altered the interior of the hotel, and also affected the exterior appearance of the hotel. The 1992 additions and alterations have diminished the integrity of design and of the building overall. Thus, the hotel was determined not eligible for National Register listing in 2002.[11]

The pedestrian bridge was completed in 1961 as part of development of the new visitor center and Mission 66 era development at the park. As part of the complex of visitor center, bridge, and hotel, the integrity of setting and to a degree association of the bridge have been diminished by the recent modifications to the visitor center and earlier changes to the hotel. The bridge as part of the original complex is therefore not considered eligible for National Register listing. The park further determined that the bridge is a non-contributing structure as part of the hotel-visitor center complex, and has scheduled the bridge for replacement. Documentation of the bridge to Historic American Engineering Record standards (HAER) is recommended prior to demolition.

Based on a previous determination of eligibility prepared by the NPS Southeast Region with Kentucky SHPO concurrence, the Woodland and Deluxe Cottages and the two associated concession buildings are considered eligible for listing in the National Register of Historic Places under Criterion A in the Entertainment/ Recreation area of significance. The cottages are also locally significant under Context D, Establishment of Mammoth Cave National Park, 1924–1941, as defined in the MPD-HRS. The CLR indicates that Sunset Lodge is a significant example of the continuing improvement of park facilities after World War II and initial Mission 66 era development, and could also be considered significant as an example (albeit minor) of pre-Mission 66 modern architecture in National Parks. Sunset Lodge should therefore be included in a potential historic district composed of visitor accommodations for further consideration for National Register.

10. David L. Morgan, Director, Kentucky Heritage Council, and State Historic Preservation Officer, to Ronald R. Switzer, Superintendent, Mammoth Cave National Park, re: Visitor Center and Pavilion, September 27, 1999.

11. David L. Morgan, Kentucky State Historic Preservation Officer, to Ronald R. Switzer, Superintendent, Mammoth Cave National Park, May 7, 2002.

As part of the development of the park a campground and picnic area was developed on a rise north of the Historic Entrance in 1940–1941. A curving drive to the campground was laid out, paved in crushed stone and extending up the hill to become a large loop drive. This loop drive exists today along with a secondary road, the south road in the picnic area, designed and constructed of crushed stone and terminating in a circle drive. These road alignments survive intact, with only changes to the surface treatment over the years. The original campground and picnic area were converted to a single larger picnic area in the Mission 66 era, and some features were added and demolished at that time. Both periods represented in the present-day picnic area should be further researched and considered for eligibility.

The extant campground was constructed in 1964 and included four loops and four comfort stations. (A fifth comfort station was built at a later date.) The comfort stations in the campground were originally similar in design to other comfort stations constructed in national parks during the Mission 66 era but have since been altered. Given the design and age of the campground and its exemplary character as an intact Mission 66 example of this type of visitor amenity, further research, especially in comparison to other Mission 66 era campgrounds in the nation parks, is recommended to determine whether the campground is eligible for the National Register.

An overarching period of significance of 1806–1941 has been established for Mammoth Cave National Park, based on the findings of the MPD-HRS and the periods of significance established for resources within the park previously listed in the National Register. This overarching period of significance is also appropriate for the Core Visitor Services Area. The 1806 start date is based on the approximate beginning of saltpetre mining in Mammoth Cave. The end date of 1941 represents the date at which Mammoth Cave National Park was officially established and coincides with the end of the major efforts by the CCC in park development (although some CCC work continued into 1942, before the last camp in the park was disbanded in July of that year).

Natural resources within the Core Visitor Services Area contribute to the site's integrity of location, association, feeling and setting. Features including the Mammoth Cave, the Green River, the River Styx and Echo River springs, significant and unique plants and wildlife, the landform and topography associated with the cave area, as well as the cave itself survive and support the understanding of the historic relationship between significant cultural activities and the natural environment. The designed cultural features and patterns of spatial organization such as the open lawn area with groves of trees, the Deluxe and Woodland Cottages and associated circulation, and the alignment of roads in the picnic and campground areas also contribute to the site's integrity of location, association, feeling, and setting.

The CLR assessment of integrity of the Core Visitor Services Area identified areas that have experienced diminished integrity due to non-historic developments within the area and associated with viewsheds and setting. Of great concern is the proposed expansion of parking for the Mammoth Cave Hotel south into the historic core landscape. Such an expansion would result in disruption of the historic spatial patterns and viewshed within the historic core and loss of cultural vegetation and open grass lawn. It is recommended in the CLR that plans for further parking avoid the historic core and consider alternative areas for expansion.

In addition to its value as a historic landscape, Mammoth Cave National Park and the Core Visitor Services Area fall within a designated International Biosphere Reserve designed to conserve a rich diversity of biological resources and a sensitive watershed and aquifer recharge area, while studying means for accommodating human needs. Treatment of the Mammoth Cave Core Visitor Services Area addresses the needs of both historic cultural resources and notable natural resources. Treatment of the area and its resources is intended to occur within a framework that first and foremost is intended to do no harm

to sensitive natural resources, and to recognize the need to promote biodiversity and protect against contamination of water resources and disruption of natural plant and animal communities through visitor activities and invasion by exotic species. To meet these goals, the overarching treatment concept for the cultural landscape at the Core Visitor Services Area is to balance the protection and enhancement of the site's historic integrity with contemporary park visitor access and interpretation needs within a broader framework of sustainable land management practices that protect the sensitive natural resources of the Biosphere Reserve. Landscape treatment actions are recommended to improve functionality, appearance, and appreciation of those that went before on the site. Current pressures to better accommodate large numbers of visitors by construction additional parking and addressing universal accessibility needs in conjunction with aging historic resources are of a particular challenge.

Overarching treatment plan recommendations include:

1. Development of new interpretive materials that illustrate the history of the Core Visitor Services Area during the nineteenth and early twentieth centuries, including the three hotels that have been associated with the landscape, history of saltpetre mining, and a tuberculosis hospital. Also interpretive materials that tell the broader story of the natural resources and the changes that occurred when the site became a National Park should be developed.

2. Additional research, investigation, and documentation efforts as required to adequately assess all potential National Register eligibility of historic resources located within the Core Visitor Services Area. These efforts are likely to include:
    a. Expansion of the lodging resource Determination of Eligibility to include the Sunset Lodge buildings, which require evaluation for years that postdate the current period of significance
    b. Evaluation of the CCC era picnic area and other CCC resources that fall outside of current historic districts
    c. Evaluation of post-World War II and Mission 66-era landscape resources, such as the expanded picnic area, the campground, and several circulation features.

3. Continue to research the late nineteenth and early twentieth century history of the Core Visitor Services Area for which little information could be collected for this CLR study.

4. Conduct an archeological survey, based on the existing work of Guy Prentice at Mammoth Cave National Park, before any new construction takes place in the Core Visitor Services Area in order to identify possible site specific archeological resource sites and information potential.

Treatment within the Core Visitor Services Area also focuses on specific maintenance and repair practices that enhance the appearance and cohesion of the historic landscape. Over the past years, the popularity of the Core Area and use by most visitors to the park, has taken its toll on the condition of some landscape features and threatens the existence and integrity of areas within the historic core. A summary of additional and more specific recommendations provided in the treatment plan include:

1. Engage an arborist to evaluate the health of the cedar trees and large specimen deciduous trees in the historic core character area. Ensure that they do not pose a hazard to visitors, structures, and vehicles. Identify the care and maintenance needs of each tree.

2. Refurbish historic plantings by replacing missing or dead trees in kind based on historic planting plans. Base the replacement on preparation of a developed area-wide planting plan. Use new plantings to establish and retain the historic character of the open landscape of

the historic core composed of cedar groves and shade trees and extensive lawn areas.

3. Avoid further development within the historic core, particularly associated with the proposed hotel and parking expansion. Consider expanding parking to the current overflow parking area west of the hotel, and to the area north of the concession dormitory rather than south into the historic core.

4. Consider re-establishing open grass lawn and tree plantings in the historic core to restore historic patterns of spatial organization and views and viewsheds. Use the restoration for additional interpretation of the cultural landscape.

5. Consider the rehabilitation of the tennis courts and shuffleboard courts and scoreboard for visitor use and recreation historically associated with the hotels in the Core Visitor Services Area.

6. Continue the efforts to rebuild the Old Guide's Trail when wash out occurs from heavy rains. Use the same alignment as the current trail, unless the topography is altered by excessive water damage. Trail reconstruction should consider avoiding any intact CCC features and drainage should be integral to the design of the trail, accommodated either through construction of a crown to shed water to either side, or through the establishment of a shallow cross pitch that sends overland flow to the downhill side of the trail.

In order to guide implementation of the recommendations presented in Chapter 5, the CLR provides a detailed list for undertaking seven priority treatment projects. These projects include:

1. A vegetation management plan for the Core Visitor Services Area.

2. A site furnishings guide for the Core Visitor Services Area.

3. Best Management Practices for addressing vegetation maintenance and removal, storm water management, and maintenance and repair protocols.

4. Design of pedestrian bridge improvements to address universal accessibility and safety update needs in conformance with the Secretary of the Interior Standards for Rehabilitation.

5. Repair trails that have experienced erosion, washouts, and diminishment of the intended views and vistas.

6. Prepare an interpretive plan to enhance visitor understanding of the evolution of features and use of the Core Visitor Services Area, including missing lodging features.

7. Prepare a comprehensive drainage plan for the trails.

Recommendations for Further Study

1. Conduct further research related to mining of saltpetre to establish the historic significance of Dixon Cave. Also conduct further research to determine whether White Cave was a saltpetre-bearing cave known to early explorers, in which case White Cave may be National-Register-eligible under the theme Discovery and Early Uses of Mammoth Cave, 1798–1849, similar to Dixon Cave.

2. Conduct further research to place the Mammoth Cave pedestrian bridge within the context of other pedestrian bridges within the National Park System, and similar bridges within the state or region. This research will help determine whether the Mammoth Cave pedestrian bridge is individually significant.

3. Conduct further research on the visitor accommodations—Woodland Cottages, Deluxe Cottages, Sunset Lodge, and associated buildings—to augment the Determination of Eligibility for the cottages and two related concession buildings prepared by the National Park Service Southeast Regional Office, and to identify a historic district comprised of these resources. Specifically, further research is recommended to compare the Mammoth Cave visitor accommodations with other visitor accommodations of the period in the National Parks System, with potential consideration of a thematic study to place this type of resource within a national context of similar structures.

4. Also conduct further research to determine if Sunset Lodge serves as a unique example of a motor lodge style motel in a national park, and to place the lodge within the context of similar structures of the period, and as an example of how visitor accommodations evolved in the years after World War II. Further research is also recommended to amplify understanding of the evolution of visitor accommodations in the National Park System, and how changes in the nature of accommodations provided are represented by the cottages and lodge at Mammoth Cave National Park.

5. Conduct further research on the core area campground and picnic area, and on other Mission 66-era campgrounds and picnic areas in the national parks, to place the campgrounds and picnic areas within this context and whether these resources at Mammoth Cave National Park are eligible for listing in the National Register. Consider the campground and picnic area as a possible component of a historic district comprised of the visitor accommodations, as discussed above.

6. Continue to research the late nineteenth and early twentieth century history of the Core Visitor Services Area. In particular, look for historic maps and photographs of the area and the first hotel. Use this information to support enhanced interpretation.

7. Conduct further research to identify dates of origin/construction and additional information about features for which this information was not identified during research for this study or for the MPD-HRS. Examples include the cedar tree plantings near the hotel, the remnant stone wall down the slope behind the Sunset Lodge, the picnic shelters, the fifth comfort station in the campground, and the stone retaining walls at the Green River Ferry crossing.

8. Conduct further research to learn more about features that are no longer present in the study area, particularly buildings and structures associated with the previous hotels.

9. Conduct further archeological research regarding the prehistoric use of the cave and environs by native peoples and to identify surviving traces of this use.

Site History

Early Exploration and Settlement of the Mammoth Cave Area

Humans are first believed to have entered Mammoth Cave approximately 5,000 years ago, during the Archaic Period (8000 BCE to 1000 BCE). Access into Mammoth Cave continued into the Woodland period of 1000 BCE to 900 CE, and was most intense during the Early Woodland period (100 BCE to 200 BCE), when it is believed that the cave was explored in search of minerals. During the Middle Woodland period (200 BCE to 500 CE), it is likely that exploration of Mammoth Cave largely ceased.[12]

European exploration began in Kentucky during the early 1700s. The region was then a part of Virginia, with few permanent residents. Most of Kentucky's occupants consisted of members of the Shawnee and Cherokee who hunted the land. The onset of the French and Indian War (1754–1763) brought the first Europeans to the immediate area of Mammoth Cave. Thomas Hutchins, a British soldier, was likely the first European to reach the Mammoth Cave area.[13] Hutchins was sent to the area during the war to conduct a survey along the Green River (then referred to as the Buffaloe River).[14]

Following their defeat of the French in the French and Indian War, the British gained control of all land east of the Mississippi River. Shortly after the end of the war, King George III issued the Land Proclamation of 1763 establishing the land west of the Appalachians and south of the Ohio River was established as an Indian Reservation, including all of present-day Kentucky. British hunters and traders soon began exploring the Mammoth Cave region and noted its abundance of natural resources.[15]

Initial settlement of the Mammoth Cave area began in the early 1780s. In September 1783, a group of nineteen merchants from Philadelphia established a speculative land company and purchased several thousand acres north of the Green River and Mammoth Cave. The land south of the Green River was set aside by the state of Virginia in 1784 for settlement by Revolutionary War veterans; however, this area remained largely

12. Joy Medley Lyons, Maryellen Cojner, ed., *Mammoth Cave: The Story behind the Scenery*. (Wickenberg, Arizona: KC Publications, Inc., 1991; eighth printing, 2011), 33–34. See also Guy Prentice, *Archeological Overview and Assessment of Mammoth Cave National Park* (Tallahassee, Florida: National Park Service, Southeast Archeological Center, 1993), 18. Also, radiocarbon dating of organic remains from Mammoth Cave indicates that exploration for mining primarily occurred in the Early Woodland period and ceased by 0 BCE/CE. Correspondence by the authors with Dr. George Crothers, Museum of Anthropology, University of Kentucky, Lexington.
13. Prentice, , 24, citing Thomas Hutchins, *A Topographical Description of Virginia, Pennsylvania, Maryland, and North Carolina* (Cleveland, Ohio: The Burrows Brothers Company, 1904, reprint of 1778 edition), 97–98.
14. Ibid.
15. Lally, *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, section III, page A-1.

unsettled for more than a decade. In 1797, John, Charles, and Francis Houchin settled south of the Green River.[16] According to folklore, Mammoth Cave was rediscovered by John Houchin, a hunter who allegedly shot a bear and followed it to the cave entrance. While the exact date of the rediscovery of the cave is unknown, the cave was known to pioneer settlers by 1798.[17] In that year, the cave is mentioned as part of a land certificate in a record of lands from the *Warren County Survey Book, 1796–1815*. The survey book states that:

> Valentine Simmons [or Simons] [entered] 200 acres of second rate land in Warren County by virtue of the Commissioner's Certificate No. 2428 lying on Green River beginning on a sycamore tree on the bank of said River thence running southward including two peter caves, thence angling down said river for quantity to include the improvement.[18]

One of the two "peter" (saltpetre) caves referred to was Mammoth Cave. As a result of this entry in the survey book, Simons is believed to be the first legal owner of the cave. This title is the earliest known written record of Mammoth Cave.[19]

Early Nineteenth Century Commercial Uses of Mammoth Cave

Saltpetre Production and the War of 1812

In 1797, Revolutionary War veteran Gilbert Imlay suggested the Mammoth Cave area as a possible domestic source of nitrates from which saltpeter could be extracted. While not specifically mentioning Mammoth Cave, Imlay noted that the largest known supply of saltpetre in colonial North America was found along the Green River.[20]

Saltpetre (potassium nitrate), properly combined with sulfur and charcoal, was used to produce black gunpowder—which was especially important at the time for use in the war effort. The nitrates to produce saltpetre were found to be present in the form of nitrocalcite in the earth of caves. These nitrates absorbed moisture from the air, making the cave earth unusable in its original form to make gunpowder. As a result, the nitrates were processed with wood ashes to form potassium nitrate, which could then be used to make gunpowder, since potassium nitrate does not absorb moisture.[21] As described by John H. Farnham in 1811:

> The earth is dug up and deposited in square pits, called hods. When one of these pits is filled, water is poured in until the strength of the earth is exhausted. The water drained off is called beer. This is conveyed through ducts or pipes from the hod as near as possible to the entrance of the cave, whence it is taken by buckets to some convenient place above ground and put into boilers, where by an infusion of potash, the limestone, which the

16. Ibid., page A-2, citing Charles E. Whittle, *Edmonson County Flashlights in Folklore* (Bowling Green, Kentucky: Whittle Places, 1932), 52–54. See also Prenctice, 26.
17. Prentice, 26.
18. Margaret M. Bridwell, *The Story of Mammoth Cave National Park Kentucky: A Brief History* (Mammoth Cave, Kentucky: 1952, rev. ed., 1959).
19. Prentice, 26.
20. Lally, section III, B-1–B-2, citing Duane DePaepe, *Gunpowder from Mammoth Cave: The Saga of Saltpetre Mining Before and During the War of 1812* (Hays, Kansas: Cave Pearl Press, 1985), 9.
21. Marsha A. Mullins, "Mammoth Cave Saltpetre Works," Historic American Engineering Record No. KY-18 (Washington, D.C.: National Park Service, 1986), 6.

> beer contains, is separated from the salt, and the sediment, after boiling, is saltpetre.[22]

The manufacture of gunpowder was an important industry in the years following the American colonies' declaration of independence from Great Britain. During this time, when trade with the British was not possible due to the American Revolution, large amounts of saltpetre needed to be found in the fledgling country. After the war, as trade reopened with Great Britain, the United States was able to receive large amounts of saltpetre from India.[23] Despite importing ample saltpetre from abroad, domestic saltpetre production continued through the early nineteenth century.

As the relationship between the United States and Great Britain again worsened in the early nineteenth century, E. I. DuPont felt that an impending war with Great Britain could severely limit the ability of the United States to continue to import saltpetre from India. As a result, the government purchased a large reserve supply of saltpetre from India, while also identifying domestic saltpetre supplies.[24]

The onset of the War of 1812 and the resulting increase in demand for saltpetre sparked the interest of investors in Mammoth Cave. In 1811, the first known map of Mammoth Cave was drawn. Created from memory, not survey, the "Eye-Draught Map of Mammoth Cave" helped acquaint merchants with the location of saltpetre in the cave. This map was the first to refer to the cave as "Mammoth Cave." It is speculated the name was chosen to emphasize both the size and profit potential of the cave.[25]

The sudden interest in saltpetre mining at Mammoth Cave led to a spike in the value of the property. The first owner of Mammoth Cave, Valentine Simons, sold the cave and adjacent lands to John Flatt for $116.47 sometime after 1799. Flatt, who is believed to have operated a small saltpetre mining business at the cave, sold the property to the McClean brothers for $400 around 1808. The McClean brothers, who expanded the mining operation at the cave, sold the property to Charles Wilkins and Fleming Gatewood in 1810 for $3,000.[26] Wilkins, a saltpetre merchant from Lexington, had knowledge of the industry and designed pumping systems and laid out cart routes within the cave, allowing the saltpetre mining operations to expand significantly. In 1812, Hyman Gratz, a Philadelphia merchant, bought out Fleming Gatewood's interest in the cave for $10,000. With Gratz's financial backing, Wilkins was able to fully implement his saltpetre extraction system.[27] Despite the increased demand caused by the onset of the War of 1812, saltpetre production at Mammoth Cave had begun to decrease by 1812. A series of four earthquakes centered in New Madrid, Missouri, occurred between December 1811 and February 1812. The earthquakes caused damage to equipment used during the mining process and also made the workers fearful of returning to the cave.

During the late eighteenth and early nineteenth centuries, when saltpetre was being mined inside Mammoth Cave, as many as seventy slaves were leased to work inside the cave.[28] The slaves lived in one-room log cabins outside the cave. The log

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22. Extract of a letter from John H. Farnham, Esq., A Member of the American Antiquarian Society, describing Mammoth Cave in Kentucky" (1811), quoted in Thor Borresen, Report on saltpetre works of Mammoth Cave (National Park Service, 1942).
23. Lally, B-3.
24. Mullins, 11–12.
25. Lally, B-2, citing DePaepe, *Gunpowder*, 9–10.
26. Ibid., B-3, citing Harold Meloy and William R. Halliday, "A New Concept of the Initial History of Mammoth Cave, 1798–1812," *Journal of Spelean History* 1, no. 4 (1968): 110. Confusingly, all of these deeds were recorded the same day, January 31, 1812. However, historians Meloy and Halliday interpret this information as a formal legal recording of transactions that had actually taken place years earlier.
27. Ibid., citing DePaepe, *Gunpowder*, 10.
28. Ibid., B-3.

rooms would later be modified to form a portion of the first Mammoth Cave Hotel.[29]

With the end of the War of 1812, the demand for saltpetre fell sharply. As saltpetre production began to slow at Mammoth Cave and word spread of the wonders of the cave, people began to travel to see Mammoth Cave (Figure 8).

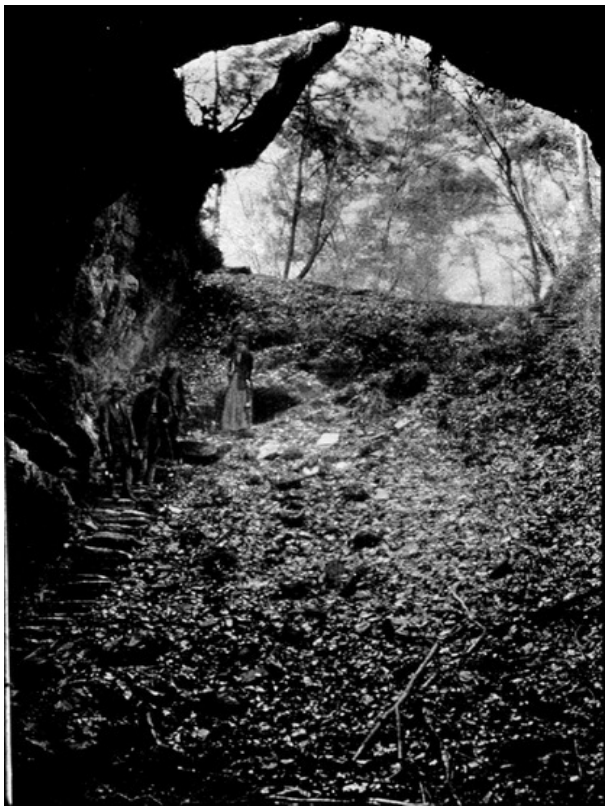


FIGURE 8. The Historic Entrance to Mammoth Cave, date unknown (circa early twentieth century). Source: Mammoth Cave National Park.

Early Tourism at Mammoth Cave, 1812 to 1850

In 1815, following the end of the War of 1812, Wilkins and Gratz suspended saltpetre mining operations. In October of that year, Nahum Ward, a Massachusetts native, visited Mammoth Cave, where during an extended (eighteen-hour) tour he saw an Indian mummy discovered by saltpetre miners. Ward took the mummy with him and published an account of the cave. This article was published throughout the country and appeared in England in 1817.[30] The popularity of the narrative contributed to increasing numbers of visitors to Mammoth Cave.

In the early 1820s, Archibald Miller, Sr., worked as the agent for Wilkins and Gratz to show visitors to the cave. By the 1820s, guests from as far away as Europe were visiting the cave.[31] Initially visitors were only taken to areas of the cave with which guides were familiar; however, as time went on, new areas were explored. Often, early visitors used open flame lanterns to lead themselves through the cave. As time went on, guides would ignite oiled paper to light large rooms, while oil-soaked rags were thrown in dark chasms to the light the way.[32]

Visitors to the cave in the early nineteenth century made a habit of "smoking" their names onto the white ceilings of the cave. In addition, in the mid to late 1800s, a caving costume was available to guests for a fee. The costume was designed to protect the clothing of the visitors to the cave.

In 1827, Archibald Miller, Sr., moved from a house near the cave to another one nearby, and Fleming Gatewood returned as the new agent to manage

29. Joy Medley Lyons, *Making their Mark: The Signature of Slavery at Mammoth Cave* (Fort Washington, Pennsylvania: Eastern National, 2006), 10–11.
30. References to archeological artifacts found within the cave were documented as early as the circa 1813 Bogart map, which noted the locations of "the Indian Mummy, the Mockason Room, and the Basket Room." In 1916, after a century of visitation, excavations were conducted in the cave by Nels C. Nelson on behalf of the American Museum of Natural History. See Prentice, 584–594.
31. Harold Meloy, "Introduction to the Reprint Edition," in Alexander Clark Bullitt, *Rambles in the Mammoth Cave during the Year 1844, By a Visiter* [*sic*] (Louisville, Kentucky: Morton & Griswald, 1845, Reprinted, Dayton, Ohio: Cave Books, 1973), vi–vii. According to Mammoth Cave National Park personnel, tours of the cave began in 1816.
32. Lyons, *The Story behind the Scenery*, 38.

visitors to the cave. Also in 1827, Charles Wilkins died; Gratz later bought out Wilkins' share of the cave property.

In 1828, Hyman Gratz, by that time the sole owner of the cave, began to operate a small log inn near the cave to house visitors.[33] The original inn as it existed in 1828 is described as a two-story log building with two rooms on the ground floor, each 18 feet square, with a 10-foot open space between.[34] Many visitors preferred to stay at Bell's Tavern (later Glasgow Junction and now Park City, Kentucky). It appears that the building that served as the original inn was the former home of Archibald Miller, Sr., and his family, built circa 1811 or 1812 when he worked as manager for the saltpetre works.[35] The house was later the home of Fleming Gatewood and his family. This building is illustrated in an 1835 watercolor (Figure 9).[36]



FIGURE 9. Watercolor view of the Fleming Gatewood house, 1835. Painting by Robert Montgomery Bird. Source: Mammoth Cave National Park.

In 1836, Joseph C. Shackelford and Archibald Miller, Jr., (son of Archibald Miller, Sr.) leased the cave and began work as cave guides, charging visitors one dollar for a tour.[37] Shackelford's sons J. C. and Oliver were also guides.[38]

Frank Gorin and Stephen Bishop at Mammoth Cave, 1838. Gratz continued to own the Mammoth Cave property until April 1838, when Franklin Gorin purchased the land for $5,000. Gorin, an attorney whose family had helped settle the city of Glasgow in Barren County, expanded the accommodations at the cave. After this work, the main hotel building included sufficient accommodations to sleep thirty to forty persons.[39] Gorin also connected the former cabins of saltpetre miners and constructed a long promenade which ran the full length of the structure.[40]

Under Gorin's ownership cave exploration was ongoing, leading to the discovery of new passageways, which were eventually opened to the public. African American slaves performed the majority of the work in the cave, some also acting as tour guides.[41]

When he purchased the Mammoth Cave property in 1838, Franklin Gorin transported slaves from his home in nearby Glasgow, Kentucky, to make improvements and lead tours at the cave. One of these slaves, Stephen Bishop, had good knowledge of the cave and was responsible for exploring several of the known cave passages. Bishop initially explored the cave to identify new passages and make improvements to existing ones, and as he became more familiar with the cave, began to lead visitors on tours. He was often mentioned in glowing terms by visitors in accounts of their travels to Mammoth Cave. In a letter, Stephen Bishop's former owner, Franklin Gorin, wrote the following about Bishop:

> I placed a guide in the cave—the celebrated and great Stephen—and he aided in making the discoveries. He was the first person who ever

33. Lally, section III, page B-5, no source cited.
34. Meloy, x.
35. Typed manuscript in park collection, recollections of O. P. Shackelford (son of Joseph C. Shackelford).
36. Correspondence with Joy Medley Lyons, Mammoth Cave National Park.
37. Typed manuscript in park collection, recollections of O. P. Shackelford (son of Joseph C. Shackelford).
38. Oliver Shackelford, "An Account of the History of Mammoth Cave during the Middle Nineteenth Century" (typed manuscript in park collection, n.d., [circa 1920]), 3.
39. Meloy, "Introduction," in Bullitt, (1845, reprint 1973), xi.
40. Lyons, *Making their Mark*, 14.
41. Ibid., 16–18.

> crossed the Bottomless Pit. . . . We discovered all that part of the cave now known beyond that point. Stephen was a self-educated man; he had a fine genius, a great fund of wit and humor, and some little knowledge of Latin and Greek, and much knowledge of geology; but his great talent was a perfect knowledge of man. . . . Stephen was certainly a very extraordinary boy and man.[42]

Other early African American slave guides at Mammoth Cave included Matt Bransford and Nick Bransford, who were both brought to the cave by Franklin Gorin at about the same time that Stephen Bishop arrived at the cave.[43]

Other than those who worked as tour guides in the cave, the slaves at Mammoth Cave largely worked in and around the nearby hotel. Very few of the slaves at Mammoth Cave worked there year round; many slaves were leased from other nearby slave owners in order to properly staff the hotel during the peak tourist months, May through September.[44]

Dr. John Croghan at Mammoth Cave, 1839 to 1849. In October 1839, about a year and a half after purchasing the Mammoth Cave property, Franklin Gorin sold 1,600 acres of land and Mammoth Cave to Dr. John Croghan, a Louisville physician and long-time business acquaintance, for $10,000. After purchasing the cave and the surrounding property, Croghan continued the improvements begun by Gorin at the cave, with the expansion and remodeling of the hotel a high priority, as Croghan sought to make Mammoth Cave a greater commercial success.[45] Croghan hired Archibald Miller, Jr., as manager.[46]

Croghan hired J. C. Shackelford to build two, two-story log buildings. Each building had a twelve-foot-long hall and contained four rooms. Shackelford was also given the responsibility for cutting and hewing logs for a row of sixteen cottages. A post and rail fence was built around the hotel, and a stable was added for visitors' horses. In 1848, a larger two-story addition was constructed to the main building, 30 feet by 90 feet in extent. The first floor of this building was the dining room, and the second floor was a ballroom (refer to Figure 19).[47]

Croghan also had several new roads constructed to better facilitate travel to Mammoth Cave. One new road was opened from Cave City to the Mammoth Cave Hotel, continuing across the Green River to connect with an existing road to Grayson Springs. A second new road led from Rowletts Station on the Louisville and Nashville Turnpike, passed directly in front of the hotel, and continued southwest toward Dripping Spring. This new road bypassed Bell's Tavern, encouraging visitors to stay at the expanded Mammoth Cave Hotel. Stagecoaches were routed along this new road, further increasing business at the hotel.[48]

In addition to stagecoaches, early visitors also arrived by steamboats, which traveled down the Ohio River and up the Green River, bringing visitors from Evansville, Louisville, or Cincinnati. (A series of dams and locks made the Green River navigable.)[49]

Advertisement of Mammoth Cave was also enhanced by the travel accounts and guidebooks Croghan published. One of these guidebooks, *Rambles in the Mammoth Cave* by Alexander Clark Bullitt (1844), included a lengthy account of the sights in the cave as well as a description of the accommodations available. Bullitt, a friend of

42. Ibid., 21, citing Harold Meloy, "The Legend of Stephen Bishop," *Journal of Spelean History* 10, no. 1 (1977).
43. Matt and Nicholas were slaves owned by a man named Bransford of Glasgow, Kentucky.
44. Ibid., 50–51.
45. Richard Hobart and Bob Thompson, *The Mammoth Cave Estate: In Historical Photographs* (2013), 66.
46. Typed manuscript in park collection, recollections of O. P. Shackelford (son of Joseph C. Shackelford).
47. Meloy, "Introduction," in Bullitt, (1845, reprint 1973), xvi; Shackelford, "An Account," 5.
48. Ibid., xvii.
49. "Valley Residents Believe Being Able to Ship Coal By Water Will Bolster Economy," *The Courier-Journal* (November 18, 1951).

Croghan's from Louisville, would go on to become editor of the *New Orleans Picayune*. Bullitt described the hotel as it existed in 1844:

> The hotel is a large edifice, two hundred feet long by forty-five wide, with piazzas, sixteen feet wide, extending the whole length of the building, both above and below. . . .[50]

In 1842, thirteen individuals suffering from tuberculosis and members of their families were brought to Mammoth Cave to live. Dr. Croghan, like many others in the medical field at the time, believed that being in an environment with a constant temperature and humidity would be beneficial to those suffering from tuberculosis. To house his patients and their families, Croghan had wood and stone huts erected in the main avenue of the cave. Croghan's experiment would only last until spring 1843, by which time seven patients died, while others saw their health worsen.[51] Three patients were buried at the Old Guide's Cemetery.[52]

Dr. John Croghan died in 1849 of tuberculosis, at which time the Mammoth Cave properties were placed in a trust for his nine nieces and nephews. His will further stipulated that the properties be sold when the last of his nieces or nephews died.[53]

When Gorin sold the cave property to Dr. Croghan in 1839, Stephen Bishop was included as part of the sale. Stephen Bishop, his wife, Charlotte, and son, Thomas, were given their freedom in 1856 under the terms of Dr. Croghan's will, which stipulated that they were to be freed seven years after his death.[54] Shortly after, Bishop purchased 75 acres of land near the cave. In 1857, at the age of 37, Stephen Bishop died of unknown causes. He was buried at the Old Guide's Cemetery, located west of the present-day Mammoth Cave Hotel.[55] In addition to Bishop, Dr. Croghan also continued to hire Matt Bransford and Nicholas Bransford as cave guides.

Expansion of Tourism at Mammoth Cave, 1850s to 1920s

Tourism in the 1850s. Following Dr. John Croghan's death in 1849, Joseph Underwood was named as one of three trustees of the Mammoth Cave estate.[56] Underwood was responsible for handling the business affairs of the cave, which included finding lessors for the property. All day-to-day operations of the cave and surrounding property were overseen by managers who resided on site and leased the property from the heirs of John Croghan.[57] The first lessee of the hotel and cave following Croghan's death was Larkin J. Procter, who first leased the property in 1852.

50. Bullitt (1845, reprint 1973), 11.
51. "Mammoth Cave Invalids," *The Illinois Free Trader* (May 26, 1843); "The Mammoth Cave," *Vermont Phoenix* (May 12, 1843).
52. Lally, section III, page B-6, citing Samuel W. Thomas, et al., "A History of Mammoth Cave, Emphasizing Tourist Development and Medical Experimentation Under Dr. John Croghan," *Register of the Kentucky State Historical Society* 68 (1970): 26.
53. Ibid. Scott E. Sallee, "Mammoth Cave Guide," (1998), typed manuscript in park files, identifies the patients buried in the Old Guide Cemetery as Oliver H. P. Blair of Pittsburgh (May 14, 1814–March 2, 1843), John Wesley Harper of South Carolina (died January 18, 1843) and Charles Marshall of Oswego County, New York (died February 1, 1843).
54. Lyons, *Making their Mark,* 20, citing Will of John Croghan, January 10, 1849, Book 4, page 181, Jefferson County Court Clerk, Louisville, Kentucky.
55. Ibid., 21.
56. Hobart and Thompson, 68. The other two trustees named were George Gwathney, who died less than four years after Croghan, and William A. Bullock, who refused his role as trustee.
57. Lally, section III, page C-1, citing John Croghan's will, Exhibit 1 in William Wyatt and Violet Janin Blair v. Mammoth Cave Development Company et al., United States District Court (August 1926), page 23.

Procter would operate the hotel until 1857 and then again after the Civil War until 1870.[58]

The popularity of Mammoth Cave as a tourist destination grew in the mid-nineteenth century. Renowned Swedish opera singer Jenny Lind traveled to the cave in April 1851.[59] Completed in 1859, the Louisville and Nashville Railroad brought travelers to nearby Bell's Tavern (present-day Park City, Kentucky), where they could board stagecoaches that traveled to Mammoth Cave (refer to Figure 11). In the summer of 1856, Oliver Shackelford operated a stage from the ferry landing at Grayson Springs Crossing on the Green River to the cave.[60]

Visitors to Mammoth Cave would typically stay at the Mammoth Cave Hotel when visiting the site. By the 1850s the hotel could accommodate up to 150 guests in single and double rooms, and also offered log buildings for families.[61] Water for the hotel was brought up from the Green River. Men's and women's latrines were located north of the building (refer to Figure 18, below). As described in an 1851 account in the *Pictorial Guide to the Mammoth Cave, Kentucky*:

> The hotel is two stories high, and two hundred feet long, with brick buildings at each extremity, showing their gable ends in the front. The space between is occupied by a long wooden building, with a piazza, and gallery over it. At the end of the hotel runs a long row of log houses, one story high, with colonnades in front, the whole length, which must be near two hundred feet. . . . The dining room of the hotel is a spacious apartment. . . . A large kitchen garden is kept in a high state of cultivation to furnish vegetables and fruits for the table. . . . Over the dining room is an apartment of precisely the same dimensions, fitted up for a ball room. . . . In another part of the premises a ten-pin alley is fitted up (Figure 10).[62]



FIGURE 10. Sketch of the Mammoth Cave Hotel, 1851. Source: Horace Martin, *Pictorial Guide to the Mammoth Cave, Kentucky* (New York: Stringer and Townsend, 1851), frontispiece.

Several stores catering to visitors to the cave operated in the vicinity of the hotel. One of the first stores was located northeast of the hotel on the north side of the historic entrance road. The store, operated by Smithy Hunt on behalf of J. J. Roberts was over taken by Confederate troops during the Civil War.[63]

The precise location of the nineteenth century hotel is not known. Travelers described the distance from the hotel to the Historic Entrance as being approximately 200 yards. The original hotel was located north of the site of the later 1925 hotel building. Based on available documentation of the first hotel, the arrangement of outbuildings on the site, and narrative descriptions of the hotel, a concept diagram of the probable location of the nineteenth century hotel was prepared for this study (Figure 12).

58. Hobart and Thompson, 72–74.
59. Julius Benedict, "Made. Jenny Lind's Visit to the Mammoth Cave," in Horace Martin, *Pictorial Guide to the Mammoth Cave, Kentucky* (New York: Stringer and Townsend, 1851), 9–14. Although no exact date is given, it is stated that Lind visited the cave after her last performance in Nashville.
60. Shackelford, "An Account," 7.
61. Horace Martin, *Pictorial Guide to the Mammoth Cave, Kentucky* (New York: Stringer and Townsend, 1851), 18.
62. Ibid., 18–19.
63. Hobart and Thompson, 50.

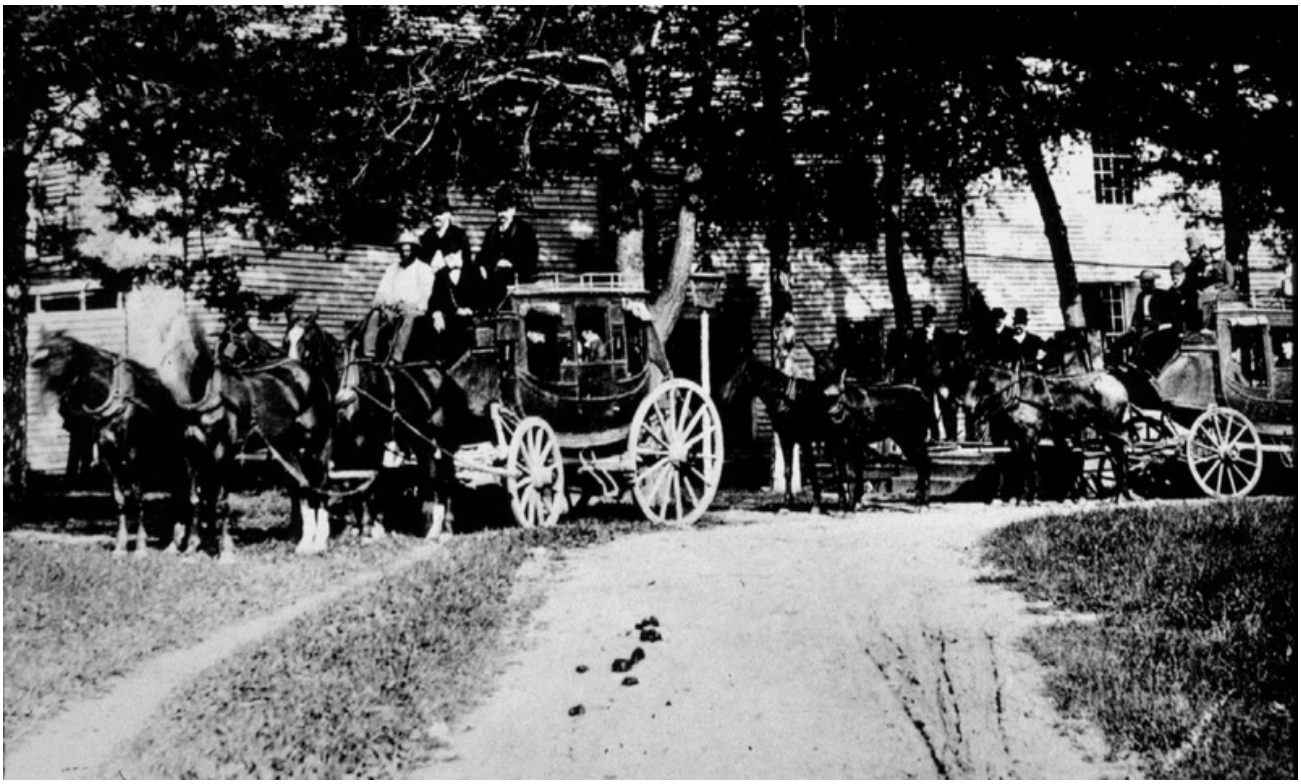


FIGURE 11. An undated nineteenth century view of a stagecoach at Mammoth Cave Hotel. Source: Mammoth Cave National Park.

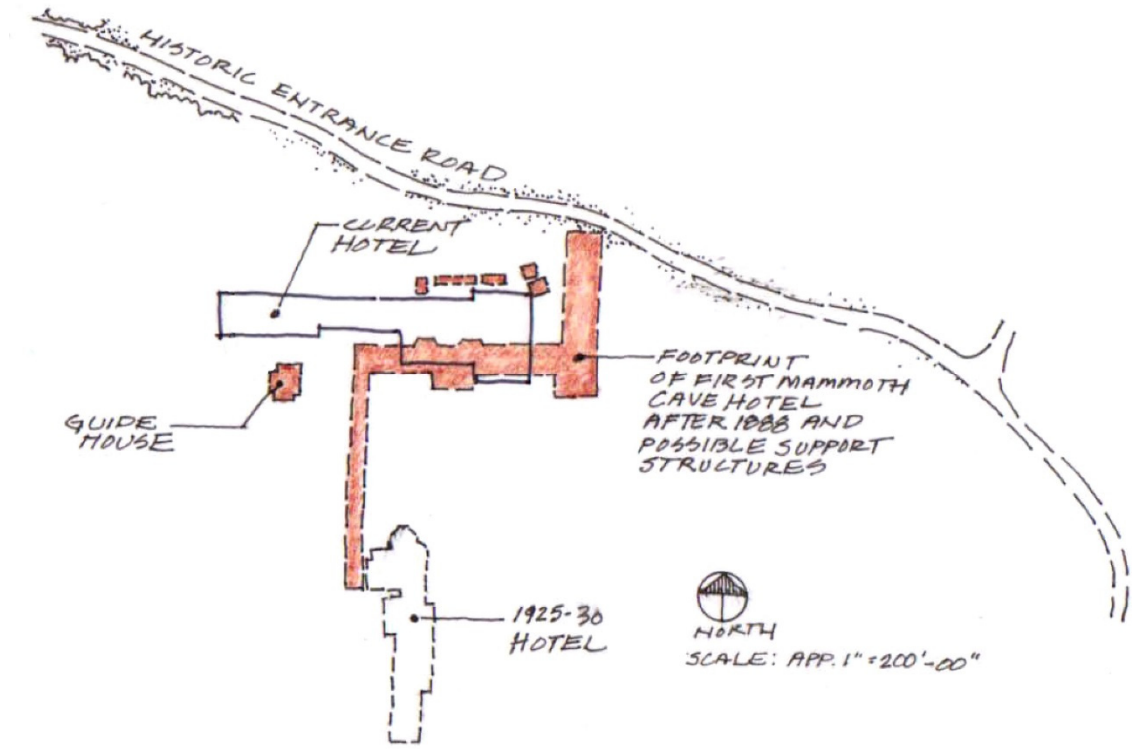


FIGURE 12. Concept diagram showing probable location of the nineteenth century Mammoth Cave Hotel, in relation to the later hotel buildings. A more detailed plan of the hotel is illustrated in Figure 18, below. Two latrines, a laundry, and other outbuildings were located north of the hotel. Source: Diagram by JMA historical landscape architects based on archival maps and photographs.

The Civil War, 1861–1865.[64] During the first months of the Civil War, Kentucky, a slave state, remained in the Union. However, on November 18, 1861, representatives from sixty-eight counties convened in Russellville, Kentucky to set up a new state government aligned with the Confederacy. This government declared Bowling Green its capital and was admitted to the Confederate States of America on December 10, 1861. The state government at Frankfort remained loyal to the Union. Confederate troops had entered Bowling Green, Kentucky, on September 17. Texas Rangers under Col. B. F. Terry advanced from there to take up a position at Bell's Tavern (present-day Park City, Kentucky). Meanwhile, Union forces were encamped north of the Green River.

On February 1, 1862, Confederate troops raided the Mammoth Cave Hotel, at that time managed by E. K. and John Owsley. A significant quantity of furnishings, supplies, and business records were removed from the hotel or damaged. The hotel manager had fled prior to the raid, but returned soon thereafter, and the hotel was again open for business by mid-March.

On February 6, 1862, Union forces captured Fort Henry on the eastern bank of the Tennessee River close to the border between Kentucky and Tennessee. Union forces then moved 12 miles east and captured Fort Donelson on the Cumberland River on February 16. With this Union advance, the position of the Confederate armies at Bowling Green and the surrounding areas of southern Kentucky became vulnerable. In response, Confederate Gen. Albert Johnson ordered the withdrawal of all forces from Bowling Green on February 11, 1862, and abandoned Nashville, Tennessee, to Union forces shortly thereafter.

Later raids by irregular forces into Kentucky persuaded the Confederate commanders that an invasion of Kentucky would be possible. Gen. Braxton Bragg led a raid that reached Glasgow, Kentucky (20 miles southeast of Mammoth Cave), by September 13, 1862. Union forces at Bowling Green moved east to meet the threat, and several skirmishes near Mammoth Cave occurred in mid-September 1862. Ultimately, the Confederate invasion was stopped at the Battle of Perryville on October 8, 1862, after which the Confederate forces retreated to Tennessee. Although irregular Confederate forces continued to occasionally raid Kentucky, the state remained firmly in Union control for the rest of the war.

Tourism after the Civil War. Following the Civil War, the number of visitors to Mammoth Cave grew substantially.[65] During this period, a time when leisure travel was most prevalent among the wealthy, several noteworthy individuals visited the cave, including actor Edwin Booth, brother of John Wilkes Booth, and George Armstrong Custer, who accompanied Grand Duke Alexei Alexandrovich of Russia to the cave in 1872.[66] Publicity surrounding visits by these individuals to the cave further increased Mammoth Cave's standing as a tourist attraction.

In 1871, David L. Graves took over operations of the hotel and cave as the new lessee of the Croghan estate. Graves had a new water system installed for the hotel. Prior to this work, water had to be brought up to the hotel from the Green River. Graves had pipes laid to the Three Springs area, which supplied storage tanks at the hotel.[67]

Graves' lease ended in January 1873, however, he refused to leave the estate at this time. Graves was eventually forced to leave once the courts became involved in March 1873. From 1873 through 1880, there were no lessees in control of the hotel and

64. This section is derived from Mike Deacon, "Mammoth Cave and the Civil War in Kentucky," (October 19, 1995), manuscript in park files.
65. Elmer G. Sulzer, "The Mammoth Cave Railroad," *The Railway and Locomotive Historical Society Bulletin*, no. 99 (October 1958): 31–32.
66. Bridwell, 26.
67. Joy Medley Lyons, "A Village Lonely: Architectural History of the Old Mammoth Cave Hotel," (December 1992), manuscript in park collection, 12.

cave. During this time, William S. Miller, Sr., the agent, served as manager until a new lessee could be found.[68]

The Hunt Store, operated by Ishmuel Hunt and Kate Roberts began operating just north of the historic entrance road near the hotel in 1873. The Hunt store was destroyed by a fire in 1891. Hunt constructed another store in 1902 on behalf of William S. Miller, Jr., a trustee of the Mammoth Cave Estate. The store, which was located along the road leading to the main entrance of the hotel, burned shortly after it opened.[69]

As the number of tourists travelling to the cave increased, the stagecoach line was replaced by the new Mammoth Cave Railroad. The railroad was incorporated in 1874; however, work on the railroad did not begin until July 1886, when the Mammoth Cave Railroad Company engaged Jim McDaniel and Henry Chapman to begin construction. The railroad ran northwest from Glasgow Junction (present-day Park City, Kentucky) on the Louisville and Nashville Railroad main line, to a site just east of the Mammoth Cave Hotel. The train line ended at an entrance arch that marked the entrance to the Mammoth Cave estate. The 8.7-mile line was operated under contract by the Louisville and Nashville Railroad. A small double wye track allowed the steam locomotives to be turned around and moved from one end of the train to the other at either end of the line. After 1900, the turning at the Mammoth Cave end of the line was converted to a single wye. Without the ability to rotate the locomotive at the Mammoth Cave terminus, when returning from Mammoth to Park City, the locomotives were positioned at the head of the train but were oriented backwards and operated in reverse. The first passengers of the Mammoth Cave Railroad arrived at the site on November 8, 1886 (Figure 13). The railroad remained profitable into the early part of the twentieth century. In 1910, the railroad experimented with a rail bus, which could be rotated on a small turntable at the end of the line (Figure 14); however, the experiment was soon abandoned.[70]



FIGURE 13. The Mammoth Cave Railroad (undated photo). Steam engines were used on the railroad until 1929, when they were replaced with the rail bus. A steam engine was again used for the final run in 1931. Note the water tank on the wooden platform. Source: Mammoth Cave National Park.

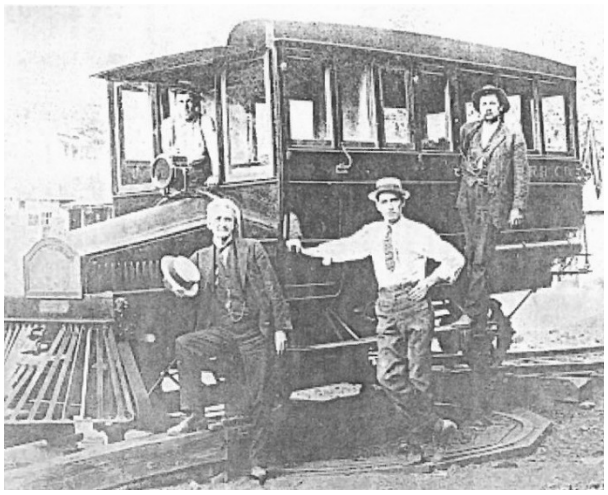


FIGURE 14. First rail bus and turntable of the Mammoth Cave Railroad, 1910. Source: Mammoth Cave National Park.

68. Hobart and Thompson, 74.
69. Ibid, 51.
70. Elmer G. Sulzer, "Gay Nineties Rendezvous: The Mammoth Cave Railroad," *The Register of the Kentucky Historical Society* 57, No. 2 (April 1959): 131.

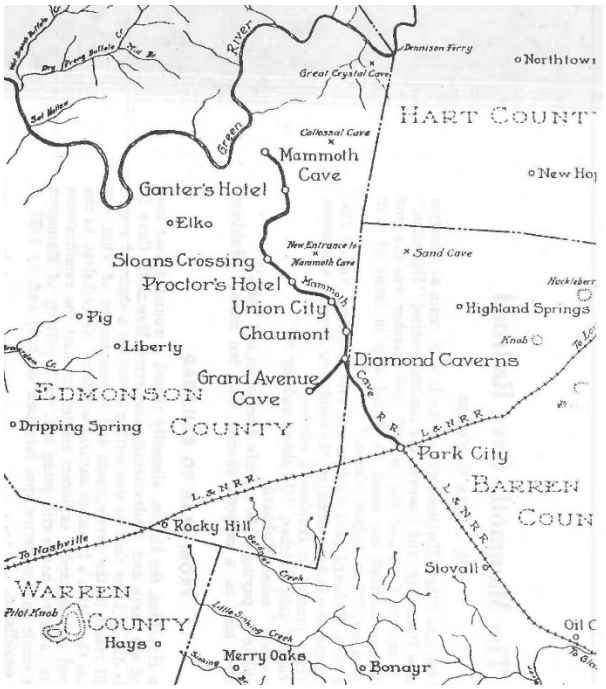


FIGURE 15. Map of the Mammoth Cave Railroad route from Park City to Mammoth Cave. Source: Elmer G. Sulzer, "Mammoth Cave Railroad," in *The Railway and Locomotive Historical Society Bulletin No. 99* (Boston, Massachusetts: Harvard Business School, Railway & Locomotive Society, Inc., October 1958), 31–41.

Visitors also continued to arrive by steamboat. In 1906, a new series of locks and dams raised the water level and made the Green River navigable. As late as the 1920s, excursion boats would depart Evansville, Indiana, to travel up the Green River to Bowling Green and Mammoth Cave.[71]

Stagecoaches also remained a common way to reach the cave through the latter part of the nineteenth century. On one occasion, on September 3, 1880, the stagecoach from Cave City to Mammoth Cave was robbed by Jesse James and Bill Ryan.[72]

Beginning in 1881, Francis Klett managed the estate. Klett's lease ended in January 1883.

Following the end of Klett's management of the estate, Julia Clark Jesup, one of Croghan's heirs, took over management of the estate through August 1883.[73] Following the brief period during which Jesup managed, William C. Comstock leased the hotel for five years. Starting in 1888, the Mammoth Cave Railroad Company leased the hotel, with H. C. Ganter as general manager.[74]

In 1888, a kitchen, souvenir store, and photography shop were added to the hotel, and the dining room and several hotel rooms were remodeled. A third floor was added to the central portion of the hotel (Figure 18 through Figure 21).[75] A variety of service outbuildings and staff housing buildings were added to the site. The dates, appearance, and exact use of these outbuildings are not documented in the available historical resources.

One outbuilding likely built in the early twentieth century was a concrete masonry, two-story building for the use of the cave guides (Figure 16); the Guide House was located along a path to the Historic Entrance.



FIGURE 16. The Guide House, circa 1930s. Based on the use of rock-face concrete masonry for the exterior walls and porch foundation, this building was very likely built after 1900. Source: Mammoth Cave National Park.

71. James M. Hines, "Evansville & Bowling Green Packet Co.," (1952), manuscript in park files.
72. J. Winston Coleman, Jr., *Stage-Coach Days in the Bluegrass* (Louisville, Kentucky: The Standard Press, 1935), 251–254.
73. Hobart and Thompson, 74.
74. Ibid, 75.
75. Bob and Judi Thompson, *Mammoth Cave and the Kentucky Cave Region* (Charleston: Arcadia Publishing, 2003), 26; Richard E. Thomas, Jr., "The Cave House: A Description and Timeline with Traveler's Accounts of the Old Mammoth Cave Hotel" (August 2003), manuscript in park collection.

The hotel went bankrupt in 1888 after the Mammoth Cave Railroad Company failed to pay the specified rent.[76] With the railroad company aborting their lease of the Mammoth Cave estate, the trustees of the estate turned over its management to Henry C. Ganter, who served as the agent for the cave property. Ganter, who did not receive any additional compensation for his managerial duties, continued in the role through 1902, at which time the trustees asked that he stop serving in that capacity.[77] Willis Ranshaw was given a five-year lease to the estate in 1902. The lease was subsequently renewed in 1907.[78]

The first automobiles arrived at the cave in 1903 from Chicago, Illinois, heralding the start of increased visitation as automobiles became the popular mode of transportation and roads to the Mammoth Cave Hotel were improved (Figure 17).[79]



FIGURE 17. First automobiles arrive at Mammoth Cave, 1903. Source: Mammoth Cave National Park.

A log guest cottage, two-stories in height, was constructed in 1912 south of the hotel. An open-air cafeteria was constructed in 1914. The original early nineteenth century hotel building remained in use until early in the morning of December 9, 1916, when it was destroyed by fire.

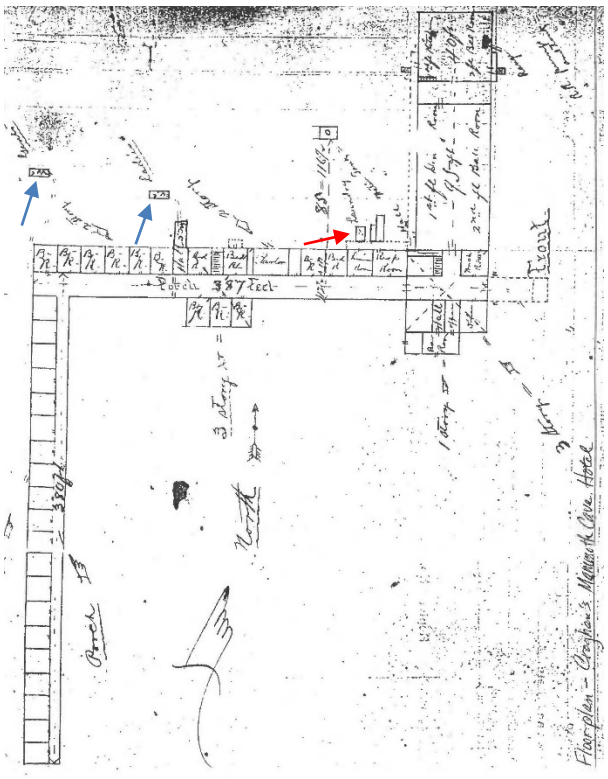


FIGURE 18. Sketch plan of the first Mammoth Cave hotel, after 1888. North is to the top. Source: Mammoth Cave National Park. The two buildings indicated by blue arrows are latrines, labelled "Ladies" and "Gents" in the sketch. The red arrow indicates the laundry building. The function of the other outbuildings is not known.

76. Hobart and Thompson, 75.
77. Ibid, 77.
78. Ibid, 80.
79. *The Horseless Age* XII, no. 4. New York, July 22, 1903.

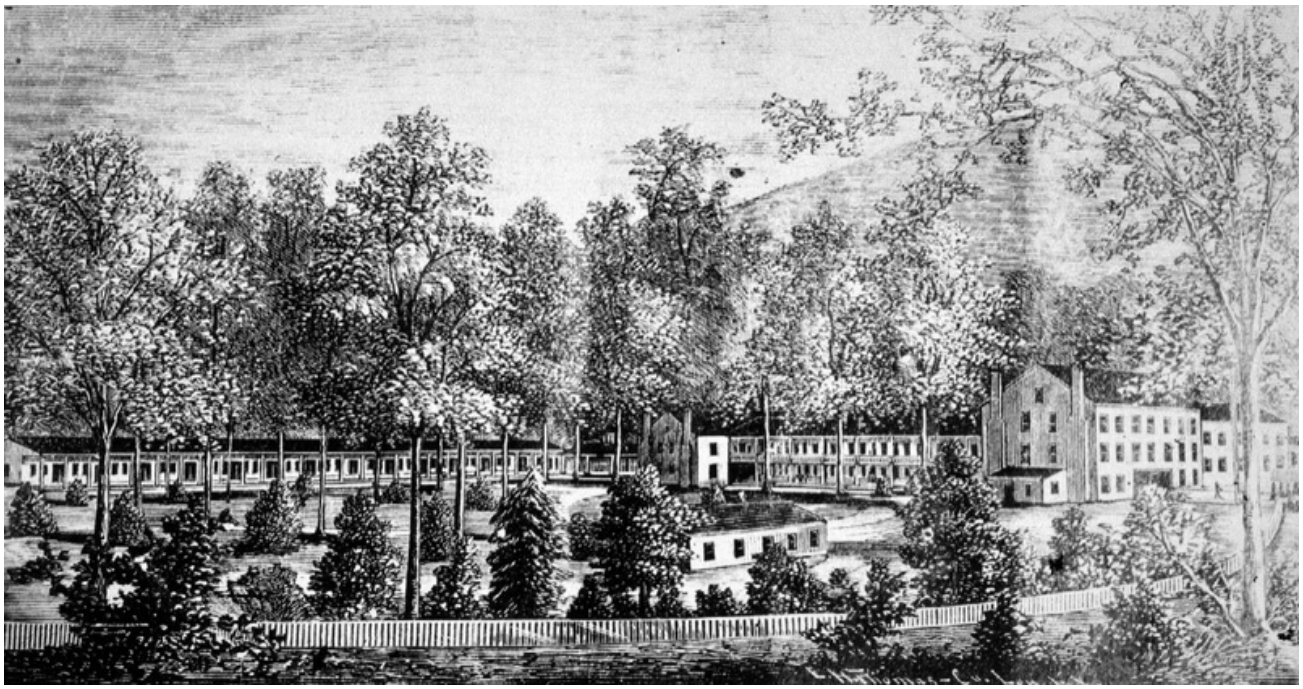


FIGURE 19. An undated drawing of the nineteenth century Mammoth Cave Hotel, view looking northwest, after 1888. Source: Mammoth Cave National Park.



FIGURE 20. Two views of the Mammoth Cave Hotel, early twentieth century. Source: Mammoth Cave National Park.



FIGURE 21. A photograph of the first Mammoth Cave Hotel, 1915, view looking northwest. The hotel complex is little changed from the earlier views, with the exception of the addition of a two-story porch at the side of the three-story gable portion, at right in this view. Photograph by Harry Pinson. Source: Mammoth Cave National Park.

Second Mammoth Cave Hotel, 1925. A few log outbuildings near the original hotel survived the 1916 fire and were used for temporary guest accommodations in the years following the fire. A small building located on the road to the hotel near the entrance arch was used as store and concession stand following the fire at the original hotel.[80] In 1919, a 20-room hotel known as the "rooming house" was constructed near the 1912 cottage to accommodate overnight visitors.[81] A porch was added to the "rooming house" in 1920. A kitchen was added to the open-air cafeteria, which was used as a dining hall during this time.[82] Following the fire, the 1912 guest cottage was used as office space.[83] In 1923, an open-air pavilion was constructed adjacent to 1912 cottage.[84]

A new Mammoth Cave Hotel was constructed in 1925 (Figure 22). The two-story, wood-sided structure had a gable roof and a covered porch on one side. The building, which sat on a concrete foundation, had a basement and forty-three guest rooms.[85] The "rooming house" constructed in 1919 was known as the annex following the construction of the new hotel in 1925.[86] The 1925 hotel was oriented with its long dimension on a north-south axis. The building was built in two phases, with the second phase extending its length and expanding the porch along the east side. The second phase was completed and opened in 1930.[87] Water continued to be supplied from the Three Springs area and was stored in a wooden tank on an elevated platform west of the building.

A variety of outbuildings were associated with the new hotel (Figure 23 and refer to 1926 Period Plans, Figure 26 and Figure 27). West of the hotel, there was a water tower, a garage, and a farmhouse. A store house and several other buildings were south of the hotel. To the north, a service building, the Guide House, and photo shop were located along a trail leading toward the Historic Entrance. The open-air cafeteria was demolished shortly after the new hotel was constructed. Farther north were a collection of service structures including a tool house, laundry, and water reservoirs. An office building and pavilion were located northeast of the hotel. Near the terminus of the Mammoth Cave Railroad, there was a water tank, gas station, and A. A. Demunbrun's store, which was a two-story log building (refer to Figure 28, below). The Demunbrun Store was constructed in 1919 and housed a general store, post office, the telephone exchange, and train depot.[88] None of these other buildings exist today.

Following the demolition of the Demunbrun Store in 1939, the post office moved to a small house occupied by Joseph McDaniel, the resident photographer at Mammoth Cave. The McDaniel house was situated near the saw mill on the historic entrance road.[89]

80. Hobart and Thompson, 52.
81. Ibid., 37.
82. Ibid., 48.
83. Ibid., 34.
84. Ibid., 43.
85. Russell Jones, *Evaluation Report: Buildings at Mammoth Cave National Park, Kentucky* (Denver: National Park Service, Denver Service Center, Historic Preservation Team, 1972), 7–8.
86. Hobart and Thompson, 43.
87. Bridwell, 34. Mammoth Cave National Park Association brochure, n.d. [1930 stated in photo caption of hotel, same view as Figure 22].
88. Hobart and Thompson, 53–54.
89. Ibid., 57.



FIGURE 22. The second hotel, circa 1930. Note the open porch along the east side and water tank beyond, located on a platform west of the building. The two phases of construction are apparent in the offset in the plane of the porch roof. Source: Mammoth Cave National Park, slide 720.



FIGURE 23. Aerial photograph of the historic core area, circa early 1930s. The arrow indicates the Mammoth Cave Hotel. Source: Mammoth Cave National Park, image 302.

The "Cave Wars," 1910s and 1920s

The number of tourists visiting Mammoth Cave continued to grow in the late nineteenth century. In an attempt to capitalize on the popularity of Mammoth Cave, several local residents began searching for other caves in the area that might attract tourists. By the turn of the twentieth century, approximately ninety caves had been discovered near Mammoth Cave, including Colossal Cavern, Great Onyx Cave, and Crystal Cave. During this period, owners of the newly discovered caves attempted to intercept tourists traveling to Mammoth Cave, directing them to their caves under the pretense of going to Mammoth Cave (Figure 24).



FIGURE 24. Employees of the Great Onyx Cave solicit visitors attempting to travel to Mammoth Cave. Source: Mammoth Cave National Park.

In early 1915, L. P. Edwards and Edmund Turner explored the property owned by Edwards on Flint Ridge, hoping to discover a major cave. In June 1915, Edwards and Turner created an entrance to Great Onyx Cave, utilizing a combination of shovels and dynamite. Edwards opened the cave for tours the following year and constructed hotels and cottages adjacent to the new cave entrance over the next several years.

In 1916, George Morrison, a nearby land owner, began to survey Mammoth Cave, with the intention of finding parts of the cave that extended past the boundaries of the property owned by the Croghan Estate and a suitable location where an artificial entrance could be constructed. Morrison, a former oil prospector in Edmonson County, was confident that Mammoth Cave extended past the aboveground boundaries of the estate. Morrison paid an old Mammoth Cave guide, who provided Morrison access to the cave at night. In 1921, Morrison created the Mammoth Cave Development Company and, during the same year, constructed a new entrance to the cave approximately 2.5 miles from the historic cave entrance. Morrison advertised the manmade entrance as the "New Entrance to Mammoth Cave" and, in 1923, constructed a twenty-five room hotel adjacent to the new entryway (Figure 25).[90]



FIGURE 25. The "New Entrance Hotel," constructed 1923. Source: Mammoth Cave National Park.

Upset by Morrison's actions, trustees of the Mammoth Cave estate filed a lawsuit alleging the illegal use of the Mammoth Cave name by Morrison, as well as the use of deceitful business practices. It was purported that Morrison would misdirect visitors away from the Historic Entrance of the cave to his new entrance. In 1928, Morrison was forced to explain on all his advertising that visitors to his entrance to Mammoth Cave would not provide views of the famous sites encountered when entering the cave through the Historic Entrance. Morrison continued to operate his site until it was sold to the Mammoth Cave National

90. Lally, section III, page C-5, citing William Wyatt and Violet Janin Blair v. Mammoth Cave Development Company et al., United States District Court (August 1926), page 10; Bridwell, 21–22.

Park Association and the Mammoth Cave National Park Commission in 1931. The hotel constructed by Morrison was demolished by the National Park Service in 1945.[91]

In 1917, Floyd Collins discovered Crystal Cave on land owned by his father, Lee Collins, near Flint Ridge. Floyd, who was known locally as an avid cave explorer, was trapped in a passage while exploring Sand Cave in 1925. Floyd Collins died after sixteen days in the cave. The death of Floyd Collins was highly publicized and was responsible for more tourists traveling to the Mammoth Cave region. Dr. H. B. Thomas of Horse Cave, Kentucky, purchased the Crystal Cave property from the Collins Family. Thomas placed Floyd Collin's remains in the cave and constructed a ticket office near the Collins family home to better accommodate the large number of visitors.[92]

The enactment of Congressional legislation establishing Mammoth Cave National Park in 1926 started a process in which a majority of the rival caves would be consolidated under the management of NPS. (The Great Onyx and Crystal caves were not added to the park until 1961.)

91. Bridwell, 21–23.

92. Ibid., 23–24.

Old Ferry Road

Dixon Cave

Boundary of Project Area

Flint Ridge Road

Cave Island

See Figure 27. 1926 Period Plan, Historic Core

Mammoth Cave Ferry

Green River

Mammoth Dome Sink

Mammoth Cave Railroad

Kentucky Route 70 (macadam surfaced)

White Cave

Green Pond

YMCA Camp

Joppa Ridge Road

0' 450' 700'

SCALE 1" = 700'

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Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

USGS, Mammoth Cave quadrangle 1:62500 series, 1922.

NPS, "Topography, Mammoth Cave Developed Area" Dwg. No. 135-6002, 1935.

Notes:

1. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 26.

1926 Period Plan Overall Features

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Mammoth Cave Ferry road (earth and gravel surface)

Trail

Box culvert

Benches for group pictures

Sandstone steps into historic entrance

Wire fence

Old Guide's Cemetery (approximate extent of burials)

Pond

Pond

Flint Ridge Road

Fields

Cistern

Chlorinating house

Tool house

Laundry

Reservoirs

Field

Service house

Photo shop

Guide House

Field

Earth road

Garage

Hotel

Water tower

Cess pools

Store house

Annex

Ranger office

Cess pool

Garage

Gas pumps

Gas Station

Office

Pavilion

Kentucky Route 70 (macadam-surfaced)

Water tank

Demunbrun Store & Post Office

0' 100' 200'

SCALE 1" = 200'

Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees
- Sewer line
- Water line
- Electric line

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

USGS, Mammoth Cave quadrangle 1:62500 series, 1922.

NPS, "Topography, Mammoth Cave Developed Area" Dwg. No. 135-6002, 1935.

Notes:

1. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 27.

1926 Period Plan Historic Core

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Mammoth Cave National Park

The idea of establishing a national park at Mammoth Cave was first broached in the late 1880s by representatives of the Louisville and Nashville Railroad, who thought that a national park would result in increased business for the railroad. Members of Congress became interested in creating a national park at Mammoth Cave as early as 1905, when Kentucky Congressman James M. Richardson began to lobby the Department of the Interior to establish Mammoth Cave National Park. Legislation to create Mammoth Cave National Park was soon introduced by Representative R. Y. Thomas, who succeeded Richardson in Congress. The legislation was unsuccessful, as there was not enough public support to establish the park.[93]

Mammoth Cave National Park Association, 1920s

In the early 1920s the Southern Appalachian National Park Commission was formed as a result of National Park Service Director Stephen Mather's desire to establish new national parks in the more populated eastern United States. On February 21, 1925, President Calvin Coolidge signed legislation officially establishing the Commission. The legislation called for the Commission to survey proposed parks in the Shenandoah-Blue Ridge and Great Smoky Mountains areas and, after some last minute lobbying by the Kentucky congressional delegation, at Mammoth Cave. Members of the Commission visited Mammoth Cave in May 1925, and on April 8, 1926, presented a report to Secretary of the Interior Hubert Work recommending that national parks be established at all three sites. In addition to recommending that the three sites be national parks, the Commission stated that the parks could not be created with the use of federal funds.[94]

Due to the lack of federal funds that would be available for the establishment of Mammoth Cave National Park, the Mammoth Cave National Park Association was formed in 1924. The stated goal of the Association was to establish "a national park in the Mammoth Cave region, in order to preserve for all people for all time one of the greatest of the natural wonders of the world."[95]

The initial objective of the Association was to lobby Congress to pass legislation authorizing the creation of a national park at Mammoth Cave. In an effort to boost local support, the Association promoted the park in the *Edmonson County News*. The advertisements noted the economic impact a national park would have on the area.[96]

Establishment of Mammoth Cave National Park and Land Acquisition, 1926 to 1941

On May 25, 1926, President Calvin Coolidge signed a bill authorizing the establishment of Mammoth Cave National Park. The legislation designated a maximum park area of 70,618 acres and a minimum of 45,310 acres. It further stipulated that the National Park Service could assume administrative control of the park land following the acquisition of 20,000 acres.[97]

In 1928, the Kentucky legislature established the Kentucky National Park Commission and granted it the power of eminent domain. The Governor of Kentucky was given power to appoint six members to the commission from a list submitted by the Mammoth Cave National Park Association. This process ensured that the two groups would have a close relationship.[98]

Initially, the acquisition of land proved to be difficult, despite the fact that several land owners were interested in selling land for inclusion in the park. The Louisville and Nashville Railroad donated more than 3,000 acres to the Mammoth

93. Lally, D-1, citing Cecil E. Goode, *World Wonder Saved: How Mammoth Cave Became a National Park* (Mammoth Cave, Kentucky: Mammoth Cave National Park Association, 1986), 33.
94. Bridwell, 47–48.
95. Lally, D-2, citing Goode, 28.
96. Ibid., D-3.
97. Ibid., D-3–D-4, citing Goode, 30–32.
98. Ibid., D-5–D-6, citing Goode, 32.

Cave National Park Association in 1929. At the same time, the association purchased a two-thirds ownership of the Mammoth Cave estate for $446,400. The third owner of the estate refused to sell. The establishment of the Kentucky National Park Commission allowed the commission to take full ownership of the estate. Shortly thereafter, the Mammoth Cave National Park Association formed a committee to manage the operations of the cave and the Historic Entrance.[99]

In 1930, the Kentucky State Legislature passed the Strange-McBrayer Act, which called for 8 percent of property taxes for a two-year period to be given to the Commission to purchase additional park lands. The passage of the act provided the Commission with $1,380,000.[100]

In early 1931, the Kentucky National Park Commission purchased the Frozen Niagara Entrance to Mammoth Cave and began to oversee operations of the entrance.[101]

End of the Mammoth Cave Railroad. As the automobile became a more popular form of transportation, ridership on the Mammoth Cave Railroad began to fall in the 1920s. Starting on February 28, 1929, the company used the tracks for a motorized rail bus (Figure 28). In 1931, the Mammoth Cave National Park Association purchased the Mammoth Cave Railroad in order to obtain its right-of-way as part of the proposed national park. On August 31, 1931, the Mammoth Cave Railroad made its final trip from Glasgow Junction, using Engine No. 4 and Coach No. 2; the Engine No. 3 "Hercules" was too deteriorated to be operated. The railroad was dismantled by a Louisville and Nashville work crew in late 1931 and early 1932.[102] The rolling stock was sold for scrap, but Engine No. 4 and Coach No. 2 were retained for the park and left at a location near the former terminus of the line where they would be visible in front of the hotel. A wooden canopy was built to protect the display (Figure 29).[103]



FIGURE 28. Rail bus of the Mammoth Cave Railroad Company, between 1929 and 1931. Note A. A. Demunbrun's store behind the rail bus. Source: Source: Mammoth Cave National Park.



FIGURE 29. Engine No. 4 (misidentified as "Hercules") and Coach No. 2, view circa 1950s or early 1960s, showing the wood-framed canopy built in the 1930s. Source: Mammoth Cave National Park, slide 553.

Presumably, the water tank associated with the terminus of the railroad was also removed at this time. The two-story Demunbrun store building located near the railroad terminus was ultimately demolished with CCC labor in October 1939.[104]

99. Ibid., D-4–D-6.
100. Bridwell, 49.
101. Ibid., 50.
102. Sulzer, "Gay Nineties Rendezvous" (April 1959): 141–142; Larry P. Asman, "Hercules and the Mammoth Cave Railroad" (1970), manuscript in park files.
103. This wooden canopy is visible in a photograph accompanying the article "Trail's End! The Mammoth Cave Railroad, 1886–1931," *The L&N Employees' Magazine* (May 1937): 6–9.
104. Memorandum for Acting Superintendent Hoskins, Subject: CCC Activities during the

Mammoth Cave Joint Operating Committee. On July 17, 1933, the Mammoth Cave National Park Association and the Kentucky National Park Commission formed the Mammoth Cave Joint Operating Committee. The committee assumed all control over both the Historic Entrance and the Frozen Niagara Entrance. The Joint Operating Committee generated approximately $400,000 from entrance fees between 1934 and 1940, allowing it to provide funding for future land purchases and park improvements.[105]

Despite potential for condemnation in addition to land purchased with state funds, acquisition of further land for the park continued to prove difficult. In May 1934, new legislation was passed that allowed the Secretary of the Interior to accept monetary donations for land purchases. This allowed the National Park Service to take the lead in acquiring land.[106] On May 22, 1936, the Secretary of the Interior formally accepted deeds to 27,561 acres of land, allowing Mammoth Cave to be formally designated a national park. This transfer gave the National Park Service responsibility for the administration and protection of the land. Federal funds could not be used for administration or development of the park until the minimum 45,310 acres had been acquired.[107]

By the late 1930s, land acquisition began to proceed at a more rapid pace. In 1941, the amount of park-owned land surpassed the 45,310 acre minimum required by the 1926 legislation, allowing Mammoth Cave to be fully established as a national park. The National Park Service assumed full responsibility for the administration, protection, and development of Mammoth Cave National Park on July 1, 1941. This allowed the park to finally receive Congressional appropriations. Two months later, on September 16, 1941, the National Park Service was given administrative control of the cave itself. Despite receiving full designation as a national park in 1941, official dedication of the park was postponed until September 18, 1946, due to the involvement of the United States in World War II.[108]

Early Development at Mammoth Cave National Park during the New Deal Era, 1933 to 1942

Although federal funds were not immediately available for the development of the park, some work was able to begin in the mid-1930s. Funding was provided by the over $400,000 in profits realized by the Mammoth Cave Joint Operating Committee from park visitors who rented hotels rooms and paid for guided cave tours between1934 and 1940. The Committee turned this money over the National Park Service, which subsequently used the money to fund improvements to the new park land which was undertaken by the Civilian Conservation Corps (CCC).[109] The CCC performed tasks such as making improvements to the site and demolishing existing structures on newly acquired land. Prior to CCC work, the area of the park was rugged, with scattered cleared areas for farms. Roads in the area were merely dirt access routes for local farmers. Development of the new park required new roads, residential and utility buildings, water

month of October 1939, November 2, 1939, copy in park archives.

105. Lally, section III, page D-6, citing Goode, 43.

106. Lally, D-8–D-9, citing Edmund B. Rogers, *History of Legislation Relating to the National Park System through the 82nd Congress* (Washington, D.C.: U.S. Department of the Interior, 1958), vol. 56: Mammoth Cave.

107. Lally, D-13, citing Goode, 42; Bridwell, 52–53.

108. Lally, D-15, citing Goode, 47, and R. Taylor Hoskins, "Annual Report Fiscal Year Ending June 1941," 6, and "Annual Report Fiscal Year Ending June 30, 1942," 1.

109. Lally, D-13. The federal government was responsible for the salaries and overhead expenses for members of the CCC. As a result, the $400,000 was used to directly fund construction projects.

and sewer facilities, removal of farm buildings, and erosion control and reforestation.[110]

Four CCC camps operated at the park between 1933 and 1942 (Figure 30). None of the camps, each of which housed 200 to 250 enrollees, was functional for this entire period. The first CCC camp, Camp NP-1 (Company 510), was established on Flint Ridge near Crystal Cave on May 22, 1933. The camp, which initially included both white and African American recruits, was first established in log buildings of the former Bluegrass Country Club, an early twentieth century golf course that failed and had been abandoned in 1925. By the spring of 1934, white enrollees had been transferred to three new camps in the park, leaving NP-1 manned by African Americans.[111] Camp NP-2 (Company 543) was located near the Frozen Niagara Entrance to Mammoth Cave. Camp NP-3 (Company 582) was positioned on Joppa Ridge at the approach to the park from the direction of Brownsville, Kentucky, and Camp NP-4 (Company 516) was situated on the north side of the Green River at Cade. Each camp was composed of several buildings including three to four barracks, a kitchen and mess hall, latrines, and maintenance areas.



FIGURE 30. An aerial view of one of the CCC camps at Mammoth Cave during the 1930s. Source: Mammoth Cave National Park.

Members of the CCC performed a variety of tasks at the park. Among the work accomplished was the construction of 65 miles of paved roads, 7 miles of trails, three steel-framed fire watchtowers, and two ferry boats. Erosion control was implemented along streams, with hundreds of check dams. More than 600 trees were planted, and the Frozen Niagara entrance was restored to a naturalistic state. Parking areas were landscaped. Approximately 1,700 former farm buildings in the park were razed, and 300 miles of fence were removed.[112]

CCC laborers constructed the park maintenance complex (1939–1941), a six-building housing complex for park employees (1937), a home for the Park Superintendent (1941), a chlorinator house (1940), and ranger station facilities (1942). The six housing units for park employees may be the "Dallas huts" shown on a 1953 plan of the park; refer to Figure B-5 in Appendix B of this report.[113]

The CCC also constructed two water systems encompassing four 50,000 gallon concrete reservoirs, two pumping stations, and 4 miles of cast iron water mains; two sewer systems; and a phone system (Figure 31). The core area was served by the spring, pump house, and reservoir at Three Springs, located 3 miles east, as well as the deep well, pump house, and reservoir at Bransford Spring, 4 miles east. The other two reservoirs were located at Crystal Cave and Maple Spring. The core area sewer system served the hotel, cottages, and tennis court comfort station and drained to an Imhoff tank (a type of two-level septic tank that

110. Jeanne Cannella Schmitzer, "CCC Camp 510: Black Participation in the Creation of Mammoth Cave National Park," *Register of the Kentucky Historic Society* 93, no. 4 (Autumn 1995): 446.

111. Ibid, 446–453. For most of its existence, the CCC maintained racial quotas, limiting African American enrollment to 10 percent of enrollees. African Americans enrollees were generally organized into segregated camps with white supervisors. However, unlike many other industries or organizations in the period, African American enrollees received equal pay and comparable work conditions to white enrollees.

112. "The National Park is Now Worth Twice What It Cost," *The Courier-Journal*, August 14, 1938.

113. Dallas huts were pre-fabricated wood housing structures assembled on site, developed during World War II to house U.S. servicemen.

encourages settling and anaerobic digestion of sludge) and chlorinating basin before discharging into the Green River (Figure 32).[114]

CCC enrollees also engaged in land conservation work such as erosion control, removal of dead trees and plant debris to reduce the risk of fire, draining and landscaping of old farm ponds and quarries, and tree planting. Within the cave, CCC work included adding handrails, bridges, and constructing 8 miles of trails throughout the cave to improve the visitor experience.[115] CCC labor also performed routine maintenance in the core area, such as mowing the grass and removing litter in the picnic area and near the hotel.[116] Camp NP-4 operated a stone quarry from which crushed stone for road and trail projects in the park was obtained.[117]

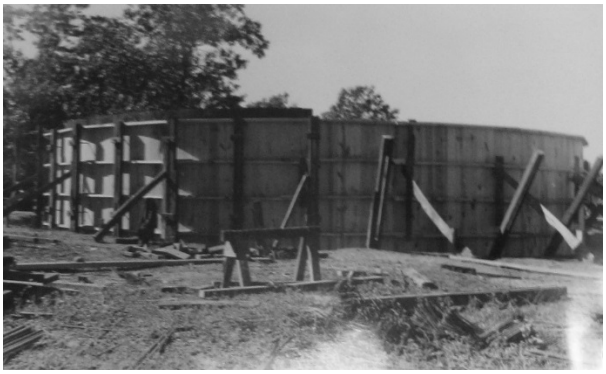


FIGURE 31. One of the concrete reservoirs under construction, October 1936. Source: Mammoth Cave National Park.



FIGURE 32. The chlorinator building and sewer plant located west of the hotel area, undated photo. Source: Mammoth Cave National Park, slide 65.

In the core area, work completed in the New Deal era included the following:

Tennis Courts and Shuffleboard Courts. In 1936, the CCC constructed a comfort station to the west of the hotel to serve a proposed recreational area (Figure 33 and Figure 34).[118] In 1939, tennis courts and shuffleboard courts were constructed west of the hotel by members of the CCC (Figure 35).[119] As part of this work, an earlier garage and water tower west of the hotel were removed.

114. NPS Drawing No. 135-6015B, "Sewage Disposal, Hotel and Administration Area" (1936, marked Job Completed, May 1938).
115. "The National Park is Now Worth Twice What It Cost," *The Courier-Journal*, August 14, 1938.
116. Lally, section III, page D-13–D-14, citing Goode 43–44; "Eight-Mile Walk Is Built Inside of Mammoth Cave," *The New York Times* (June 6, 1935); Schmitzer, 461; R. Taylor Hoskins, "Memorandum for the Mammoth Cave Operating Committee," April 20, 1940.
117. Homer Salisbury, Project Superintendent KY NP-4, "Narrative Report Covering the Activities at KY NP-4 for the Fifth Enrollment Period, April 1st, 1935 to September 30, 1935." Copy in park archives. Similar reports are included for camps NP-1 through NP-3.
118. NPS Drawing No. 135-1061A, "Comfort Station" (March 26, 1936).
119. Drawing No. 135-2089, Location Plan for Tennis and Shuffleboard Courts, Mammoth Cave National Park (May 1937).



FIGURE 33. The comfort station west of the hotel under construction, September 1936. Source: Mammoth Cave National Park.

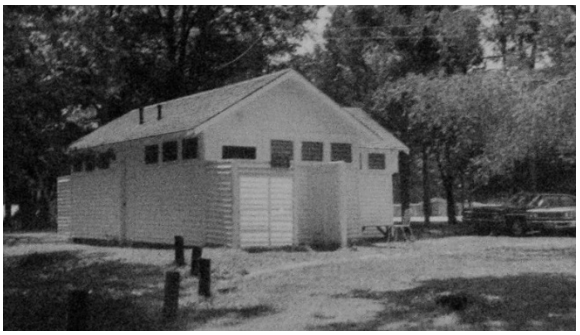


FIGURE 34. The completed comfort station, photograph dated 1972. Source: Mammoth Cave National Park.



FIGURE 35. The completed tennis court, September 1939. Note the Guide House and another outbuilding visible to the north, beyond a gravel road. Source: Mammoth Cave National Park.

Deluxe Cottages. In 1936–1937, ten hotel cottages (the "Deluxe Cottages") were constructed southeast of the hotel (Figure 36 through Figure 38). These gable-roofed, wood-framed, one-story buildings were designed by the NPS Branch of Plans and Design, Eastern Division. Each contained a single room. The cottages, which were constructed by Will Gill of Bowling Green, Kentucky, in association with Bass and Company for a cost of $8,000, were sited in a semi-circular pattern (refer to Figure B-3 in Appendix B). The project was funded by the Mammoth Cave Joint Operating Committee.[120] CCC labor was used to construct the infrastructure necessary for the cottage group as well as the landscaping adjacent to the cottages. As part of the development of this cottage group, four older outbuildings at the site associated with the hotel were demolished (Figure 40). (The hotel annex and store house in this vicinity had been demolished prior to 1936.) Water service was extended to the Deluxe Cottages in 1939 (Figure 39).



FIGURE 36. One of the Deluxe Cottages, 1940. Source: Mammoth Cave National Park.



FIGURE 37. The Deluxe Cottages group adjacent to Mammoth Cave Hotel, 1972. Source: Mammoth Cave National Park.



FIGURE 38. A Deluxe Cottage adjacent to the Mammoth Cave Hotel, 1972. Source: Mammoth Cave National Park.



FIGURE 39. Extension of new water lines to the Deluxe Cottages, November 1939. Source: Mammoth Cave National Park.

120. NPS Drawing No. 135-1016A, "Tourist Cabins for Hotel" (January 31, 1936, stamped "Job Completed, May 1937"); "The National Park is Now Worth Twice What It Cost," *The Courier-Journal*, August 14, 1938.

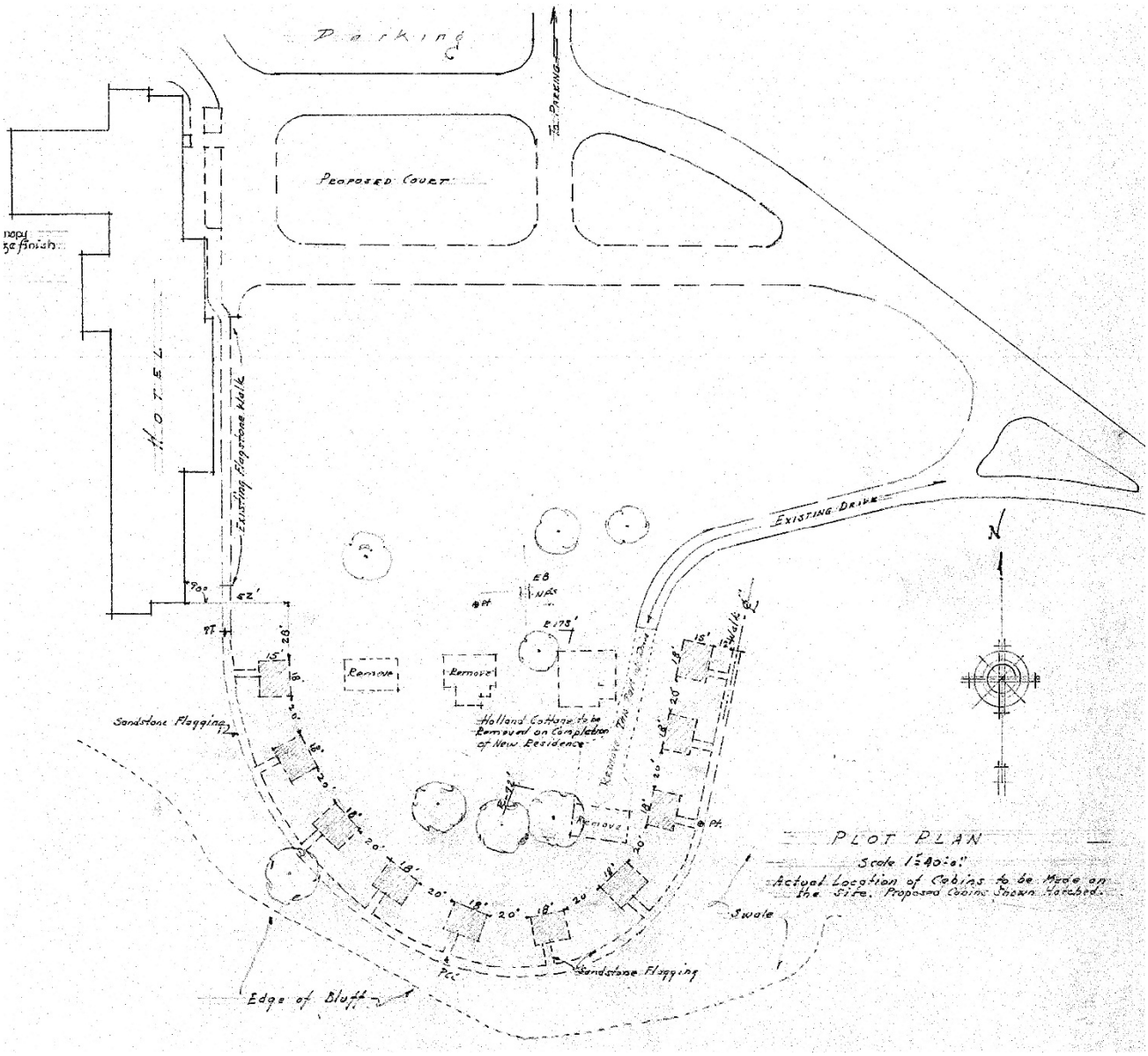


FIGURE 40. Plot plan for the Deluxe Cottages group, 1936. Note the four buildings shown with a dashed outline within the horseshoe shaped group that were to be removed as part of the work. Source: NPS Drawing No. 135-1016A.

Woodland Cottages. Sixteen Woodland Cottages were constructed north of the hotel in 1938–1939 with funds from the Mammoth Cave Joint Operating Committee, opening for guests on May 14, 1939.[121] These gable-roofed, one-story wood-framed buildings were designed by Nevin, Morgan, and Kolbrook Architects and Engineers of Louisville, Kentucky.[122] The group included one four-room cottage, one three-room cottage, ten two-room cottages, and four one-room cottages. Landscaping and infrastructure work adjacent to the cottages was completed by members of the CCC (Figure 41).



FIGURE 41. Woodland Cottage 67, August 1942. Source: Mammoth Cave National Park.

Green River Ferry Road. The CCC was also responsible for construction of Green River Ferry Road (Figure 42). The crushed limestone road, completed in 1939, led to a ferry crossing at the Green River. Ferry service across the Green River at the new crossing point on the Green River Ferry Road began in November 1939.[123] Apparently, the CCC work included construction of stone retaining walls near the ferry landing.[124]



FIGURE 42. An undated photo of construction work at Green River Ferry Road. Source: Mammoth Cave National Park.

Picnic Area and Campground. In 1940–1941, a new picnic area and campground was constructed with CCC labor north of the Historic Entrance and adjacent to the Woodland Cottages.[125] As part of the project, a comfort station was constructed near the southeast entrance to the campground. The 15-foot by 30-foot stone and wood structure consisted of restroom facilities for campground guests (Figure 43 and Figure 44). In early 1942, plans were prepared for additions to either side of the original building, consisting of men's and women's shower rooms and an open-air laundry porch at the northwest end. Per correspondence dating to mid-1949, this addition was apparently not completed until circa late 1949 (Figure 45).[126]

The adjacent picnic area to the south of the campground included parking for sixty cars and several picnic tables scattered throughout the

121. Memorandum for the Director, June 6, 1939, copy in park archives.
122. NPS Drawing No. 135-9004, "One Room Cabin for Mammoth Cave National Park" (March 1938, revised April 14, 1938). Other sheets in this set depict the two-room, three-room, and four-room cabin plans.
123. Memorandum to the Acting Superintendent from G. R. Allison, Coordinator CCC. December 4, 1939. Mammoth Cave National Park Archives.
124. Correspondence with the authors by Ken Kern, Mammoth Cave National Park.
125. NPS Drawing No. 135-2163, Picnic and Camping Areas (May 19, 1939).
126. NPS Drawing No. 135-2183, "Comfort Station, Picnic Area" (May 1940); Drawing No. 135-2025D, Bath House Addition to Comfort Station (June 1942, annotations dated September 1946). Today, this building is known as the Earth House. The design shown on NPS Drawing No. 135-2187, "Shower and Laundry Building, Camping Area" (March 1941) was apparently never built; rather two identical comfort stations were built, as shown on the site plan, NPS Drawing No. 135-2021.

wooded area (Figure 46). The picnic area had a second comfort station, located near the south end of the area. This building, which is no longer extant, had a similar configuration.

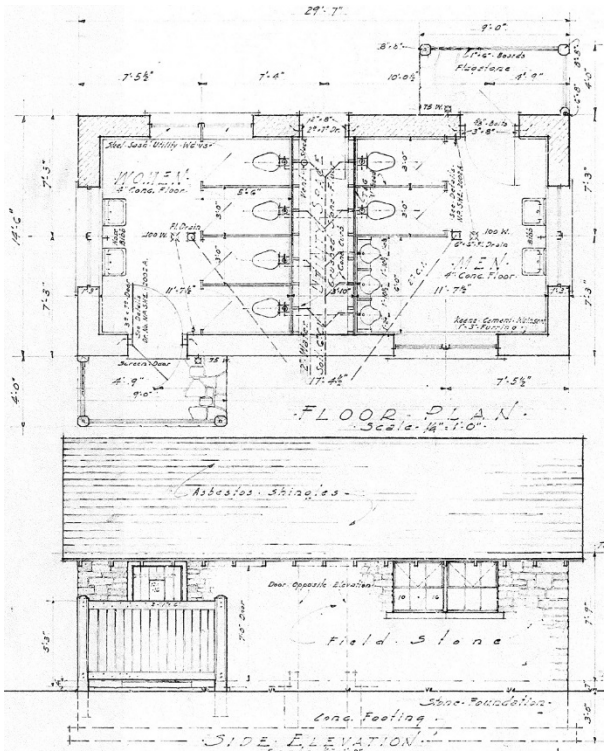


FIGURE 43. Floor plan and elevation of the 1941 comfort station in the campground. Source: NPS Drawing No. 135-2183.



FIGURE 44. The campground comfort station as it neared completion, August 1941. Source: Mammoth Cave National Park.

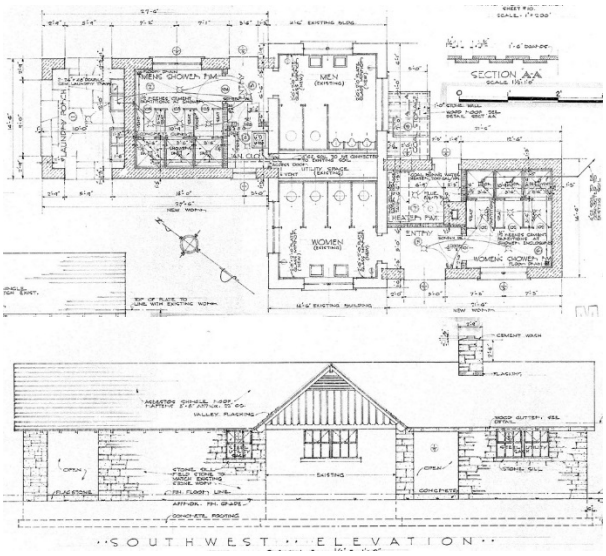


FIGURE 45. Floor plan and elevation of the comfort station in the campground as expanded circa 1949 (present-day Earth House). Source: NPS Drawing No. 135-2025D.



FIGURE 46. Grading in the picnic area, December 1940. Source: Mammoth Cave National Park. Note comfort station in the background.

Amphitheater. An amphitheater was constructed with CCC labor east of the Hotel cottages in 1938–1939 (Figure 47 through Figure 49). The amphitheater was mostly completed and in use by the beginning of June 1939.[127] With seating for 250 persons, the amphitheater consisted of sixty half-round log benches, and a wood-framed stage.[128]



FIGURE 47. A view of the amphitheater, 1939. Source: Memorandum for the Director, June 6, 1939, copy in park archives.



FIGURE 48. The amphitheater, showing the original log benches and rustic stage. Source: Mammoth Cave National Park, slide 641.



FIGURE 49. An view of the stage at the amphitheater from the 1940s. Source: Mammoth Cave National Park.

Hotel and Guide House Remodeling. Among the last work completed during the New Deal era was work at the second hotel building in 1941–1942. At the north end of the building, a snack shop addition was completed (Figure 50).[129] Also, the Guide House to the north of the hotel (refer to Figure 16 and Figure 35) was remodeled for use by the photographic concession. The small, separate photograph building nearby was then demolished (refer to 1926 Period Plan of Historic Core, Figure 27).[130] Both of these projects were paid for by National Park Concessions, Inc., and overseen by NPS staff.[131]

127. Memorandum for the Director, June 6, 1939, copy in park archives.
128. Drawing No. 135-2153, Amphitheater (September 14, 1938).
129. Drawing No. 135-9001, Cabins & Extension to Coffee Shop (April 1938). *(Copy in NPS Denver TIC; will add further information, if available.)*
130. Drawing No. 135-2024B, Remodeling of Guide House, Key Area (1942). *(Copy in NPS Denver TIC; will add further information, if available.)*
131. Memorandum for Mr. Hoskins, 1941–1942 Annual Report of the Activities of the Branch of Plans and Design, June 11, 1942.



FIGURE 50. The snack shop constructed at the north end of the 1925 hotel building in 1941–1942, photograph dated 1972. Source: Mammoth Cave National Park.

By 1941, as the New Deal era activity at Mammoth Cave drew to a close and the park was officially established, the core area had been noticeably transformed (refer to 1941 Period Plan, Figure 56 and Figure 57). Many of the older outbuildings associated with the Mammoth Cave Hotel had been removed. At the hotel itself, the original east porches were enclosed with screening. Water tanks for the hotel were located on an elevated platform west of the building (Figure 55). East of the hotel, one-story wood-framed buildings were in use as a post office, the park headquarters (Figure 52), and the park technician's office (Figure 53 and Figure 54). The Guide House remained in use between the hotel and the Historic Entrance (refer to Figure 16), and a small manager's cottage had been built to the south of the hotel.

CCC camp NP-3 at Joppa Ridge was disbanded in 1938.[132] The three remaining CCC camps at Mammoth Cave were disbanded in July 1942.[133] Former CCC Camp NP-4 was later used as the Maple Springs campground.[134] The former Camp NP-1 site was the first camp used by the Job Corps at Mammoth Cave.[135] Development at Mammoth Cave National Park slowed considerably following the entrance of the United States into World War II. During the war, visitation at Mammoth Cave decreased as well.



FIGURE 51. Interior of the Mammoth Cave Hotel, circa 1951. Source: Mammoth Cave National Park, park brochure, revised 1951.



FIGURE 52. The original park headquarters building, circa 1960s view. Based on available historic maps and aerial photography, this building was likely built during the 1930s. Source: Mammoth Cave National Park, slide 664.

132. Kelly A. Lally, "A History of the Civilian Conservation Corps at Mammoth Cave National Park" (December 1987), 7.
133. Schwitzer, 463. (The date of demolition of the camps was not identified in documentation reviewed for this study.)
134. William E. Giesecke, Jr., "The Civilian Conservation Corps at Mammoth Cave," Hart County Historical Quarterly XXIII, No. 3 (July 1991): 14.
135. Lally, "History of the Civilian Conservation Corps," 7.



FIGURE 53. The technician's office, later used as a museum for park visitors. Based on available historic maps and aerial photography, this building was likely built before 1930, perhaps as an outbuilding associated with the first Mammoth Cave Hotel. Source: Mammoth Cave National Park, slide 662.



FIGURE 54. The technician's office, later used as a museum for park visitors. Source: Mammoth Cave National Park, slide 663.



FIGURE 55. The Mammoth Cave Hotel, with water tanks visible beyond, circa 1940s. Source: Mammoth Cave National Park, slide 666.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Green River Bluffs Trail
Old Ferry Road
Dixon Cave
Cave Island Trail
Cave Island
Sunset Point
River Styx
Echo River Trail
Green River
Echo River
Mammoth Cave Ferry
Ferry landing ramp with concrete gutter and riprap retaining walls
Stone drinking fountains
Camping area: paved exterior road, interior drives staked on the ground; picnic table and fireplace at each campsite
Comfort Station
Picnic area
Comfort Station; adjacent stone drinking fountain
Stone-edged parking area
Rental cabins
Laundry facilities
Flint Ridge Road
See Figure 57. 1941 Period Plan, Historic Core
Residential area (outside of project area; approximate 1941 configuration shown)
Boundary of Project Area
Kentucky Route 70 (macadam surfaced)
Mammoth Dome Sink
White Cave
Green Pond
Maintenance area (outside of project area; approximate 1941 configuration shown)
Mammoth Cave Ferry Road
Joppa Ridge Road

0' 450' 700'
SCALE 1" = 700'

Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

NPS, "Planting Plan for Old Entrance Hotel Area," Dwg. No. 135_2094, 1939.

NPS, "Roads, Trails, Developed Areas," Dwg. No. 135_1071D, 1941.

NPS, "Headquarters Area," Dwg. No. 135_2021H, 1945, revised 1949.

NPS, "Topographic Map, Headquarters Area," Dwg. No. 135_2108, 1953.

NPS, "Road and Trails System Plan," Dwg. No. 135_2035B, 1953.

NPS, "Topography–Proposed Development Area, Hotel Vicinity," Dwg. No. 135_3015A, 1957, revised 1958.

NPS, "Base Topographic Sheet, Historic Cave Entrance," Dwg. No. 135_3037, 1959.

NPS, "Approach Walk, Steps and Parking, Historic Entrance," Dwg. No. 135_3029A, 1960.

Notes:

1. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 56.

1941 Period Plan Overall Features

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Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Trail to Green River Bluffs
Comfort station
Stone drinking fountain
Cabin Unit #1
Hot water utility building
Linen storage
Stone service road
Macadam-surfaced parking area
Old Mammoth Cave Ferry road (earth and gravel surface)
Stone-surfaced parking area with stone curbs (possibly only partially constructed)
Stone-surfaced trail
Flint Ridge Road
Trail
Box culvert
Benches for group pictures
Sandstone steps into historic entrance
Wire fence with concrete posts
Steps
Old Guide's Cemetery
Stone walk (probably crushed stone)
Macadam road
Post Office
Foot trail to Sunset Point
Gravel road
Earth road
Post and wire fencing overflow parking area (possible picnic area)
Gas house
Lantern houses
Telephone exchange
Park Headquarters
Guide House
Technician's Office
Earth and stone road
Parking area
Kentucky Route 70 (macadam-surfaced)
"old shack"
Tennis court
Hotel
Overlook
Engine No. 4 (referred to as "Hercules" on historic plans)
Earth road
Comfort station
Concrete shuffleboard courts
Hotel Manager's Cottage
Deluxe Cottages
Amphitheater
Trail to Mammoth Dome Sink
Gas pumps
Gas Station
Flagstone walk

0' 100' 200'
SCALE 1" = 200'

Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

NPS, "Planting Plan for Old Entrance Hotel Area," Dwg. No. 135_2094, 1939.

NPS, "Roads, Trails, Developed Areas," Dwg. No. 135_1071D, 1941.

NPS, "Headquarters Area," Dwg. No. 135_2021H, 1945, revised 1949.

NPS, "Topographic Map, Headquarters Area," Dwg. No. 135_2108, 1953.

NPS, "Road and Trails System Plan," Dwg. No. 135_2035B, 1953.

NPS, "Topography–Proposed Development Area, Hotel Vicinity," Dwg. No. 135_3015A, 1957, revised 1958.

NPS, "Base Topographic Sheet, Historic Cave Entrance," Dwg. No. 135_3037, 1959.

NPS, "Approach Walk, Steps and Parking, Historic Entrance," Dwg. No. 135_3029A, 1960.

Notes:

1. Woodland cover and utilities not available for this period.
2. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 57.

1941 Period Plan
Historic Core

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Further Development at Mammoth Cave National Park, 1940s and 1950s

Immediately following World War II, a few improvements to the park that had been planned in 1941 or 1942 were implemented. As noted above, additions were made to the campground comfort station circa 1949. Shortly after World War II, electric lighting was apparently extended into the cave.[136] Also, additional cottages were built in the Woodland Cottage group.

Woodland Cottage Additions. In 1949, five additional one-story two-room wood structures were added to the Woodland Cottages group. The design for these buildings matched the cottages constructed in 1938–1939. Plans for these five additional cottages had been prepared in late 1941, but construction was delayed until after World War II.[137]

Sunset Lodge. Further facilities for guests were developed in the 1950s. In 1954, the first Sunset Lodge building was constructed by National Park Concession, Inc., a private concessionaire operating at the park (Figure 58 and Figure 59).[138] Consisting of ten hotel units, the one-story stone and wood structure was typical of the motor lodges being constructed across the county. An "old shack" that was present on the site was demolished.[139]

A few years later, the second building of the Sunset Lodge was built northwest of the original building (Figure 60). Constructed by National Park Concession, Inc., and nearly identical to the Sunset Lodge building constructed in 1954, the one-story stone and wood structure was built by F. W. Kirby of Bowling Green, Kentucky, at a cost of approximately $58,000. Work began in August 1957 and was completed in 1958. The National Park Service was responsible for constructing the parking lot, sidewalks, and utility connections for the new building.[140]

136. Federal Works Agency, no title page in partial copy reviewed (revised edition, 1954), 310, notes that "some of [the principal routes in the cave] are electrically lighted."
137. Drawing No. 135-2193, Lay-out Plan for Additions Cabins, Cabin Area, Unit No. 1 (December 1941, marked "Superseded by [drawing no. 135-]2027).
138. *Mammoth Cave National Park NPS/NPCI Building Survey and Recommendations* (no date, circa 1998). This report correctly identifies the locations and dates of the two buildings and states that both were built by NPCI.
139. NPS Drawing No. 135-2105B, "Multi-Cabin Unit, Headquarters Area" (August 25, 1953), 5 sheets, depicts the lodge building. The location plan on preliminary NPS Drawing No. 135-2105A dated March 9, 1953, depicts the "old shack" located just south of the east wing of the lodge.
140. Memorandum from H. S. Sanborn, President and General Manager, National Park Concessions, Inc., to Perry E. Brown, Superintendent, Mammoth Cave National Park, August 23, 1957; Memorandum from H. Reese Smith, Acting Regional Director, to Director, Region One, National Park Service, August 27, 1957. National Archives, College Park Maryland, Record Group 79, entry 11, box 1025, folder 2.



FIGURE 58. An undated view of the Sunset Lodge. Source: Mammoth Cave National Park.

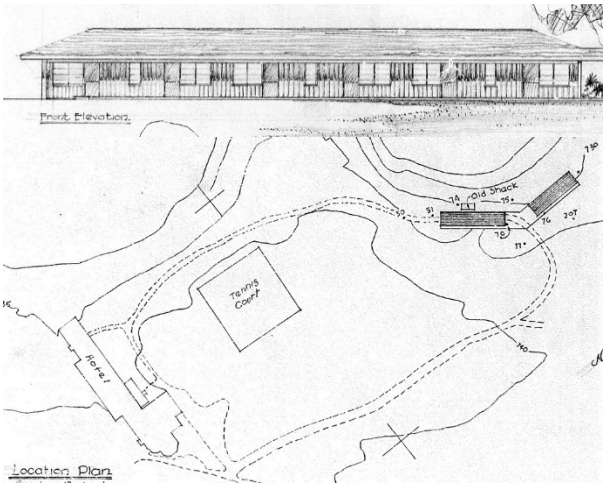


FIGURE 59. Partial elevation and location plan for the Sunset Lodge. Source: NPS Drawing No. 135-2105A.

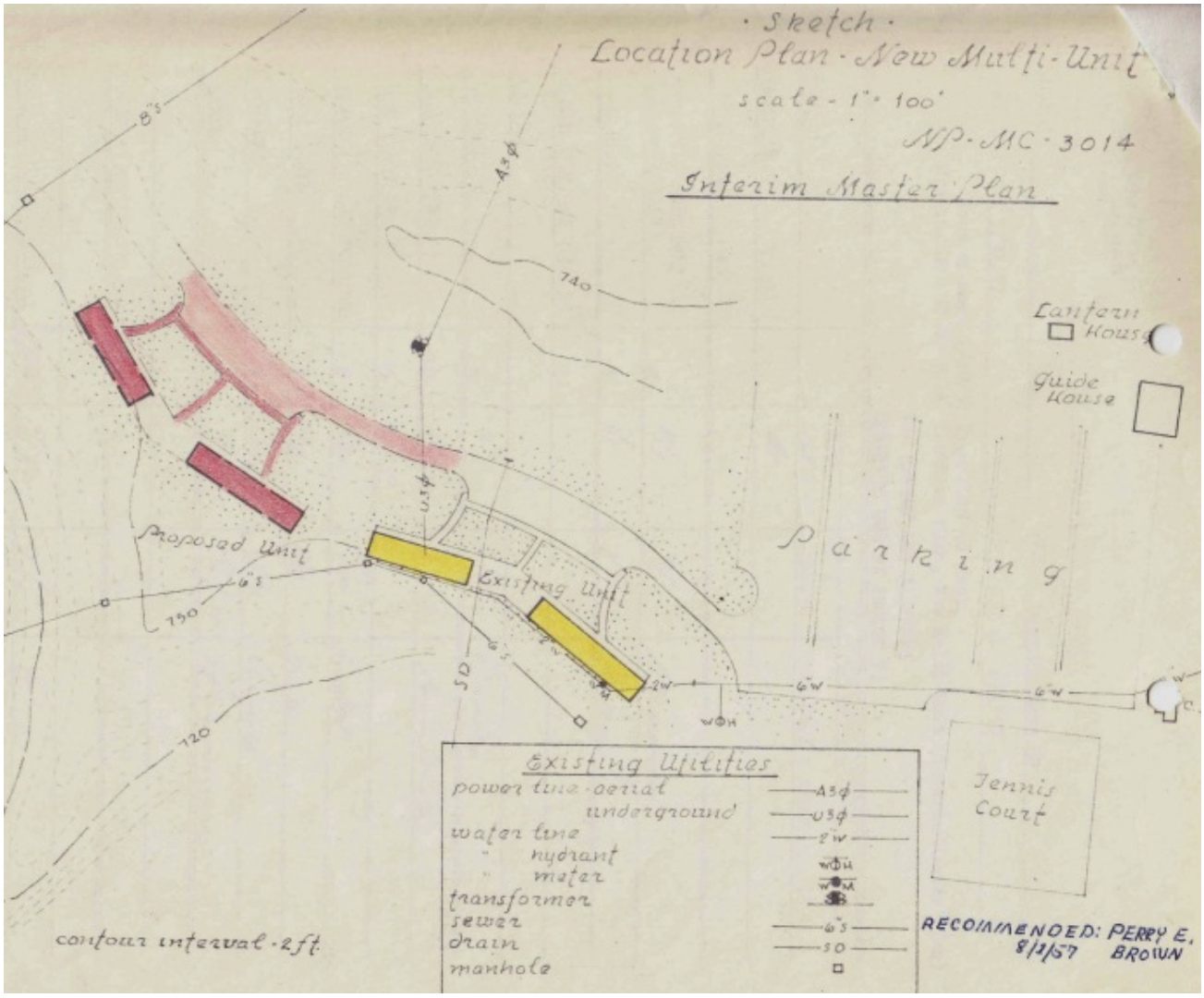


FIGURE 60. Site plan for the second phase of the Sunset Lodge, 1957. The new building and site features are shaded pink. Note the Lantern House and Guide House shown at upper right. Source: NPS Drawing No. 135-3014, copy in National Archives, College Park, Maryland, Record Group 79. Entry 83, box 2.

Mission 66 Development at Mammoth Cave, 1950s and 1960s

Background to the Mission 66 Program. By the 1950s, conditions at national parks were generally in a state of deterioration. Improvements had not been made to public facilities since the New Deal era programs of the 1930s. The desperate need for building maintenance and funding was further amplified by the rapid increase in visitors to national parks following World War II. Despite the increase in visitation, park facilities remained essentially as they had been before the war. Limited National Park Service budgets led to cuts in staff, which, combined with the increasing number of visitors, jeopardized the integrity and condition of the existing natural resources. The increase in automobile usage further harmed the parks, as the parks were generally ill prepared to accommodate an influx of vehicles.

In February 1955, NPS Director Conrad Wirth conceived a comprehensive conservation program to revitalize the national parks. The ten year capital program aimed to modernize and expand the national park system.[141] Wirth chose to name the program "Mission 66," as he thought the word "mission" successfully expressed the urgency of the park's situation to Congress, while "66" was used to signify the end date of the program, which would be 1966, coinciding with the fiftieth anniversary of the establishment of the National Park Service. The Mission 66 plan not only sought to improve conditions at the parks through the construction of new roads, trails, and visitor facilities, but also through the establishment of increased operating budgets to maintain the parks in the future.

Building technologies developed during and immediately following World War II made construction faster and more economical, especially as compared to the costly, labor-intensive construction needed to construct the earlier rustic style park structures. While economics played an important role in the Park Service's shift to modern design, it should be noted that many of the in-house designers at the Park Service had previously abandoned the rustic style in favor of more progressive architecture. In 1939, construction began on an Art Moderne style museum and administration building at Ocmulgee National Monument in Georgia. Designed by NPS architect James T. Swanson, this structure marked a departure from the rustic style common in national parks buildings and heralded the changes in design that resulted in the architecture of the Mission 66 program.[142]

The goals of the Mission 66 program supported and accelerated a change in philosophy with regard to the design of buildings in the national parks. The postwar modernist architecture seen in National Parks featured low profiles and horizontal massing in addition to muted colors, which helped the buildings visually blend in with their natural surroundings. This was in direct contrast to the rustic style buildings which, through their picturesque character, were highly noticeable in their context.[143]

The Mission 66 Program at Mammoth Cave. Mission 66 related planning began at Mammoth Cave National Park in 1955, with the release of a prospectus that included a survey of existing conditions in addition to recommendations for future development. In 1956, proposals were made for development at Mammoth Cave National Park. The initial plan called for the construction of a visitor center and new campgrounds and picnic grounds, as well as improvements to existing trails in the cave and roads and trails throughout the park. New employee residences were also planned.[144]

141. Ethan Carr, *Mission 66: Modernism and the National Park Dilemma* (Amherst: University of Massachusetts, 2007), 10.
142. Ibid., 137–138.
143. Ibid., 134–135.
144. Summary of Mission 66 Objectives and Program for Mammoth Cave National Park, April 2, 1956. United States Department of the Interior, National Park Service, Washington, D.C.

The last privately owned lands within the park boundary, at Crystal Cave and Great Onyx Cave, were acquired in late 1960.

Visitor Center and Pedestrian Bridge. A new visitor center was constructed at Mammoth Cave National Park in 1959–1961 (Figure 61). The visitor center, designed by the Philadelphia architecture firm of Bellante & Clauss, was constructed east of the Historic Entrance and north of the existing hotel. The one-story structure with a walk-out basement was constructed of masonry and steel, and consisted of two wings that housed park offices, a visitor lobby, ticket office, restrooms, an auditorium, and a museum. The two wings were connected by an open-air breezeway. A concrete ramp extended from the upper level of the visitor center to a path below, which led to the Historic Entrance. A 60-inch by 50-inch below-grade concrete air tunnel ran southwest from the building to the cave, to provide cool air to condition the building in summer. As part of the visitor center project, a concrete pedestrian bridge was also completed in 1961, extending from the visitor center south toward the hotel (Figure 62).[145]

The building, as constructed, was an example of a typical Mission 66 visitor center. The new visitor center at Mammoth Cave National Park combined administrative and educational facilities in one structure, with the intention of better orienting the visitor to the site. Like other Mission 66 visitor centers, the visitor center at Mammoth Cave contained interpretive areas, offices, restrooms, and a large lobby. A 380-car, asphalt-paved parking lot was constructed to the north of the new visitor center. Parking for eleven buses was also included in the new lot. An eight-car employee parking lot was constructed east of the structure, adjacent to the administrative wing.[146] In 1967, the employee parking lot adjacent to the visitor center was expanded to include eighteen additional parking spaces.[147]



FIGURE 61. The Mammoth Cave National Park Visitor Center, view circa 2001–2007. Source: Mammoth Cave National Park.



FIGURE 62. An undated view of the pedestrian bridge and visitor center, looking north.

145. Drawings for design and construction of the bridge were not identified in archival collections accessed for this study. The bridge is shown on site plans for the hotel and visitor center complex, although the designer of the bridge is not identified. The bridge is visible in a photograph of the newly completed visitor center published in "Cave Purchases, Improvements Herald Bright Future for Mammoth Cave Park," *The Park City Daily News*, March 12, 1961.
146. Drawing No. 135-3002, Visitor Center, Mammoth Cave National Park, Bellante & Clauss Architects (1956).
147. Drawing No. 135-3219, Employee Parking Expansion, Mammoth Cave National Park (1967).

Historic Entrance. Shortly after the opening of the new visitor center in 1963, improvements were made to the walkway and stairs leading to the Historic Entrance. The new asphalt walkway extended from a driveway east of the visitor center to the Historic Entrance. A single parking space was located at the end of the walkway adjacent to the Historic Entrance. A small asphalt plaza was provided at the end of the walkway, at the approach to the cave. A concrete staircase was constructed leading from the plaza down to the Historic Entrance.[148]

Camp Store and Service Center. In 1963, a new camp store and service center building was constructed by National Park Concessions, Inc., southeast of the hotel and cottages, and just north of the new campground. Designed by architect Joseph Wilk of Bowling Green, the one-story structure consisted of a gas station, post office, restrooms, showers, and camp store. A small utility building to the west housing telephone equipment predated the store.[149]

Picnic Area and Campground. Plans were made to construct a campground south of the hotel and amphitheater. Plans for the new campground, dated 1962, featured three large loop roads with camp sites and vehicular pull offs.[150] It also contained four comfort stations.[151] The comfort station design used concrete masonry walls 4 feet 8 inches tall to support wood-framed upper walls and an overhanging gable roof. (By 2000, the campground had one large loop split into two and an additional comfort station in what is currently Loop B.) The new campground also featured a check-in kiosk at the entrance.[152] The kiosk was a small building, approximately 13 feet by 6 feet, with brick masonry walls, sloped glass windows, and a flat roof. Water and sewer lines in the campground were connected to existing utility infrastructure at the camp store and service center.[153] The campground was completed in 1964.

At this time, the former campground northwest of the Woodland Cottages was apparently converted into an expanded picnic area.[154] Within the enlarged picnic area, the New Deal-era comfort station at the south end was demolished, but the concrete foundation was left in place. The New Deal-era comfort station at the former campground was renovated for educational use. Although not specifically documented in the materials identified for this study, apparently a new comfort station was built near the middle of the enlarged picnic area, matching the design of the campground comfort stations.[155]

Amphitheater. The New Deal-era amphitheater was completely reconstructed during the Mission 66 era. New asphalt paving, new wood slat seating on steel posts, and new lighting were installed circa 1964. Subsequently, in 1967, a new stage and projection building was built.[156]

148. NPS Drawing No. 135-3039A, "Approach Walk Steps and Parking at the Historic Entrance" (July 25, 1960).
149. NPS Drawing No. 135-8085B, "Camp Store and Service Station," Joseph Wick, Architect (September 1962).
150. NPS Drawing No. 135-3110B, "Campground Roads" (1962). The original check-in kiosk was replaced in 2004.
151. NPS Drawing No. 135-3119, "Comfort Station" (April 1963).
152. NPS Drawing No. 135-3118, "Contact Station" (April 1963).
153. NPS Drawing No. 135-3115A, [Campground] Water and Sewer Lines (November 1962).
154. Although apparent based on the present day use of the former campground as part of the picnic area, confirmation of this change in use and the date at which it occurred was not available through documentation reviewed for this study.
155. These changes are not documented, but are assumed to have occurred during the Mission 66 era based on the present condition of the picnic area.
156. NPS Drawing No. 135-3123A, "Amphitheater" (August 1964); NPS Drawing No. 135-3146C, "Mammoth Cave Projection Unit" (August 1967).

Hotel. A new Mammoth Cave Hotel was completed in 1965 by National Park Concessions, Inc., between the existing hotel constructed in 1925 and the recently built visitor center. The new hotel was designed by Braun & Ryan Architects & Engineers of Louisville, Kentucky.[157] The new hotel, constructed of concrete, masonry, and steel, and similar in style to the visitor center, consisted of a restaurant, coffee shop, gift shop, and overnight accommodations (Figure 63 through Figure 65). The overnight accommodations were housed in a two-story structure connected via an open-air covered walk to an H-shaped building housing the hotel lobby, gift shop, and restaurant. Two early twentieth-century outbuildings, the Lantern House and Guide House, were demolished as part of the new hotel construction. A small plaza at the north side of the hotel led to the concrete pedestrian bridge. The existing hotel parking lot was minimally reconfigured to accommodate the new hotel (Figure 66).[158] The existing hotel remained in use and was referred to as the "hotel annex." The new hotel opened to guests on July 1, 1965.[159]



FIGURE 63. An undated postcard showing the new Mammoth Cave Hotel. Source: Mammoth Cave National Park.



FIGURE 64. The Mammoth Cave Hotel. Source: Mammoth Cave National Park, slide 69.

157. NPS Drawing No. 135-8086, Lodge Building, Mammoth Cave, Kentucky, for National Parks Concessions Inc., Braun & Ryan Architects & Engineers, no date, marked "issued August 7, 1962, for Park Service review of utility connections only."
158. NPS Drawing No. 135-3141B, "Road Adjustments, New Lodge" (May 1965).
159. "Mammoth Cave National Park Sports New Hotel," *The Courier-Journal*, Louisville, Kentucky, July 11, 1965.

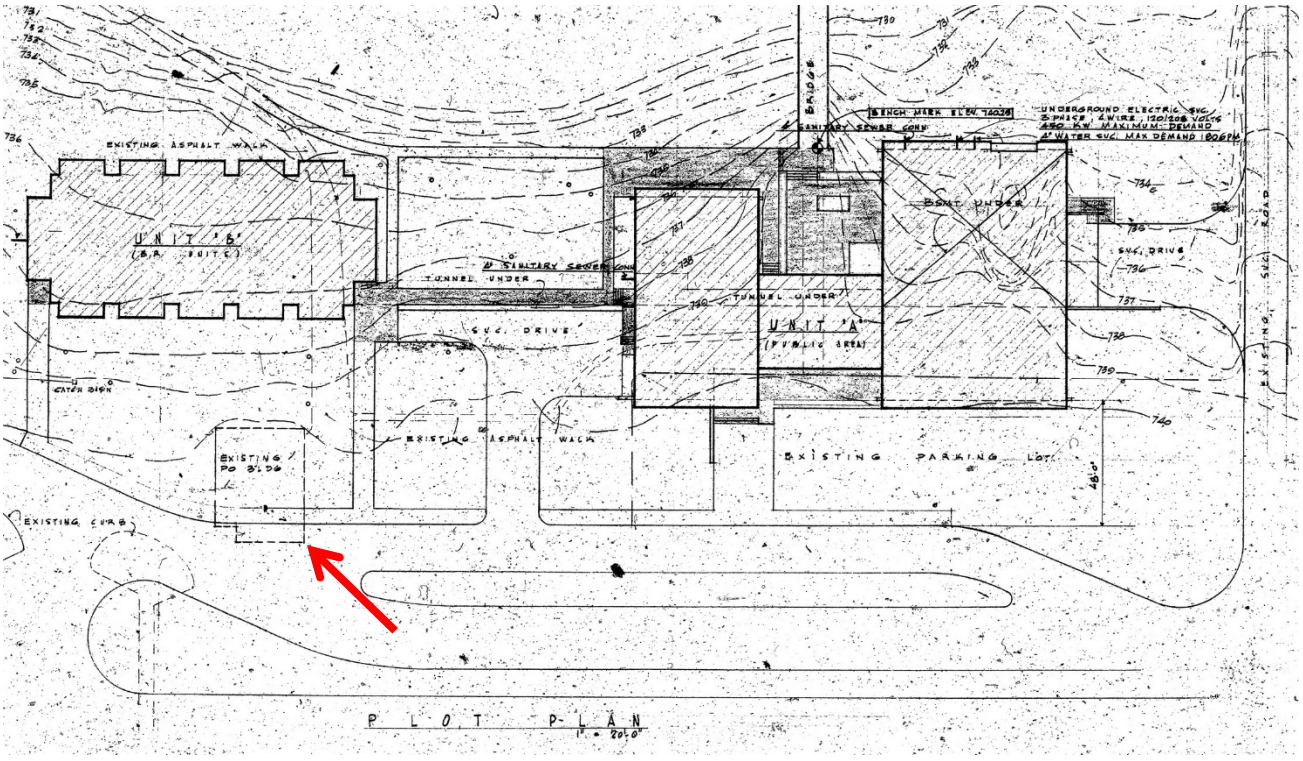


FIGURE 65. Plot plan of the new Mammoth Cave Hotel, showing the two-story overnight accommodations portion at left and the H-shaped lobby, gift shop, and restaurant building at right. The arrow shows the location of the Guide House, demolished as part of hotel construction. Refer to Figure 60 for the location of the Lantern House. Source: NPS Drawing No. 135-8086.

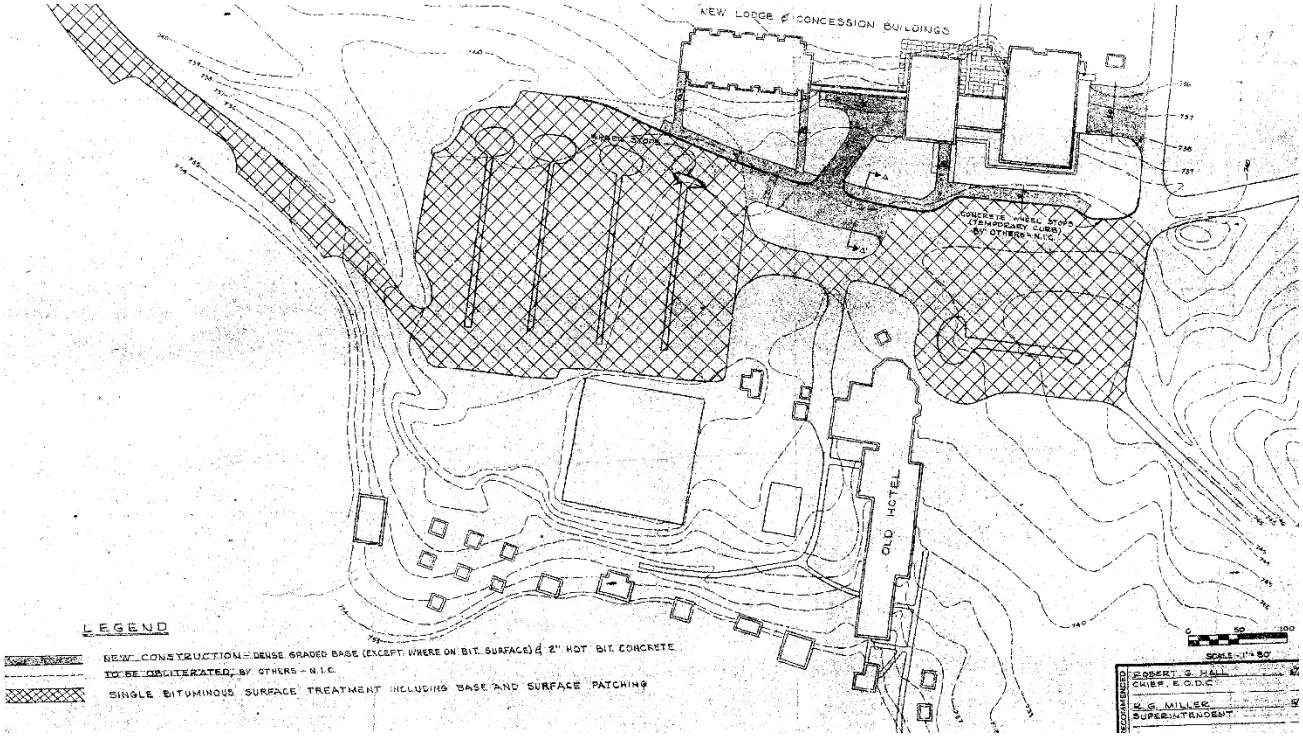


FIGURE 66. Modifications to the hotel parking lot at completion of the 1965 hotel building. The cross-hatched areas were existing parking areas to be resurfaced, while the shaded areas were new paving added as part of the hotel. Note the unidentified outbuildings west of the 1925 hotel. Source: NPS Drawing No. 135-3141B.

Engine No. 4 Shelter. In 1967, a new shelter was constructed to house and protect Engine No. 4 and Coach No. 2 from the defunct Mammoth Cave Railroad. The interpretive exhibit also contained a remnant railroad bed. Based on available archival maps, the remnant railroad bed appears to have been located at the original terminus of the Mammoth Cave Railroad. The steel-framed open shelter was 72 feet long and 40 feet wide (Figure 67).[160] The new steel-framed canopy replaced the 1930s wood-framed canopy with a hip roof (refer to Figure 29).

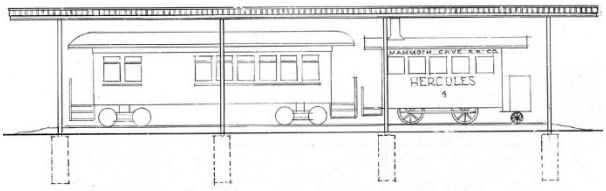


FIGURE 67. Elevation of the new shelter for Engine No. 4 (misidentified as "Hercules") and Coach No. 2, 1967. Source: NPS Drawing No. 135-3225.

Picnic Shelters. The Great Onyx Job Corps camp was established at Mammoth Cave National Park in 1965.[161] Three shelters were constructed in the picnic area by labor from this camp, as indicated by surviving plaques on two of the shelters. Although not documented in material reviewed for this study, it appears that the picnic shelters were constructed in the second half of the 1960s.

Visitor Center Modifications. Two modifications were made to the visitor center in the late 1960s. In 1967, a shelter for bus loading was constructed in front of the building to the northwest. The shelter consisted of a sheet metal framed 100-foot-long canopy supported on tube steel columns, sheltering a series of wood slat benches and a concrete sidewalk.[162] In 1969, the visitor center itself was altered, with a new information desk that projected into the lobby space, and new exterior doors and entrance steps on the north and south elevations to ease visitor circulation through the building to the parking lot and bridge (Figure 68).[163]

At the close of the Mission 66 era, the core area had been significantly reconfigured, with new roadways and parking areas, demolition of many older structures, and the creation of new lodging, camping, and visitor service facilities, as well as a new visitor center (Figure 69 and refer to 1966 Period Plans, Figure 70 and Figure 71). The north part of the core area retained the New Deal-era picnic area, now expanded to include the New Deal-era campground and featuring three picnic shelters, and the Woodland Cabins. The central part of the area had been rebuilt with the new visitor center and the third Mammoth Cave Hotel. South of the third hotel, the second hotel remained in use, with the Deluxe Cottages to the east and the Sunset Lodge buildings to the west. Small cottages, a dormitory, and tent sites were located southwest of the second hotel. At the southeast part of the core area, a new campground had been established, with a new camp store and service center between the campground and the Mammoth Cave Railroad exhibit.

160. Drawing No. 135-3225, Shelter for "Hercules" (April 1967).
161. Job Corps is an education and vocational training program administered by the U.S. Department of Labor established in 1964. Job Corps was active at Mammoth Cave National Park starting in 1965. See Drawing No. 135-60024, Black Onyx Job Corps Conservation Center (June 1965).
162. Drawing No. 135-3222A, Shelter for Bus Loading, Visitor Center (May 1967).
163. Drawing No. 135-41001A, Visitor Center Alteration (December 19, 1968).

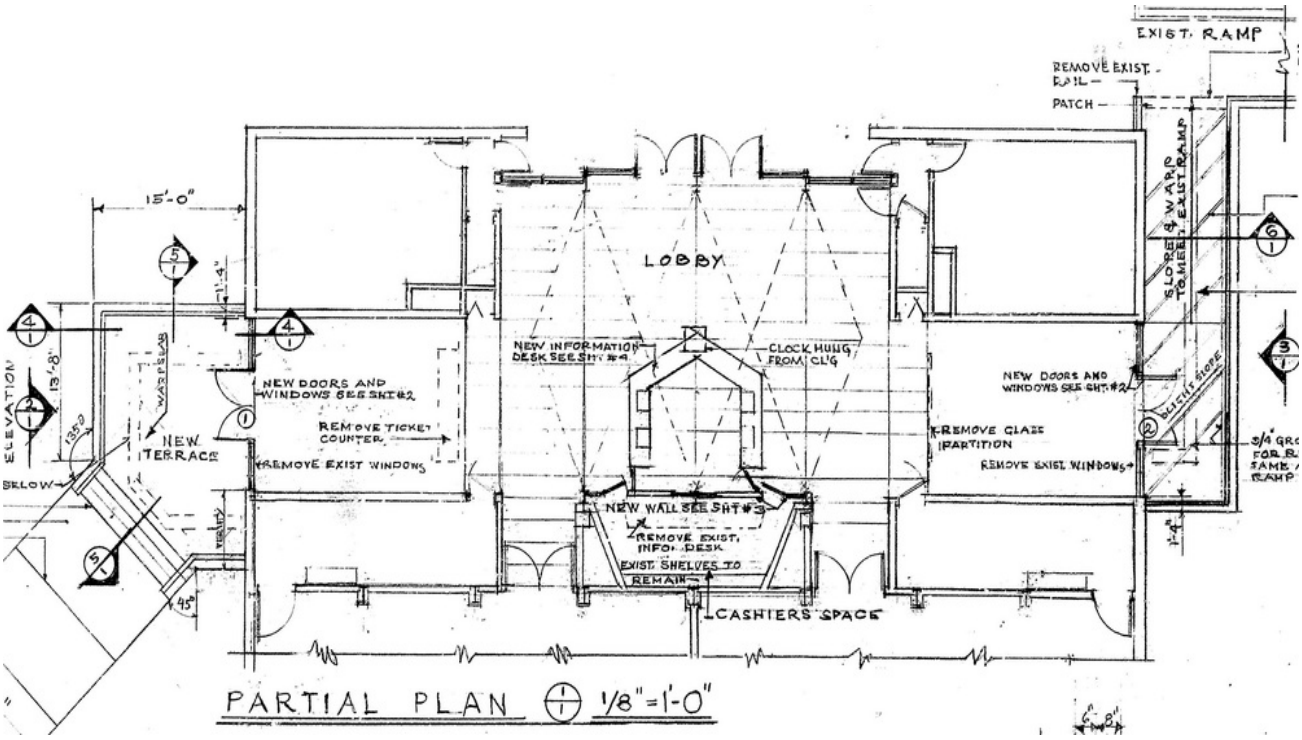


FIGURE 68. Partial plan of visitor center showing 1969 remodeling. Source: Drawing No. 135-41001A.

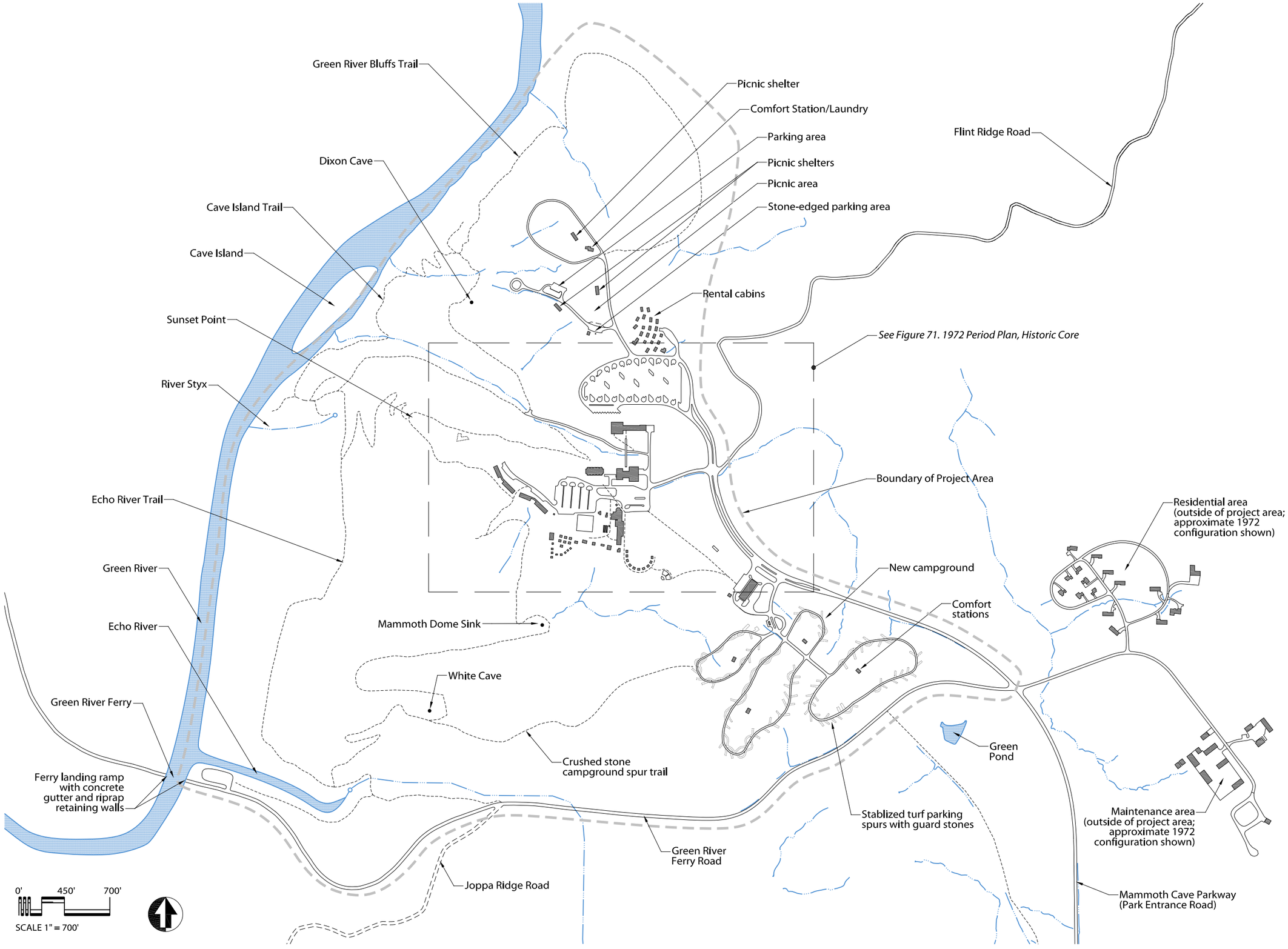


FIGURE 69. Aerial view of the core area, circa 1970. Source: Mammoth Cave National Park, slide 72.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area



Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

NPS, "Topographic Map, Headquarters Area" Dwg. No. 135_2108, 1953.

NPS, "Topography–Proposed Development Area, Hotel Vicinity" Dwg. No. 135_3015A, 1957, revised 1958.

NPS, "Base Topographic Sheet, Historic Cave Entrance" Dwg. No. 135_3037, 1959.

NPS, "Approach Walk, Steps and Parking, Historic Entrance" Dwg. No. 135_3039A, 1960.

NPS, "Existing Parking Areas" Dwg. No. 135_3139, 1964.

NPS, "Developed Areas–Surface" Dwg. No. 135_3209, 1965.

NPS, "Circulation System Plan" Dwg. No. 135_40000, 1971.

Notes:

1. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 70.

1972 Period Plan Overall Features

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Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Trail to Green River (former Old Mammoth Cave Ferry Road to Green River and ferry crossing)
Comfort station
Stone drinking fountain
Rental cabins
Cabin rental office
Visitor Center parking
Flint Ridge Road
Rubble spillway
Parking
Steps into Historic Entrance
Visitor Center
Park office
Concrete road with native stone curb
Old Guide's Cemetery (outline from 1953 survey; unclear if it denotes a fence or merely the extent of burials)
Macadam walk
Foot trail to Sunset Point
Bridge
Hotel
Parking area
Comfort station
Parking area
Sunset Lodge
Tennis court
Hotel
Asphalt trail
Mammoth Cave Parkway (Park Entrance Road)
Valley View Overlook
Engine No. 4 (referred to as "Hercules" on historic plans)
"Dallas huts"
Macadam walk
Deluxe Cottages
Hotel Manager's Cottage
Amphitheater
Gas pumps
Camp Store and Service Station
Concrete shuffleboard courts
Trail to Mammoth Dome Sink

0' 100' 200'
SCALE 1" = 200'

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Legend

- Project area boundary
- Paved roads
- Unpaved roads
- Walks
- Unpaved trails
- Fences
- Streams
- Buildings
- Trees

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

NPS, "Topographic Map, Headquarters Area" Dwg. No. 135_2108, 1953.

NPS, "Topography–Proposed Development Area, Hotel Vicinity" Dwg. No. 135_3015A, 1957, revised 1958.

NPS, "Base Topographic Sheet, Historic Cave Entrance" Dwg. No. 135_3037, 1959.

NPS, "Approach Walk, Steps and Parking, Historic Entrance" Dwg. No. 135_3039A, 1960.

Braun & Ryan, "Lodge Building, Mammoth Cave, KY" Dwg. No.135_8086C, 1962.

NPS, "Existing Parking Areas" Dwg. No. 135_3139, 1964.

NPS, "Developed Areas–Surface" Dwg. No. 135_3209, 1965.

NPS, "Circulation System Plan" Dwg. No. 135_40000, 1971.

Notes:

1. Vegetation west of park entrance road not available.
2. Buildings labeled where possible; if a building does not have a label, the building outline appeared on the source map, but was not identified in any way.

Figure 71.

1972 Period Plan
Historic Core

Continued Development of the Park, 1972 to Present

In 1976, the original cooling system for the visitor center was changed. The underground tunnel that used air from the cave to cool the building in summer was abandoned and sealed off, and new air conditioning equipment was installed in the building. A cooling tower surrounded by a board-and-batten clad screen wall was built at the west end of the building. Three Scotch pine (*Pinus sylvestris*), six Carolina buckthorn (*Rhamnus caroliniana*), and four fiveleaf aralia (*Acanthopanax sieboldianus*) were planted to screen the equipment from view.[164]

Park planning and 1925 hotel demolition. Several years after the completion of the Mission 66 projects at Mammoth Cave, a new master plan was developed for Mammoth Cave National Park. The master plan, approved in 1977, called for the construction of a new visitor staging area, where park guests would park their cars before being transported to various sites in the park via a new transit system. Patrons of the hotels and restaurants would still be allowed to drive their personal vehicles to the existing visitor service area. When the existing structures at the visitor service area were ready to be replaced, they would be removed and the area around the Historic Entrance would be returned to a more natural state.[165] This plan resulted in a great deal of controversy. In 1978, the Committee on Appropriations of the U.S. House of Representatives advised the park to reassess the plan.

Also in the 1970s, the National Park Service determined that the 1925 hotel was a fire hazard and unsafe for guests, and that the extensive repairs required were not economically feasible. Although the decision to demolish the hotel was controversial, demolition began in 1978 and was completed by the spring of 1979. Debris was buried at the Great Onyx Job Corps site.[166] The Sunset Lodge, hotel cottages and woodland cottages remained.

Visitation to Mammoth Cave National Park fell in the late 1970s and early 1980s. As a result, the 1983 General Management Plan, which served as a revision to the 1977 Master Plan, did not incorporate the plan for a new visitor staging area on the periphery of the park and included only small changes to the existing management programs and policies. A decrease in visitation and the possibility of underground water pollution caused by new development on the periphery of the park were reasons given for the visitor staging area to remain in its present location. The new management plan called for the current commercial visitor services, including lodging, food service, and transportation, to be maintained. An increase in the number of tours offered was also proposed.[167]

In 1982, Mammoth Cave National Park was dedicated as a World Heritage Site.

164. NPS Drawing No. 135-41013A, "Revised Air Conditioning, Visitor Center" (May 1976).
165. *Mammoth Cave National Park Master Plan*. Washington, D.C.: Department of the Interior, National Park Service. Approved September 8, 1977.
166. Correspondence by the authors with Joy M. Lyons, Mammoth Cave National Park, July 2012. Specific information about secondary structures, which are known from archival site maps to have been demolished after the 1960s, was not identified as part of this study.
167. *Mammoth Cave National Park General Management Plan*, "Summary." Department of the Interior, National Park Service. 1983.

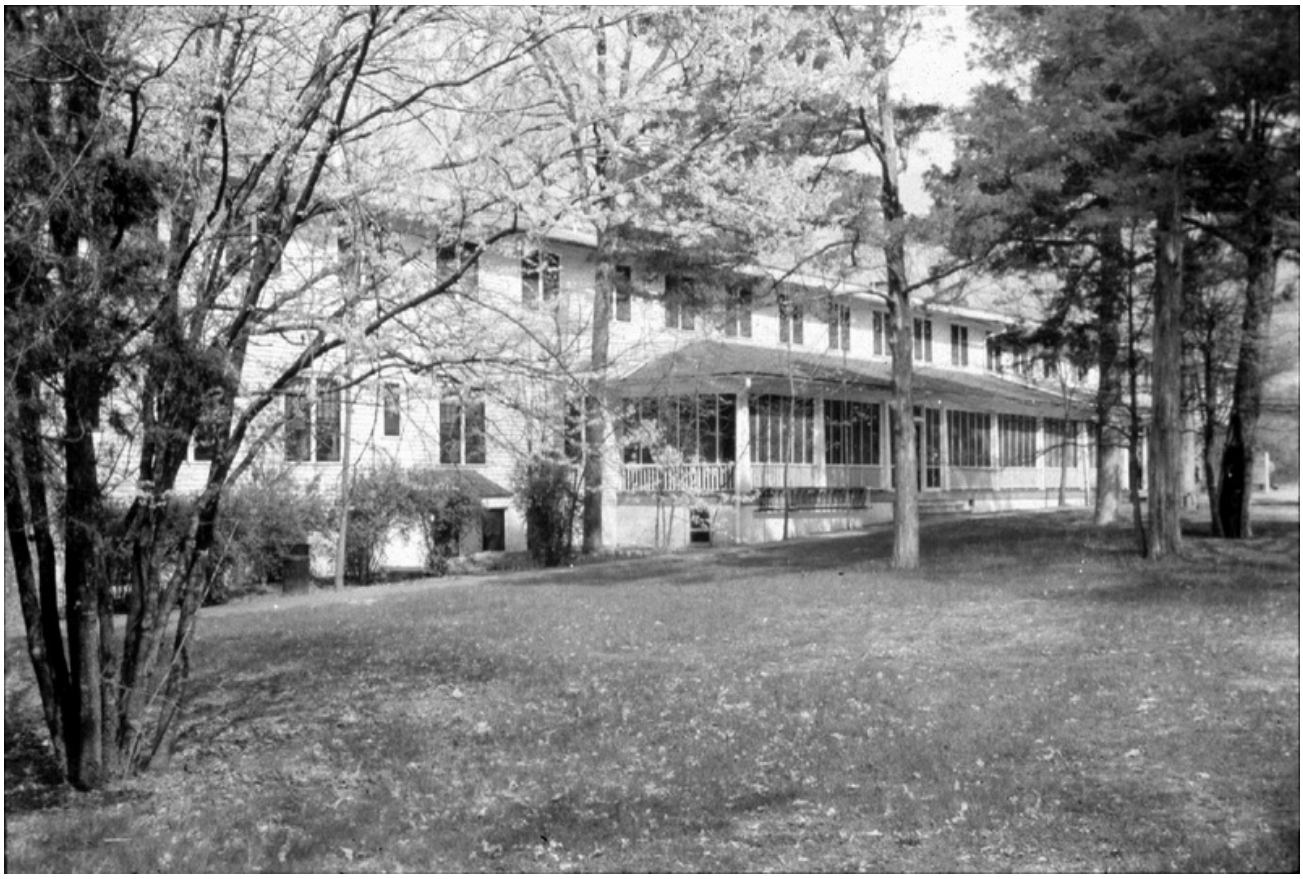


FIGURE 72. The 1925 hotel building, with its enlarged, screened in porch, as it appeared in 1972. Source: Mammoth Cave National Park, slide 729.



FIGURE 73. The screened east porch at the 1925 hotel building, 1972. Source: Mammoth Cave National Park.



FIGURE 74. The 1925 hotel building, circa 1970s. Source: Mammoth Cave National Park, slide 728.



FIGURE 75. Inside the screened porch at the south side of the 1925 hotel, circa 1970s. Source: Mammoth Cave National Park, slide 719.

Sunset Lodge and Hotel Renovations and New Dormitory. In the 1980s, improvements were made to the units at the Sunset Lodge. Interior renovations consisted of new carpet and wall coverings, as well as new furniture.[168]

In 1985, a new employee dormitory was constructed south of the Sunset Lodge by National Park Concessions, Inc. The wood-framed building consisted of twelve units for use by seasonal concessionaire employees and was designed by E. O. Associates Architects of Lexington, Kentucky. An existing building called the "Brown Dormitory," located just west of the new 1985 building, was demolished as part of the project (Figure 76 and refer to 1966 Period Plan, Figure 71).[169]

Several improvements were made to the Mammoth Cave Hotel in 1992, funded by both National Park Concessions, Inc., and the National Park Service (Figure 77).[170] An addition was constructed which connected the existing hotel structure with the existing restaurant and concession structure. The addition contained four universally accessible guest rooms as well as two large meeting rooms. A small addition was added to the north side of the building to expand the existing restaurant with a new fast-service portion. Renovations were also made to the existing public restrooms, making them universally accessible. Changes were also made to exterior landscaping adjacent to the hotel at this time.[171]

168. *Mammoth Cave National Park NPS/NPCI Building Survey and Recommendations* (no date, circa 1998).
169. Drawing No. 135-41903, New Employee Dormitory. E. O. Associates Architects, Lexington, Kentucky, July 1984.
170. Drawing No. 135-80094, Additions and Alterations to Mammoth Cave Hotel (February 18, 1992). *(Copy in NPS Denver TIC; will add further information, if available.)*
171. *Mammoth Cave National Park NPS/NPCI Building Survey and Recommendations* (no date, circa 1998). The extent of landscaping work completed in 1992 is not described in the 1998 report.

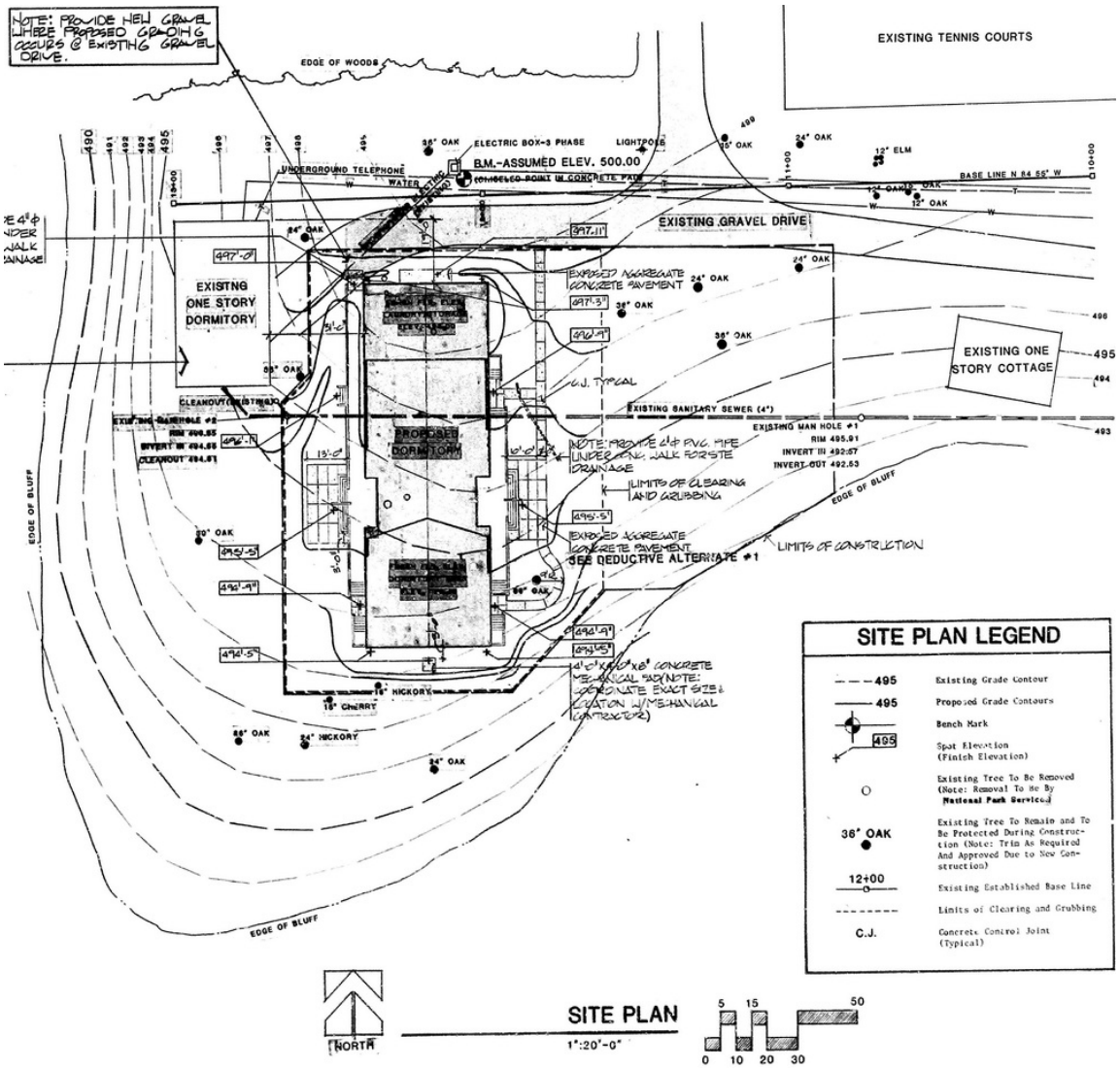


FIGURE 76. Site plan for the 1985 employee dormitory. An older dormitory to the west was removed after the 1985 building was completed Source: NPS Drawing No. 41903.

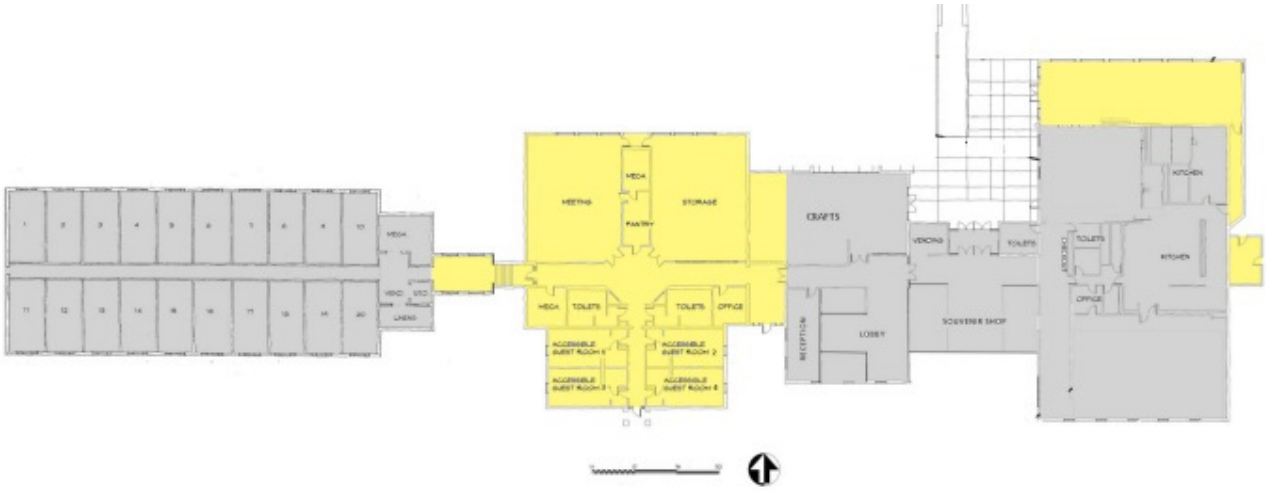


FIGURE 77. Present-day floor plan of the hotel. The original 1960s portions are shown shaded gray. The yellow shaded portions were added as part of the 1992 renovations. Source: *Mammoth Cave National Park Hotel Improvements, Environmental Assessment*. Mammoth Cave, Kentucky: National Park Service, July 2011.

Sewer system. The sewer system in the Core Visitor Services Area was reconstructed in the late 1990s, and three new pump houses for the sewer system were constructed. One of these pump houses is located at the east end of the campground; one is located west of Sunset Lodge; and one is located between the tennis courts and the Deluxe Cottages.

Kennel and storage building. In 1997, a new kennel and storage building was built east of the employee dormitory with labor from the Great Onyx Job Corps. The kennel replaced an earlier kennel near the Heritage Trail west of the hotel. The attached storage building provided space for concessioner-owned lawn equipment. Lawn equipment had previously been stored in the former garbage building (one of the outbuildings associated with the second hotel), which was demolished after completion of the kennel.[172]

Picnic area modifications. Reportedly in the late 1990s, one of the shelters in the picnic area was renovated and enclosed. Although not documented in the materials reviewed for this study, the Mission 66-era comfort station in the picnic area was significantly renovated circa 1990s. Based on its existing appearance, the building was demolished down to the concrete masonry bases of the walls, which were clad with stone. New wood-framed walls with board-and-batten siding and a new wood-framed roof were built atop the masonry walls. The entrance porches were extended slightly at each end of the building, and the concrete walks leading to the building were replaced. Also circa 1990s, a new trailhead, steps, and boardwalk were constructed to connect the road in the picnic area to the Dixon Cave Trail.

Campground modifications. In 2001, the camp store and service center was renovated. In 2004, the campground entrance road was reconfigured, the original entrance kiosk was demolished, and a new entrance kiosk was constructed in a median of the roadway. At about the same time, Loop A in the campground was reconfigured to accommodate group camp sites, with timber guards added to define the sites, new compacted gravel tent pads, and replacing the concrete picnic tables with recycled plastic tables.[173] Apparently as part of this same project, the four Mission 66-era comfort stations in the campground were renovated. The buildings were demolished down to the concrete masonry bases of the walls. New wood -framed walls with board and batten siding and new wood-framed roofs were built atop the masonry walls. The entrance porches at either end were reconfigured, with new wood-framed screen walls. The fifth campground comfort station, which already existed prior to the 2004 work, was similarly reconstructed.

Other work, 2004–2010. In 2004, the road leading to the Historic Entrance to the cave was rehabilitated. Also, the road to the hotel was changed, and a new loop road for tour buses was constructed. This work was completed circa 2005.

The Mammoth Cave Railroad Bike and Hike Trail was completed in 2007. Also in 2007, the reconstruction of the water system in the core area was completed. The electrical system for the cave was renovated, with new generators installed at the surface. This work was completed in 2007.

The amphitheater was renovated, with new aluminum and plastic lumber benches. As part of this project, a new concrete walkway was built along the north side of the amphitheater to provide a universally accessible route to the front of the seating area. This work was completed circa 2010.[174]

172. *Mammoth Cave National Park NPS/NPCI Building Survey and Recommendations* (no date, circa 1998).
173. Drawing No. 135-41059, Headquarters Campground, Loop A (May 13, 2003).
174. Drawing No. 135-41081, Safety and Accessibility Upgrade, Amphitheater (August 4, 2009).

New Visitor Center. Beginning in the late 1990s, plans were made for modifications and improvements to the visitor center. A design charette was held in 1999 to consider possible renovations to the visitor center. In 2007, the first phase of construction began at the visitor center substantial alterations and additions were made to the existing structure (Figure 78). The original Mission 66-era building was transformed into an interpretation of a rustic-style structure defined by exposed timber rafters and stone walls. The new visitor center was designed by Parsons Brinckerhoff.



FIGURE 78. A view of the renovated east portion of the visitor center next to the unaltered west portion of the building. Source: Angelle Bergeron, "Mammoth Cave's Overdue Welcome," *South Central Construction*, November 1, 2009 (New York: McGraw Hill Construction).

During the first phase, the former administrative east wing was demolished down to its foundation by Martin Construction of Louisville. The new structure built atop the original foundation contained a new lobby and welcome area, restrooms, and ticket office. Utilities and dumpsters were located in a new walled enclosure east of the building.

As part of the project, a new information kiosk was constructed north of the renovated visitor center. Also, improvements were made to the adjacent parking lots (Figure 82). Southeast of the visitor center, two new shelters with benches for visitors and a storage building for lantern tours were built in association with the visitor center project.

Concurrent with the visitor center project, piers were constructed at either side of the entrance to the pedestrian bridge. The piers are faced with sandstone matching that used on the new visitor center. The $6 million first phase of the project was completed in 2010 and was funded by fees collected in the park (cave tour tickets and campground fees) through the Federal Lands Recreation Enhancement Act.

During the phased reconstruction of the visitor center from 2007 to 2012, temporary office trailers were located east of the visitor center (Figure 79).



FIGURE 79. Temporary office trailers, June 18, 2011.

In 2010, phase two of the project began with the renovation of the former museum wing, which most recently housed a visitor contact station, ticket sales, book store, a movie theater, and office. Similarly to the former east wing, the west wing structure was demolished to the foundation and rebuilt by Perry Bartsch, Jr., Construction Company of Asheville, North Carolina (Figure 80 and Figure 81). The 1967 bus shelter north of the west wing was demolished, as was a small fuel storage building south of the west wing. The new west wing contains a museum, bookstore, and staff offices at the main floor and staff break room and work areas at the basement level. A new concrete sidewalk was created connecting from the parking lots north of the visitor center, around the west end of the building, and passing under the bridge east to the staging area near the bus loop. Along this sidewalk south of the building, an open air shelter called the wild cave tour shelter was built. Funding for the $10.4 million second phase was

provided via the American Recovery and Reinvestment Act of 2009. The project was completed and opened to the public in November 2012.[175]



FIGURE 80. Phase two construction in progress at the west half of the visitor center, view from the north, June 18, 2011.



FIGURE 81. Phase two construction in progress at the west half of the visitor center, view from the south at the bridge, June 18, 2011. The original foundation and steel structural frame was retained and incorporated into the renovated building.

175. "Mammoth Cave celebrates its new visitor center," press release, Mammoth Cave National Park, November 16, 2012.



FIGURE 82. Aerial view circa 2010 showing first phase of visitor center reconstruction, bus loop roadway constructed in 2005, temporary office trailers, and shelters southeast of visitor center under construction. Source: NPS.

Mammoth Cave National Park Core Visitor Services Area Chronology

5,000 years ago	Pre-European contact peoples from the Archaic Period are believed to be the first to have entered Mammoth Cave.
1700s	European exploration
1780s	Early settlement
1798	Valentine Simons purchased the deed for 200 acres of land, which included Mammoth Cave.
circa 1799	Valentine Simons sold Mammoth Cave and adjacent lands to John Flatt, who operated a small saltpetre mining business at the cave.
1808	The McClean brothers purchased the cave property from Flatt and subsequently expanded the mining operation at the cave.
1810	The McClean brothers sold the cave and adjacent property to Charles Wilkins and Fleming Gatewood. Wilkins and Gatewood expanded the saltpetre mining operations significantly.
1812	Hyman Gratz purchases Fleming Gatewood's interest in Mammoth Cave and the surrounding property.
1816	Beginning of tourism
1828	A small log inn was opened by Hyman Gratz, the owner of Mammoth Cave. This inn is possibly the same structure that was built as the Archibald Miller, Sr., house circa 1811 or 1812 and was subsequently the house of Fleming Gatewood (depicted in 1835 painting).
1838	Franklin Gorin purchased the Mammoth Cave property in April 1838 and expanded accommodations there.
1839	Dr. John Croghan purchased the Mammoth Cave property in October and expanded visitor accommodations by constructing two, two-story log buildings and sixteen cottages.
1849	Croghan died; his will placed the Mammoth Cave properties in trust for his nine nieces and nephews.
1850s	The Louisville and Nashville Railroad was constructed, bringing travelers to nearby Bell's Tavern. Stagecoaches ran from the tavern to Mammoth Cave.
1871	David L. Graves took over operations of the hotel and cave, at which time a new water system was installed.
1886	Construction of the Mammoth Cave Railroad by the Mammoth Cave Railroad Company began; service between Bell's Tavern (later Glasgow Junction) and Mammoth Cave began in November.
1888	A kitchen, souvenir store, and photography shop were added to the hotel. The dining room and several hotel rooms were remodeled at this time.
Post-1900	The Guide House was constructed along a path to the historic entrance.
1916	The original Mammoth Cave Hotel was destroyed by fire.
1925	A new Mammoth Cave Hotel was constructed with forty-three guest rooms.

1926	President Calvin Coolidge signed a bill authorizing the establishment of Mammoth Cave National Park.
1930	The Mammoth Cave Hotel was expanded, with the length of the building extended.
1931	The Mammoth Cave Railroad ceased operation.
1933	The first CCC camp was established on Flint Ridge near Crystal Cave. In all, four CCC camps operated at the camp.
1936	The CCC constructed a comfort station west of the hotel to serve a proposed recreational area.
1936–1937	Ten one-room Deluxe Cottages were constructed by Will Gill of Bowling Green in association with Bass and Company. Landscaping work was completed by the CCC.
1939	Tennis and shuffleboard courts were constructed west of the hotel by the CCC.
1938–1939	Sixteen one-, two-, three-, and four-bedroom Woodland Cottages were constructed with landscaping work completed by the CCC.
1939	The Green River Ferry Road was constructed by the CCC.
1939	An amphitheater was constructed east of the hotel cottages by members of the CCC.
1940–1941	A picnic area and campground were constructed. One comfort station was constructed near the southeast entrance to the campground and another was constructed near the south end of the picnic area.
1940	A sewer system and the chlorinator house were constructed by members of the CCC.
1941–1942	A snack shop was added to the north end of the hotel. The Guide House was also renovated at this time.
1949	An addition containing bathing facilities was made to the comfort station and laundry building at the campground. Five additional one-story Woodland Cottages were constructed.
1954	The Sunset Lodge motor inn was constructed west of the Mammoth Cave Hotel.
1958	A second building at the Sunset Lodge motor inn was constructed.
1959–1961	A new visitor center was constructed north of the hotel by the NPS as part of the Mission 66 program. The visitor center included an underground air tunnel connected to the cave for summertime cooling. A concrete bridge connecting the visitor center and the hotel area was also completed at this time.
1963	Improvements including a new walkway and stairs were constructed at the Historic Entrance.
1963	A new camp store and service center was constructed southeast of the hotel and cottages.
1964	A new campground was constructed south of the hotel and amphitheater, including four comfort stations (fifth comfort station added later).
Circa 1964	1940–1941 picnic area/campground was converted to picnic area only. One new comfort station was built, and one 1941 comfort station was demolished.
1964–1967	The amphitheater was completely reconstructed.

1965	A new Mammoth Cave Hotel was constructed between the existing hotel building and the visitor center by National Park Concession, Inc. The Guide House was demolished as part of the new hotel construction.
1967	A shelter was constructed to house Engine No. 4 and Coach No. 2, replacing the 1930s canopy.
Circa late 1960s	Three open-air picnic shelters constructed.
1978–1979	The Mammoth Cave Hotel constructed in 1925 was demolished by the NPS.
1985	An employee dormitory was constructed south of the Sunset Lodge by National Park Concession, Inc.
1980s	Interior renovations were made to the Sunset Lodge.
1990s	Sewer system improvements were made throughout the park.
Circa 1990s	Changes to picnic area: One picnic shelter renovated and enclosed; Mission 66-era comfort station significantly renovated; new trailhead to provide access to Dixon Cave Trail.
1992	An addition was made to the Mammoth Cave Hotel, which included the construction of universally accessible guest rooms and a new restaurant and shop.
1997	New kennel and storage buildings were constructed east of the employee dormitory.
2001	Modifications were made to the camp store and service center.
2004	Improvements were made to the road to the Historic Entrance.
2004	The entrance road to the campground was replaced; new campground entrance kiosk was constructed; five comfort stations in campground were significantly renovated.
2005	Improvements were made to the access road to the hotel; new bus loop road was constructed east of the visitor center.
2007	New sewer and water system was constructed.
2007	The Mammoth Cave Railroad Bike and Hike Trail was completed.
2007	New above ground generators were installed as improvements to the cave electrical systems were made.
2010	Upgrades were made to the amphitheater.
2007–2012	The visitor center was renovated and expanded. New tour shelters were constructed adjacent to the new facility.

Existing Conditions Documentation

Introduction

This chapter describes, through narrative text, photographs, labeled base mapping, and analytical diagrams, the current conditions and extant landscape features associated with the Mammoth Cave Core Visitor Services Area, a developed area that is part of Mammoth Cave National Park.

The chapter is composed of five sections. The first section—Environmental Context and Setting—sets the core area within a regional and local context by discussing the larger systems that surround and encompass it. The second section—Cultural Context and Setting—describes regional elements such as major road corridors, planning and zoning districts, demographics, and local attractions that provide a cultural framework for the core area. The third section—Landscape Systems and Features—describes the core area as a whole. The fourth section—Landscape Character Areas—describes the discrete land areas where concentrations of cultural resources support visitor use within the core area. The fifth section—Existing Conditions Documentation by Landscape Character Area—depicts the extant landscape features located within each character area. These feature descriptions are organized by landscape characteristics, the tangible and intangible aspects of a site that collectively convey its historic character and aid in the understanding of its cultural importance.

Landscape characteristics range from large-scale patterns and relationships to site details and materials. The following categories of landscape characteristic are used to document the Core Visitor Services Area:

- **Natural systems and features**. These are the environmental resources and qualities that have influenced the development and physical form of a landscape. They include the underlying landform and topography, soils, and water resources, as well as attendant native plant communities.
- **Response to natural resources.** These describe the physical connections between the built and natural environment, such as the siting of buildings and structures and the use of native materials in construction.
- **Patterns of spatial organization.** These reflect the three-dimensional organization of physical forms and visual associations in a landscape, including the articulation of ground, vertical, and overhead planes that define and create spaces.
- **Topographic modifications.** These include alterations to the elevations of the land surface by humans for such purposes as accessing potable water, grading roads, siting buildings, and draining storm water.
- **Land uses and activities.** These include the principal activities in a landscape that form, shape, and organize it as a result of human interaction.
- **Circulation.** This represents the patterns, features, and applied material finishes that constitute the systems of movement in a landscape.
- **Cultural vegetation.** This includes the deciduous and evergreen trees, shrubs, vines, ground covers, and herbaceous plants that

have been introduced in a landscape by cultural activities.

- **Buildings.** These are elements constructed primarily for sheltering any form of human activity in a landscape.

- **Structures.** These are elements constructed for functional purposes other than sheltering human activities.

- **Views and Vistas.** Views are generally defined as being expansive and panoramic prospects, whether naturally occurring or designed. **Vistas** are deliberately designed views often meant to orient the gaze to a linear feature or particular focal point.

- **Small-scale features.** These are the elements providing detail and diversity for both functional needs and aesthetic concerns in a landscape.

- **Known and potential archeological resources.** These are the traces, or deposited artifacts in a landscape, evidenced by the presence of either surface or subsurface features.[176]

A full inventory of all landscape resources documented in this chapter are included in Appendix A for each of the seven character areas.

Environmental Context and Setting

Refer to Figure 83, Site Context and Location Map Figure 84, Core Visitor Services Area in the Context of Mammoth Cave National Park; and Figure 85, Core Visitor Services Area.

Mammoth Cave National Park is located mostly in Edmonson County, Kentucky, with small portions in Barren and Hart counties. The park is northwest of Park City, lying approximately midway between Louisville, Kentucky and Nashville, Tennessee and is accessed from Interstate 65. The Core Visitor Services Area is bordered to the west by the Green River, to the south by Green River Ferry Road, to the east by Mammoth Cave Parkway and to the north by wooded bluffs, with magnificent views to the Green River in the heart of the expansive 52,830 acres that define the park.

Mammoth Cave National Park encompasses and protects diverse geological, biological and historical features associated with the longest cave in the world. The surface landscape highlights include rare plants and dense forest, a diverse aquatic ecosystem in the Green and Nolin Rivers, and geologic features of a classic karst terrain.

While most of the park consists of second-growth woodland, a number of special plant communities including wetland, rare Kentucky prairies, the Big Woods, hemlock groves, and sinkhole microclimates are examples of the park's rare species. The park's diverse plant communities support diverse wildlife. The Green River contains more than 80 species of fish, and more than 70 species of freshwater mussels live in the river sand, gravel and mud. The Green River is one of the most biologically diverse river habitats in the National Park system. In 1988, Kentucky designated the Green River a wild and scenic river, and Green River and Mammoth Cave subsurface streams as outstanding resource waters.

176. Derived from Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports; Contents, Processes, and Techniques* (Washington, D.C.: department of the Interior, 1998), 53; and Linda Flint McClelland, J. Timothy Keller, Genevieve Keller, and Robert Z. Melnick, National Register Bulletin 30: *Guidelines for Evaluating and Documenting Rural Historic Landscapes* (Washington, D.C.: Department of the Interior, 1990), 53.



FIGURE 83. Site Context and Location Map. USGS, 1:100,000 Beaver Dam quadrangle, 1981.

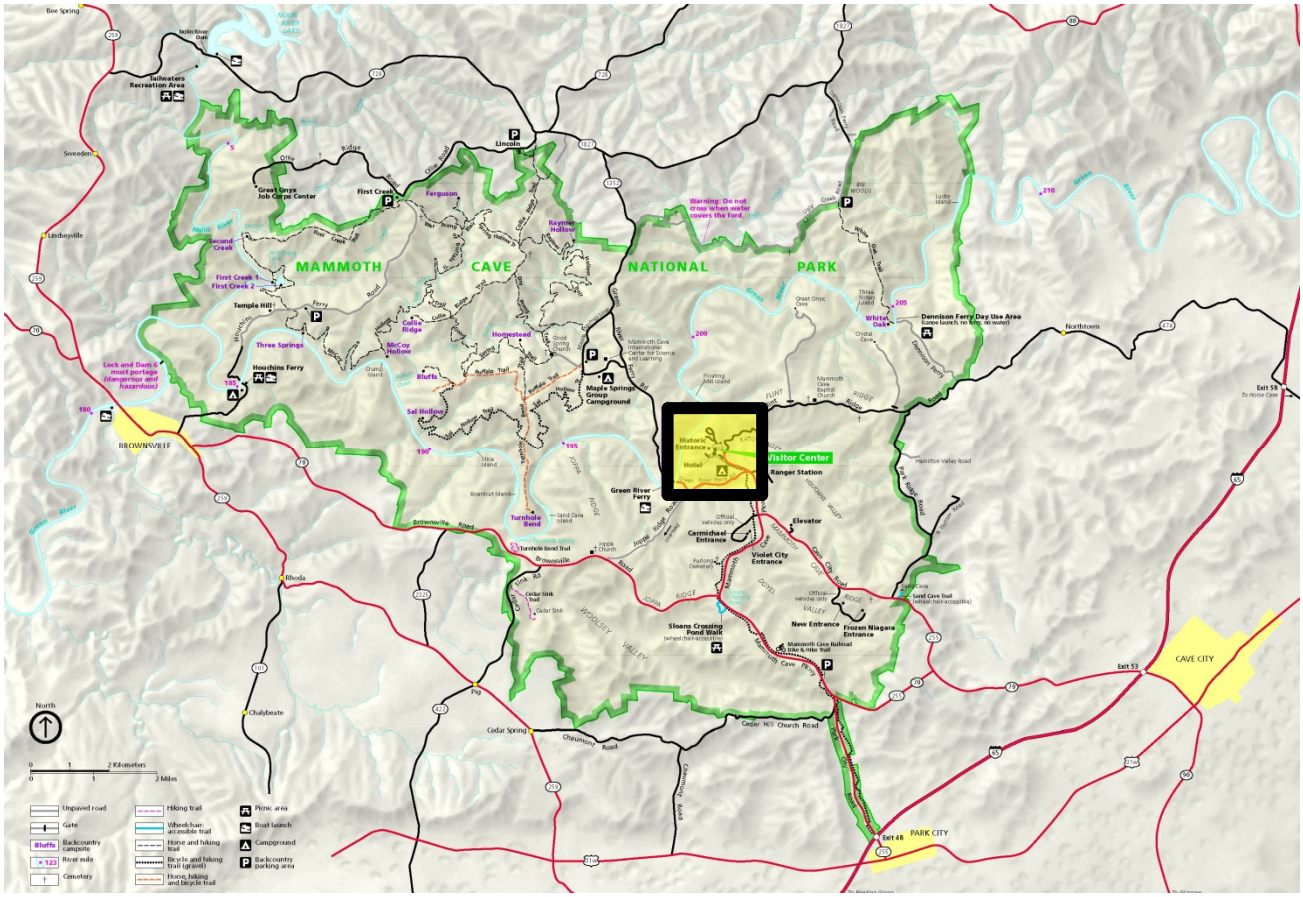


FIGURE 84. Location of the Core Visitor Services Area in Mammoth Cave National Park.

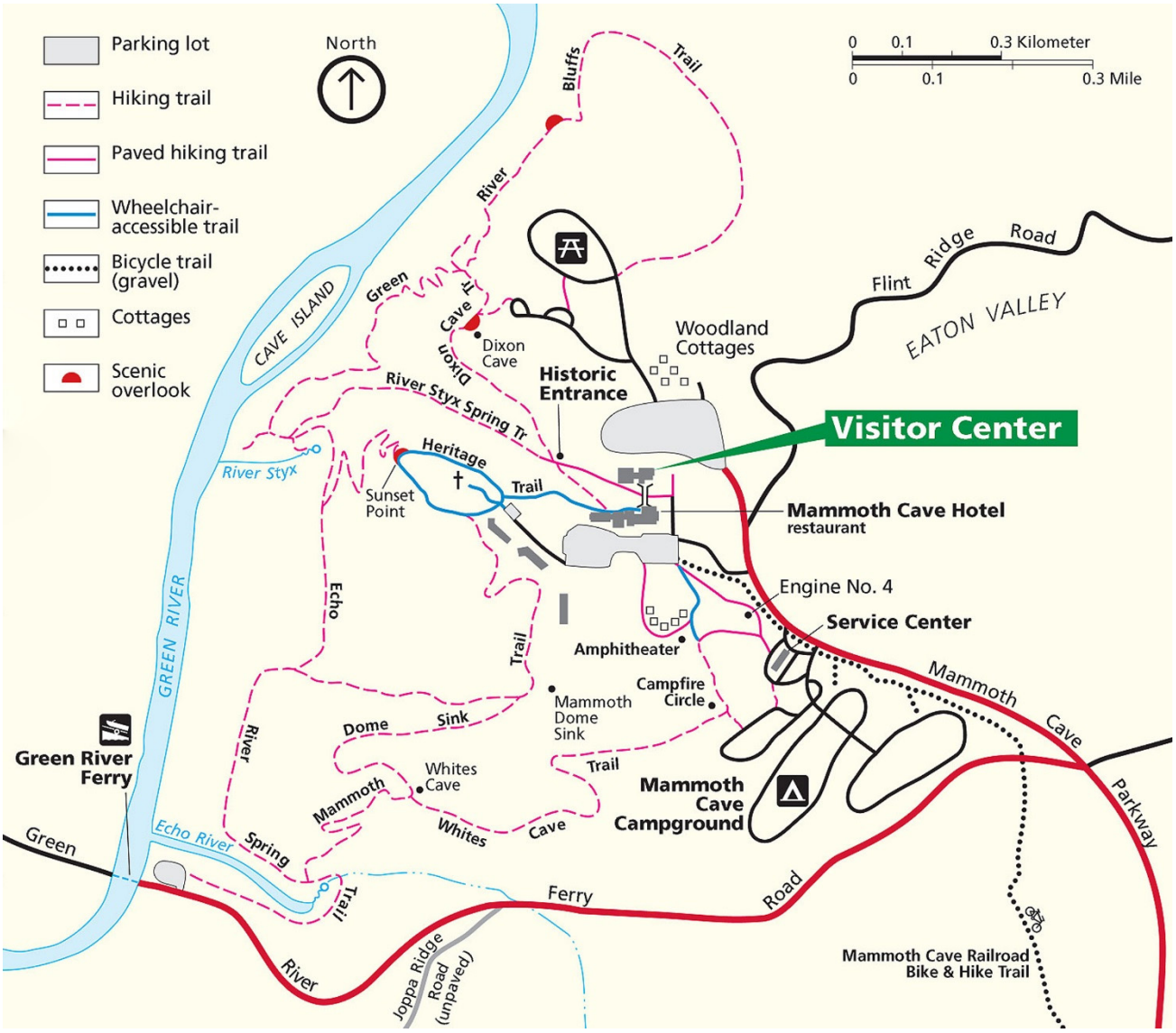


FIGURE 85. Core Visitor Services Area. Source: Mammoth Cave National Park..

On October 27, 1981, Mammoth Cave National Park joined the ranks of renowned places like Australia's Great Barrier Reef, Egypt's Pyramids of Giza, Nepal's Kathmandu Valley and India's Taj Mahal Historic Park. The United Nations Educational, Scientific and Cultural Organization (UNESCO) designated Mammoth Cave National Park as a World Heritage Site for its exceptional natural features and habitat for threatened and endangered species.[177]

On September 26, 1990, Mammoth Cave was officially designated an Area Biosphere Reserve by UNESCO. "A biosphere reserve is a unique category of safeguarded, natural resources. Each biosphere reserve represents a specific ecosystem; a place for research, monitoring and education, and a place where government policy makers, scientists and local people cooperate to manage land and water resources to meet human needs while conserving natural resources."[178] Biosphere reserves examine how to reconcile conservation of biological resources with their sustainable use. The extent of the Reserve was greatly increased in 1996 to cover the cave's entire recharge area.

177. Mammoth Cave National Park, Preserving the Park: www.ohranger.com/mammoth-cave/preserving-park. *World Heritage Site.*

178. Mammoth Cave National Park, Preserving the Park: www.ohranger.com/mammoth-cave/preserving-park. *Biosphere Reserve.*

Physiography

On the physiographic map of Kentucky, Mammoth Cave National Park falls into the general province of the Mississippian Plateau (Figure 86). The Mississippian Plateau of south-central and western Kentucky is an upland region underlain by Mississippian rocks, mostly limestones and shale. This province consists of a limestone plain characterized by tens of thousands of sinkholes, sinking streams, streamless valleys, spring and caverns. The karst terrain occurs because the bedrock in the eastern and southern parts of the region is dominated by thick deposits of Mississippian-age limestones. The limestone is soluble and will dissolve under the right conditions thus easily eroded by waters moving through the ground.[179]

Most of the Mississippian Plateau is drained by the Green River and its tributaries. The river valley and karst drainage network are subtly controlled by the regional dip of the limestone beds toward the Western Coal Field region (Figure 87). The rugged topography of the boundary has developed by headward erosion by the Green River and its tributaries, updip through the westward-dipping strata of the karst area of the plateau. Collapsed topography, sinking streams, and extensive cave networks are common. Mammoth Cave occurs along the Green River and is part of the most extensive cave development in Kentucky. It occurs in strata that form an intensely dissected cuesta (a ridge formed by gently tilted sedimentary rock layers). The steep outward-facing slopes of the cuesta are known as the Dripping Springs Escarpment.[180]

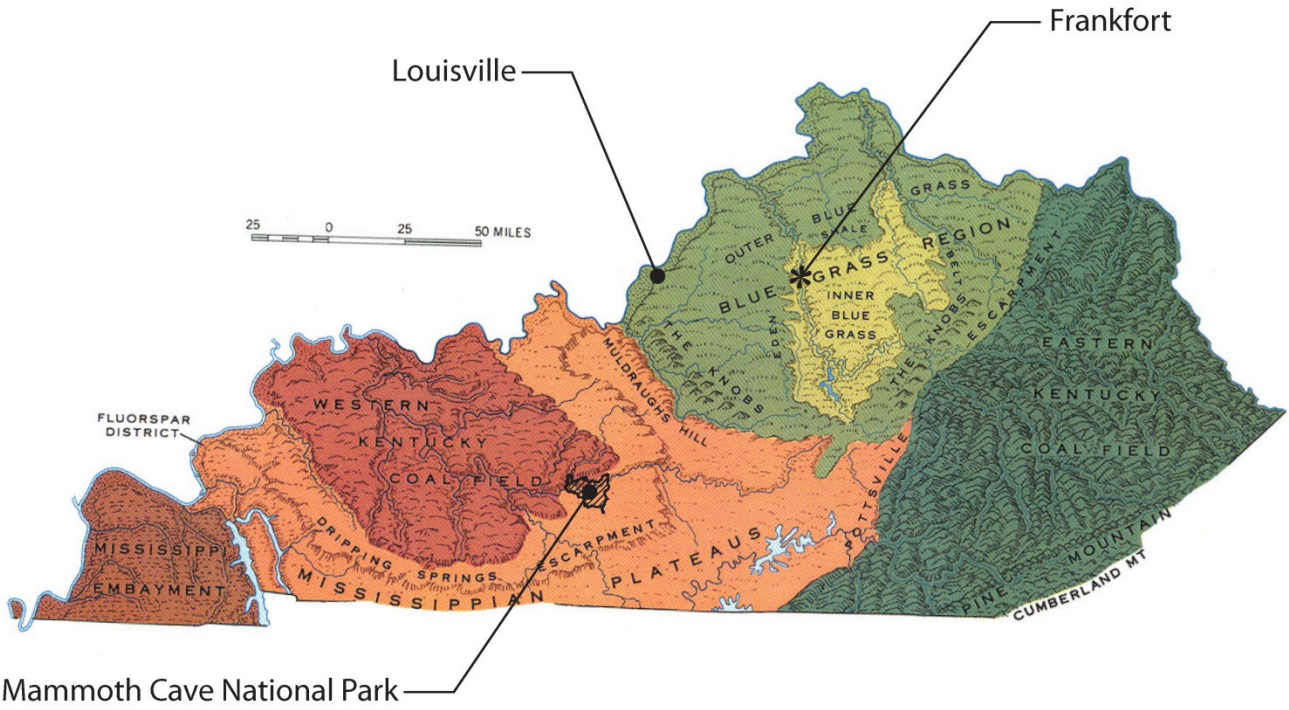


FIGURE 86. General Physiographic Provinces of Kentucky.

179. Wayne L. Newell, *The Geology of Kentucky: Physiography.* USGS Professional Paper 1151-H. January 9, 2001. http://pubs.usgs.gov/prof/p115/physiography.html. Accessed December 26, 2011.
180. Ibid.

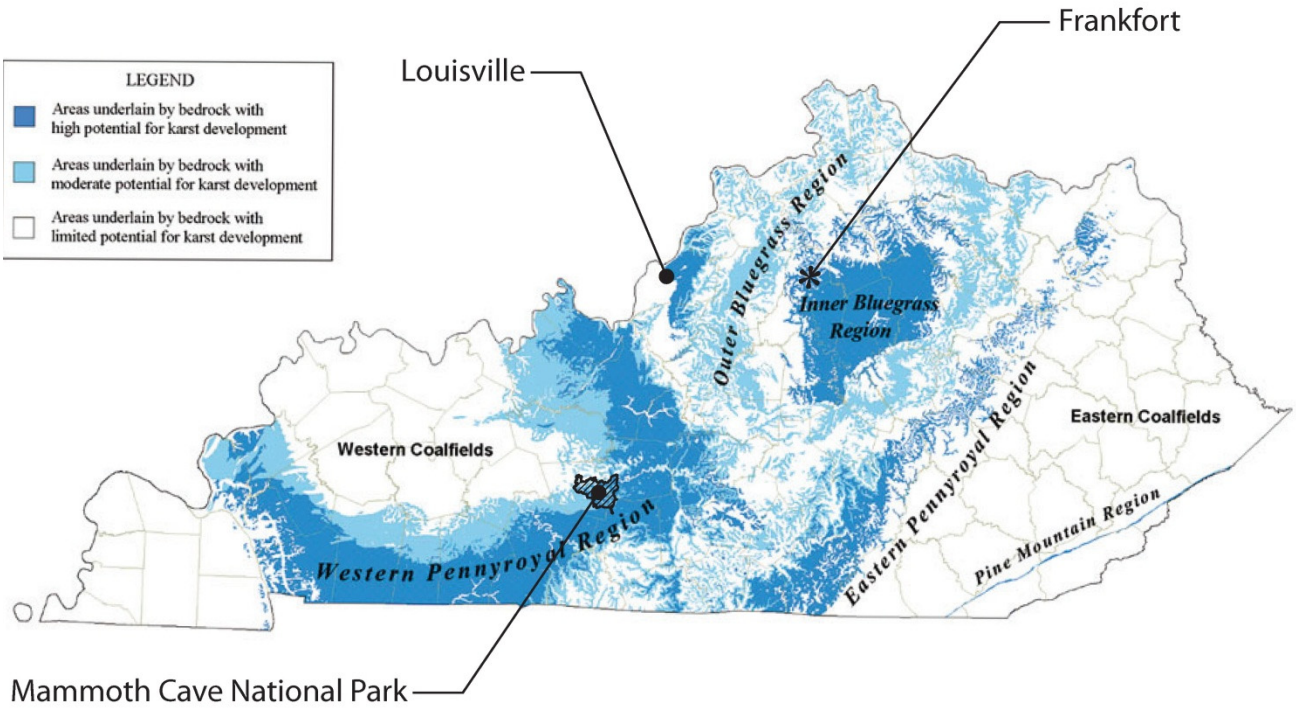


FIGURE 87. Karst areas in Kentucky.

Physical Geology

The geological process resulting in the Mammoth Cave system, began hundreds of millions of year ago. Three hundred and fifty million years ago, the North American continent was located much farther south; Kentucky was about 10 degrees south of the equator. A shallow sea covered it and most of the rest of the southeastern United States. The warm waters supported a dense population of marine organisms. As these creatures died, calcium carbonate ($CaCO_3$) from their skeletal fragments accumulated on the floor of the ancient sea. In addition, calcium carbonate precipitated from the water itself. The build-up of material continued during the next 70 million years until some seven hundred feet of limestone and shale was deposited. After the deposition of the limestone, about fifty to sixty feet of sandstone was deposited over much of the area by a large river system that emptied into the sea from the north (Figure 88).

About 280 million years ago, the sea level started to drop, and the continent began to rise, exposing layers of limestone and sandstone. The stage was set for the formation of the Mammoth Cave. Forces at work beneath the earth's crust caused it to slowly rise, buckle and twist, causing tiny cracks between and across layers of limestone and sandstone. At the same time river systems as we know them today slowly developed. By about three million years ago, a sandstone-capped plateau stood above the Green River, and a low, almost flat limestone plain extended southeast of what is now Interstate 65.

The upper sandstone member that caps the limestone strata is known as the Big Clifty Sandstone: thin, sparse layers of limestone interspersed within the sandstones give rise to an epikarstic zone, in which tiny conduits (cave passages too small to enter) are dissolved by the natural acidity of groundwater. The epikarstic zone concentrates localflows of runoff into high-elevation springs which emerge at the edges of ridges. The resurgent water from these springs typically flows briefly on the surface before sinking underground again at elevations of the contact between the sandstone caprock and the underlying massive limestones. It is in these underlying massive limestone layers that the human-explorable caves of the region have naturally developed. [181]

The limestone layers of the stratigraphic column beneath the Big Clifty, in increasing order of depth below the ridgetops, are the Girkin Formation, the St. Genevieve Limestone, and the St. Louis Limestone. Each of the primary layers of limestone are divided further into named geological units and subunits (Figure 89).

In the dissected terrain north and west of Interstate Highway 65, between the sinkhole plain and the caprocks of the Mammoth Cave Plateau, are harder ridges composed of cherty limestones, sandstones, limestones and shales, alternating and interspersed with the stream valleys, whose floors are composed of purer limestone. The sinkhole plain (Pennyroyal Plateau) abruptly ends at the base of the Dripping Springs Escarpment. The flat ridge tops of the Chester Upland are capped with the Big Clifty Sandstone. The series of ridges that hold the Mammoth Cave system are separated by valleys that expose the highly soluble limestone beneath. This is where the entrances to Mammoth Cave are found and where the Green River cuts through the park and forms the western boundary of the Core Visitor Services Area.[182]

181. Mammoth Cave National Park: Geology. GORP.com. http://www.gorp.com/parks-guide/travel-ta-mammoth-cave-national-park-culture-kentucky.Accessed December 27, 2011.

182. NatureServe Southeast Regional Office (for the National Park Service), *Vascular Plant Inventory and Plant Community classification for Mammoth Cave National Park,* (NPS, February 2010), 5.

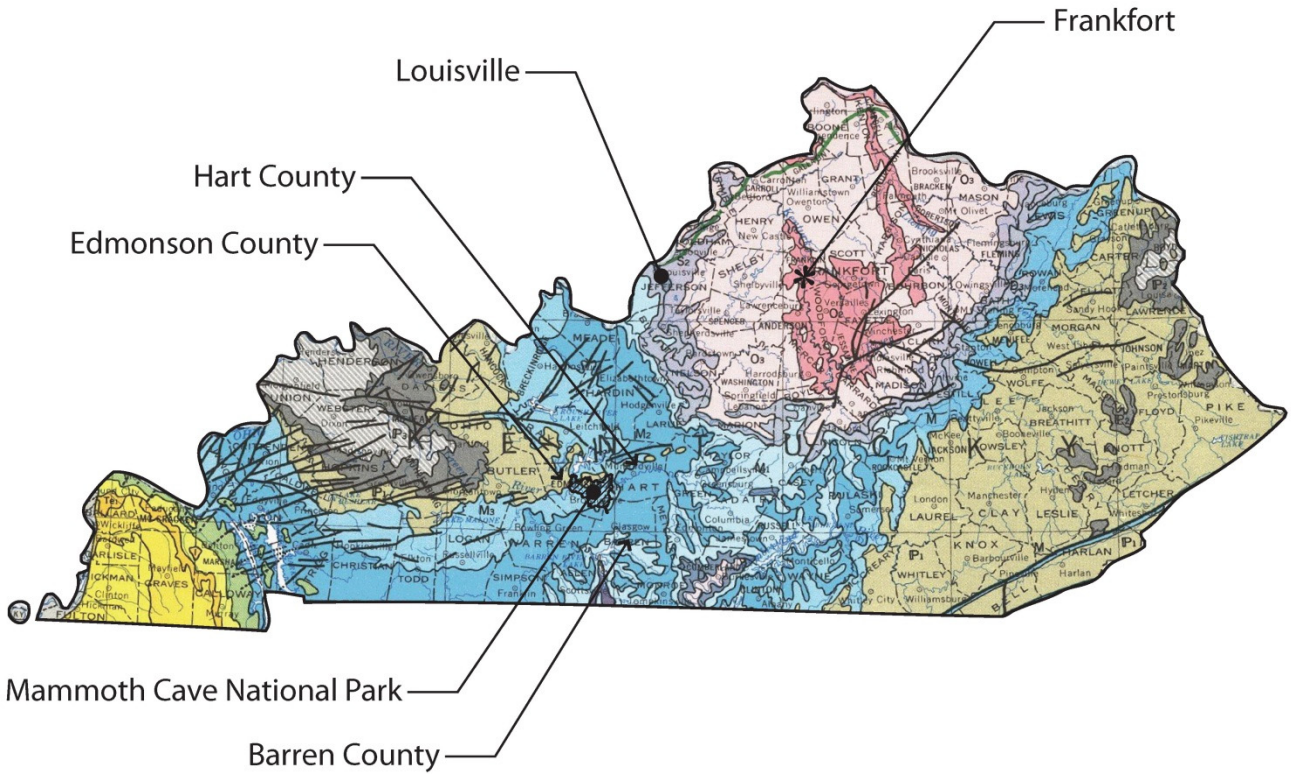


FIGURE 88. Generalized Geologic Map of Kentucky.

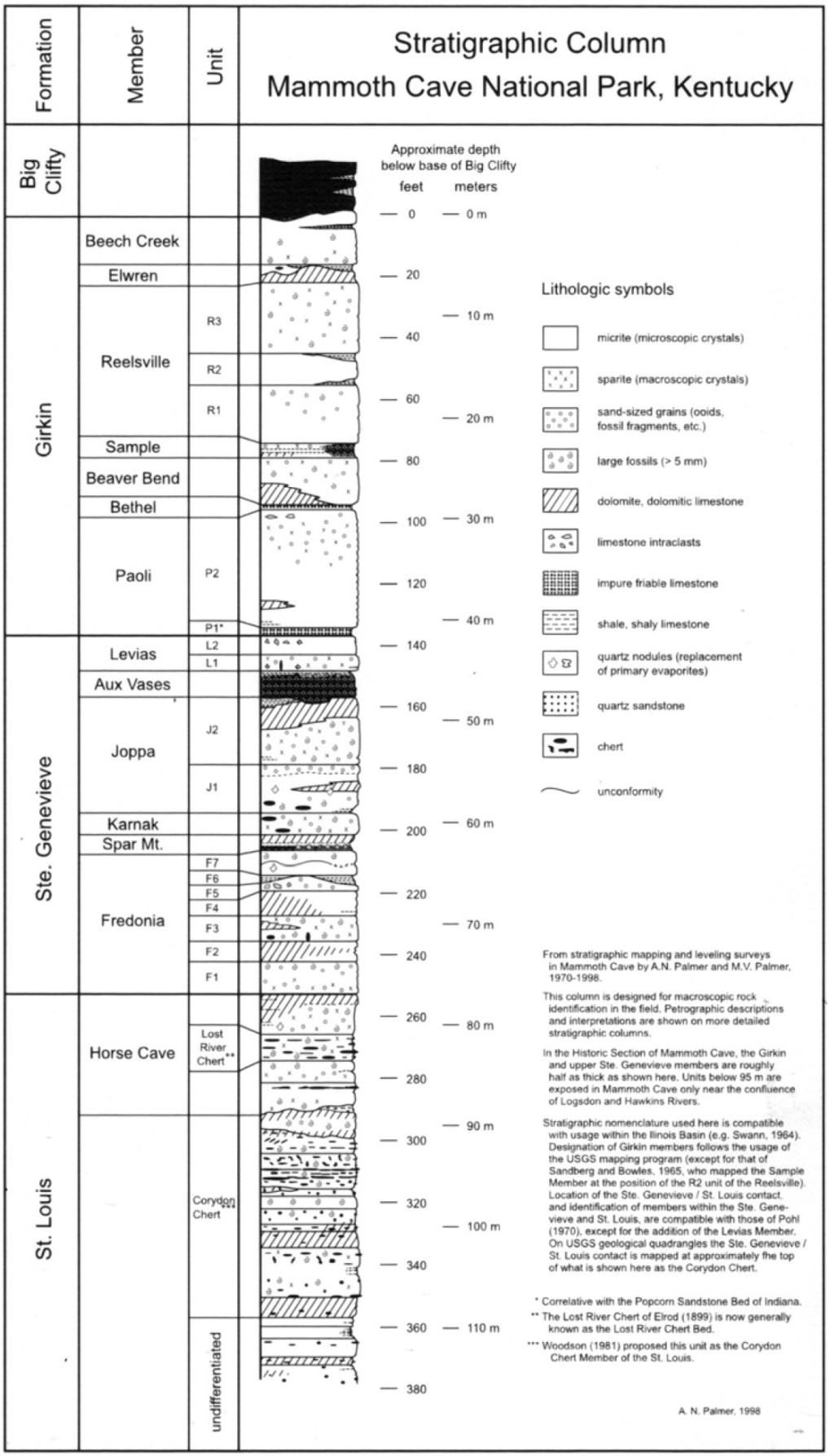


FIGURE 89. Stratigraphic Column in Mammoth Cave area.

Hydrogeology

The Mammoth Cave karst aquifer is recharged primarily from areas outside the park boundary. This recharge, in the form of precipitation or the injection of liquid wastes, enters the aquifer through numerous sinking streams and countless sinkholes. Any practices that may have an adverse impact on water quality within the park's recharge area can directly impact the park's water quality.[183] The primary activities that influence the park's water quality include the domestic, municipal, industrial sewage, solid waste disposal, agricultural and forestry management practices, oil and gas exploration and production, urban land-use and recreational activities.

The Mammoth Cave karst aquifer exhibits what is called "convergent flow", much like the convergent patterns of a dendritic surface stream system. While other aquifers may possess a more diffuse flow, in which contaminants slowly disperse, the convergent flow of the Mammoth Cave karst aquifer channels recharge and pollutants toward a common trunk conduit or spring.[184] Flow through the Mammoth Cave karst aquifer can be very rapid, on the order of thousands to tens of thousands of feet per day. Contaminants entering the karst aquifer can thus be rapidly transported, unaltered, through the conduit system.

The karst aquifer is very dynamic, that is, it responds instantaneously to rainfall. Aquifer stages can rise tens of feet in a matter of hours. Also, chemical and bacteriologic properties of the ground water can change dramatically following rainfall events.[185]

Soils

Soils associated with Mammoth Cave National Park vary widely, but are all formed in material weathered from limestone, sandstone, shale, and siltstone, except one series that was formed in alluvium on karst upland depressions and flood plains. The soil survey for the park provides maps and assessment information sufficient to understand the entire park, and specifically the Core Visitor Services Area. The general soils map for the park shows broad areas that have a distinctive pattern of soils, relief and drainage (Figure 90). Typically, these units consist of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. They are named for the major soils or miscellaneous areas.[186]

The Core Visitor Services Area is dominated by four soil types: Wallen-Caneyville-Bledsoe; Wellston-Clarkrange; Nolin; and Water (mostly the Green River).

1. Wallen-Caneyville-Bledsoe. Sloping to very steep, very deep to moderately deep, well drained to somewhat excessively drained soils that have a clayey or loamy subsoil; formed over residuum weathered from limestone, sandstone, or shale. This map unit is about 27 percent Wallen and similar soils, 25 percent Caneyville and similar soils, 24 percent Bledsoe and similar soils, and 24 percent soils of minor extent. Of minor extent in this unit are Clarkrange, Wellston, Donahue, Newark, Lily and Nolin soils. Also included are areas of rock outcrop. This unit is mostly in mixed hardwoods, mainly oak with some eastern red cedar. It is used primarily for recreation and wildlife.

183. USDA, NRCS, and NPS and Kentucky Agricultural Experiment Station, *Soil Survey of Mammoth Cave National Park, Kentucky,* 4.
184. William B. White and Elizabeth L. White, eds., *Karst Hydrology: Concepts from the Mammoth Cave Area* (New York: Van Nostrand Rheinhold, 1989).
185. USDA, NRCS, and NPS and Kentucky Agricultural Experiment Station, *Soil Survey of Mammoth Cave National Park, Kentucky,* 4.
186. Ibid., 7.

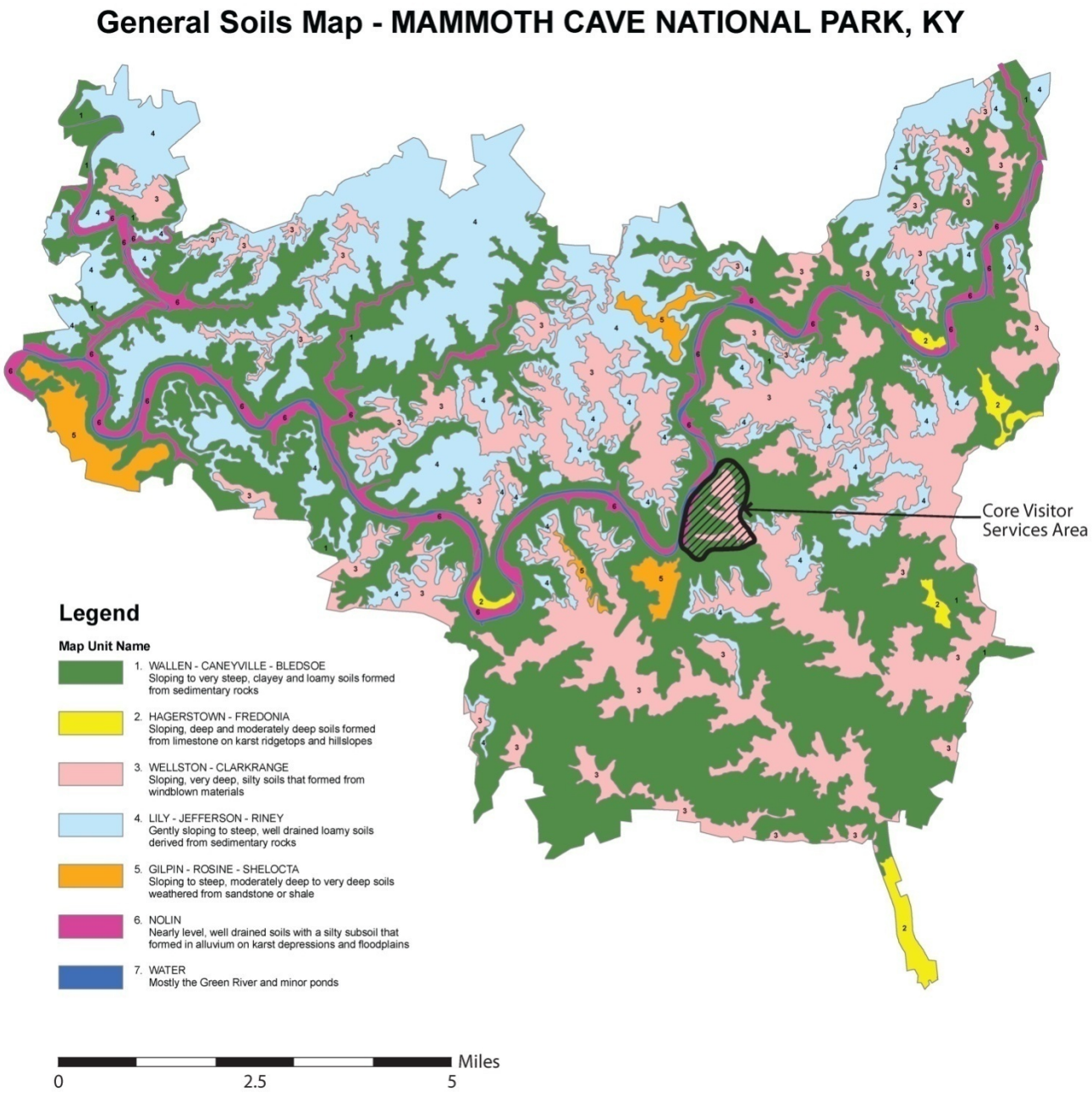


FIGURE 90. General Soils Map for Mammoth Cave National Park. United States Department of Agriculture, Natural Resources Conservation Service, 2010.

2. Wellston-Clarkrange. Gently sloping to strongly sloping, very deep, well drained and moderately well drained soils that have a silty subsoil; formed in loess over residuum from weathered sandstone and siltsone or loess over residuum from weathered sandstone and shale on ridgetops and hillsides. This map unit is about 48 percent Wellston and similar soils, 42 percent Clarkrange and similar soils, and 10 percent soils of minor extent. Of minor extent in this map unit are Lily and Nolin soils. This unit is mostly in mixed hardwoods, mainly oak. It is used primarily for recreation and wildlife.

3. Nolin. Nearly level, very deep, well drained soils that have a silty subsoil; formed in alluvium on karst upland depressions and flood plains mostly along the Green River and its major tributaries and upland depressions. This map unit is about 80 percent Nolin and similar soils and 20 percent soils of minor extent. Of minor extent in this map unit are Grigsby, Elk, Chagrin, and Clifty

soils. This map unit is primarily in mixed hardwoods. Some areas have second-growth trees, and some areas have grass with scattered trees. The unit is used primarily for recreation and wildlife.

4. Water. This map unit is comprised mostly of the Green River and includes some ponds. It makes up about 1 percent of the park area. It is about 98 percent water and 2 percent soils of minor extent. Of minor extent in this map unit are Grigsby and Nolin soils primarily on small islands in the Green River. This unit is used primarily for recreation, wildlife, and navigation.[187]

Hydrology

Mammoth Cave National Park is located in the large Ohio River Drainage Basin which covers most of the state of Kentucky. From the Ohio River, water flows into the Mississippi River as do all rivers in Kentucky (Figure 91).

Within this context, the state has been divided into 12 drainage basins, each related to tributaries of the Ohio River. These twelve basins include: Ohio, Tygarts and Little Sandy, Big Sandy, Licking, Kentucky, Salt, Upper Cumberland, Green, Lower Cumberland, Tradewater, Tennessee, and Mississippi. Mammoth Cave National Park is located in the Green River Basin (Figure 92).

The headwaters of the Green River are characterized by bedrock of limestones, sandstones and shales. The limestone areas have well-developed karst topography and are characterized by vast sinkhole plains which take in virtually all surface drainage and channel the water through caves and other underground passages. In karst aquifer systems, groundwater typically flows rapidly through caves and fractures of the rocks. Karst terrain is particularly vulnerable to contamination by human activities. Karst springs supply drinking water to several municipalities in the sinkhole plain.[188]

The Green River is one of North America's most diverse ecosystems and the most biologically abundant branch of the Ohio River system. The river flows unhindered for more than 100 miles through 13counties and through Mammoth Cave National Park. The greatest amount of the Green River's diverse life occurs in this 100 mile stretch. The Green River is the base-level stream for the Mammoth Cave system, and has crucial influence on the cave aquatic community since food supply and sediment transport are both affected. The USDA and the State of Kentucky have agreed to implement a Conservation Reserve Enhancement Program to restore up to 99,500 acres in south central Kentucky's Green River Watershed. Revitalizing this area will help protect Mammoth Cave National Park and the ecologically rich Green River.[189]

The Green River forms the western boundary of the core area. The groundwater that flows underground from the sinkhole plains south of the park into the river finds its outlet through innumerable springs. Among the most notable springs in the park and the Core Visitor Services Area are the River Styx Spring and the Echo River Spring.[190]

187. Ibid., 7–11.
188. Dr. Cathleen J. Webb and Dr. Rezoul Mahmood, *NSF-REU Mammoth Cave Upper Green River Project.* Western Kentucky University, Ogden College of Science and Engineering, www.wku.edu/watershed. Accessed December 26, 2011.
189. United States Department of Agriculture, *Conservation Reserve Program – Kentucky Green River Conservation Reserve Enhancement Program,* www.FSA.USDA.gov/Internet/FSA_File/greenrivercrepfactsheet.pdf. Accessed December 26, 2011.
190. National Park Service, *"Mammoth Cave National Park – Springs and Seeps"* www.nps.gov/maca/naturescience/springs.htm. Accessed December 26, 2011.



FIGURE 91. Mammoth Cave National Park within the Ohio River Drainage Basin.

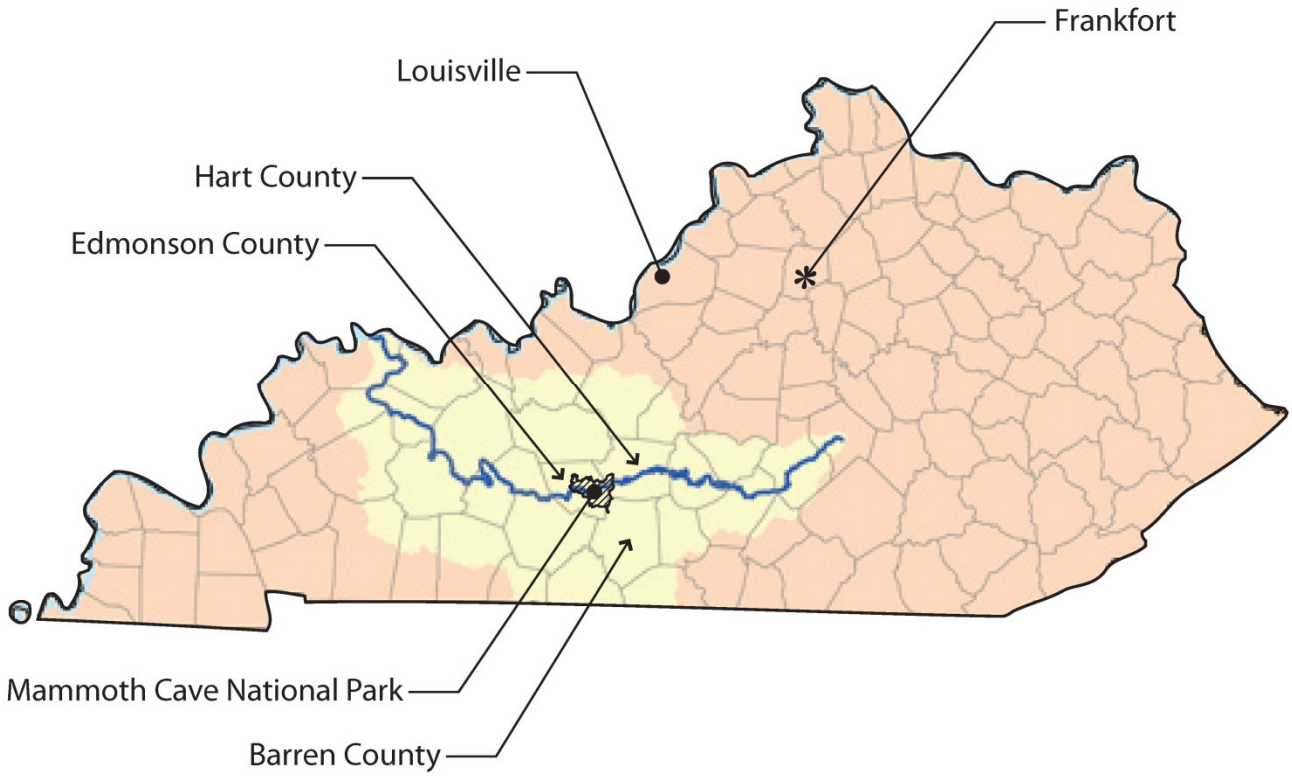


FIGURE 92. Mammoth Cave National Park within the Green River Basin.

Plant Communities

The geology, soils, hydrology, and resultant topography of the area strongly affect patterns of vegetation in the Core Visitor Services Area. Some vegetation types, such as eastern hemlock forests, are primarily found in the northern and western sections of the park while specific oak forest types such as chinquapin oak woodlands and limestone glade vegetation, are only found on the limestones that are more abundant in the southeastern part of the park. In between these two extremes are found variable oak-hickory forests containing a mixture of white oak, black oak, and chestnut oak.[191]

Mammoth Cave National Park has a rich diversity of natural ecological community types, ranging from rich forested slopes to very dry/xeric calcareous glades, including forested bottomland, small-scale ponds, and calcareous seeps. Portions of the upland acreage were cultivated or pastured agricultural land at the time of park establishment, and this land is today occupied by various kinds of successional hardwood or evergreen forests. In addition some of the acreage of the park, particularly around buildings and facilities as well as on the boundary of the park is successional, mowed, or maintained grassland.[192]

The most globally rare communities in the park appear to be the Central Limestone Glade, the Chinquapin Oak Unglaciated Bluff Woodland, the Western Highland Rim Escarpment Post Oak Barrens, the Shumard Oak-Chinquapin Oak Mesic Limestone Forest, and the Highland Rim Limestone Cliff/Talus Seep, and the Southern Red Oak Flatwoods Forest. The first three of these communities are related to exposures of limestone or other habitats favorable for light-demanding plants. These three associations warrant special attention due to their relatively high global rank/rarity and the habitat that they can provide for species ranked globally or locally vulnerable. These communities should be monitored as it is possible that degradation and loses of species diversity may result from woody plant encroachment due to changes in management or natural disturbance regimes. In addition, there are several examples of mesophytic forests and oak-hickory forests that are noteworthy for their intactness and or their maturity. Mammoth Cave National Park is noteworthy for being one of the largest blocks of continuous hardwood forest in the region.[193]

Pathogens and invasive plants have had significant impact on the park forests. Chestnut blight and Dutch elm disease have almost entirely eliminated American chestnut and American elm and the American butternut tree is also currently impacted by a similar disease. In addition, about 14%of the plant species in the park are not native to the region or continent. Many of these species were deliberately planted (including in the cultivated meadows), or are harmless present day components of the flora that found their way into natural areas from plantings, errant seed mixes, or contaminated topsoil brought into the park. However, at least 44 of the 161 exotic species found within the park are considered aggressive invasive species that are severe or significant threats and are actively out-competing and replacing native species in other parts of the Southeast. Invasive species may be the biggest single threat to the overall ecological health of the park at this point in time. In the interior woods and forests, shrubs and vines such as Japanese honeysuckle (*Lonicera japonica*), and multiflora rose (*Rosa multiflora*) have colonized areas of the understory. Most of the floodplains and lower slopes in the park now have large infestations of garlic mustard (*Alliaria petiolata*), ground-ivy (*Glechoma hederacea*), and Japanese stilt grass/Nepalese browntop (*Microstegium vimineum*). Several other species such as chinese privet (*Ligustrum sinense*), sweetclover species (*Melilotus* sp.), sweet autumn virgin's bower (*Clematis ternaflora*), and others may need

191. NatureServe Southeast Regional Office (for the National Park Service), *Vascular Plant Inventory and Plant Community classification for Mammoth Cave National Park,* (NPS, February 2010), 5.
192. Ibid., 21.
193. Ibid.

monitoring and attention to assure they are not spreading.[194]

Because most of the park has been logged at least once, most portions of the existing forests are relatively young and exhibit post-agricultural characteristics representative of secondary succession. Fire suppression and colonization by non-native species have altered natural ecological processes, and the emerging forests are not entirely consistent with pre-settlement communities in terms of structure and composition. One exception to this would be the area known as "Big Woods", described in a variety of sources as an "old growth" forest, or as the "oldest and least disturbed stand of timber within the park's boundaries." Tree age data derived from tree ring counts performed in 1966 and 1985 provide some tree ages in excess of 250 years. In 1988 Kentucky designated the Big Woods a state natural area.[195] Current historical climate projects have analyzed tree cores from older white oaks and tulip poplars. Data points to the park containing the seventh oldest documented white oak (*Quercus alba*) in the eastern United States at 359 years. The analysis of the tulip poplar (*Liriodendron tulipifera*) will be available in late 2014.[196]

In addition to native trees, Mammoth Cave National Park contains a wide variety of wildflowers and native grasses. The river bottoms, narrow valleys, sinks, hillsides and ridgetops of Mammoth Cave National Park are home to more than 60 species of herbaceous wildflowers which start to bloom in late February. Among the species that cover the landscape include spring beauty, twinleaf, hepatica, yellow corydalis, violets, trout lily, bluebells, may-apple, columbine, phlox, wild geranium, Jack-in-the pulpit, trillium, wood poppy, fire pink, larkspur, squirrel corn, wild hyacinth, synandra, coral root orchid, yellow lady slipper, crested dwarf iris, and showy orchid. This display of wildflowers draws visitors to the area each year to see this most spectacular component of the local flora.

A prairie ecosystem exists in the park but is limited to small areas, each no greater than 40 acres. These areas are rich in prairie grasses and forbs such as big bluestem, Indian grass, goldenrod, prairie coneflower, culvers root, purple coneflower, tall coreopsis and species of blazing star, sunflower, and aster. These small areas serve as refuges for species marginalized by conversion of former prairie on the sinkhole plain to agriculture, and by fire suppression within and beyond park boundaries, such as Western dwarf dandelion (*Krigia occidentalis*). The park is the only site in Kentucky where this plant has ever been found.[197]

Wildlife

Mammoth Cave National Park is one of the greatest protectors of biological diversity in Kentucky and is home to over seventy threatened, endangered or state listed species. These species include birds, crustaceans, fish, gastropods, insects, mammals, mussels, plants and reptiles. The caves have more than 130 species that are regular inhabitants within the Mammoth Cave system. The surface landscape contains mammals that are typical of an eastern hardwood forest. Larger mammals include white-tailed deer, fox, raccoon, opossum, woodchuck, beaver, rabbit, bobcats, coyotes, foxes, muskrats, skunks, mink, weasels and squirrel. Smaller mammals such as bats, mice, moles, voles, chipmunks and the Pygmy shrew also inhabit the park. The park reintroduced river otter to this part of the Green River in early 2007.

Bats, the only mammals that truly fly, have inhabited Mammoth Cave for millions of years. As described by the National Park Service in *Wildlife in Mammoth Cave National Park*,

> [o]nly 150 years ago, Indiana bats *(Myotis sodalist)* and to a lesser extent gray bats *(M. grisescens)* were prominent species in Mammoth Cave, but are today listed as

194. Ibid.
195. Ibid., 22.
196. Bobby Carson, SRM Chief at Mammoth Cave National Park.
197. National Park Service, "Mammoth Cave National Park Grasses," http://www.nps.gov/maca/naturescience/grasses.htm. Accessed December 27, 2011.

> endangered. Little brown bats *(M. lucifugus)* were also abundant with the big grown bat *(Eptisecus fuscus),* and [tri-colored bat (formerly called eastern pipstrelle)]*(Pipistrellus subflavus)* being less common. All together, these and more rare bat species such as eastern small-footed bat had estimated populations of 9-12 million just in the Historic Section. While these species still exist in Mammoth Cave, their numbers are now no more than a few thousand at best. Not all bat species in the park inhabit the caves. The red bat *(Lasiurus borealis)* is a forest-dweller, found underground only rarely.[198]

A disease called white-nose syndrome was first identified in 2006 and has since been associated with the deaths of five to six million bats. The syndrome has been linked to a fungus that forms a white covering on bats' muzzles as well as other body parts.

On January 6, 2013, Mammoth Cave National Park Superintendent Sarah Craighead announced that a bat from a cave in the south central Kentucky portion of the park had been confirmed with white-nose syndrome. The bat was found in Long Cave, an undeveloped cave 1. 3 miles long and the park's largest bat hibernaculum. It houses endangered Indiana bats and gray bats, along with other non-threatened species. Long Cave is not connected to Mammoth Cave and has not been open to visitors for more than 80 years. White-nose syndrome is known to be transmitted primarily from bat to bat, but spores of the fungus may be inadvertently carried between caves by humans on clothing, footwear, and caving gear. Significant evidence indicates that humans can and have transmitted the fungus from one cave to another, hastening its spread. While no tours at Mammoth Cave National Park enter areas used by colonies of bats for hibernation, bats do occasionally fly through toured sections of the cave year-round. Due to the spread of the disease in other states, the confirmed presence of the disease in Mammoth Cave National Park and the potential lethal consequences to the bat populations, decontamination procedures to prevent spread of the fungal spores by humans continues as all visitors leave cave tours. These procedures were adopted more than two years ago as white-nose syndrome was decimating bat populations in the northeast. Mammoth Cave National Park implemented such procedures years ahead of any actual finding of white-nose syndrome in the park. Evident at the Historic Entrance are efforts to curtail the spread of the disease by visitors to the cave (Figure 93). Nylon bio-security mats saturated in a solution of Woolite, which is a laundry cleaning solution, have been installed at the Historic Entrance and at the visitor center for tours returning by bus. Visitors are required to walk the length of the bio-security mats after exiting the cave. Visitors are also encouraged to visit the white-nose syndrome station at the visitor center to learn more about the disease and the efforts of the park to curtail its devastation.[199]



FIGURE 93. Bio-security mats at the Historic Entrance.

198. National Park Service, "Wildlife of Mammoth Cave National Park" www.nps.gov/maca/naturescience/mammals.htm.Accessed December 12, 2001.

199. National Park Service, "White-Nose Syndrome Confirmed in Park Batswww.nps.gov/maca/whitenose. Accessed April 2013.

An abundance of bird species are present in the larger park and in the vicinity of the Core Visitor Services Area. Birds such as mourning doves, whip-poor-wills, owls, hawks, woodpeckers, grebes, herons, geese, ducks, vultures, bald eagles, quail, sandpipers, hummingbirds, kingfishers, flycatchers, crows, blue jays, chickadees, titmice, nuthatches, wrens, thrushes, catbirds, starlings, vireos, wood warblers, tanagers, cardinals, sparrows, blackbirds, and finches inhabit the forests surrounding the area. Wild turkeys, which were rare in the park by the mid-twentieth century, were reintroduced in 1983.

Other wildlife that inhabit the forests, rivers, caves and streams that are contiguous to the Core Visitors Service Area include the following:

Mollusks. The Green River which borders the Visitor Core and Services area contains the most diverse population of freshwater mussels in North America, and one of the most diverse populations in the world. Among the species found in the river are the ring pink, rough pigtoe, pistolgrip, fatmucket, spectaclecase, plain pocketbook, washboard, sheepnose, and snuffbox. Several of the mussel species are federally endangered. A snail (*Antroselates spiralis*) is also found in cave environments.[200]

Reptiles. The Park contains a wide array of lizards, turtle, and snakes. Species of lizards include fence lizard, slender glass lizard, six-lined racerunner, ground skink, coal lizard, five-lined skink, and broad-headed skink. Turtle species include stinkpot, snapping turtle, Eastern box turtle, map turtle, slider, red-eared turtle, smooth softshell turtle, and Eastern spiny softshell. Snakes include worm snake, Northern ringneck snake, hognose snake, rough green snake, Northern black racer, Northern copperhead, and timber rattlesnake. [201]

Amphibians. The park contains a variety of salamanders, toads, and frogs. Toad species include the Eastern spadefoot toad, American toad, and Fowler's toad. Frog species include Southern cricket, mountain chorus, spring peeper, gray treefrog, bullfrog, green frog, pickerel frog, leopard frog, wood frog, Eastern narrow-mouthed toad. Several salamander species include mudpuppy, hellbender, red spotted newt, Jefferson salamander, spotted salamander, marbled salamander, Northern red, Eastern mud, cave salamander and small-mouthed salamander.[202]

Crustaceans. The endangered Kentucky cave shrimp (*Palaemonias ganteri*) is found only in base level streams. Cave crayfish (*Orconectes pellucidus*) occupies habitats ranging from base level to tiny streams, and can travel out of water if necessary. The troglophilic or partially cave adapted amphipod (*Crangonyx packardi*) and the crayfish (*Cambarus tenebrosus*) often occur in organically rich situations.[203]

Fish. Common fish found in the Green River include: black crappie, white crappie, yellow perch, channel catfish, bullhead catfish, largemouth bass, smallmouth bass, bluegill, and Northern pike. The most unusual fish are cave-adapted species known generally as eyeless fish. They have adapted to lightless, low-energy environments by ceasing to grow eye structures and unnecessary skin pigments.[204] The sculpin (*Cottus carolinae*) and the springfish (*Chologaster agassizi*) are examples of cave fish native to the underground rivers in Mammoth Cave.

200. National Park Service, "Mammoth Cave National Park – Mollusks" www.nps.gov/maca/naturescience/mollusks.Accessed December 15, 2011.
201. National Park Service, "Mammoth Cave National Park – Reptiles" www.nps.gov/maca/naturescience/reptiles.Accessed December 15, 2011.
202. National Park Service, "Mammoth Cave National Park – Amphibians" www.nps.gov/maca/naturescience/amphibians. Accessed December 19, 2011.
203. National Park Service, "Mammoth Cave National Park – Crustaceans" www.nps.gov/maca/naturescience/crustaceans. Accessed December 19, 2011.
204. National Park Service, "Mammoth Cave National Park – Fish" www.nps.gov/maca/naturescience/fish.Accessed December 20, 2011.

Insects, Spiders, Centipedes, Millipedes. At cave entrances are found the collembolans or springtails (genera *Tomocerus*, *Hypogastrura*, *Sinella*, and *Arrhopalites*). Predators include the beetle (*Pseudanophthalmus* spp.) and a rhagidid mite. The cave cricket (*Hadenoecus subterraneus*) exists in sandy passages with moderate moisture in the constant temperature zone of the cave, and the blind cave beetle (*Neaphaenops tellkampfii*) feeds on their eggs. After cave crickets, this beetle has the highest density of any species in Mammoth Cave.[205]

Climate

Mammoth Cave National Park has a relatively moderate climate with frequent warm and humid conditions. Summers can be hot and humid with highs in the 80s and 90s. Winters are cool but not unusually cold with average high temperatures in the 30s and 40s. Through most of Kentucky, the average precipitation is 52.2 inches and mainly occurs in the spring which is the rainiest season.

Thunderstorms occur on about 40 days each year, most in July. The average seasonal snowfall is 11.8 inches. The greatest snow accumulation depth at any one time during the period of record was 14 inches, recorded on November 2, 1966. On an average, eleven days per year have at least 1 inch of snow on the ground. The heaviest one-day snowfall on record was 16 inches, recorded in March 1960.[206] The average relative humidity in mid-afternoon is about 58 percent. Humidity is higher at night, and the average at dawn is about 81 percent. The sun shines 67 percent of the time in summer and 42 percent in winter. The prevailing wind is from the south and average wind speed is highest, 9.2 miles per hour, in January.[207]

Generally, the air temperature inside Mammoth Cave averages 54 degrees year round. In summer the cooler air at the cave entrances, most significantly at the Historic Entrance, provides visitors with welcome relief from hot and humid conditions on trails and the developed areas of the visitor center, hotel, and associated parking (Figure 94 and Figure 95).



FIGURE 94. Historic Entrance in the Core Visitor Services Area.



FIGURE 95. Interpretation at the Historic Entrance references thousands of years of constant cave temperatures.

205. National Park Service, "Mammoth Cave National Park – Insects, Spiders, Centipedes, Millipede" www.nps.gov/maca/naturescience/insectsspiderscentipedesmillipedes.Accessed December 20, 2011.

206. Depending on the method of snowfall measurement, the amount of snowfall may be more than the amount of accumulation.

207. USDA, NRCS, and NPS and Kentucky Agricultural Experiment Station, *Soil Survey of Mammoth Cave National Park, Kentucky,* 5.

Cultural Context and Setting

Refer to Figure 96, Regional Map with Features and Transportation Corridors.

Mammoth Cave National Park is located approximately 100 miles from Louisville, Kentucky, and 100 miles from Nashville, Tennessee. Its boundaries extend into the counties of Edmonson, Hart, and Barren in Kentucky. The park is a major tourist destination with easy access from Interstate 65, which connects Louisville and Nashville. It is one of five National Park Service sites in Kentucky; the other four include: Big South Fork National River and Recreation Area, Cumberland Gap National Historic Park, Abraham Lincoln Birthplace National Historical Park and the Trail of Tears National Historical Trail.

The region surrounding Mammoth Cave National Park is generally rural, with cave tourist destinations and other recreation facilities. The area is called "Cave Country," and is known for its natural beauty and recreation in six Kentucky state parks including: Lake Cumberland State Resort Park, Nolin Lake State Park, Barren River Lake State Resort Park, Dale Hollow State Resort Park, General Burnside Island State Park, and Green River Lake State Park. The region also contains Cedars of Lebanon State Park and Standing Stone State Park in Tennessee.

Mammoth Cave National Park encompasses one fourth of the land area in Edmonson County. Edmonson County and the adjacent Warren County make up the Bowling Green Metropolitan Statistical Area, a geographical region defined by the U.S. Census Bureau. The population of Edmonson County was 12,161 in 2010. The county seat is Brownsville. Kentucky State Highway 70 is the primary west to east route traversing the county and KY 101/259 is the main north south route.

Part of the designation of Mammoth Cave National Park as a Biosphere Reserve is the mandate to fulfill three basic functions, including: conservation of important biological resources; development of environmentally sound economic growth; and support for research, monitoring, education, and information exchange related to conservation issues. The context and setting for the Biosphere Reserve are organized into three interrelated zones, the core area, the zone of cooperation, and the transition area. The core area is legally protected from activity which would adversely affect its natural features. This area could be used for such activities as hiking, birdwatching, educational field trips, scientific research, and monitoring of plant and animal life. The zone of cooperation is an "adjacent managed use area" that might be used for lumbering, grazing, and fishing activities, settlements, and recreational facilities managed to benefit local residents and the local environment. The transition zone is the larger region in which local residents, cultural groups, economic interests, scientists or managing agencies would together link conservation and economic development guided by the cultural values of the local community. In the Mammoth Cave Area International Biosphere Reserve, the core area is Mammoth Cave National Park (52,830 acres); the zone of cooperation is 94,365 acres to the immediate north and south of the park; and the transition zone is 762,133 acres in Edmonson, Hart, Barren, Metcalfe, Warren, and Butler Counties.[208]

208. Mammoth Cave Biosphere Reserve: www.bradd.org/indes.php/mammoth-cave-area-bioshpere-reserve.html.

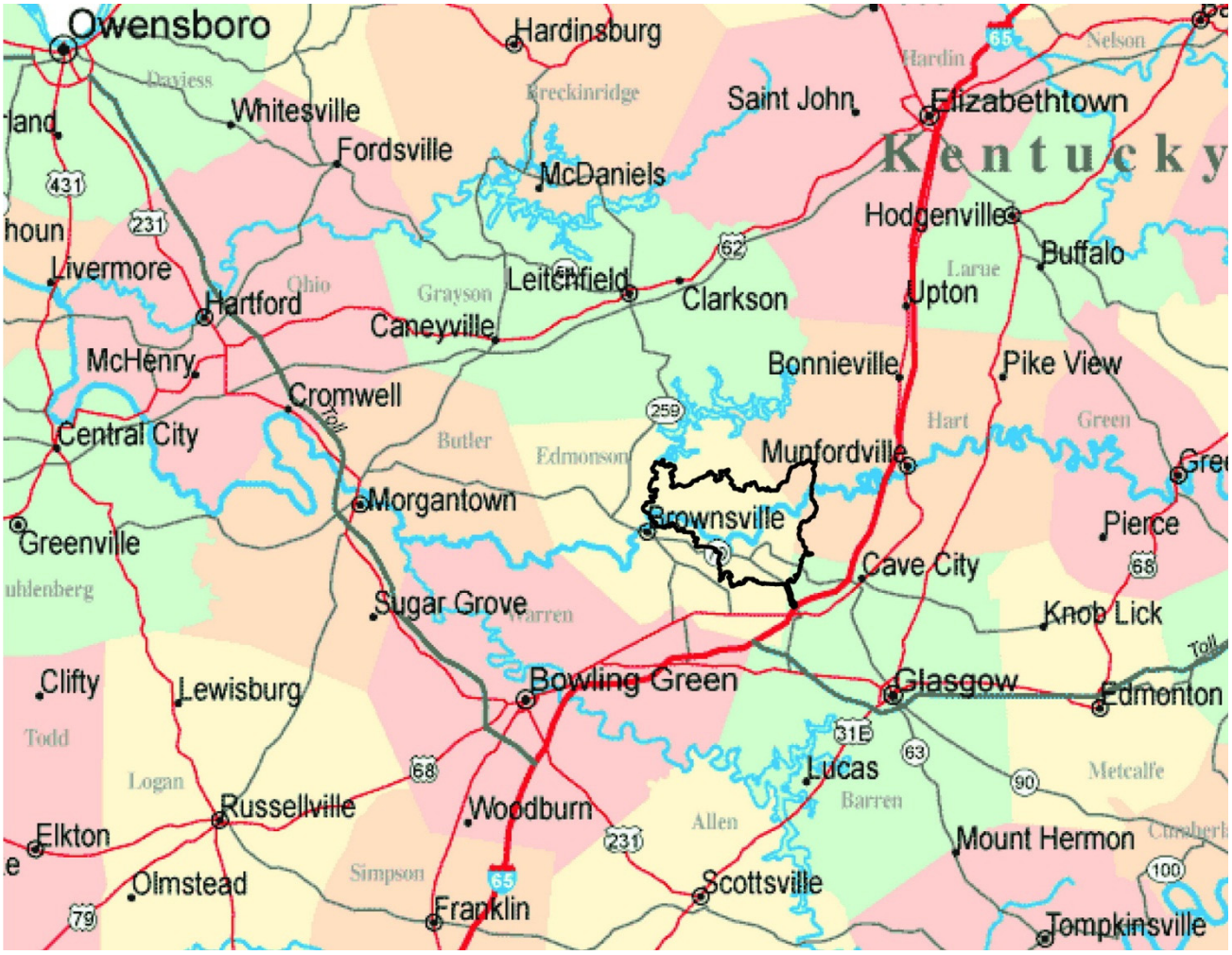


FIGURE 96. Regional map with features and transportation corridors.

Site-Wide Landscape Systems and Features

As noted above, the Core Visitor Services Area consists of approximately 500 acres and serves as the major aboveground contact area for visitors to Mammoth Cave National Park. The area contains natural and cultural resources as well as the visitor center, hotel and cottage lodging complex with associated roads, parking and visitor amenities, including the picnic area and campground.

Two of the boundaries of the core area are defined by natural features. The Green River forms its western boundary and the Green River Bluffs form its northern boundary. Specifically, the manmade Green River Bluffs Trail forms the northern boundary. The Green River is the main waterway in the park. The groundwater that flows into the Green River exits the cave system from numerous springs. The most notable springs in the study area are the River Styx Spring and Echo River Spring. Both are located within the Core Visitor Service Area and are features along the interpretive trail system. The Green River Ferry Crossing, located in the Core Visitor Service Area, connects the North Entrance Road to the park and the Green River Ferry Road. This road forms the southern boundary of the core area.

The Green River Bluffs rise above the river and form the northern boundary of the Core Visitor Service Area. There is access to the bluffs via a trailhead from the picnic area. Spectacular views to the river valley are interpreted and described to hikers along the trail.

The most notable natural resource within the Core Visitor Services Area is the Historic Entrance to Mammoth Cave and the miles of cave passages underneath the ground. The developed complex of the visitor center and the hotel allow easy access to the Historic Entrance via a short walk on the Historic Entrance Road and/or the Old Guide's Trail from the hotel to the Historic Entrance. Other cave entrances located within the core area include Dixon Cave, and White Cave. Dixon Cave and White Cave are interpreted features on the trail system within the area, but not accessible to visitors. The YMCA Cave is located within a steep embankment adjacent to the Green River Ferry Road near the ferry crossing. This cave is located outside the study area boundary and is also closed to visitors.

Upon entering the Core Visitor Services Area from the south on Mammoth Cave Parkway, the campground and service center/store is the first developed area encountered west of the parkway. The campground is composed of four loop roads with pull-in parking for camp sites, comfort stations, picnic tables and grills, and pathways and trails to the campfire circle, amphitheater, camp store, shower facilities, and U.S. Post Office. A kiosk sits at the entrance to the campground. The loop roads wind through native woodland trees, which provide canopy for the campsites.

Farther north and west on the parkway, is the entrance to the main hotel and Heritage Trail Rooms, Sunset Lodge, Deluxe Cottages, and associated parking. Other features and amenities associated with the hotel complex include restaurants, gift shops, staff dormitory, pet kennels, tennis courts, shuffleboard courts, and the surrounding wooded landscape. Additional overnight accommodations are provided in the Woodland Cottages located north of the visitor center parking lot and accessed by a spur road from the parking area.

From the hotel entrance, the parkway continues north directly to the parking lot for the visitor center. As well as parking, the visitor center area provides a bus passenger drop-off and tour shelters. The visitor center is connected to the main hotel lodge by a concrete pedestrian bridge.

The picnic area within the Core Visitor Services Area is located north of the visitor center parking lot. It is composed of both straight and curvilinear roads, parking, picnic tables and grills set underneath native woodland tree canopies, a comfort station, two open-sided picnic shelters, an enclosed picnic shelter, and the Earth House. A gated road allows vehicular access to the area. The Woodland Cottages mentioned above are adjacent to this access road. There is easy pedestrian access

to the picnic area from the Woodland Cottages and from the visitor center parking lot.

A trail system winds throughout the landscape within the Core Visitor Services Area, connecting major natural and cultural features with the visitor center, visitor hotel accommodations, picnic area and campground. The trails include: the Green River Bluffs Trail, with access from a trailhead in the picnic area; the Heritage Trail, accessed from the visitor center via the pedestrian bridge to the main hotel lodge, and leading to the Old Guide's Cemetery and Sunset Point; the Historic Entrance Road, accessed from the visitor center and leading to the Historic Entrance, the River Styx Spring and the old ferry crossing; the Dixon Cave Trail; the Echo River Spring Trail; the Mammoth Dome Sink Trail; and White Cave Trail. There is also the beginning of the Mammoth Cave Railroad Bike and Hike Trail to Park City, accessed from the main hotel lodge parking lot. This multi-purpose trail runs directly by the Engine No. 4 and Coach No. 2 interpretive exhibit and remnant railroad bed.

Buildings are served by several waste water lift, or pumping, stations throughout the Core Visitor Services Area. The abandoned chlorinator house, the only remaining CCC-era building associated with the former water supply and treatment system, is located along the Echo River Spring Trail.

Site-wide Condition Assessment

In general, most of the features of the Core Visitor Services Area are maintained in very good condition. Exceptions include the asphalt path in the picnic area, which is broken in places and undulating due to tree roots, erosion under and around the picnic tables and grills, an exposed pipe across the gravel path north of the comfort station at the intersection with the loop road, and a broken curb stop. There is also broken asphalt on a pathway in the campground leading to a comfort station, and the gravel path to the campfire circle and amphitheater has deep gullies due to erosion associated with storm water. There is a similar condition on the Green River Bluffs Trail where a gully has formed down the center of the gravel path.

Landscape Character Areas

Refer to Figure 97, Character Areas.

For the purposes of organizing the documentation of existing conditions as well as later sections of the CLR, the Core Visitor Services Area has been divided into a series of discrete character areas that share similar traits or are unified by land use, topography, vegetative character, or historic associations.

Descriptions of the landscape resources present within the Core Visitor Services Area are conveyed below by character area. The character areas are numbered one through seven on the character area map. The seven character areas comprising the Core Visitor Services Area include:

Character Area 1: Historic Core Landscape

The Historic Core Landscape Character Area is bounded by Mammoth Cave Parkway, the main hotel parking area, the campground store/service area and steeply wooded slopes to the south. It includes the site of the second hotel, constructed in 1925 and demolished in 1979. The Historic Core Landscape is the site of the large cedar groves that once lined the original access road to the Mammoth Cave Hotel. The landscape also includes the Deluxe Cottages. The site of the circa 1920s and 1930s archway entrance to Mammoth Cave is in this character area, along with the Engine No. 4 and Coach No. 2 interpretive exhibit and remnant railroad bed. The Historic Core contains numerous historic features that have survived from the over-arching period of significance.

Character Area 2: Picnic Area and Woodland Cottages

The Picnic Area and Woodland Cottages Character Area is located to the north of the visitor center complex and parking lot; it is generally bounded by the visitor center parking lot to the south and wooded slopes and bluffs to the north, east and west. This character area is accessed from Mammoth Cave Parkway which leads to the visitor center parking lot. The Woodland Cottages and associated parking are accessed via an entrance drive just east of the cottages. The Woodland Cottages provide lodging for guests and are clustered together with connecting asphalt paths. Large deciduous trees are scattered in the small grass yards of the structures. The picnic ground is adjacent to the Woodland Cottages, though screened by woodland vegetation.

The paved and gated entrance road has two loops with associated parking and scattered picnic tables and grills. The picnic area also contains a comfort station, two picnic shelters, an enclosed picnic shelter building, and the Earth House. The original portion of the Earth House was built by the CCC as a comfort station for the New Deal-era campground.

Character Area 3: Historic Entrance and Old Guide's Cemetery

This character area contains both the Historic Entrance to Mammoth Cave and the Old Guide's Cemetery. The Historic Entrance to Mammoth Cave is the original visitor entrance to the cave. It is accessed via the Historic Entrance Road, a hard-surface trail with curbs from the visitor center which becomes the River Styx Spring Trail immediately beyond the Historic Entrance. The Historic Entrance can also be reached by a trail immediately south of the Heritage Trail Rooms wing of the hotel. This trail may be the historic Old Guide's Trail from the old hotel to the Historic Entrance. It is not certain if the current trail follows the original alignment or if it was moved uphill and assumed a different alignment. The Historic Entrance is also the site of a previous boiler/furnace area that transformed nitre into saltpetre. These structures are visible in several early etchings of the cave entrance. The Historic Entrance includes landings, retaining walls, stairways, and paths that eventually lead into the cave. Benches and interpretive signage are also provided. Due to white-nose syndrome, the entrance/exit area now includes nylon mats saturated in a cleaning solution comparable to that used in home cleaning. Visitors are required to walk the length of the bio-security mats after exiting the cave.

Located on a hill above the Historic Entrance, the Old Guide's Cemetery contains the grave of the famous cave guide, Stephen Bishop, who died in 1857. The cemetery probably began as an itinerant cemetery and may even include members of the first family who owned the property. There is at least one other slave buried in the same row as Stephen Bishop. It also contains the graves of former tuberculosis patients, who died during an 1842–1843 experiment which attempted to establish a medical use for the cave. The Old Guide's Cemetery is part of the Heritage Trail loop and is accessible via the visitor center or the hotel.

Character Area 4: Campground

The campground is accessed from Mammoth Cave Parkway, northwest of the Green River Ferry Road intersection. The campground includes a kiosk at its entrance and four loop roads with pull offs for camping sites as well as picnic tables, grills, and comfort stations with connecting pathways to the paved roads. This character area also includes the service center building which houses the post office, camp store, and concession business offices. A trail from Loop D of the campground leads campers to the campfire circle and eventually to the new and larger amphitheater. This trail also connects to White Cave Trail, which meanders west of the campground toward the entrance to White Cave and connection with the greater trail system.

Character Area 5: Mammoth Cave Hotel and Lodging

This area consists of the existing Mammoth Cave Main Hotel Lodge, Heritage Trail Rooms wing, Sunset Lodge, concessionaire dormitory and laundry, pet kennels, and associated parking and pathways. A pedestrian bridge connects the visitor center to the hotel. Guests staying in the Heritage Trail Rooms have easy access to the Heritage Trail. This trail runs between the hotel and the ravine leading to the Historic Entrance and continues to the trailhead directing visitors to the Old Guide's Cemetery. At the western end of the Sunset Lodge parking is additional parking for access to the Heritage Trail trailhead, which takes visitors to the Old Guide's Cemetery, Sunset Point, and intersections with the Echo River Spring Trail and the Mammoth Dome Sink Trail. The existing hotel and possibly some of the associated vehicular circulation and parking in this character area are located on the site of the first hotel at Mammoth Cave. There are no above-ground historical features of the first hotel structure and any associated structures or landscape that survive today, but there are archeological sites present in this character area.

Character Area 6: Visitor Center Complex

The Visitor Center Complex Character Area is accessed from Mammoth Cave Parkway. Features of this area include the visitor center building, tour shelters, parking, bus loop drive, associated walkways, the concrete pedestrian bridge to the hotel and paths leading to the Historic Entrance, the main hotel lodge, and the Heritage Trail.

Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances

This character area is composed of features surrounding the developed landscape of the hotel and visitor center and within the boundaries of the Core Visitor Services Area. Features include the extensive trail system associated with the visitor center area, roads and road traces, the old ferry crossing and the existing Green River Ferry crossing and two cave entrances, Dixon Cave and White Cave. Most of this area is characterized by dense woodland tree cover, spectacular views to the Green River Valley and the access to the Green River.

Descriptions of the landscape resources present within the Core Visitor Services Area are conveyed below by character area.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Character Areas

1. Historic Core Landscape
2. Picnic Area & Woodland Cottages
3. Historic Entrance & Old Guide's Cemetery
4. Campground
5. Mammoth Cave Hotel & Lodging
6. Visitor Center Complex
7. Trails, Traces, Roads, Ferry Crossings, & Cave Entrances

Green River
Picnic Area
Woodland Cottages
Flint Ridge Road
Mammoth Cave Visitor Center
Mammoth Cave Hotel
Detailed information not available outside this line
Detailed information not available outside this line
Engine No. 4 Shelter
Residential Area
Sunset Lodge
Campground
Deluxe Cottages
Maintenance Area
Maintenance Road
Green River Ferry
Green River Ferry Road
Mammoth Cave Parkway
Joppa Ridge Road
0' 450' 700'
SCALE 1" = 700'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 97.
Character Areas

Nov 06, 2015 - 11:01am G:\PROJECTS\Mammoth Cave CLR\Planning\AutoCAD\Active\MACA_Base36Lwith new VC.dwg

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Mammoth Cave Hotel
Bus loop
Mammoth Cave Railroad Bike and Hike Trail–Visitor Center Access Trail
Mammoth Cave Parkway
Split-rail fence
Tennis courts surrounded by 10' chain link fence
Gravel drive
Mammoth Cave Railroad Bike and Hike Trail
Portions of walkway paved in asphalt
Eastern red cedars
Shuffleboard courts and scoreboards
Boardwalk
Engine No. 4 and Coach No. 2 shelter
Site of former hotel (now overflow parking)
Utility pole
Fire hydrant
Concrete manhole cover
Trace of old entrance road (State Route No. 70)
Gravel access road
Stands of large trees, including Eastern red cedars
Concrete walkway
Hitching post
Lift station
Foot bridge
Concrete walkway
Concrete path lined with low bollard lights
Amphitheater
Grouping of utility boxes
Utility box
Deluxe Cottages with stone landings
Recycled plastic boardwalk
740
750
730
720
710
700
690
680
670
0' 50' 100'
SCALE 1" = 100'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 98.

Existing Conditions

Character Area 1: Historic Core

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Existing Conditions Documentation by Landscape Character Area

Character Area 1: Historic Core Landscape

See Figure 98, Character Area 1: Historic Core Landscape Existing Conditions.

The Historic Core Landscape Character Area contains the site of the second hotel, which was built starting in 1925 and demolished in 1978–1979. This landscape also includes the Deluxe Cottages (hotel cottages 1938–1939), the site of the circa 1920s and 1930s arch entrance to Mammoth Cave, and the Engine No. 4 and Coach No. 2 interpretive exhibit and shelter. There are also extant tennis courts and shuffleboard courts, the amphitheater, large stands of cedar trees and mature deciduous trees, paved pathways, and the trailhead and first segment for the Mammoth Cave Railroad Bike and Hike Trail.

Resources present within Character Area 1 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

This area is characterized by the large landscape with relatively few structures, beautiful stands of old cedar trees, and a maintained lawn. Large deciduous trees are also scattered over the gently rolling topography. The Deluxe Cottages, recreational features, and the train shelter/exhibit are sited on a gently rolling ridge above steep slopes to the south and southwest. The amphitheater is sited on a natural incline that slopes to the southwest and functions as a stage and gathering area for visitors.

This area was the site of the first and second hotels, the former entrance road to Mammoth Cave Hotel, a railroad terminus near the hotel, and cultural vegetation that gives clues to the location of the previous hotel structures. This landscape area is surrounded by woodland vegetation to the south and southwest on the steep slopes descending from the ridge.

Responses to Natural Resources

The main response to natural resources in this character area is the construction of pedestrian bridges and boardwalks along trails, which traverse drainage ditches and low wet areas. Boardwalks are located along the Mammoth Cave Railroad Bike and Hike Trail, along the trail between the train exhibit and the hotel parking lot, and along the trail between the amphitheater and the campground.

Patterns of Spatial Organization

This character area is organized by the patterns of open lawn and stands of large trees. The large expanse of landscape has gently rolling topography covered with mown grass extending to the west from the camp store and service center parking lot to the edge of the entrance road, to the hotel and the hotel parking lot (Figure 99 and Figure 100). The same pattern continues west and includes the area of the tennis and shuffleboard courts (Figure 101 and Figure 102). The old entrance road trace is evident in this character area as is the site of the second hotel. The open space and vegetation clearly define these historic landscape uses.



FIGURE 99. Relatively level topography with gently slopes and expanses of mown lawn.



FIGURE 100. The landscape expands to the hotel parking lot.



FIGURE 101. The character is organized by the expanses of mown lawn surrounded by stands of trees.



FIGURE 102. The same pattern extends to the tennis courts and shuffleboard area.

Smaller landscape spaces are created by the semi-circular siting of the Deluxe Cottages with dense woodland vegetation behind and open lawn in front with a scattering of large trees (Figure 103). This creates a sense of place or destination for the cottages and the site. A similar condition exists in the area of the tennis and shuffleboard courts (Figure 104). The amphitheater also defines a smaller space within the larger landscape (Figure 105).



FIGURE 103. The semi-circular siting of the Deluxe Cottages creates a smaller landscape space within the character area.



FIGURE 104. A smaller landscape space is also created by the shuffleboard and tennis courts.



FIGURE 105. The amphitheater is located east of the Deluxe Cottages.

Topographic Modifications

Topographic modifications evident in this character area have occurred due to general grading required to construct features in the landscape including: structures, trails, paths, roads, and recreational resources. Grading was required to accommodate the train exhibit shelter, pathways, the Deluxe Cottages, tennis courts and shuffleboard courts and the amphitheater. Grading also occurred for the Mammoth Cave Railroad Bike and Hike Trail and the old railroad bed. There is also topographic modification evident on the old entrance road trace and the site of the second hotel built in 1925.

Land Uses and Activities

Land uses in this character area include visitor services, exhibit/interpretation, and recreation. Overnight lodging is provided in the Deluxe Cottages with easy access on a footpath to the hotel parking lot. Opportunities for outdoor entertainment and gatherings are provided at the amphitheater, east of the Deluxe Cottages. There are recreational facilities in this character area including the tennis courts and the shuffleboard courts. Other more passive recreation is provided with walking paths through the open landscape. This area also contains the beginning of the Mammoth Cave Railroad Bike and Hike Trail that connects to Park City.

The Engine No. 4 and Coach No. 2 exhibit, shelter, and interpretation are also located in this character area. The walking path connecting the camp store and service center and the hotel parking lot passes the exhibit and provides access for visitors around the exhibit shelter.

Circulation

Active vehicular circulation in this character area is limited to short gravel service drives in the vicinity of the tennis and shuffleboard courts. There are traces of two roads in this area, including the original hotel entrance road. The area remains relatively uncluttered, but not without pressure from the expanded parking lot for the hotel. Pavement already covers some archeological sites associated with the first hotel and support structures once located in the adjacent Character Area 5. There is a group of archeological sites associated with the first hotel, the remains of which underlie the southern part of the existing parking lot. The site is currently classified as stable and in good condition as it is protected by the overlying parking lot pavement. (Refer to Character Area 5 Archeological Sites.)

The trailhead and first segment of the nine-mile Mammoth Cave Bike and Hike Trail to Park City is located in this character area (Figure 106and refer to Figure 99). The trail follows remaining portions of the old berm of the Mammoth Cave Railroad. It is constructed with exposed aggregate concrete and is 8 feet wide. The trailhead is located at the north border of the character area immediately adjacent to the hotel parking lot. It is marked with a bollard, to prevent vehicular access to the trail (Figure 107).



FIGURE 106. The nine-mile Mammoth Cave Railroad Bike and Hike Trail starts within this character area.



FIGURE 107. A bollard prevents vehicular access to the Mammoth Cave Railroad Bike and Hike Trail.

A concrete-paved pedestrian walkway connects the hotel parking lot, the camp store and service center parking lot and the amphitheater (Figure 108). The walkway forms a loop within the character area and provides access to and around the train exhibit (Figure 109). This trail is 4 feet wide and paved with concrete. There are two access spurs for this trail from the camp store and service center parking lot. A portion of one spur is lined on one side by a low concrete block retaining wall (Figure 110). At the intersection of the entrance spurs, the walkway branches into a loop, leading northwest to the train exhibit and hotel parking lot and west toward the amphitheater (Figure 111).



FIGURE 108. A concrete-paved pedestrian walkway connecting to the hotel parking lot.



FIGURE 109. Concrete-paved walkway providing access to the train exhibit.



FIGURE 110. A portion of the walkway from the camp store and service center parking lot has stone curbing.



FIGURE 111. The walkway divides, with one branch leading to the amphitheater and the other leading to the train exhibit.

There is a smaller paved trail that connects the hotel parking lot to and around the Deluxe Cottages, with a spur to the amphitheater (refer to Figure 101). Approximately one third of this trail is paved with asphalt and is generally 3 feet wide (refer to Figure 105). The portion of the trail around the Deluxe Cottages is paved with concrete (Figure 112).



FIGURE 112. A portion of the trail around the Deluxe Cottages is paved in concrete.

Vegetation

Large stands of Eastern red cedars and large deciduous trees characterize this area (Figure 113). The trees stand majestically in the open grassy landscape and are indicators of historical land uses within this character area (Figure 114). Eastern red cedars *(Juniperius virginiana)* occur in groves, but also there are very old individual trees, including several at the site of the second hotel (Figure 115).



FIGURE 113. Groups of large trees stand in the grassy landscape.



FIGURE 114. Stands of large cedar and other deciduous trees.



FIGURE 116. Large deciduous trees near the site of the second hotel, demolished in 1978–1979.



FIGURE 115. There are groves of large cedars and other old individual trees.



FIGURE 117. Sugar maples and red maples line the fence separating the historic landscape core and the hotel parking lot.

Large deciduous trees are scattered throughout this character area, including varieties of oak and hickories, as well as the Eastern red cedars and pines. Most notable are the large sycamores *(Platanus occidentalis)* and tulip poplar *(Liriodendron tulipifera)* near the site of the old hotel (Figure 116). Also sugar maples *(Acer saccharum)* and red maples *(A. rubrum)* line the recently constructed fence separating the historic landscape core from the parking lot for the hotel (Figure 117).

A variety of large trees shade the tennis court/shuffleboard court area (Figure 118). They include Eastern red cedar, persimmon *(Diospyros virginiana)*, walnut *(Juglans nigra)*, and sycamore. Some of these trees are in very poor condition or dead due to disease, weather damage or other causes. Replacement should be considered and is discussed at length in the Treatment chapter of this report. Also, numerous dogwood and redbud trees are gone as well as several large cedar trees and other deciduous trees.



FIGURE 118. Several of the trees around the shuffleboard court are in poor condition.

Large trees also shade the Deluxe Cottages (refer to Figure 103). Species there include Eastern red cedar, white oak (*Quercus alba*), post oak (*Q. stellata*), scarlet oak (*Q. coccinea*), white ash (*Fraxinus americana*), and pines. Ornamental plantings, mainly yucca (*Yucca filamentosa*) associated with the foundations and yards of the cottages (Figure 119). Dense woodland vegetation surrounds the cottage semi-circle to the south and beyond the cottage walkways.



FIGURE 119. Yucca and red cedar associated with a cottage.

Buildings and Structures

Deluxe Cottages. (Structures No. 008 to No. 017) Situated southeast of the Mammoth Cave Hotel are ten identical one-room structures referred to as the Deluxe Cottages (Figure 120). Each cottage, rectangular in plan, has a gable roof covered with asphalt shingles, with exposed rafter ends at the eaves. The one-story clapboard-sided buildings each sit on a stone foundation with a stone stoop at the front entrance. A six-panel wood door leads to the interior of each building, with a wood six-over-six double-hung window to its right. Three additional wood double-hung windows are present on each building, one on each elevation. Storm windows have been installed over the wood windows. There is a louvered wood vent at each gable end. Aluminum gutters without a downspout are installed over the door and stone stoop. Widespread paint failure is present on the buildings, and the stone stoops are generally no longer level.



FIGURE 120. A view of two of the ten Deluxe Cottages.

The Engine No. 4 and Coach No. 2 Pavilion. The historic Engine No. 4 and Coach No. 2 (LCS ID 5004, Structure No. HS-1) are housed in an open-air, steel- and wood-framed pavilion (Structure No. 101,Figure 121). Eight steel-tube columns support two steel beams on which the wood-framed roof of the pavilion sits. The underside of the roof is clad in wood, while a metal fascia piece partially covers the wood fascia. The locomotive and coach sit on a short segment of steel rails with a gravel bed. (Based on available historic maps, the remnant railroad bed seems to be located at the original terminus of the Mammoth Cave Railroad.) A metal fence encloses the space, keeping visitors from approaching the train.



FIGURE 121. The steel and wood frame pavilion that protects the historic Engine No. 4 and Coach No. 2.

Lift Station. (Structure No. 415) Situated along the gravel road west of the Deluxe Cottages, the lift station is a small wood frame structure, rectangular in plan. The building is clad with wood siding and has an asphalt shingle, gable roof. The structure sits on a concrete slab foundation.



FIGURE 122. Lift station west of the Deluxe Cottages.

Amphitheater. (Structure No. 018) The amphitheater is composed of a seating area and a stage (Figure 123). The stage, which is trapezoidal in plan, has a shed roof covered with asphalt shingles. The walls are clad with wood board-and-batten siding. An overhead metal door conceals the proscenium when the space is not being used. A low stone wall separates the stage from the seating area of the amphitheater, which is paved with concrete. There are sixteen rows of seating situated in three sections at the amphitheater. The majority of the seating consists of plastic lumber benches supported by stainless steel posts. In the center section, the first seven rows of seating include benches with backs. A set of short stone walls and aluminum railings define a ramp on the north side of the amphitheater, installed to make the space universally accessible.



FIGURE 123. A view of the amphitheater stage with seating in the foreground.

Tennis courts and shuffleboard courts. This character area contains standard-sized tennis courts and shuffleboard courts. The shuffleboard courts are constructed with a foundation of 4 inches of well tamped cinders, 4 inches of concrete, and a surface of 2 inches of fine trowel finished concrete. They are located east of the tennis courts near the site of the old hotel(refer to Figure 68). There are large scoreboard signs that accompany the shuffleboard courts. One of the scoreboards has fallen off its posts.

The tennis courts have asphalt surfacing. A chain link fence surrounds the courts. The court is also used for basketball with portable goals on either end (Figure 124). There are presently no plans for the park to rehabilitate the tennis courts or the shuffleboard courts and scoreboard.



FIGURE 124. The tennis courts, with the shuffleboard courts in the foreground.

Boardwalks. There are three boardwalk segments in this character area that cross low, wet areas. A boardwalk that is part of the Mammoth Cave Railroad Bike and Hike Trail crosses a grass drainage ditch as it exits the character area and intersects with the camp store and service center circulation (Figure 125). Another boardwalk crosses a stretch of low wet landscape along the path from the camp store and service center parking lot, past the train exhibit to the hotel parking lot (Figure 126). A third boardwalk traverses a portion of the trail from the campground to the amphitheater (Figure 127). These boardwalks are elevated slightly off the ground and are constructed of recycled plastic planking with wood supports and edging.



FIGURE 125. A boardwalk crosses a drainage ditch along the Mammoth Cave Railroad Bike and Hike Trail near the camp store and service center.



FIGURE 126. Boardwalk on the trail between the hotel parking lot and the train exhibit.



FIGURE 127. Recycled plastic plank boardwalk with wood curbs near the amphitheater.

Views and Vistas

Beautiful expansive views are afforded into this character from the sidewalk next to the camp store and service center parking lot near the campground (refer to Figure 113). From this area it is easy to see the old entrance road trace and to visualize where the old arched entrance sign once stood. The train exhibit is also visible from this area, but the view remains pastoral, with rolling landscape and stands of trees.

From the parking lot of the hotel, there are views to the tennis courts, shuffleboard courts, and the

Deluxe Cottages in the distance. There is a stark contrast from the hotel parking area to this character area and the split rail fence along the parking lot calls attention to this contrast (refer to Figure 117). Visitors are drawn to the views south into the green and rolling landscape with the large trees and walkways.

There are views into this character area from the camp store and service center to the entrance road to the hotel (refer to Figure 106). Views into the historic landscape core continue from the entrance road to the hotel complex. The open expanse of landscape in this character area is visible to the south all the way up the entrance drive to the parking lot.

Views from the character area are contained to the south and southwest due to thick woodland vegetation on the descending slopes.

Small-scale Features

Signs. Directional, informational, and interpretive signs are present within this character area. The directional signs include the standard design used throughout the study area (refer to Figure 101). These signs are constructed with wooden 4x4 posts and 2x4 sign boards, sometimes several bolted together depending on the amount of information on the sign. The letters and arrows are incised into the wood and painted white. They inform visitors of destinations and often of distances to destinations.

There are regulatory signs at each end of the Mammoth Cave Railroad Bike and Hike Trail segment within this character area. Standard stop signs are used at the trailhead and when the trail exits the character area into the driveway of the camp store and service center.

Standard NPS low profile interpretive signage is used at the train exhibit site. These signs are composed of black painted, metal frame insets with a fiberglass panel that contains interpretive information about the train and train transportation to Mammoth Cave (Figure 128). Interpretive signs that discuss the historic Mammoth Cave Hotel are also located along the Mammoth Cave Railroad Bike and Hike Trail.

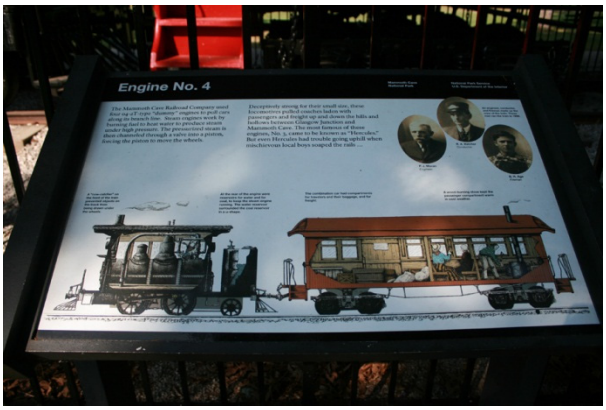


FIGURE 128. Low profile interpretive panel at the train exhibit.

There is also standard NPS informational signage located at the trailhead for the Mammoth Cave Railroad Bike and Hike Trail. This sign is composed of two rectangular panels with metal frames painted black. It contains maps and information about the trains to Mammoth Cave. The sign is located at the east end of the parking lot (Figure 129).



FIGURE 129. Two-panel interpretive sign at the east end of the parking lot.

Site Furnishings. Site furnishings within this character area include assorted outdoor furniture associated with the Deluxe Cottages, a wood slat bench at the trailhead for the Mammoth Cave Railroad Bike and Hike Trail, bench seating associated with the amphitheater, and trash receptacles in various locations.

Furnishings at the Deluxe Cottages consist of wrought iron single chairs and a decorative

wrought iron bench that seats two people. The chairs are scattered around the cottages for informal seating and gathering (Figure 130). There are also trash receptacles and separate recycling bins located around the cottages (Figure 131).



FIGURE 130. Outdoor movable seating at the Deluxe Cottages.



FIGURE 131. Trash and recycling bins at the Deluxe Cottages.

The bench located at the trailhead for the Mammoth Cave Railroad Bike and Hike Trail is a standard wood slat seat and back with metal supports (Figure 132). This is consistent with many of the benches throughout the core area. There is also a bicycle rack associated with this bench.



FIGURE 132. Wood bench and adjacent bike rack near the Mammoth Cave Railroad Bike and Hike Trail.

Long benches with recycled plastic lumber seats and pole supports characterize the amphitheater seating. The seating is located in rows, descending to the stage area and backdrop structure of the amphitheater (Figure 133).



FIGURE 133. Benches in the amphitheater are organized in descending rows.

Fences and Gates. Fences in this character area include the split rail fence that separates the hotel parking from the historic landscape core (refer to Figure 117), one section of split rail fencing along the pathway around the amphitheater (refer to Figure 105), a wood hitching post with iron rings (Figure 134), and chain link fencing around the tennis courts (refer to Figure 124). The split rail fence that separates the hotel parking from the historic landscape core was erected to prevent parking on the landscape.



FIGURE 134. Hitching post with iron rings near the shuffleboard court.

Lighting. Lighting within this character area consists of low level path lighting painted brown with pitched caps and consistent with the low level lighting throughout the Core Visitors Service Area. These lighting fixtures are installed around the amphitheater and its associated paved walkways, and on the paved pathways around the Deluxe Cottages (Figure 135). These fixtures are also evident along the paved pathway from the hotel parking lot to the Deluxe Cottages (refer to Figure 101).



FIGURE 135. Low level path lighting is present throughout the Core Visitor Services Area.

Utilities. Utilities within this character area include fire hydrants, sewer manholes, electrical boxes, lift station, above-ground poles and wires, and yard drain inlets (Figure 136).

Above ground poles and wires are located near several of the Deluxe Cottages and a large utility pole with boxes and wires is located north of the lift station (Figure 137). A red fire hydrant is evident in the open landscape space north of the Deluxe Cottages (Figure 138).



FIGURE 136. Concrete manhole cover east of the lift station.



FIGURE 137. Large utility pole, wires and boxes is located north of the lift station.



FIGURE 138. Fire hydrant north of the Deluxe Cottages.

Archeological Resources

Archeological resources including historic scatters and building remnants and prehistoric scatters have been reported near and within areas of the existing hotel parking lot, south of the hotel parking lot and the hotel cottages, and in overflow parking areas. The discussion of these resources is based on data presented in Prentice (*Archeological Overview and Assessment of Mammoth Cave National Park*, 1993) and individual inventory forms.

A group of archeological sites comprised of those associated with the first hotel (after 1888) is listed as MACA-611. Component parts which are reported are within the existing parking lot or south of the existing parking lot between but north of the Hotel Cottages. These previously recorded residential sites are MACA-611.003 through MACA-611.009. Park staff in 2011 verified that all surface traces of the first hotel have been obliterated. However, subsurface remains have been identified. The site is currently classified as stable and in good condition as it is protected by the overlying parking lot pavement. The current status of the residential sites is unknown but the plotted locations of these sites are within landscaped areas south of the existing parking lot.[209] Further archeological surveys would be necessary if future infrastructure or development were to continue south of the current hotel parking lot, extending further into the historic core of the park.

209. Sources for archeological information in this section are Guy Prentice, *Overview and Assessment of the Archeological Resources of Mammoth Cave National Park* (Tallahassee, Florida: National Park Service, Southeast Archeological Center, October 1989 and 1993); *Improvements to Concession Facilities Environmental Assessment* (Mammoth Cave, Kentucky, National Park Service, 2014), 72.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Stormfilter unit for oil and grit separator filtration system
Asphalt parking
Concrete sidewalk
Pay phone
Light pole
Woodland cottage with wood steps (typ.)
Asphalt pathways
Green River Bluffs Trail (gravel surface)
Parking with asphalt wheelstops
Wood bench and trail sign at trailhead
Comfort Station
Stone feature
Enclosed picnic shelter
Earth House
Packed earth social trail with remnant concrete
Hard-packed earth social trail
Exposed aggregate concrete walk lined with low bollard lights
Parking with wheelstops
Gravel pull-in
One-way asphalt road
Picnic shelter
Parking with wheelstops
Dumpster
Picnic tables and grills scattered among trees throughout picnic area
Trailhead leading to Dixon Cave Entrance, Historic Entrance, and River Styx Spring
Low rock wall and steps
Gravel pull-in
Picnic shelter
Asphalt path
Stone curb remnant along back of parking area
Wood fence
Metal gate
Mammoth Cave Visitor Center
Non-functional stone drinking fountain
Comfort station foundation
Fire pit remains
Parking
Dumpster with wood screen fencing

0' 75' 150'
SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 139.

Existing Conditions

Character Area 2: Picnic Area & Woodland Cottages

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Character Area 2: Picnic Area and Woodland Cottages

See Figure 139, Character Area 2: Picnic Area and Woodland Cottages Existing Conditions.

The picnic area is located north of the visitor center parking lot and accessed from the loop road around the parking lot. The current picnic area was the former location of the campground. The entrance to the picnic area is from the parking lot and follows an asphalt drive that runs just west of the Woodland Cottages. Views through the woodland vegetation to the cottages are available from the entrance drive.

The Woodland Cottages are immediately adjacent to the picnic area and also accessed from the loop road around the visitor center parking lot. There are twenty-one cottages with associated parking and asphalt pathways connecting the buildings. Large deciduous trees are scattered throughout the site.

Resources present within Character Area 2 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

The picnic area and its associated features are sited on a ridge atop the Green River Bluffs. The ridge is aligned generally north-to-south and the picnic area slopes gently to the west and southwest from the ridge (Figure 140). The Green River is north and west down the slope from the picnic area. Expansive views to the Green River are afforded from the Green River Bluffs Trail, which has a trailhead off the northern loop of the picnic area entrance drive.

Four intermittent streams are seen on maps of the character area, however, there are no surface streams present in this karst landscape.

The Woodland Cottages located to the east of the picnic area entrance road are sited on a gentle slope falling southeast from the ridge toward the visitor center parking lot (Figure 141). The cottages and parking area are surrounded by woodland vegetation to the north, east, and partially to the west.



FIGURE 140. The picnic area slopes generally to the southeast toward the Green River.



FIGURE 141. The Woodland Cottages area slopes gently toward the visitor center parking lot.

The vegetation communities present within this character area include native oak-hickory woodland consisting of mature deciduous hardwood trees with some shrubs and thickets and glade vegetation. The deciduous hardwood trees include white oak *(Quercus alba)*, black oak *(Q. nigra)*, and some chestnut oak *(Q. prinus)*.

Responses to Natural Resources

The main structures of the picnic area are sited on along the top of the ridge. The roadway alignments follow the contours, creating gently sloping circulation (Figure 142, Figure 143, and refer to Figure 140). The roadways traverse the contours as they lead toward the trailhead to Dixon Cave and as the northern loop road circles the site and climbs from south to north.



FIGURE 142. The main structures and portions of the roads in the character area are sited on the relatively level plateau atop the ridge.



FIGURE 143. Roads through sloping portions of the character area were sited to follow existing contours.

Drainage within the character area is controlled through the use of culverts and stone headwalls, ditches, curb drains, and drop inlets. There is also a large storm filter unit located on the site of the Woodland Cottages associated with the oil and grit separation/filtration systems that receive storm water runoff from impervious surfaces. (See section on utilities).

Patterns of Spatial Organization

The picnic area is organized around the curvilinear loop road at the north half and a second road terminating in a cul-de-sac at the south half, which provide vehicular access to parking in close proximity to the picnic shelters and areas of scattered picnic tables and associated grills. The spatial quality of the picnic area is enclosed and inward focused as woodland vegetation surrounds the site and trees are scattered throughout the picnic sites and buildings associated with the area (Figure 144).



FIGURE 144. The spatial quality of the picnic area is focused inward due to the woodland vegetation surrounding the site.

The Woodland Cottages are sited in five rows stepping up the slope from the parking area. The pedestrian pathway connects to each cottage entrance and provides access to each row thus organizing the site (refer to Figure 141). The area is an enclosed space due to surrounding woodland vegetation and large deciduous trees scattered throughout the site, providing overhead canopy and the sense of enclosed space. The south edge of the Woodland Cottages site is transparent, affording views to the visitor center parking lot (Figure 145).



FIGURE 145. The transparent south edge of the Woodland Cottages site.

Topographic Modifications

Topographic modifications in evidence within this character area include: grading required to construct the straight and curvilinear road corridors, parking lots, picnic shelters, restroom facility, Earth House, and enclosed shelter in the picnic area (Figure 146, Figure 147, and refer to Figure 143). Topographic modification due to grading requirements for the construction of pathways through the picnic area and at dumpster pull-offs and platforms is also evident in this character area (Figure 148).

Grading for the construction of the Woodland Cottages, associated parking, and the asphalt walkway system is evident throughout the site.



FIGURE 146. Topographic modifications were necessary for the road corridor, parking area, and structures.



FIGURE 147. Grading to accommodate picnic shelters, parking, and paths in the picnic area.



FIGURE 148. Grading for paved pathways through the picnic area.

Land Uses and Activities

Land uses associated with this character area include recreation, visitor services, and education. The picnic tables and trailheads within the picnic area provide recreational uses. The comfort station in the picnic area provides visitor services and the Woodland Cottages provide overnight accommodations for visitors. The enclosed shelter in the picnic area is used for meetings and educational activities and is available for rent by the public. Located in the picnic area, the Earth House is currently used as an environmental education center.

Circulation

Vehicular circulation within this character area includes the entrance road to the picnic area; the entrance road to the Woodland Cottage parking; parking, curbing and wheel stops associated with the Woodland Cottages and the picnic area; the roadway branching west from the entrance road in the southern portion of the picnic area and terminating in a cul-de-sac, and the loop road in the northern portion of the picnic area. All of these circulation features are paved with asphalt.

The entrance road to the picnic area accommodates two-way traffic but transitions to a narrower one-way width at the northern loop. The entrance road gives direct access to the enclosed shelter and the comfort station with associated parking and to the trailhead for the Green River Bluffs Trail. The one-way loop provides access to picnic parking, a picnic shelter, the Earth House and associated parking (Figure 149 and refer to Figure 143 and Figure 144). The roadway branching west from the entrance road accommodates two-way traffic for its entire length including the small turn-around at the end of the roadway (Figure 150). This road provides access to picnic area parking, a picnic shelter, and the trailhead to Dixon Cave.



FIGURE 149. A portion of the one-way loop road.



FIGURE 150. Roadway leading west through the southern portion of the picnic area.

The short entrance road to the Woodland Cottages is directly north of the visitor center loop road around the large parking lot. The spur leads into the small parking area for the cottages (Figure 151). The parking lot provides pull-in unmarked spaces as well as enough width for drop off and unloading for overnight visitation.



FIGURE 151. A short spur leads from the visitor center loop road to the Woodland Cottages parking area.

Parking for the picnic area is located on the entrance road as it winds north from the visitor center parking lot, the road in southern half of the picnic area, and on the one-way loop road. The

road through the southern half of the picnic area has two main areas for parking. The first is pull-in parking on both sides of the road. This area has lined parking with wheel stops on the north side and no markings on the south side. Some of the wheel stops are damaged. An accessible parking space has been provided and indicated by signage (refer to Figure 150). The south side of the parking area is edged with a low stone wall and a small set of stone steps (Figure 152). This separates the parking from the grassy plateau that was the site of a former comfort station. The second is a separate parking lot with pull-in spaces and entrance and exit to the main road (Figure 153). This lot is edged with stone curbing and has no painted lines. Secondary parking on this road is provided at the picnic shelter. This area for pull-in parking is surfaced with gravel.

The one-way loop road contains 12 pull-in parking spaces with lines and curb stops. This parking provides access to the picnic tables on the interior of the loop road (Figure 154).



FIGURE 152. A low stone wall with a set of stone steps along the south side of the parking area.



FIGURE 153. The second parking area along the south road.



FIGURE 154. Pull-in parking along the one-way loop road.

Parking is also provided from the entrance road for the enclosed shelter and comfort station. As the entrance road narrows into the loop, parking is provided for the Earth House and a picnic shelter (Figure 155).

Pedestrian circulation in the picnic area includes pathways throughout the area, connecting parking to the picnic sites and to the buildings and shelters. Many of these paths are very narrow and paved with asphalt (refer to Figure 148). Some of the surfaces are in poor condition due to cracking and buckling of the asphalt (Figure 156). There are several earth-packed social trails and two small secondary gravel trails that lead to the Earth House and the comfort station (Figure 157). There are social trails leading to picnic tables, causing erosion problems especially on the steeper slopes (Figure 158). The picnic area contains two trailheads. The Green River Bluffs Trailhead is located at the transition of the entrance road to the narrower loop road (Figure 159). The trailhead is east of the entrance road. The trailhead for Dixon Cave is located at the end of the south road turn-around loop in the picnic area.

The walkways associated with the buildings, including the picnic shelter west of the Earth House and their associated parking are paved with exposed aggregate concrete (Figure 160 and Figure 161).



FIGURE 155. Parking adjacent to the Earth House.



FIGURE 156. The surface of some asphalt paths is cracked and buckling.



FIGURE 157. A social trail west of the Earth House.



FIGURE 158. Social trails leading to picnic tables has led to erosion problems on steeper slopes.



FIGURE 159. The trailhead for the Green River Bluffs Trail is located in this character area.



FIGURE 160. Walkways associated with the buildings and picnic shelters are composed of exposed aggregate concrete.



FIGURE 161. Exposed aggregate concrete sidewalk to the Earth House.

The Woodland Cottages site has both concrete and asphalt walkways. The concrete walks are adjacent to the parking area and lead into the cottage sites (Figure 162). The pathways around the cottages are paved with asphalt (refer to Figure 141).



FIGURE 162. A concrete walk leads from the Woodland Cottages parking lot, transitioning to asphalt in front of the first cottage.

Vegetation

Many of the deciduous trees within the picnic area and the Woodland Cottages area are relatively mature and shade the areas in the summer. Some of the trees, however, appear to be in decline or include potentially hazardous limbs. There are dead limbs and tree debris along some of the pathways in the picnic area (Figure 163). The area contains mixed hardwood vegetation with some scattering of evergreens. The character area is surrounded by variable oak-hickory forests containing a mixture of white oak, black oak, and chestnut oak (refer to Figure 144). Maples and sycamores are also present in the character area.



FIGURE 163. Dead limbs and other tree debris along a picnic area path.

There is maintained grass lawn in the picnic area and in the Woodland Cottages with scattered deciduous trees that form various degrees of canopy on the sites (Figure 164, Figure 165, and refer to Figure 141). There are also mown grass shoulders on the roads in the picnic area and grass lawn surrounding the parking area for the Woodland Cottages (refer to Figure 143).



FIGURE 164. Mown grass with scattered deciduous trees in the picnic area.



FIGURE 165. Mown grass area with a larger degree of canopy.

Buildings and Structures

Earth House. (Structure No. 001) The Earth House was originally constructed by the CCC as a comfort station for the surrounding campground (Figure 166 and Figure 167). Additions were made to each side circa 1949 including the bathing facilities and an open laundry porch. The porch has been enclosed with wood-framed walls. The building is currently used as an environmental education center. It is a one-story structure with rock-faced random ashlar sandstone walls and cross-gable roof covered by asphalt shingles. The building has exposed roof framing members and wood gutters. Each gable is clad with vertically oriented tongue-and-groove siding and has a louvered vent. Typical window units are steel-framed multi-light casement windows with stone sills.



FIGURE 166. A view of the Earth House.



FIGURE 167. A view of the Earth House.

Woodland Cottages. (Structures No. 067 to No. 087) The woodland cottages were built in two phases, with sixteen cottages constructed in 1938–1939 and five more built in 1949. The twenty-one, single-, double-, triple-, and quadruple-unit cabins are arranged along asphalt paved walking paths on a wooded gently sloping ravine (Figure 168). The cabins are unified by their similar wood-framed construction on concrete pier foundations, asphalt shingle gable roofs with exposed eaves, and green and yellow painted exterior. The cottage units are accessed from a wood-framed entrance stoop and have a wood-framed door opening with wood-framed screen door. In addition, the cabins have wood-framed window openings, screen window units, wood plank shutters, and a louvered end gable vent. Each cabin has a unique configuration of siding consisting of either 9 inch wide drop siding or 9 inch wide board with 2-1/2-inch battens oriented either horizontally or vertically.



FIGURE 168. A view of a one-bedroom Woodland Cottage.

Comfort Station. (Structure No. 305) The comfort station is a one-story structure measuring 40 feet by 18 feet and houses the men's and women's bathroom facilities (Figure 169). The building has a concrete foundation and a wood-framed asphalt shingle gable roof with exposed eaves. The lower portion of the structure consists of ashlar sandstone coursed stone with a cast stone coping. Above the coping the building has wood-framed board-and-batten siding. The end gables feature two large trapezoidal wood-framed fixed windows with plastic glazing and a wood-framed privacy screen.



FIGURE 169. A view of the comfort station.

Enclosed Picnic Shelter. (Structure No. 316) The enclosed shelter is a one-story stone masonry and wood-framed building measuring 70 feet by 25 feet (Figure 170). It has a concrete foundation and a wood-framed asphalt shingled gable roof with exposed eaves. The lower portion of the building has random ashlar sandstone walls with a cast stone coping. The walls above the coping are wood-framed with board-and-batten siding and aluminum-framed doors and windows. An exterior chimney of random ashlar stone construction is centered on the end gable.



FIGURE 170. A view of the enclosed shelter.

Picnic Shelters. (Structures No. 303 and 304) There are two other picnic shelters on the picnic area site, both open-air shelters constructed by the Great Onyx Job Corps (Figure 171 and Figure 172). Each structure consists of a concrete slab with a 25 foot by 75 foot, wood-framed, asphalt shingle gable roof. The picnic shelter near the Earth House has a brick double-hearth fireplace at the end gable, while the other has fireplaces at both ends. The roof frame bears on metal wide-flange beams which are in turn supported on 6 inch diameter metal posts spaced 20 feet on center. The underside of the roof structure has plywood sheathing. Picnic tables and benches are organized under the protection of the gable roof.



FIGURE 171. One of the shelters in the picnic area.



FIGURE 172. A view of the second picnic shelter, near the Earth House.

Views and Vistas

Views and vistas are limited within this character area due to the extensive woodland cover. There is a view to the visitor center parking lot from the south edge of the Woodland Cottages site (refer to Figure 145). Otherwise views are contained by vegetation.

Small-scale Features

Signs. Signage within this character area consists of standard regulatory signs, wayfinding signs and informational signs. The regulatory signs consist of standard traffic signs such as the stop sign at the exit for the Woodland Cottages (Figure 173). There are also regulatory signs directing use of the dumpsters for trash disposal (Figure 174). The dumpsters and recycling bins are also labeled for quick reference.



FIGURE 173. Stop sign and directional sign at the Woodland Cottages entrance spur.



FIGURE 174. Regulatory sign about dumpster use.

Directional signs in this character area consist of the standard wood signs used throughout the Core Visitor Services Area. In the picnic area one such sign gives direction to the visitor center and is constructed with two 4x4 posts and a 2x4 signboard (Figure 175). The letters and directional arrow are incised and painted white. This type of signage is also found at the trailhead for the Green River Bluffs Trail and at the entrance to the Woodland Cottages (Figure 176 and refer to Figure 173).



FIGURE 175. Directional sign in the picnic area.



FIGURE 176. Directional sign at the Green River Bluffs Trail trailhead.

There is one large informational sign at the trailhead for the Green River Bluffs Trail (Figure 177). This sign is a standard NPS design with a black metal frame and a large panel with a map of the trail.



FIGURE 177. Informational sign at the Green River Bluffs Trail trailhead.

Site Furnishings. The picnic area contains tables in the glade south of the road leading to Dixon Cave, inside the loop road, and in the landscape area between the south road and the loop road. The tables are constructed with metal tubing bases with wooden seats and table tops (Figure 178 and Figure 179). Most of the tables are mounted on concrete pads. There are also tables within both picnic shelters of the same style and construction (refer to Figure 171 and Figure 147).



FIGURE 178. Picnic tables scattered among trees.



FIGURE 179. Picnic tables with adjacent upright grills.

Upright grills are placed in proximity to the picnic tables (refer to Figure 179). The upright grill is composed of a three-sided metal box mounted on a single metal post anchored to the ground in concrete. Interior notches on the box hold an adjustable-height metal grill. There are also ground-level box grills within the area (Figure 178).



FIGURE 180. Ground-level grills are composed of a metal grate over a concrete surface.

A mortared stone drinking fountain is located adjacent to the comfort station foundation south of the low rock wall and steps (Figure 181). The fountain has a metal nozzle and foot pedal, and does not appear to be functional.



FIGURE 181. A mortared stone drinking fountain in the picnic area does not appear to be functional.

The Woodland Cottages contain plastic trash receptacles and recycling bins (Figure 182). Concrete pads are provided for these containers and they are located among the cottages.



FIGURE 182. Litter receptacle and recycling bin in the Woodland Cottages area.

Fences and Gates. Within this character area there are two small sections of split rail fencing. One short section of fencing lines the entrance road to the picnic area, stopping at the gate. There is a second small section of fencing along the loop road at the end of an earth-packed social trail leading south from the picnic shelter to the loop road (Figure 183). There is a standard NPS metal gate on the entrance road to the picnic area which can be closed and secured whenever necessary.



FIGURE 183. A short section of split rail fence in the picnic area.

There is screen fencing around a dumpster adjacent to the large parking area on the south roadway in the picnic area (refer to Figure 150).

Lighting. There is low level pathway lighting along the parking area and pathways at the picnic shelter and Earth House on the loop road. These lights, identical to those found in Character Area 1, are approximately 18 inches high and are brown metal with peaked caps (refer to Figure 135).

There is post-mounted lighting in the Woodland Cottages parking area. The posts are wood with attached light fixtures (Figure 184). Residential-style wooden light posts are also present within the Woodland Cottages for safety and access to the front doors of the structures (Figure 185).



FIGURE 184. Pole-mounted light in the Woodland Cottages parking lot.



FIGURE 185. Residential-style light post in the Woodland Cottages area.

Utilities. Within this character area there is a storm filter unit that is part of the oil and grit separation filtration system within the Core Visitor Services Area. The system was installed in 2003. The unit is located near the entrance to the Woodland Cottages (Figure 186). This structure is cast-in-place concrete with a large rectangular metal grate. There is also a dry-laid sandstone retaining wall associated with the south end of the unit. There is also a stone headwall associated with a culvert west of the storm filter unit inscribed with the date 2003 (Figure 187).



FIGURE 186. Large rectangular metal grate, is part of the storm filter unit with a dry-laid sandstone retaining wall on the south edge.



FIGURE 187. Stone headwall associated with a culvert; a metal utility access hatch is visible in the foreground.

There are utility boxes associated with the Woodland Cottages and the buildings in the picnic area (Figure 188, Figure 189, and refer to Figure 145 and Figure 167). Both also contain manholes and fire hydrants (Figure 190, Figure 191, and refer to Figure 184).



FIGURE 188. Utility panel in the Woodland Cottages area.



FIGURE 189. Utility box and manhole adjacent to the Earth House.



FIGURE 190. Fire hydrant and water valve access in the picnic area.



FIGURE 191. Fire hydrant and water valve access panels adjacent to a gravel path in the picnic area.

The picnic area contains water pumps similar to the ones in the campground (Figure 192).

This character area has numerous trash dumpsters and recycling bins. Both are provided for the Woodland Cottages and at various locations in the picnic area (Figure 193 and Figure 194).



FIGURE 192. Blue-painted water hydrant adjacent to a picnic shelter.



FIGURE 193. Trash dumpster along the loop road in the picnic area.



FIGURE 194. Recycling dumpsters in the picnic area.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Trail connection to Echo River Spring Trail

Sunset Point above stone retaining wall

Boardwalk with recycled plastic plank surface and wood siderails

Old Guide's Cemetery surrounded by black metal post and picket fence

River Styx Spring Trail

Dixon Cave Trail (gravel, with wood waterbars)

Historic Entrance

Steps into cave with metal handrails

Stone steps and wood bridge

Historic Entrance Road; asphalt trail with wide concrete gutters

Mammoth Cave Visitor Center

Stone drainage structures

View to Historic Entrance

Split rail fence

Elevated deck with handrail

Old Guide's Trail

Concrete sidewalk

Elevated deck and boardwalk with handrail

Wood benches along trail (typ.)

Three-sided kiosk

Elevated wood boardwalk with handrails

Mammoth Cave Hotel

Heritage Trail exposed aggregate concrete with concrete edging

Mammoth Dome Sink Trail

0' 75' 150'

SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 195.

Existing Conditions

Character Area 3: Historic Entrance & Old Guide's Cemetery

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Character Area 3: Historic Entrance and Old Guide's Cemetery

See Figure 195, Character Area 3: Historic Entrance and Old Guide's Cemetery Existing Conditions.

The Historic Entrance and Old Guide's Cemetery character area consists of two of the most historically significant features in the Core Visitor Services Area and the entire park. The Old Guide's Cemetery is easily accessed from the visitor center and the hotel complex via the Heritage Trail. This trail surfacing includes exposed aggregate concrete and boardwalk and is universally accessible to park visitors. Visitor amenities along the trail include overlooks, benches, handrails, and interpretive signage.

The Historic Entrance is accessed by the Historic Entrance Road from the visitor center area, and by the Old Guide's Trail from the hotel area. The asphalt-paved Historic Entrance Road descends to the cave entrance where visitors gather for tours and eventually make their way to the steeply descending stairways into the mouth of the cave. The entrance area around the staircase contains interpretive signage, benches, bio-security mats and structures, and access to the Dixon Cave Trail.

Resources present within Character Area 3 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

The Old Guide's Cemetery is situated at the crest of a ridge oriented generally east to west, which also passes through Character Area 5, the Hotel and Lodging area. From the ridge, the landscape slopes steeply to the north and south. The Heritage Trail circumnavigates the crest of the ridge about twenty feet below the cemetery. From the Heritage Trail, the topography then gets steeper, continuing in descent to the paved Historic Entrance Road near the Historic Entrance to Mammoth Cave. The Historic Entrance is at approximate elevation 650 above mean sea level (AMSL) and the plateau of the Old Guide's Cemetery is at approximate elevation of 758 AMSL. The paved trail to the Historic Entrance descends from the visitor center and hotel complex plateau and leads to the entrance area. The cave is then accessed from descending staircases that take visitors and their guide into the elaborate system of passages running underground below the developed areas.

The change in temperature and humidity is unmistakable upon the approach to the descending staircase to the cave. A cool, consistent microclimate produced by the cave system is prevalent over the Historic Entrance area in warm summer months.

The Historic Entrance and the underground system of caves continues to be a source of artistic expression for painters, photographers, and writers. The unique and dramatic natural resource serves as an inspiration and stimulus for artistic expression as well as extensive scientific exploration and investigation.

Responses to Natural Resources

The primary response to natural features in evidence within this character area is the siting of the Old Guide's Cemetery on a ridge and the development around the Historic Entrance to allow visitor access to the cave.

Storm drainage within the character area is controlled through use of precast concrete curb, curb and large paved gutter, stone curbs with open joints, culverts with stone headwalls, and drop inlets with metal grates to convey storm water beneath paths and roads.

The asphalt-paved Historic Entrance Road that leads to the Historic Entrance is curbed on both sides, with concrete curb and large gutter on the north edge of the trail and precast concrete curb on the south edge of the trail. These concrete curbs become stone curbs with open joints west of the Historic Entrance, where the trail transitions to the River Styx Spring Trail and continues toward the Green River. There are inlets with metal grates along both sides of the paved trail and

two major culverts with stone headwalls near the Historic Entrance. A large rubble masonry spillway is located to the west of the paved trail where it expands to accommodate parking for two vehicles.

A wooden bridge is used to cross an intermittent stream on the Old Guide's Trail, which connects the Hotel complex to the Historic Entrance Road (Figure 196).



FIGURE 196. A wooden bridge is used to cross a small intermittent stream.

Patterns of Spatial Organization

This character area is organized by the combined effects of topography, trail layout, and woodland vegetation. Old Guide's Cemetery is defined by the Heritage Trail and its relatively shallow slopes. The Heritage Trail from the hotel complex to the intersection with the loop portion of the trail around the Old Guide's Cemetery is surrounded by woodland vegetation with some transparency to the south. After this portion of the trail intersects with the loop trail, the woodland vegetation creates a spatial corridor that closes down views until the approach and overlook to the surrounding landscape at Sunset Point (Figure 197). The site of the Old Guide's Cemetery is an open, defined space with woodland vegetation surrounding it. This space is further defined by the black modern metal picket fence that surrounds the cemetery (Figure 198).



FIGURE 197. Overlook at Sunset Point.



FIGURE 198. A black modern metal picket fence surrounds the Old Guide's Cemetery.

The gravel trail that connects the Hotel complex to the Historic Entrance Road is characterized by thick woodland vegetation on both sides creating the experience of a spatial corridor. On the other hand, the area around the Historic Entrance is constrained by the steep slopes of the ravine leading down to the trail and entrance area.

The descent on the paved trail from the visitor center to the Historic Entrance and woodland vegetation on each side of the trail give a distinct spatial quality to the experience of going to the cave (Figure 199). The feeling of leaving the "surface" starts on this descent that is characterized by thick woodland vegetation on and around the steep slopes of the trail. The Historic Entrance area opens up on the north side of the paved trail as it descends toward the Green River (Figure 200). The Historic Entrance area is an open space with extensive modifications to accommodate visitors and provide safe entry to the cave. Using the staircases provided, the space

further descends dramatically down to the mouth of the cave (Figure 201).



FIGURE 199. Woodland vegetation borders the paved trail from the visitor center to the Historic Entrance.



FIGURE 200. The woodland vegetation opens up on the north side of the trail at the entrance to the cave.



FIGURE 201. Steep steps lead visitors into the cave.

Topographic Modifications

Topographic modification in evidence includes grading required to build the Heritage Trail and the retaining walls and steps at Sunset Point built to connect the Heritage Trail with Echo River Spring Trail (Figure 202 and refer to Figure 197). Grading was also required to develop the River Styx Spring paved trail and the drainage structures to convey storm water.



FIGURE 202. Grading was required along the Heritage Trail.

Extensive topographic change was required to develop the cave entrance area with concrete steps, retaining walls, concrete terraces, parking for two vehicles, and the concrete staircases with metal railings that descend to the cave (Figure 203, Figure 204, and refer to Figure 201).



FIGURE 203. Extensive grading was required to develop the cave entrance.



FIGURE 204. Steps leading from the trail to the cave entrance area.

Land Uses and Activities

The primary land uses associated with this character area include cemetery, recreation, interpretation, and visitor services associated with the continued use of Mammoth Cave National Park as a tourist destination. The cemetery land use is associated with the Old Guide's Cemetery. Recreational land use in this character area is provided through trails for hiking and access to historical features such as the cemetery and the cave entrance. Interpretive land use is reflected in the interpretive signage along the trails and in the area of the Historic Entrance (Figure 205 and Figure 206). Use of the natural resources, particularly Mammoth Cave for artistic and scientific endeavors is evident through continued production of paintings, photographs, writings inspired by the great beauty and uniqueness of the resource and scientific investigation and recorded research pertaining to the evolution and conditions of the cave.

Services for visitors at Mammoth Cave National Park continue to provide interpretation, infrastructure, lodging, and recreational features to support its use as a major tourist attraction. Visitors who come to tour the cave are provided interpretive opportunities, information and guidance within the visitor center. Organized tours begin at the visitor center and lead to the Historic Entrance, where extensive stairways and handrails ensure visitor safety while entering the cave (Figure 207). This is the major tourist destination in the park and part of the Mammoth Cave Historic District.



FIGURE 205. Trails are provided for recreation and access to historic features.



FIGURE 206. Interpretation uses are associated with wayside signs.



FIGURE 207. Organized tours begin at the Historic Entrance.

The trails in this area were constructed to connect the Historic Entrance, to the visitor center and the

hotel complex and provide access to the Old Guide's Cemetery and the Historic Entrance to the cave. The trails are used for ranger-led interpretive walks and recreation, and to access the Old Guide's Cemetery and the cave entrance. Connections to the recreational trail system within the Core Visitor Services Area are provided from the Heritage Trail, the Historic Entrance Road, and from the Historic Entrance area. The Dixon Cave Trail is accessed from the north area of the Historic Entrance. The Mammoth Dome Sink Trail and the Echo River Spring Trail are accessed from the Heritage Trail.

Circulation

The circulation within this character area includes the Heritage Trail, the Historic Entrance Road, the Old Guide's Trail connecting the hotel complex to the Historic Entrance Road, access to the Dixon Cave Trail from the Historic Entrance, access to Echo River Spring Trail and the Mammoth Dome Sink Trail from the Heritage Trail, and parking and walkways in the Historic Entrance area.

Heritage Trail. The Heritage Trail is accessed from the visitor center and main hotel complex, and from parking at Sunset Lodge. It is composed of three segments, one from the visitor center and hotel, the loop that surrounds the Old Guide's Cemetery, and the segment that leads to the Old Guide's Cemetery (Figure 208). This complete trail is universally accessible, with exposed aggregate concrete paving and elevated boardwalks . The boardwalks are composed of both wood planks and recycled plastic planks and have wood handrails where necessary (Figure 209 and refer to Figure 202). The trail widens in various spots to accommodate benches (Figure 210). The western most point of the trail is Sunset Point, where the trail widens to accommodate retaining walls, benches, interpretation, and space to enjoy the spectacular views to the landscape (refer to Figure 197). The Echo River Spring Trail begins at Sunset Point (Figure 211). The loop portion of the Heritage Trail provides an access point to the Mammoth Dome Sink Trail.



FIGURE 208. A segment of the Heritage Trail leads to the Old Guide's Cemetery.



FIGURE 209. Portions of the exposed aggregate concrete Heritage Trail are lined with split rail fencing.



FIGURE 210. The concrete portion of the Heritage Trail widens to accommodate benches.



FIGURE 211. Access to the Echo River Spring Trail from Sunset Point.

Historic Entrance Road. This trail descends from the visitor center to the Historic Entrance. It is asphalt paved with curbing on both sides. The south edge is precast concrete curb and the north edge is rounded concrete curb and gutter (refer to Figure 199). The paved trail can accommodate vehicles and leads to the parking at the Historic Entrance (refer to Figure 200). Beyond the Historic Entrance, the trail transitions to gravel and becomes the River Styx Spring Trail, which is described in Character Area 7.

Old Guide's Trail. This trail originates to the north of the Heritage Trail Rooms wing of the hotel complex. It provides access for visitors at the hotel to the Historic Entrance Road. The trail is gravel and steep as it winds northwest down the wooded slope behind the hotel (Figure 212). As the trail approaches the intersection with the paved trail, its surfacing changes to large stones, native to the area and three large flat stone steps flanked by retaining walls and leading over a very small bridge that crosses an intermittent stream(Figure 213). The bridge is constructed of recycled plastic planking and wooden handrails (refer to Figure 196). After the bridge, the trail surface is concrete for approximately 15 feet and then intersects with the paved trail Figure 214). Wooden split rail fencing edges this small segment of the trail.



FIGURE 212. Stone and gravel surface of the Old Guide's Trail.



FIGURE 213. Stone steps along the Old Guide's Trail.



FIGURE 214. The intersection of the Old Guide's Trail and the Historic Entrance Road.

Historic Entrance. The Historic Entrance area contains the complex of walkways and steps that provide ingress and egress for the cave. There is also parking in this area for two cars. The Historic Entrance structure is discussed further, below.

Dixon Cave Trail. The trailhead of the Dixon Cave Trail arises from gravel area northwest of the small parking area at the Historic Entrance (Figure 215). The trail is paved in gravel and has wood water bars embedded at intervals along its surface to divert storm water and prevent gravel loss. A wood sign on one side of the trail notes the distance to Dixon Cave and the Green River Bluff Trail (Figure 216).



FIGURE 215. The Historic Entrance area. The Dixon Cave trailhead is visible in the background.



FIGURE 216. The gravel Dixon Cave Trail with waterbars.

Vegetation

Surface vegetation in this character area consists of variable oak/hickory woodland containing a mixture of white oak, black oak and chestnut oak on the surrounding slopes. Tree canopy extends to the edges of the Heritage Trail and the Old Guide's Cemetery (Figure 217 and refer to Figure 210). Slopes near the Historic Entrance are covered with woodland vegetation which forms a transparent canopy over the entrance area (Figure 218 and refer to Figure 200).



FIGURE 217. The Heritage Trail passes through woodland vegetation.



FIGURE 218. Woodland vegetation near the Historic Entrance.

The Historic Entrance area has some grassed surfaces on the landscape between the retaining walls and stone curbs (refer to Figure 215). Grass also grows on the back side of some of the retaining walls on the slopes produced during excavation and grading for the retaining walls. During the descent to the cave, the microclimate produces the moss and ferns on the rocky slopes

associated with the proximity to the cave (Figure 219).

The Old Guide's Cemetery within the modern metal picket fence is covered with grass, and contains medium to large deciduous trees scattered throughout (refer to Figure 198).



FIGURE 219. Mosses and ferns grow on rocky surfaces at the cave entrance.

Buildings and Structures

Historic Entrance Structure. The Historic Entrance structure is composed of the approach walks, steps, parking, retaining walls, fences, and bio-security exit that provide visitor ingress and egress to the cave entrance (Figure 220). All cave tours conducted by the park originate from the visitor center.



FIGURE 220. The Historic Entrance structure.

The approach to the Historic Entrance from Historic Entrance Road is signaled by an approach walk with steps, retaining walls and fencing (refer to Figure 207). The approach walk is 11 feet in width and constructed in concrete (refer to Figure 204). The approach walk continues in a gentle descent with intermittent steps and landings. An elaborate stone masonry retaining wall system accommodates the grading for the steps and walkway (Figure 221). From this walkway, the structure then begins a steep descent toward the mouth of the cave. The descent is on concrete staircases with stainless steel handrails. The elevation change from the top of these steps to the cave interior is approximately 46 feet. After the first twelve steps, which are 4 feet wide, there is a landing and then an additional forty steps down toward the cave entrance (Figure 222). These steps have been widened and an additional handrail added to separate ingress and egress (Figure 223 and refer to Figure 201). At the bottom of the staircase, there is one more landing and an additional ten steps into the cave interior (Figure 224).



FIGURE 221. Masonry retaining wall to accommodate the grading for steps and walkway.



FIGURE 222. The first portion of the steps into the cave.



FIGURE 223. The second portion of the steps into the cave are separated by a railing.



FIGURE 224. Stairways and handrails are provided along the entrance to the cave for visitor safety.

Upon exiting via the same staircases and walkway, there are temporary connecting stanchions painted black to guide visitors through the mandatory bio-security mat apparatus before exiting the cave entrance area (Figure 225).

The entrance area also has a gravel terrace that overlooks this elaborate entrance structure and contains interpretation, benches, and access to the Dixon Cave Trail.



FIGURE 225. Bio-security apparatus at the cave exit.

Views and Vistas

With the exception of Sunset Point, views in this character area are for the most part contained by vegetation. Woodland trees form visual corridors with canopy cover on both the Heritage Trail leading to the Old Guide's Cemetery and the Historic Entrance Road leading to the Historic Entrance (refer to Figure 218). Views to the greater landscape from the Heritage Trail occur at Sunset Point, west of the cemetery. From this promontory there are magnificent views to the landscape as well as visitor amenities such as interpretive signs and benches (Figure 226).



FIGURE 226. View from Sunset Point overlook.

Small-scale Features

Signs. A variety of signs are located within this character area, including informational, interpretive and directional signage. The sign types and material represented are consistent with signs found throughout the Core Visitor Services Area.

There are numerous National Park Service interpretive signs at the Historic Entrance, the Old Guide's Cemetery and Sunset Point along the Heritage Trail. These low profile signs are constructed of fiberglass boards supported by black-painted metal framing (refer to Figure 203, Figure 206, and Figure 226).

Informational signage is displayed on a three-sided kiosk constructed of wood with a shingle roof, and located on the Heritage Trail in the center of the intersection of the trail segments (Figure 227).



FIGURE 227. Three-sided kiosk along the Heritage Trail.

Directional signs in this character area are associated with the trails and distances to features and structures. These signs are constructed of wood with 4x4 posts and sign faces of various lengths and widths according to the amount of directional information (refer to Figure 208 and Figure 216). The lettering is incised and painted white. This signage is consistent throughout the trail system and other parts of the Core Visitor Services Area.

Site Furnishings. Site furnishings within the character area include benches and trash receptacles. Benches are located on the Historic Entrance Road and in the Historic Entrance area. They are also located along the Heritage Trail and at Sunset Point.

The benches associated with the Heritage Trail are constructed of brown metal supports with wood plank seats and backs (refer to Figure 210).

Benches associated with the Historic Entrance are constructed with five 2x2 recycled plastic slats that form the seat (Figure 228). The supports are three black metal poles anchored in the ground with concrete footings. This bench is on the gravel terrace portion of the entrance area, at the Dixon Cave trailhead.



FIGURE 228. Backless recycled plastic bench with metal supports near the Historic Entrance.

A second bench type located on the paved portion of the trail near the Historic Entrance is constructed with wood 2x2s that form the seat and continuously curve to form the back of the bench (refer to Figure 199). This bench has metal pole supports anchored in the ground.

Grave Markers. (LCS ID 90211, Structure No. C-28) The cemetery contains twenty-one graves with various types of markers. Included are one rock-walled grave with an inscribed marker, two rock-walled graves without inscriptions, five inscribed markers, and thirteen graves designated with plain head and foot markers. There are three box tombs aboveground; one with a stone slab cover and two without covers. These tombs were repaired in the fall of 2011.

Fences and Gates. The Old Guide's Cemetery is surrounded by a modern metal picket fence, painted black with two interpretive signs on the

eastern side of the fence along the Heritage Trail (refer to Figure 198).

The Heritage Trail has wooden split rail fencing in the vicinity of the informational kiosk. This two-rail fencing defines the edge of the trail segments leading toward the main hotel complex and the Sunset Lodge units (refer to Figure 209 and Figure 227).

Portions of the Heritage Trail are constructed boardwalks with wooden hand rails that are similar to fence construction. The rails are constructed of wood 4x4 posts with two 2x6 plank rails and a 2x6 rail cap. The rail is located on the downhill side of the boardwalk, and a wooden curb edging lines the other side (Figure 229 and refer to Figure 202).



FIGURE 229. Wooden hand rails along the Heritage Trail boardwalk.

Fencing at the Historic Entrance consists of a three-rail split rail fence that defines the entrance and helps guide visitors into the cave area and serves as a protective safety barrier (Figure 230). The fence begins on the paved trail and lines the curb and continues into the entrance parallel to the retaining wall.



FIGURE 230. Split rail fencing guides and protects visitors traveling to the cave entrance.

There is also wood fencing to the east of the Historic Entrance, where the Old Guide's Trail connecting to the Hotel intersects with the Historic Entrance Road (refer to Figure 214). This fence is a two-rail split rail fence and continues on the small segment of the Old Guide's Trail to the small bridge.

Lighting. There are low, brown-painted bollard light fixtures used in this character area (Figure 231). They are located on Historic Entrance Road near the Historic Entrance and at the intersection of the Old Guide's Trail and the Historic Entrance Road (refer to Figure 199). They are also located intermittently along the Heritage Trail and in the vicinity of site amenities such as benches, interpretive signage, Sunset Point promontory, the Old Guide's Cemetery and the kiosk at the trail intersections (refer to Figure 229).



FIGURE 231. Metal light bollards set in concrete along the Heritage Trail.

Utilities. Drainage within the character area is controlled through use of precast concrete curb, curb and large paved gutter, stone curbs with open joints, culverts with stone headwalls and drop inlets with metal grates to convey storm water beneath paths and the paved trail and a masonry spillway for surface drainage.

There are two major culverts with headwalls on the Historic Entrance Road. As the trail descends toward the entrance, the first culvert consists of an 18-inch pipe with boulder stone headwalls on either side of the paved trail (Figure 232 and Figure 233). A drop inlet with a metal grate is located within the curb gutter at the headwall on the north edge (Figure 234).

The second major culvert consists of a 36-inch pipe with a stone headwall located on the south edge of the Historic Entrance Road across from the Historic Entrance (Figure 235). The pipe connects to a rubble masonry spillway northwest of the parking area at the entrance (Figure 236 through Figure 238).

There is an additional drop inlet with a metal grate in the curb of the paved trail as it intersects with the retaining wall and approach walk to the entrance (refer to Figure 200).



FIGURE 232. Stone culvert headwall with metal grating on the north side of the Historic Entrance Road.



FIGURE 233. Stone culvert headwall on the south side of the Historic Entrance Road.



FIGURE 234. Metal grates cover the drop inlets within the curb gutter.



FIGURE 235. The stone headwall of a culvert near the Historic Entrance, partially obscured by vegetative debris, which carries water below Historic Entrance Road to below the rubble spillway northwest of the small parking area.



FIGURE 236. Masonry spillway northwest of the parking area at the Historic Entrance.



FIGURE 237. The masonry spillway empties into the woodland above a stone headwall.



FIGURE 238. Stone headwall at the base of the spillway.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Bike rack
Camp Store and Service Station
Sanitary dump station
Gravel path
Picnic tables in Loop A are metal tubing with wood seats and tables
Flagpole
Telephone exchange building
Flagpole
Campground kiosk
Parking
Stormfilter unit for oil and grit separation filtration system
Benches and low bollard lights line path
Mammoth Cave Parkway
Mammoth Cave Railroad Bike and Hike Trail
Concrete pads
Wood bridge with rails
Loop A campsites 1-10
Split-rail fence
Comfort Station (No. 49)
Campfire Circle: stone retaining wall, low wooden benches
Lift station
Gate
Dumpster and recycling bins
Loop D campsites 91-111
Wood bridge
Comfort Station (No. 51)
Loop B campsites 11-53
White Cave Trail
Grass grid pavers
Loop C campsites 54-90
Comfort Station (No. 48)
Low bollard lights line exposed aggregate path
Green Pond
Comfort Station (No. 317)
Comfort Station (No. 50)
Green River Ferry Road
Picnic tables in Loop C are concrete over a concrete slab
Culverts

0' 100' 200'
SCALE 1" = 200'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

"MACA Headquarters Campground" Drawing No. 135-41056, 2003.

Figure 239.

Existing Conditions

Character Area 4: Campground

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Character Area 4: Campground

See Figure 239, Character Area 4: Campground Existing Conditions.

The Mammoth Cave Campground is one of three developed campgrounds in Mammoth Cave National Park. The other two campgrounds, Maple Springs Campground and Houchin Ferry Campground, are located 2-1/2 miles and 8 miles west of the visitor center, respectively. Mammoth Cave Campground is located about a quarter mile from the visitor center and is accessed from Mammoth Cave Parkway. The campground features four camping loops with a total of 111 individual campsites. Trails within the campground lead to the visitor center and hotel complex and connect with the greater trail system. Resources present within Character Area 4 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

Character Area 4 is sited on a gently sloping ridge which is bounded by steep slopes west toward the Green River, south toward the Green River Ferry Road, and north along the parkway. Several small intermittent streams run through this character area and drain down the surrounding slopes (Figure 240). The vegetation in this character area consists of variable oak/hickory woodland containing a mixture of deciduous trees on the surrounding slopes. Much of the understory vegetation has been lost to trampling in the more heavily utilized areas and grass has been planted (Figure 241).



FIGURE 240. Several small intermittent streams run through the woodland in this character area.



FIGURE 241. Much of the understory in the campground has been lost to trampling.

Responses to Natural Resources

Responses to natural resources in evidence in this character area include the use of culverts to convey storm water beneath paths and roads. The curvilinear layout of the campground roads was designed to complement the natural topography and angled parking spurs minimize damage to the natural features.

Pedestrian bridges are used along trails to cross small intermittent streams that cut through the character area (refer to Figure 240). Several bridges are located along the trail that connects the campsites to the campfire circle and the amphitheater. There is also a pedestrian bridge on the pathway south of the camp store and service center that leads to the campground and the campfire circle.

Patterns of Spatial Organization

The Mammoth Cave Campground is bounded by Mammoth Cave Parkway on the north. Within, it is organized by a main entrance road with four major loop roads on either side. Each loop is characterized by a one-way asphalt road encircling the camping area, with asphalt single-vehicle parking spaces branching from either side of the central travel lane. Comfort stations are positioned in the center of each loop. A sanitary dump station, required for the disposal of waste from recreational vehicles, is sited near the camp store and service center, tying in to the underground sewage lines.

The northwestern portion of this character area, near Mammoth Cave Parkway, is visually open due to the parking for the camp store and service center and the single entrance leading to the campground kiosk. From this area, the remainder of the campground is surrounded by woodland vegetation and the spatial quality becomes enclosed with only occasional views beyond the campsites.

Within Loops A, B, C, D, each parking space has its own campsite tent pad, fire ring, and picnic table. Loop A differs somewhat as it provides tent camping only and large areas of gravel for tents for large groups.

Topographic Modifications

Topographic modifications evident in the character area include grading for Mammoth Cave Parkway, the Green River Ferry Road, the camp store and service center and its associated parking lot, loop roads, comfort station sites, parking bays, camp sites, and trails (Figure 242). There is erosion damage on some of the trails, especially the trail leading to the campfire circle and amphitheater (Figure 243).



FIGURE 242. Topographic modifications were necessary to accommodate the parking bays and campsites.



FIGURE 243. Erosion damage on the trail leading to the campfire circle.

Additional modifications also include grading to accommodate camping pads and gravel areas associated with the campsites (Figure 244). There is also grading to accommodate the campfire circle.



FIGURE 244. Grading to accommodate gravel areas in the camping loops.

Land Uses and Activities

The primary land uses associated with Character Area 4 are recreation and visitor services related to the campsites, comfort stations, and camp store and service center, which houses shower and laundry facilities. Utility uses are associated with the comfort stations and camp store and service center, underground sewage disposal, litter disposal, telephone service at the camp store and service center, and aboveground power lines which cut through Loops A and B. Additionally, commercial and administrative uses are associated with the camp store and service center, which houses offices, a shower and laundry facility, a camp store, and a post office, and with the campground entrance kiosk, where camping fees are collected.

Circulation

Circulation within the campground character area includes Mammoth Cave Parkway which forms the northeast border of the character area; the Green River Ferry Road which forms the southeast border of the character area; the entrance road and vehicular circulation system around the camp store and service center and the campground; parking for the camp store and service center; parking for the trash/recycling area; parking and access for the campsites; and the pedestrian circulation throughout the campground. There is a gravel trail to the campfire circle and the amphitheater which intersects with White Cave Trail, leading out of the character area. This character area also contains the Mammoth Cave Railroad Bike and Hike Trail, leading to Park City.

The two major roads that border this area are Mammoth Cave Parkway and the Green River Ferry Road. The parkway widens with a median and separated lanes at the entrance to the campground and to the camp store and service center. The Green River Ferry Road branches southwest from the parkway and leads to the Green River Ferry Crossing. A gravel road to a sewer lift station begins at the Green River Ferry Road near its intersection with the parkway.

The entrance road to the campground also serves as an entrance for the camp store and service center, but the camp store and service center area has another entrance/exit west of the campground entrance. As the entrance road proceeds to the campground and past the campground kiosk, it forms a spine with one-way loop roads on either side (Figure 245 and Figure 246). Loop D is southwest of the entrance road, Loop A is northeast, Loop C is southwest, and Loop B straddles the entrance road with campsites on both sides (Figure 247). The loop roads have pull-through and pull-in parking and parking on small loops with asphalt surfacing consistent with the road and wheel stops (Figure 248 and Figure 249).



FIGURE 245. The campground entrance road as it passes the campground kiosk.



FIGURE 246. The loop roads branch out from the main spine.



FIGURE 247. Loop C branches off to the southwest of the campground road.



FIGURE 248. Two types of parking bays are available along the asphalt-paved loop roads.



FIGURE 249. Pull-in parking bay and associated campsite along Loop B.

Parking within this character area is provided at the camp store and service center, the campground kiosk, the dumpster/recycling area and at the camp sites. The paved parking at the camp store and service center is lined with curbing and has white striping (Figure 250 and Figure 251). Universally accessible parking is provided. The small parking lot near the campground kiosk is paved with asphalt and contains standard five spaces and one universally accessible space (Figure 252 and refer to Figure 245). The pull-in parking on both sides of the trash/recycling area is surfaced with grass pavers (Figure 253).



FIGURE 250. Paved parking on the northwest side of the camp store and service center.



FIGURE 251. Parking on the southeast side of the camp store and service center.



FIGURE 252. The small parking lot near the campground kiosk.



FIGURE 253. Grass paver parking is available adjacent to the dumpster and recycling bins.

Pedestrian circulation consists of paths leading to the comfort stations which are paved with exposed aggregate concrete (Figure 254). There is some cracking and damage to this path in Loop D Figure 255). There are also gravel trails to and from the comfort stations (Figure 256). One of these gravel trails has wooden curbing to prevent the loss of surface materials (Figure 257). Other gravel trails in the campground do not have curbing and act more as social trails through the campsites and to the comfort stations (Figure 258). There is also an exposed aggregate concrete sidewalk on the northwest edge of the parking lot across from the post office in the camp store and service center area (Figure 259).



FIGURE 254. Exposed aggregate concrete path leading to the comfort station in Loop A.



FIGURE 255. The concrete path to the Loop D comfort station has some condition issues.



FIGURE 256. A gravel trail leading from a campsite to a comfort station.



FIGURE 257. A gravel trail with wooden curbing.



FIGURE 258. Some gravel trails function more as social trails and have lost gravel.



FIGURE 259. Exposed aggregate concrete sidewalk adjacent to camp store and service center parking.

There are trails in this character area with gravel surfacing. One leads from the campground to the campfire site and on to the amphitheater (Figure 260). This trail is in poor condition in some places due to severe wash out resulting in gullies and uneven walking surfaces (refer to Figure 243). This trail intersects with White Cave Trail that meanders west down the slopes from the campground (Figure 261).



FIGURE 260. Gravel trail leading to the amphitheater.



FIGURE 261. White Cave Trail near its intersection with the trail from the campground to the amphitheater.

A segment of the 9-mile Mammoth Cave Bike and Hike Trail to Park City is located in this character area, running parallel to Mammoth Cave Parkway. It is constructed with packed dense grade gravel and is 8 feet wide. It exits this character area near the intersection of the parkway and Green River Ferry Road.

Vegetation. The campground character area is surrounded by woodland vegetation, with various species of deciduous trees and a scattering of evergreen trees (refer to Figure 247 and Figure 248). Some of the trees are mature and provide shade for the campsites. There is some undergrowth present but more prevalent are maintained grass lawn areas around the campsites (Figure 262). Soil compaction associated with heavy foot traffic and shade from canopy trees limit vegetation growth, creating various degrees of erosion (Figure 263). In some areas, gravel has been used to stabilize the soil.



FIGURE 262. Little undergrowth is present near the campsites.



FIGURE 263. Gravel used to stabilize the soil.

Buildings and Structures

Camp Store and Service Center. (Structure No. 208) The camp store and service center located near the entrance of the campground is rectangular in plan (Figure 264). The gable-roof structure is clad in brick masonry and board-and-batten siding and has a concrete block foundation. The building is split into two sections with an open air throughway at the center of the structure. The east front of the building is defined by a series of large aluminum-framed windows. The post office, which is situated in the northwest corner of the building, is accessed by a concrete ramp on the north side of the building and steps to the breezeway located on the north and south sides of the building. Concession employees work in offices next to the post office. Shower and laundry facilities are also located in the building. A loading dock is located on the west side of the building.

Telephone Equipment Building. (Structure No. 433) Southwest of the camp store and service center is the telephone exchange building, a small brick masonry structure with a low-slope roof (Figure 265). The building, rectangular in plan, sits on a concrete foundation. A single metal door on the east elevation leads to the interior of the building. A metal louver vent is present adjacent to the door.



FIGURE 264. A view of the camp store and service center. Note the opening at the center of the long side of the structure.



FIGURE 265. A view of the telephone equipment building northwest of the camp store and service center.

Campground Kiosk. (Structure No. 437) The campground kiosk is a small building clad in sandstone masonry and wood board-and-batten siding (Figure 266). The building, which is rectangular in plan, has a small porch on each end of the structure. Two sliding vinyl windows are present on the east elevation of the building. A vinyl door with inset glass on the west side of the building leads to the interior of the structure. A sliding vinyl window and a fixed vinyl window are present on both the north and south elevations of the building.



FIGURE 266. A view of the campground kiosk at the entrance to the campground.



FIGURE 267. A view of a comfort station in the campground area.

Comfort Stations. (Structures No. 048, No. 049, No. 050, No. 051, and No. 317) There are five comfort stations located in the campground at Mammoth Cave National Park (Figure 267). One comfort station is located in each loop with the exception of Loop B, which has two comfort stations. The comfort stations are all similar in appearance. The typical comfort station is a one-story structure that houses men's and women's bathroom facilities. The building has a concrete foundation and a wood-framed asphalt shingled gable roof with exposed eaves. The lower portion of the structure consists of concrete block topped by a concrete coping. Above the coping the building is clad with wood-framed board-and-batten siding. The end gables feature two large trapezoidal wood-framed fixed windows with plastic glazing and a wood-framed privacy screen and railing.

Lift Station. (Structure No. 414) The lift station is a small sandstone building with an asphalt shingled gable roof (Figure 268). A double metal door is centered on the south elevation of the building, and large metal louvered vents are present on the other three elevations of the building. The structure, which is rectangular in plan, sits on a concrete foundation.



FIGURE 268. A view of the lift station.

Bridges. There are several bridges in this character area, two on the trail to the campfire circle and one on the paved trail from the camp store and service center parking lot into the campground area. The bridges on the campfire trail are constructed with wood planking and post-and-plank handrails (Figure 269 and refer to Figure 240). The bridge near the parking lot has plastic planking with wood curb edges (Figure 270).

Campfire Circle. The campfire circle, located near the intersection of White Cave Trail and the trail to the main amphitheater, is a small amphitheater with wooden benches that slopes downhill to a small stone stage supported by a stone retaining wall (Figure 271). The wall forms a semi-circle around the stone-paved stage and contains the fire circle used for campfires. The

back side of the wall is 4 to 5 feet in height (Figure 272).



FIGURE 269. Wood pedestrian bridge with handrail on one side.



FIGURE 270. Plastic plank pedestrian bridge with wood curb edges.



FIGURE 271. The campfire circle.



FIGURE 272. A semi-circular wall with stone stage and fire circle.

Kiosk. There is a large wooden kiosk located at the parking area for the dumpster/recycling area of the campground (Figure 273). It is a two-sided information kiosk with a wood-shingled gable roof. This kiosk recently replaced an older one that was demolished and removed.



FIGURE 273. Wooden kiosk at the dumpster and recycling area.

Views and Vistas

Vegetation limits long views within the campgrounds and individual campsites (refer to Figure 248). Narrow, linear views are afforded along the road and trail corridors at open breaks through the generally wooded site (Figure 274).



FIGURE 274. Narrow views are available through open break in the trees.

The camp store and service center is visible from Mammoth Cave Parkway and there are views from the northwest parking area at the camp store and service center to the open landscape of the historic core area. The Engine No. 4 and Coach No. 2 interpretive exhibit is also visible in the distance from this part of the character area.

Small-scale Features

Small-scale features associated with Character Area 4 include site furnishings, fences and gates, lighting, signs, and utilities.

Signs. Signs within the campground include wood directional signs, standard traffic signs, directional signs, and campsite directional signs and markers.

The wood directional signs are consistent with the signage throughout the Core Visitor Services Area (Figure 275). The signs are mounted on 4x4 posts with 2x4 sign faces. The lettering is incised and painted white. These signs are located at trail intersections to direct visitors to various trails and destinations associated with the core area. There are also regulatory signs along the trail, informing visitors that bicycles are not allowed on the trail (Figure 276).



FIGURE 275. Wood directional sign along the trail to the amphitheater.



FIGURE 276. Regulatory sign along the trail to the amphitheater.

There are standard traffic signs throughout this character area due to the volume of vehicles at the camp store and service center and inside the campground (Figure 277 and Figure 278). Signs include standard stop signs and small scale signs for universally accessible parking (refer to Figure 252).



FIGURE 277. Traffic and directional signs at Loop D.



FIGURE 278. Traffic sign at the parking area near the campground kiosk.

There are campsite directional signs at the loop roads. These signs have a single metal post and the sign is metal with a brown vinyl surface and white letters (refer to Figure 246 and Figure 277). Campsite markers are constructed of composite fiber-reinforced material and painted brown. The campsite number is incised into the wood and painted white (Figure 279).



FIGURE 279. Campsite marker.

Site Furnishings. Site furnishings located in the campground include flagpoles, bicycle racks, picnic tables, fire pits, benches, trash receptacles, and assorted features associated with the camp store and service center.

Two flagpoles are located within this character area, one at the campground kiosk and the other in front of the post office, which is part of the camp store and service center (Figure 280 and refer to Figure 245).



FIGURE 280. Flagpole adjacent to the camp store and service center post office.

One large bicycle rack is located in front of the camp store and service center and several smaller racks throughout the campground (refer to Figure 275).

There are numerous picnic tables in the campground, associated with campsites along the loop roads. A picnic table is located between the campground kiosk and the small parking lot at the entrance. Some picnic tables are constructed with concrete foundations, seats and table slabs and placed on concrete pads (Figure 281). Other tables are constructed of metal tubing with wood benches and table placed on either gravel or a concrete pad (Figure 282).



FIGURE 281. Concrete picnic table.



FIGURE 282. Wood picnic table with metal supports.

Fire pits are associated with the individual campsites. Each fire pit is an adjustable-height grate set over a concrete slab (Figure 283). A circular steel band surrounds the pit and has notched supports attached to one side to hold a metal grate that can be adjusted using attached handles. A metal beam connecting the top of the notched supports prevents the grate from being removed. The entire assembly can be tipped backwards to allow for easy removal of ashes.



FIGURE 283. A fire pit is placed at each individual campsite.

There are twenty-one backless wooden benches with wood supports within the campfire circle. They are low to the ground and placed in ascending rows away from the campfire concrete stage and fire circle (Figure 284). Benches along the trail between the campground and the amphitheater have wood slat seats and backs bolted on steel supports (Figure 285). Two single iron poles in concrete footings anchor each bench to the ground.



FIGURE 284. Backless wooden benches in the campfire circle.



FIGURE 285. Wooden benches are placed along the trail between the campground and the amphitheater.

Around the camp store and service center, there are trash receptacles similar to those at the hotel. The receptacles are plastic with dome lids and wood paneling (Figure 286). This area also has a blue post box on the west side of the camp store and service center and an ice box in front of the store (refer to Figure 250 and Figure 286).



FIGURE 286. Trash receptacles adjacent to a short length of split rail fence near the camp store and service center; an ice box, light post, bike rack, and regulatory signage are also visible.

Several hooked metal posts are located along the trail west of Loop D. The posts were designed to hold lanterns to light the route to the campfire circle (Figure 287).



FIGURE 287. Hooked metal post along the route to the campfire circle.

Fences and Gates. This character area contains wood split rail fencing and metal swing gates at the loop entrances. There is split rail fencing located in Loop D marking a headwall and culvert under the road (Figure 288). This also occurs at a culvert under the entrance road between Loop A and Loop C (refer to Figure 246). There is also split rail fencing surrounding the paved area for the dumpsters and recycling bins located in Loop A (Figure 289). The same fencing is found edging the pathway north of the comfort station in Loop A.



FIGURE 288. Split rail fencing surrounding a drainage culvert.



FIGURE 289. Split rail fencing surrounding the dumpster area near Loop A.

Metal swing gates are located on both sides of the entrance roads to the campsite loop (Figure 290). Each gate arm is attached to a post and when open the arm attaches to a brown metal gate rest (Figure 291).



FIGURE 290. Metal swing gates on both sides of the entrance to Loop D.



FIGURE 291. Metal swing gate with attached sign.

Lighting. Lighting in this character area consists of low level fixtures painted brown with a pitched cap used for illumination of pathways and overhead pole lighting in the vicinity of the service area. The tall pole lighting is metal with a box fixture (refer to Figure 286).

The low level fixtures are similar to the ones used in the picnic area. They are located on the trail to the amphitheater, gravel paths around the comfort stations, paved paths leading to the comfort stations and along the paved walkway in Loop A (refer to Figure 254 and Figure 260).

Utilities. A sanitary dump station is located in the southeast portion of the camp store and service center parking area. The feature is typical of NPS campgrounds that allow RVs and trailers. It is used to empty the waste holding tanks of RVs and trailers and ties into the underground sewer lines (Figure 292).



FIGURE 292. A sanitary waste disposal station east of the camp store and service center.

A storm water filter unit associated with the oil and grit separation filtration system is located south of the camp store and service center building and parking. This structure is cast-in-place concrete with a large metal grate. (Figure 293). The system receives the storm water runoff from impervious surfaces.



FIGURE 293. Large storm water runoff grate.

A defined area for dumpsters and recycling bins is adjacent to the Loop A comfort station (refer to Figure 289). It is east of the entrance road and easily accessible, with parking provided. The recycling bins are painted green and the trash dumpsters are blue.

Drainage culverts in this character area direct storm water flow under roads and paths. Some of the headwalls are delineated with split rail fencing (refer to Figure 288). There are also drop inlets in the grass lawn areas around the campsites.

Water pumps are located along pathways to the comfort stations (refer to Figure 254). Some pump structures are surrounded by an exposed concrete base pad, with a drainage grate for excess water. Others are surrounded by gravel with no concrete pad.

Evident in this character area are above-ground power lines and utility boxes associated with underground installations.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Mammoth Cave Visitor Center
Heritage Trail
Parking
Former location of dog kennel
Old Guide's Trail
Gravel/gravel paver roadway
Dry-laid stone wall
Metal light pole with box fixture (typ.)
Remnant stone fireplace/grills
Pedestrian bridge
Stormfilter unit
Stormfilter unit for oil and grit separation filtration system
Heritage Trail Rooms
Mammoth Cave Hotel and Restaurant
Exposed aggregate sidewalk
Overflow parking on grass
Pay phone
Lift station
Stone culvert
Gray bollard lights
Dumpster with wood screen fencing
Asphalt parking lot
Split-rail fencing
Asphalt parking lot
Exposed aggregate covered patio
Sunset Lodge
Exposed aggregate covered patio
Hose house
Hard-packed earth trail
Gravel access road
Mammoth Dome Sink Trail
Employee Dormitory
Kennel
0' 50' 100'
SCALE 1" = 100'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 294.

Existing Conditions

Character Area 5: Mammoth Cave Hotel & Lodging

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Character Area 5: Mammoth Cave Hotel and Lodging

See Figure 294, Character Area 5: Mammoth Cave Hotel and Lodging Existing Conditions

This character area consists of the Mammoth Cave hotel lodge, adjacent Heritage Trail Rooms wing, the Sunset Lodge units and associated parking, pedestrian circulation, including connections to trails, and the visitor center and surrounding landscape. Also located in this character area is the concessions dormitory, the pet kennels, and a lift station.

Resources present within Character Area 5 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

The Mammoth Cave Hotel and Lodging Character Area and its associated parking features are sited on a ridge surrounded by steep slopes to the north, west, and southwest and include a series of hotel buildings that date to various periods of the twentieth century. Much of the character area is maintained in mown grass with ornamental plantings at the hotel entrances. Large deciduous trees dot the parking lot medians and the large median that separates the east and west sides of the parking lot. This hotel lodge building is situated above the "Rotunda" room in the cave and approximately 350 feet uphill from the Historic Entrance. Surface water drains along the ravine between the hotel and visitor center.

Responses to Natural Resources

The primary responses to natural features found within this character area include the careful siting of the access road to follow curves of natural topography and use of the relatively level ridge to site the buildings. Surface water in this character area drains either overland towards the Historic Entrance or infiltrates naturally into subsurface geologic features. NPS has installed oil and grit separation/filtration systems that receive the storm water runoff from the impervious surfaces. The systems were designed to filter pollutants out of water run-off from various parking lots, including the hotel parking area and the Sunset Lodge parking area.

Drop and trench inlets are also present in the large parking lots of the hotel lodge and Sunset Lodge units (Figure 295 and Figure 296). There is a culvert under the access road to the Sunset Lodge units and a small stone headwall (Figure 297).



FIGURE 295. Trench drain in the large hotel parking lot.



FIGURE 296. Drop inlet adjacent to the Sunset Lodge units.



FIGURE 297. Stone headwall associated with a culvert below the Sunset Lodge access road.

Patterns of Spatial Organization

Views to the hotel are afforded from Mammoth Cave Parkway looking west. The expanse of parking and a small portion of the main hotel is visible, with trees surrounding the complex (see Character Area 1). An open grass field surrounds the entrance road that leads to the main parking lot. The space is then defined by open space with parking, lined by buildings.

The spatial character of this area is organized by the circulation system including large open paved parking areas with buildings organized around them (Figure 298). The space to the south of the hotel and associated parking visually extends into the more historic landscape and site of the former hotel except when the parking lot is full (Figure 299). As the character area extends west, the spatial quality is more enclosed due to the heavy woodland vegetation that surrounds the Sunset Lodge units and the area between the Heritage Trail and the Sunset Lodge units (Figure 300).



FIGURE 298. The area is characterized by large open areas of parking with buildings organized around the edges.



FIGURE 299. The space south of the hotel extends visually into the historic landscape (left).



FIGURE 300. The character area becomes more enclosed along the upper portion of the Sunset Lodge access road.

Topographic Modifications

Topographic modifications are clearly in evidence within this character area and include grading to accommodate a number of buildings: the hotel lodge, the Heritage Trail Rooms wing, the Sunset Lodge units, the concessions dormitory, pet kennels and the lift station (Figure 301 and Figure 302). Modification of topography due to grading is also evident with the associated parking lots for these facilities, sidewalks, and trails (Figure 303 and refer to Figure 299).



FIGURE 301. Topographic modifications were required for the Heritage Trail Rooms wing, as well as the rest of the hotel complex.



FIGURE 302. Grading behind the Sunset Lodge units.



FIGURE 303. Grading was also required for the parking and sidewalks associated with the Sunset Lodge units.

Land Uses and Activities

The primary land uses associated with this character area are the commercial, recreational, lodging, and visitor services uses provided by the Mammoth Cave Hotel complex, which houses overnight accommodations, food and beverage service, book store, pet kennels, meeting space and special event space. The trail connections constitute the primary recreational feature, but the hotel does provide visitors use of the tennis courts and shuffleboard courts. These two features are included in Character Area 1. Utilities associated with the complex include water, electricity, and sewage disposal services.

Circulation

The hotel lodge, the Heritage Trail Rooms wing, and the associated parking lot are accessed from an entrance road to the hotel from Mammoth Cave Parkway. (See Character Area 6 for a description of the entrance road.) At the west end of the parking lot, another road extends to the Sunset Lodge units and associated parking (refer to Figure 300). This short stretch of roadway is asphalt paved with no curb or gutter. Curbing begins at the walkways and parking associated with these units.

Service roads consist of a gravel and pervious paver road located west of the Sunset Lodge buildings and a road south of the hotel parking lot in the area of the tennis courts. The gravel/gravel paver road provides access to the lift station in the woodlands behind the Sunset Lodge buildings (Figure 304). The other service road is also gravel and provides access to the concessions dormitory/laundry and the pet kennels (Figure 305 and Figure 306).



FIGURE 304. A gravel/gravel paver road leads to the lift station behind the Sunset Lodge units.



FIGURE 305. A second gravel service road provides access to the concessions dormitory/laundry.



FIGURE 306. The second gravel service road also provides access to the kennel and continues into Character Area 1.

The hotel parking lot is immediately adjacent to the south side of the hotel (refer to Figure 298). It offers approximately 220 spaces in two major parking areas divided by a large median, separating traffic lanes through the lot (Figure 307 and refer to Figure 299). This parking lot serves as overflow visitor center parking during periods of peak visitation. The parking lot is paved with asphalt and contains planted medians (Figure 308 and Figure 309). During the busier summer months, visitors park in lawn areas and along road shoulders when demand exceeds the existing paved parking.



FIGURE 307. A large planted median divides the two parking areas south of the hotel.



FIGURE 308. Grass-planted median in the larger of the two asphalt parking areas.



FIGURE 309. Planted medians in the hotel parking area.

A trailhead to the Mammoth Cave Railroad Bike and Hike Trail is located at the eastern edge of the first parking lot, allowing easy access to this multi-purpose trail that leads to Park City.

Parking for the Sunset Lodge units include two pull-in parking areas with a total of thirty spaces (refer to Figure 303). There is also a pull-in parking

area for approximately five vehicles located at the western end of the units and adjacent to the walkway leading to the Heritage Trailhead (Figure 310).



FIGURE 310. A small pull-in parking area adjacent to the Heritage Trail entrance point west of the Sunset Lodge units.

There are sidewalks, pathways and trails associated with the hotel facilities throughout this character area.

There is a series of concrete sidewalks leading to the hotel entrances and to the Heritage Trail Rooms from the main parking lot (Figure 311, Figure 312, and Figure 313). These walkways are universally accessible and adjacent to accessible parking spaces and passenger drop off (Figure 314). The Heritage Trail terminates at the hotel lodge and runs between the hotel and the historic Old Guide's Trail leading to the Historic Entrance (see Character Area 3). Visitors who park in the hotel parking lot who wish to get to the visitor center either walk around the exterior of the hotel facilities or pass through the hotel making several turns as they find their way out through the north elevation of the hotel to the pedestrian bridge that connects directly to the visitor center.



FIGURE 311. Concrete sidewalk leading to the main hotel entrance. The visitor center can be accessed through the hotel.



FIGURE 312. The concrete sidewalks edge the parking area adjacent to the hotel entrance.



FIGURE 313. Concrete sidewalk at the Heritage Trail Rooms wing.



FIGURE 314. Universally accessible parking adjacent to the sidewalk.

Walkways within the Sunset Lodge units are constructed of exposed aggregate concrete and are 4 feet in width (Figure 315). The walkways, along with concrete curbing, form the edge of the pull-in parking lots and extend to connect the two major building units (Figure 316 and refer to Figure 303). These walks also provide entrance to the partially-covered patios that connect the buildings (Figure 317). A small concrete step located in front of most of the rooms hinders universal accessibility. The patios are also constructed of exposed aggregate concrete. A walkway connection to the Heritage Trailhead is located at the western edge of the Sunset Lodge parking area.



FIGURE 315. Exposed aggregate concrete sidewalk at the Sunset Lodge units.



FIGURE 316. The sidewalk extends along the access road to connect the two building units.



FIGURE 317. The sidewalks lead to the exposed aggregate concrete patios connecting the units.

Vegetation

Much of the vegetation in this character area consists of maintained lawns and ornamental plantings associated with the hotel entrances, and facades (refer to Figure 311 and Figure 312). The hotel lodge has ornamental plantings that emphasize the entrances and soften the façade of the building. There is a concrete planter box along the foundation of the hotel lodge that contains low perennial plantings (Figure 318 and refer to Figure 314). The Heritage Trail Rooms wing is maintained within a grass lawn to the south but has woodland forests to the north, sloping to the Historic Entrance to the cave (refer to Figure 301).



FIGURE 318. A low concrete planter box along the foundation of the hotel contains ornamental plants.

The Sunset Lodge units are located at the edge of woodland to the southwest, but have maintained grass lawn surrounding the buildings and parking (refer to Figure 300). Native trees are scattered in parking lot medians and any open landscape among the buildings (Figure 319).



FIGURE 319. Grass lawn in between the Sunset Lodge units and their associated parking area, with trees dividing the two building groups.

Buildings and Structures

Mammoth Cave Hotel. (Structure No. 207) The Mammoth Cave Hotel consists of two buildings. The east side of the complex, which contains restaurants, book store, and universally accessible guest rooms, is a one-story brick structure that sits on a concrete foundation (Figure 320). The building has a flat roof that overhangs the building slightly. The original portion of the building, constructed in 1965, is defined by tall, narrow, aluminum-framed windows. A recently-added green awning marks the main entrance to the hotel. Two additions were made to the building in 1992. One addition, on the southeast corner of the building, houses an expansion of the restaurant. The second addition is between the original hotel lobby and the Heritage Trail Rooms wing and contains universally accessible guest rooms and meeting rooms. Both additions are clad in brick similar to that used on the original building. A band of stucco lines the top of the additions. A concrete patio is present on the north side of the building. A concrete ramp connects the patio to the addition containing universally accessible guest rooms.

The second building of the Mammoth Cave Hotel contains guest rooms and is called the Heritage Trail Rooms wing (Figure 321). The two-story brick structure is connected to the rest of the complex by an open staircase. A second open staircase is situated on the west side of the building. Like the concessions building, the structure has a low-slope roof. A copper fascia is present on the north, east, and west elevations, while an aluminum fascia is present on the south elevation. Pairs of covered balconies protrude from the building. The second floor balconies have metal railings, while the ground level patios below have no railings. Large sliding glass doors are present at each balcony.



FIGURE 320. A view of the exterior of the restaurant at the Mammoth Cave Hotel.



FIGURE 321. A view of the exterior of the Heritage Trail Rooms wing at the Mammoth Cave Hotel.

Pedestrian Bridge. The concrete pedestrian bridge spans a ravine between the hotel and visitor center (Figure 322). The walking path to the Historic Entrance passes under the bridge in the ravine. The bridge measures approximately 10 feet wide and is constructed of a cast-in-place reinforced concrete girder beam with sloped concrete coping walls and precast concrete guardrails mounted on metal posts. The bridge is supported by two A-frame reinforced concrete piers and concrete abutments.

In February 2014, the bridge was inspected by a team from the Federal Highway Administration (FHWA). Delamination and spalling of the concrete was observed at the piers (most severely at the north pier) as well as on the walking surface of the bridge deck; however, the spalling was limited to the concrete cover over the embedded reinforcing steel, so it was determined by FHWA that the bridge could remain open for pedestrian traffic. Concrete repairs were recommended by FHWA, to be implemented in conjunction with planned work to repair the bridge deck, expansion joints, and drains.[210] Recently, deterioration including bridge deck spalling was found to be more extensive than originally thought. The decision was then made by the park to replace the existing bridge, with work currently planned for FY 2016.



FIGURE 322. A view of the pedestrian bridge linking the visitor center to the Mammoth Cave Hotel.

Sunset Lodge. (Structures No. 202 and 206) Sunset Lodge is comprised of two chevron-shaped structures (Figure 323). One structure was constructed in 1954, while the second building was completed in 1958. Each structure is composed of two wings of guest rooms connected by a covered breezeway. The buildings are clad in wood board-and-batten siding and sandstone. A concrete-paved walk extends the length of each structure's north elevation, with a patio south of the breezeway. Both buildings have an asphalt shingled hip roof. A pair of wood double-hung windows and a wood door is present at the entrance to each guest room on the northeast side of the buildings. There are ten guest rooms in each structure. A housekeeping room is also present at the center of the western portion of each building. A group of three wood double-hung windows are present at each room on the southwest elevation.

210. Jorgomai Ceesay, "Federal Lands Highway Emergency Inspection Report" (Federal Highway Administration, February 19, 2014); Hratch Pakhchanian, Bridge Engineer, FHWA, to Kent Cochran, NPS Southeast Region, May 19, 2014; and Hratch Pakhchanian, Bridge Engineer, FHWA, to Kent Cochran, NPS Southeast Region, July 10, 2014.



FIGURE 323. A view of the front of one of the buildings at Sunset Lodge.

Lift Station. (Structure No. 412) A small sandstone masonry utility building with an asphalt shingled gable roof is situated to the west of the Sunset Lodge (Figure 324).

Hose House. (Structure No. 006) A small concrete masonry utility building is located east of the Sunset Lodge on the south edge of the parking lot. The small shed is painted pink and has a small sign with a number 6 on one side (Figure 325). It formerly housed a supply of fire hose for fire suppression. This structure is planned for removal in FY 2015–2016.



FIGURE 324. A view of the lift station outbuilding west of Sunset Lodge.



FIGURE 325. Small utility building east of the Sunset Lodge units.

Concessionaire Dormitory. (Structure No. 324) The concessionaire dormitory is a one-story, board-and-batten sided building, rectangular in plan (Figure 326). The building, constructed in 1985, also houses laundry facilities. A wood-framed deck extends from the center of the east elevation of the structure. Two small porches are present on either side of the central deck. Seven sliding aluminum windows and seven metal doors are situated on the east side of the building. An open air prefabricated metal structure is present to the north of the concessionaire dormitory. The park is currently leasing two dorm rooms for White Nose functions and storing cave gear.



FIGURE 326. A view of the concessionaire dormitory.

Kennel. (Structures No. 425 and No. 431) A pet kennel is located in this character area to the south of the parking lot for the hotel lodge (Figure 327). It is constructed of concrete masonry unit blocks with a pitched roof. There are outdoor runs with chain link fencing for the dogs. Part of the

structure is a storage garage for landscaping maintenance equipment.



FIGURE 327. A pet kennel and storage building is located along the gravel service drive near the concessionaire dormitory.

Views and Vistas

Views within this character area are primarily internal due to the extent of woodland cover to the north, west, and southwest (refer to Figure 299, Figure 300, and Figure 316). Views south to the historic landscape including the tennis courts, shuffleboard courts, lawn, and the deluxe cottages and the site of the 1925 hotel are afforded from this character area. The south edge of the parking lot for the hotel lodge is adjacent to the historic core landscape, separated partially by a split rail fence and in some places by cars parked next to the grass (Figure 328 and Figure 329). The east portion of the hotel parking lot affords views to an expanse of landscape that includes the Mammoth Cave Railroad Bike and Hike Trail, the train exhibit, several pathways, a road trace, and the large cedar grove associated with the historic hotel site (Figure 330).



FIGURE 328. Views into the historic core to the south of the character area.



FIGURE 329. Views into the historic core are occasionally obscured by vehicles parked on the edge of the parking area.



FIGURE 330. Views to the east of the character area include linear views down paths and a road trace.

Small-scale Features

Small scale features associated with this character area include signs, site furnishings, fences, lighting, and utilities.

Signs. There are a variety of signs within this character area including signs for wayfinding,

interpretation, park regulation, road and parking regulation, and identification. The Mammoth Cave Hotel is identified by lettering printed on the entrance awning (refer to Figure 311). A group of signs located at the main entrance to the hotel contains a variety of information. These signs differ in size, construction, materials and color. They provide directions to the visitor center, orientation maps, and announcements of seasonal events.

There are also assorted regulatory signs for parking and traffic located near the hotel in the parking lot and medians (refer to Figure 307, Figure 308, Figure 313, and Figure 314).

Site Furnishings. A bike rack and trash receptacle are located in the large grass median that separates the east and west parking lots (refer to Figure 299).

Outdoor furniture associated with the Sunset Lodge units includes white metal chairs in front of the rooms under the roof overhang, and red metal chairs and tables located on the patios adjacent to the covered walkways (Figure 331). There are also trash and recycling receptacles provided for guests in front of the Sunset Lodge units (Figure 332).



FIGURE 331. White metal chairs on the porches and red metal chairs and tables on the patios at the Sunset Lodge units.



FIGURE 332. Litter and recycling receptacles adjacent to the Sunset Lodge units.

Fences and Gates. Three-rail split rail fencing is located adjacent to the parking lot, separating it from the open landscape of Character Area 1 (refer to Figure 328).

Lighting. Within this character area, lighting is provided in the parking lot, at the entrances to the hotel lodge and the Heritage Trail Rooms wing and along the roadway access to the Sunset Lodge units. The lighting installations include poles with rectangular "shoebox" fixtures painted dark brown, and low level bollard lighting at the entrances and pathways (refer to Figure 332). The bollard fixtures are square columns approximately 3 feet tall and painted a light gray (Figure 333).



FIGURE 333. Bollard light fixtures adjacent to the hotel.

Utilities. Above ground evidence of utilities within this character area include: fire hydrants associated with the hotel lodge/Heritage Trail Rooms wing and the Sunset Lodge units (refer to Figure 300); power lines; utility boxes and manhole covers associated with the buildings (Figure 334); a large trench drain in the parking lot (refer to Figure 295); and drop inlets with steel grates scattered in the parking lot and near pathways in the Sunset Lodge area (refer to Figure 296). There is also a culvert running underneath the roadway north of the first Sunset Lodge unit with an associated stone headwall (refer to Figure 297). There is a storm filter unit associated with the oil and grit separation filtration system located west of the hotel (Heritage Trail Rooms wing) in the open, grass area. This unit is cast-in-place concrete with a metal grate. All above ground evidence of the utilities appears to be in good condition.



FIGURE 334. Manhole covers adjacent to the hotel.

Archeological Resources

One previously reported archeological site lies immediately southwest of the Heritage Trail Rooms wing of the new hotel.[211] This is site MACA-62.003, which is a component of the larger site designated MACA-62 (Old Guide's Cemetery; 15ED85). According to data presented in Prentice, the site MACA-62.003 (also referred to as MACA-602) might represent the remains of one of the earlier historic period residential cottages. Also the results of systematic survey and shovel testing conducted during planning for the Heritage Trail found a persistent subsurface scatter of both historic and prehistoric artifacts. The latter included Middle archaic, Late Archaic, Early Woodland and Late Woodland projectile points and other chipped stone artifacts. The presence of these materials led to an extension of the boundaries of MACA-62 (15ED85) into the existing hotel parking lot as far west as the reported location of the site MACA-62.003.

Another group of previously reported archeological sites is in the vicinity of the existing roadways within this character area. Previously reported sites in the vicinity of existing roads include a site near an entrance/exit way; one located in the vicinity of the main entrance road; and the 1925 Mammoth Cave hotel site. The site adjacent to an entrance/exit way has not been assessed for condition or significance.

It also appears that the southern part of the existing hotel parking lot may be on top of one or more versions of the old roadways to the 1925 hotel.

211. Sources for archeological information in this section are Prentice, 315–316; and *Mammoth Cave National Park: Improvements to Concession Facilities Environmental Assessment* (Mammoth Cave National Park, November 2013), 73.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Flint Ridge Road
Paved swale
Mammoth Cave Railroad Bike and Hike Trail–Visitor Center Access Trail
Mammoth Cave Parkway
Trace of old entrance road (State Route No. 70)
Woodland Cottages
Bus unloading area
Bus loop
Hotel entrance road
Curb-lined turf islands
Tour shelter
Lantern tour storage
Metal gate
Historic Core Character Area see Figure 98
Wooden gate
Paved swale
Parking
Tour shelter
Gated utility enclosure
Mammoth Cave Visitor Center
Bicycle rack
Stephen Mather marker
Monument sign
Cave tour information kiosk
Metal fence
Mammoth Cave Hotel & Lodging Character Area see Figure 294
Flagpole
Picnic area entrance road
Stairs
Pedestrian bridge between visitor center and hotel
Accessible parking
Wild Cave tour shelter
Dumpster enclosure
Historic Entrance road
Concrete pad
Concrete path
Stormfilter unit for oil and grit separation filtration system

0' 75' 150'
SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 335.

Existing Conditions

Character Area 6: Visitor Center Complex

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Character Area 6: Visitor Center Complex

See Figure 335, Character Area 6: Visitor Center Complex Existing Conditions.

The Visitor Center Complex character area is accessed from Mammoth Cave Parkway. Features of this area include the visitor center building, tour shelters, parking, bus loop drive, and associated loading and drop off zones, walkways and terraces, the concrete pedestrian bridge to the hotel and paths leading to other parts of the Core Visitor Services Area. The character area is bounded by the entrance road to the hotel complex to the south, Mammoth Cave Parkway to the east, the Woodland Cottages, picnic area, and dense woodland vegetation to the north, the hotel complex and parking to the south, and woodland vegetation and slopes to the west.

Resources present within Character Area 6 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

The Visitor Center Complex Character Area and its associated parking features are sited on a ridge north of the Historic Entrance. Much of the character area is maintained in mown grass dotted with deciduous hardwood trees and small flowering trees planted when the visitor center was renovated. Deciduous hardwood forest dominated by hickory and oak, typical to the region, frames the character area to the north, east and west.

Responses to Natural Resources

The primary responses to natural features found within this character area include the siting of the access road within the existing natural contours of the landscape and the placement of the buildings along the relatively level ridge. Surface water in this character area is controlled by the use of culverts and swales to control runoff. NPS has installed oil and grit separation/filtration systems that receive the storm water runoff from the impervious surfaces. The structure closest in proximity to this character area is directly north of the parking lot in the grass lawn of the Woodland Cottages. There is also use of curb and gutter and drop inlets throughout the parking lot.

The pedestrian bridge at the visitor center spans the upper reaches of a ravine and intermittent stream to connect to the hotel and visitor center. This bridge is elevated above the paved trail that leads to the Historic Entrance.

Patterns of Spatial Organization

The space within this character area is organized by the circulation system, including Mammoth Cave Parkway, the large diagonally striped parking lot, and the walkways that direct visitors to the building entrance (Figure 336and Figure 337). The area is also organized by the spatial relationship of the hotel to the visitor center and the bridge connecting them. The spatial characteristics of this area include an open expanse of developed landscape with buildings, the entrance road, the concrete walkway connecting the visitor center with the Mammoth Cave Railroad Bike and Hike Trail, parking and open grass lawns, and the scattered tree plantings throughout. The character area is bordered to the east, west and southwest by dense forest vegetation forming an opaque edge that defines the extent of the open space (Figure 338).



FIGURE 336. Mammoth Cave Parkway is one of the major organizing features of the character area.



FIGURE 337. The large parking lot also serves as a major organizing feature.



FIGURE 338. Dense forest vegetation borders the character area to the east, west, and southwest.

Topographic Modifications

The topographic modifications evident within this character area include grading required to construct the larger footprint of the visitor center complex, tour shelters, associated circulation, terraces, and the pedestrian bridge. There is also grading required to construct the parking lot and associated sidewalks, and Mammoth Cave Parkway.

Land Uses and Activities

The primary land uses associated with the Visitor Center Complex Character Area are interpretive/museum/education/administration and orientation associated with the Mammoth Cave National Park visitor center. Land use in this character area also includes visitor services such as restroom facilities, drinking fountains, tour information, benches inside the visitor center, and benches associated with the visitor center site. Commercial use occurs within the visitor center at the book store, which sells books, maps, and assorted souvenir items. Commemorative uses associated with the visitor center include the plaque designating Mammoth Cave National Park as a World Heritage Site and the bronze plaque honoring the achievements of Stephen Mather. Recreational uses are associated with the pedestrian bridge which connects the visitor center to the hotel and the Heritage Trail. There is also access from the visitor center to the Historic Entrance Road leading to the Historic Entrance

and the Woodland Cottages, Picnic Area, and trails.

Circulation

The major vehicular circulation route within the Visitor Center Complex Character Area is Mammoth Cave Parkway to the visitor center (refer to Figure 336 and Figure 338). The segment of the parkway in this character area consists of the asphalt-paved two lane road divided by a large median (Figure 339). The medians have concrete curbing but the road edge does not. As the parkway leads to the parking lot it transitions down to a single lane for one way traffic that circles the parking lot, allowing drop-off at the visitor center entrance and access to parking aisles and spaces.



FIGURE 339. The asphalt paved road is divided by a large grassy median.

There is a bus loop for the visitor center which is accessed from the entrance road to the hotel complex. This loop, which is used exclusively by NPS and concessionaire buses, allows for drop off and pick up at the tour shelters south of the visitor center.

The visitor center parking lot includes diagonal parking with small turf islands at the ends of each parking aisle (refer to Figure 337). Several of the curb-lined islands contain large trees. There is a larger island that separates the parking from the entrance. Large parking spaces are provided for recreational vehicles (RVs), buses, and vehicles pulling trailers (Figure 340).



FIGURE 340. Larger parking spaces are provided for RVs, buses, and vehicles towing trailers.

There is a separate parking area including universally accessible spaces provided near the entrance to the visitor center.

Pedestrian circulation includes a sidewalk on the south edge of the parking lot, leading to the visitor center entrance (Figure 341). This walkway is paved in exposed aggregate concrete and is immediately adjacent to the curbing for the access road/parking lot near the visitor center. This sidewalk connects with the east pedestrian walkway to the plaza. There are two additional pedestrian entrances to the visitor center plaza from the parking lot (Figure 342 and Figure 343). All of the paved area associated with the entrance to the visitor center is exposed aggregate concrete. A sidewalk circles around the east side of the visitor center and leads to the tour shelters and bus drop-off and pick-up (Figure 344). A concrete walkway connects the visitor center with the Mammoth Care Railroad Bike and Hike Trail. There is an additional informal pathway from the west side of the visitor center that leads to the Historic Entrance Road. The back plaza of the visitor center provides visitor access to the tour shelters, Historic Entrance Road, and the concrete pedestrian bridge that connects to the hotel complex (Figure 345).



FIGURE 341. An exposed aggregate concrete sidewalk lines the south edge of the parking lot.



FIGURE 342. One of the pedestrian entrances from the parking lot.

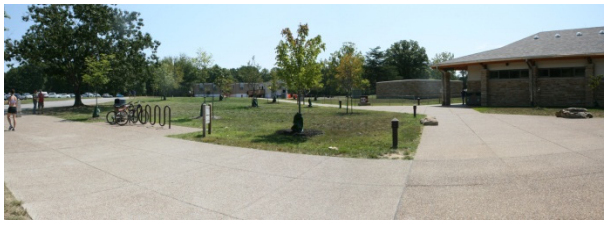


FIGURE 343. A second pedestrian entrance.



FIGURE 344. A sidewalk leads to the tour shelters and bus drop-off area.



FIGURE 345. The pedestrian bridge leading to the hotel complex, flanked by stone columns. The piers at either side of the end of the bridge were added as part of the visitor center renovation.

Vegetation

Vegetation within this character area includes scattered deciduous and evergreen trees north of the hotel entrance road, trees in the parking lot medians, trees at the entrance to the visitor center, new tree and shrub plantings around the visitor center, walkways and terraces. The character area is surrounded by dense woodland vegetation to the east, north, and west.

Tree species planted in the parking lot medians include pin oak *(Quercus palustris)*, red oak *(Q. rubra)*, sycamore *(Platanus occidentalis)*, tulip poplar *(Liriodendron tulipifera)*, hackberry *(Celtis occidentalis)*, dogwood *(Cornus florida)*, post oak *(Q. stellata)*, American holly *(Ilex opaca)*, blue ash *(Fraxinus quadrangulata)*, and white oak *(Q. alba)*. While most of the trees in and around parking lot area are in good condition, some are in poor to fair condition (Figure 346 and refer to Figure 337). There are trees missing in some of the medians.



FIGURE 346. An oak with some die-off in its upper branches.

Due to recent construction and renovations to the visitor center complex and the associated walkways and terraces, new tree plantings are evident on the site (refer to Figure 343 and Figure 344). These plantings are associated with the walkways, the building exterior walls and foundation, and the expanse of green lawn in front of the visitor center. Some of these trees appear to be in very poor condition. Existing trees in this area include large red oaks and pin oaks.

Buildings and Structures

Visitor Center. (Structure No. 005) The visitor center is a one-story structure with a partial basement. It has sandstone-clad piers and partial height walls with cast stone coping, horizontally oriented wood clapboard, aluminum-framed windows and door vestibules, and a wood-framed gable roof with exposed eaves and imitation slate tile (Figure 347). Primary entrances are located on the east and west elevations and are denoted by a portico with an exposed engineered wood truss framed gable roof and sandstone-clad piers.

East of the visitor center is an open-air utility enclosure (Figure 348). The sandstone clad walls, which match the new visitor center, sit on a concrete foundation. An opening with a set of metal access gates is present on the east side of the enclosure. The gate doors extend the full height of the walls.



FIGURE 347. A view of the visitor center. Note construction in progress on the portion of the building at the right.



FIGURE 348. Metal gates and sandstone clad masonry wall at the utility enclosure east of the visitor center.

Pedestrian Bridge. The pedestrian bridge connecting the visitor center with the Mammoth Cave Hotel is discussed above as part of Character Area 5: Mammoth Cave Hotel and Lodging.

Cave Tour Information Kiosk. (Structure No. 112) The cave tour information kiosk is an open air structure completed in 2011 and measuring 21 feet by 21 feet. It consists of concrete pavers, sandstone-clad corner piers, and an engineered wood truss framed gable roof with imitation slate tiles (Figure 349). The piers are spaced 18 feet on center and clad in rock-faced, coursed ashlar, sandstone masonry. They support the roof framing as well as information displays.



FIGURE 349. A view of the cave tour information kiosk in front of the visitor center.

Flagpole. Also located in this character area is a metal flagpole sited along the main walkway to the visitor center entrance (Figure 350).



FIGURE 350. A metal flagpole along the main walkway to the visitor center.

The Lower Shelter. The Lower Shelter is located south of the visitor center. The open air structure measures approximately 12 feet by 12 feet with concrete slab flooring and sandstone-clad piers supporting an engineered wood truss cross-gable roof with imitation slate tiles (Figure 351). The concrete slab flooring has an exposed aggregate finish. The piers are clad in rock-face random ashlar sandstone masonry with a cast stone coping.

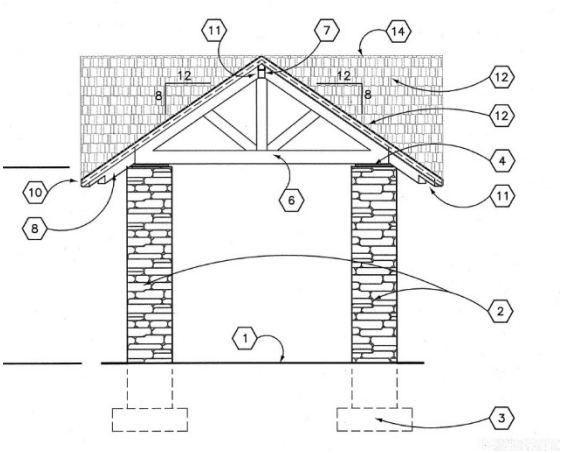


FIGURE 351. A drawing of the Lower Shelter. Source: NPS drawing 135-100490.

Shelters. The two visitor center shelters were completed in 2011. Each shelter is an open air structure measuring approximately 36 feet by 36 feet with concrete slab flooring and sandstone-clad piers supporting an engineered wood truss cross-gable roof with imitation slate tiles (Figure 352). The concrete slab flooring has an exposed aggregate finish. Support piers are located along the perimeter of the structure and spaced 8 feet on center. They are clad in rock-face random ashlar sandstone masonry with a cast stone coping. Wood seating benches are anchored to the concrete slab and support piers.

Lantern Tour Storage Building. The lantern tour storage building was completed in 2011, and is located between the two visitor shelters, southeast of the visitor center (Figure 353). The sandstone-clad structure contains a small enclosed storage room on the south side, and a covered open-air area with metal lockers on the north side. Two piers are present on the north end of the building and are clad in rock-face random ashlar sandstone masonry with a cast stone coping. The building is covered with an engineered wood truss cross-gable roof with imitation slate tiles.



FIGURE 352. A view of one of the tour shelters outside the visitor center.



FIGURE 353. A view of the lantern tour shelter building.

Views and Vistas

Within the Visitor Center Complex Character Area, the primary open views are afforded looking north across the parking lot and east/southeast over the lawn areas toward the parkway and the tour shelters. Views are contained within the character area by dense woodland forest on the east side of the entrance road and the western side of the parking lot. There are some views north to the Woodland Cottages from the visitor center parking lot (Figure 354).



FIGURE 354. The Woodland Cottages are visible from the visitor center parking lot.

Small-scale Features

Small scale features within this character area include signs, commemorative markers, site furnishings, bollards, lighting, interpretive elements, and utilities.

Signs. There are a variety of signs within this character area, including signs for wayfinding, interpretation, road regulation, parking regulation, information, and identification.

The visitor center is identified by the large standard National Park Service identification sign, mounted on a stone base with sandstone columns and concrete caps (refer to Figure 342). There is also a large sign with standard symbols for restrooms mounted on a smaller type of sandstone base and located east of the visitor center entrance (refer to Figure 344).

Two tall wood signs stand along the road leading from Mammoth Cave Parkway to the hotel and new bus drop-off loop (Figure 355). The signs identify the hotel and are each supported by two wood posts.



FIGURE 355. Two wood signs identifying the hotel stand along the road leading to the hotel and bus drop-off loop from the parkway.

Smaller standard regulatory signs are located along the entrance road and are constructed with a single metal pole with attached metal sign face. This sign face is the standard vinyl NPS brown with white lettering (refer to Figure 338). Standard traffic regulatory signs are placed along the entrance road and where necessary in the parking lot (refer to Figure 354).

There are large information and orientation signs associated with video screens located inside the cave tour information kiosk on the visitor center plaza near the entrance (Figure 356).



FIGURE 356. Video screens in the cave tour information kiosk at the visitor center entrance.

Commemorative Markers. Located in front of the visitor center is a bronze plaque, commemorating Mammoth Cave National Park as a World Heritage Site. The inscription reads:

> Through the collective recognition of the community of nations expressed within the principles of the convention concerning protection of the world cultural and natural heritage, MAMMOTH CAVE NATIONAL PARK has been designated a WORLD HERITAGE SITE and joins a select list of protected areas around the world whose outstanding natural and cultural resources form the common inheritance of all mankind. October 27, 1981.

There is another commemorative marker along the walkway in front of the visitor center. It is a bronze plaque mounted in a rock, honoring Stephen Mather's accomplishments for the National Park Service (Figure 357). Many of these plaques were made and installed in parks beginning in 1932. The inscription reads:

> Stephen Tyng Mather
> July 4, 1867–January 22, 1930
> He laid the foundation of the National Park Service, defining and establishing the policies under which its areas shall be developed and conserved unimpaired for future generations. There will never come an end to the good that he has done.



FIGURE 357. Commemorative marker honoring Stephen Mather.

Site Furnishings. Within the Visitor Center Complex Character Area there are a variety of benches, trash/recycling receptacles and visitor amenities associated with the visitor center.

Included in this area are sets of recycling bins. These containers, three to a set, are located on the visitor center plaza and at the east end of the visitor center (Figure 358). The containers have plastic tops and precast concrete exteriors.



FIGURE 358. Recycling bins in the visitor center plaza.

There is a bicycle rack and associated trash receptacle located on an exposed aggregate concrete pad next to a pedestrian path to the visitor center plaza and entrance (refer to Figure 343). There are also ash receptacles (for disposal of cigarette waste) with exposed aggregate concrete containers located on the visitor center plaza (Figure 359).



FIGURE 359. Ash, cigarette, and cigar receptacle in the visitor center plaza; adjacent slender green bollards prevent vehicular access to the plaza.

Fences and Gates. There are large metal gates associated with the utility structure located east of the visitor center (refer to Figure 348). The gates remain closed unless access is necessary. The gates lock with metal rods attached to the base of the gates that project down into the adjacent paved access to secure the gate doors.

Black metal fencing is located on the south side of the visitor center, forming the edge of the south plaza and defining the access to the pedestrian bridge leading to the hotel (refer to Figure 345). The decorative picket fencing is attached to sandstone columns and continues around the tour shelters.

There is also a metal gate at the entrance to the bus loop road that prevents traffic from entering during times that the park is closed, and a wooden gate on the service drive to the Historic Entrance Road near the hotel service/kitchen area.

There are two types of bollards located to prevent vehicular access at the pedestrian entrances to the visitor center plaza. Two of the bollards are slender green posts and the others are made of concrete, with decorative features (Figure 360 and refer to Figure 359).



FIGURE 360. Decorative concrete bollards prevent vehicular access to the visitor center plaza.

Lighting. Lighting within this character area consists of low level lighting consistent throughout the Core Visitor Services Area (refer to Figure 231). The fixture is brown metal with a peaked cap and located along all the major pedestrian pathways in this character area (refer to Figure 344 and Figure 357).

Within the character area, lighting is also provided in the visitor center parking lot and along some of the visitor center sidewalks. The lighting installations include poles with rectangular "shoebox" fixtures painted black (Figure 361). There are double and single fixtures on the poles.



FIGURE 361. Pole-mounted lights illuminate the visitor center parking lot.

Utilities. Above ground evidence of utilities within this character area include power poles and above ground lines adjacent to the parking lot, drainage inlets, sewer manholes, and utility boxes associated with the visitor center. There is also a utility enclosure for HVAC units with sandstone walls and access gates. Utility boxes are mounted on this structure located east of the visitor center.

There is a storm filter unit associated with the oil and grit separation filtration system located by the hotel dock in this character area, and one west of the visitor center. The units are cast-in-place concrete with a large metal grate similar to the other storm filter units located within the Core Visitor Services Area.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Scenic overlook
Green River Bluffs Trail
Dixon Cave Entrance
Dixon Cave Trail
River Styx Spring Trail
Cave Island
Green River
River Styx Spring
Site of old Mammoth Cave Ferry crossing
River Styx
Echo River Spring Trail
Chlorinator house (remnant of former sewage treatment plant)
Gravel road to former sewage treatment plant
Mammoth Dome Sink Trail
Echo River
Parking
Green River Ferry
YMCA Cave Entrance
Green River Ferry Road
Joppa Ridge Road (unpaved)
Mammoth Dome Sink
White Cave Entrance
White Cave Trail
Echo River Spring
Picnic Area & Woodland Cottages
see Character Area 2 map
Historic Entrance
see Character Area 3 map
Mammoth Cave Visitor Center
see Character Area 6 map
Mammoth Cave Hotel
see Character Area 5 map
Campground
see Character Area 4 map
Flint Ridge Road
Detailed information not available outside this line
Residential Area
Maintenance Area
Maintenance Road
Mammoth Cave Parkway

0' 450' 700'
SCALE 1" = 700'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Figure 362.

Existing Conditions

Character Area 7: Trails, Traces, Roads, Ferry Crossings, & Cave Entrances

Nov 16, 2015 - 1:03pm G:\PROJECTS\Mammoth Cave CLR\Planning\AutoCAD Active\MACA_Base36161_with new VC.dwg

Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances

See Figure 362, Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances.

This character area is composed of features surrounding the developed landscape of the hotel and visitor center and within the boundaries of the Core Visitor Services Area. These include the extensive trail system associated with the visitor contact area, roads and road traces, the old ferry crossing/riverboat landing, and the Green River Ferry crossing and three cave entrances, Dixon Cave, White Cave, and the YMCA Cave. Most of this area is characterized by dense woodland tree cover, spectacular views to the Green River Valley and access to the Green River.

Resources present within Character Area 7 are described below, and have been assessed as being in good condition unless otherwise noted.

Natural Systems and Features

Within this character area there are three cave entrances: Dixon Cave, White Cave, and the YMCA Cave (near the Green River Ferry Crossing). These three caves, although in close proximity to Mammoth Cave, are separate caves and unconnected to the Mammoth Cave system. The Dixon Cave Entrance currently has a bat gate inside the entrance to keep unauthorized explorers from disturbing the habitat of the Indiana bat and to protect the full range of natural and cultural resources and the general safety of the public. All caves in the park are closed to the public by regulation and the NPS controls all access. (Figure 363).

White Cave Entrance is also blocked from access. White Cave was toured in the nineteenth-century and was used for the Trog Tour beginning in the 1970s. The park discontinued its use around 2005.

The YMCA Cave Entrance is also gated to stop unauthorized access and protect the public who come to the Ferry Crossing and use the parking lot and canoe launch. (Figure 364).



FIGURE 363. Dixon Cave has a bat gate inside the entrance.



FIGURE 364. The YMCA Cave Entrance located on the south side of Green Ferry Road.

The Green River is the western boundary of this character area and the entire Core Visitor Services Area (Figure 365). The Green River is the base-level stream for the Mammoth Cave system, and has crucial influence on the cave aquatic community. The groundwater that flows underground from the sinkhole plain south of the park into the river finds its outlet through springs. Among the most notable springs in the park and specifically in this character area are the River Styx Spring and the Echo River Spring. Both are subterranean waterways that emerge onto the surface in the park. River Styx Spring upwelling is backed against a steep bluff (Figure 366). From the point of its emergence, the water flows for 50 yards or so into the Green River.



FIGURE 365. The Green River serves as the western boundary of the Core Visitor Services Area.



FIGURE 366. River Styx Spring backs up to a steep bluff.

Green River bluffs are most evident within the northern section of this character area. The Green River Bluffs Trail provides the opportunity for hiking along the bluffs. Expansive views are afforded from the trail to the river valley with natural resource interpretive signage.

Mammoth Dome Sink is located along the Mammoth Dome Sink Trail, descending from the Heritage Trail. This sinkhole surface depth is approximately 30 feet. The sinkhole funnels water from the surface to the underground. Water runs off ridge tops until captured by a sink which creates vertical shafts within the cave system.

Responses to Natural Resources

Trails are established within this character area to provide access and views to key features of the natural environment. Bridges, boardwalks with rails, and overlooks constructed along the trail system within this character area help negotiate streams, steep topography, and vegetation. There are stone and wood water bars along trails to help prevent erosion of the gravel surfacing and switchbacks are used to construct trail section on steep slopes.

Culverts, drop inlets, channelized swales, curbs and concrete gutters convey storm water associated with the Green River Ferry Road and the associated parking lot.

Patterns of Spatial Organization

Within this character area, spatial organization is characterized by heavy woodland vegetation surrounding the trail corridors that wind over the steep terrain and pass natural systems and features such as the Green River, cave entrances, springs, unique vegetation, and wildlife. (Figure 367). The enclosed quality of the trails sometimes opens up to expansive views from the bluffs to the river valley (Figure 368). To a lesser degree the space opens up a bit at the cave entrances or at intersections of the trails. Woodland vegetation tightly encloses the Green River Ferry Road until it opens up at the parking lot and the ferry crossing over the Green River.



FIGURE 367. Spatial organization is characterized by heavy woodland vegetation surrounding trail corridors.



FIGURE 368. The spatial quality of the trails begins to open, providing a view to the river valley.



FIGURE 369. Topographic modifications for trail construction include the use of stone retaining walls and crushed stone/gravel to create a level trail surface.

Topographic Modifications

The topography of this character area is characterized by steep bluffs, a river valley and smaller ravines and hills. Grading to accommodate the Green River Ferry Road, the Green River Ferry crossing and associated parking and the numerous hiking trails has resulted in modifications to the existing topography of the area (Figure 369 and Figure 370). Natural stone retaining walls contain the slope on both sides of the Green River Ferry crossing.

Land Uses and Activities

Land uses associated with this character area include recreation, interpretation, and transportation. The entire trail system provides recreational hiking for visitors with interpretive information at key features along the trails. Recreation is also associated with the canoe and boat launch provided at the Green River Ferry Crossing and associated parking lot. Transportation features in this area include the Green River Ferry Road and associated parking lot, the Green River Ferry Crossing, and the old Mammoth Cave ferry crossing.



FIGURE 370. Grading was required to construct the stone retaining walls on both sides of the Green River Ferry crossing.

Circulation

Green River Ferry Road connects the Green River Ferry Crossing with Mammoth Cave Parkway. The road is a two-lane asphalt road that retains the original alignment constructed by the Civilian Conservation Corp in 1939 (Figure 371). It is lined with curb and gutter on both sides from the parking lot entrance to the ferry crossing (Figure 372). The south side of the road has a concrete ditch, which is sometimes utilized for unofficial and unauthorized canoe storage (Figure 373).

The Green River Ferry connects the two segments of Green River Ferry Road on either side of the river (refer to Figure 373). Service began there in 1939. The ferry operates year-round from 6:00 a.m. to 9:55 p.m. Service schedule is subject to water level on the Green River and is taken out of commission every five years to sandblast and paint the hull and undergo inspection by the Coast Guard.

There is an old ferry crossing located upstream of the Green River Ferry crossing that can be accessed on the River Styx Spring Trail (Figure 374). This trail follows an old road trace from the Historic Entrance to the old Mammoth Cave Ferry crossing (Figure 375). There is interpretive signage near the Green River to inform visitors about the old riverboat landing. The former Miss Green River Tour boat, a concession operation, was also located near the Green River Ferry crossing. This boat was a motorized sightseeing boat that provided thousands of visitors each year with an introduction to the outstanding scenery, the flood plain, bluff forests, and wildlife of the Green River Valley.



FIGURE 371. Green River Ferry Road leads from Mammoth Cave Parkway to the ferry crossing.



FIGURE 372. The ferry crossing on Green River Ferry Road.



FIGURE 373. A concrete ditch near the crossing is not an official or authorized storage area, but is often utilized as such.



FIGURE 374. The old ferry crossing, accessed from the River Styx Spring Trail.



FIGURE 375. The access trail to the old ferry crossing follows a road trace.

A gravel road formerly extended from the Green River Ferry Road to the sewage treatment plant. A segment of this road remains and forms part of the trail leading to the sewage treatment plant northwest of White Cave and west of the Mammoth Dome Sink. The road segment that connected to the Green River Ferry Road is no longer in existence. The intersection with the Green Ferry Road was located in close proximity to the intersection with Joppa Ridge Road.

The only parking lot in this character area is accessed from Green River Ferry Road. The parking lot entrance is located to the north of the road immediately before it descends to the Green River Ferry Crossing (Figure 376). The lot is curbed with striped spaces and universally accessible parking. It serves visitors with canoes who launch from the ferry crossing. A few parking spaces are also provided parallel to the road.

Trails. An extensive trail system is associated with Character Area 7 within the Core Visitor Services Area. The trails include: the Campground Trail (begins at the campfire circle at the campground); Dixon Cave Trail (begins at the Historic Entrance); Echo River Spring Trail (begins at the Green River Ferry); Echo River Trail (begins at Sunset Point); Green River Bluffs Trail (begins at the picnic area); Mammoth Dome Sink Trail (begins at the Heritage Trail); River Styx Spring Trail (begins at the Historic Entrance); and Heritage Trail (begins at the Mammoth Cave Hotel).

Campground Trail (White Cave Trail). This trail begins at the campfire circle in close proximity to the campground. It intersects with the Mammoth Dome Sink Trail at the entrance to White Cave. The trail surfacing is gravel. The length of this trail is approximately 1/2 mile.

Dixon Cave Trail. This trail starts at the Historic Entrance and intersects with the Green River Bluffs Trail (refer to Figure 216). Vegetation along this trail includes mountain laurel, dogwood and chestnuts oak. This trail goes by the Dixon Cave Entrance which is gated to control access. The trail surfacing is gravel and the length of this trail is approximately 1.2 miles.

Echo River Spring Trail. This trail begins at the Green River Ferry parking lot and continues around the Echo River Spring approximately 0.4 miles and it then becomes the Echo River Trail which then leads to Sunset Point. The length of the Echo River Trail is approximately 2.2 miles. It also passes the chlorinator building, the last remaining structure of the original park sewage system. The trail surfacing is gravel.

Green River Bluffs Trail. This trail is accessed from a trailhead located at the picnic area. Most of the vegetation that forms the corridor of this trail is upland hardwood forest (Figure 377 and Figure 378) The trail surfacing is gravel and there is some severe gully erosion in the middle of the trail walking surface. There have been some attempts in these areas of the trail to diminish the erosion by use of water bars. The Green River

Bluffs Trail ends at the River Styx Trail and is approximately 1. 1 miles in length.



FIGURE 376. The ferry parking lot on Green River Ferry Road.



FIGURE 377. The gravel-paved Green River Bluffs Trail.



FIGURE 378. Benches at a small overlook on the Green River Bluffs Trail.

Mammoth Dome Sink Trail. This trail begins at the Heritage Trail and winds past the Mammoth Dome Sink and White Cave to the Echo River Spring Trail. It is approximately 2 miles long and surfaced with gravel.

River Styx Spring Trail. This trail begins at the Historic Entrance and leads to the Green River floodplain, populated with large trees (Figure 379). At the trail junction, east goes to Echo River Spring Trail and to a boardwalk leading to the River Styx Spring. To the west is Green River Bluff Trail, which leads 1. 1 miles to the picnic area. South is the River Styx Trail, ending at the confluence of the River Styx, the outflow of River Styx Spring, and the old ferry/steamboat landing (refer to Figure 375). This trail is surfaced with gravel.



FIGURE 379. The River Styx Spring Trail.

Vegetation

Surface vegetation in this character area consists of variable oak/hickory woodland containing a mixture of white oak, black oak and chestnut oak on the surrounding slopes. Evergreens are present along the trails as well as trees such as dogwood and mountain laurel.

Buildings and Structures

Chlorinator building. (Structure No. 026) The chlorinator building was constructed in 1940 by members of the CCC. The sandstone-clad structure is rectangular in plan and topped by a cedar-shingled gable roof (Figure 380). The door and window openings on the structure have been covered by plywood.



FIGURE 380. The chlorinator building.

Trail Structures. There is an overlook structure on the Green River Bluffs Trail and a boardwalk to the River Styx Spring where the river emerges from underground (Figure 381 and Figure 382). There is also a complex system of wood boardwalks and stairs leading from the picnic area down to the Dixon Cave Trail (Figure 383).



FIGURE 381. Scenic overlook wooden rail structure on Green River Bluffs Trail.



FIGURE 382. Boardwalk to the River Styx Spring.



FIGURE 383. A complex system of boardwalks and platforms leads to the Dixon Cave Trail from the picnic area.

Retaining Walls. There are large stone retaining walls on both the north and south sides of the Green River Ferry crossing. There are two walls on the south side of the river (one on each side of the road) and two on the north side (one on each side of the road). The walls are constructed of limestone slabs and the walls curve around the landform and abut the concrete landing where the road ends at the Green River (refer to Figure 370).

Views and Vistas

There are dramatic views to the river valley within this character area from the Green River Bluffs trail. (Figure 384). At various other locations on the trails there are some views to the greater landscape or to the river. Views are enjoyed along the trails from overlooks to smaller natural features such as the emergence of the River Styx which flows into the Green River (refer to Figure 366). Otherwise views are contained to the trail corridors and any small openings in the vegetation due to natural or man-made features. There is a contained view of the Green River Ferry Crossing and the Green River Ferry Road as the road descends toward the water (refer to Figure 372). There is also a view at this point to the open space of the parking lot.



FIGURE 384. View of the Green River from the bluffs trail.

Small-scale Features

Small scale features within this character area include signs, site furnishings, fences, lighting and utilities.

Signs. The majority of signs within this character area are the wooden directional signs associated with trail identification, direction, and length of a particular trail segment. These signs are consistent with others throughout the Core Visitor Services Area. They are constructed with 4x4 wooden posts and 2x4 wooden sign boards(Figure 385). There are single signboards and multiple signboards where the 2x4 slats area bolted together. The lettering is incised into the wood slats and painted white.



FIGURE 385. Typical wooden directional sign.

Interpretive signage is located within this character area along trails to highlight historic land or water uses and other natural and cultural resources (Figure 386). These signs are standard NPS low profile, with a slanted fiberglass panel supported by a powder-coated steel frame with two legs. In some cases the sign frames are mounted on wooden overlook structures such as the interpretive sign at the River Styx overlook (Figure 387). The standard interpretive sign located on the scenic overlook along the Green River Bluffs Trail is adjacent to a web –cam, installed to monitor air quality visibility at the overlook.



FIGURE 386. Typical low profile interpretive sign adjacent to web cam installation on Green River Bluffs Trail.

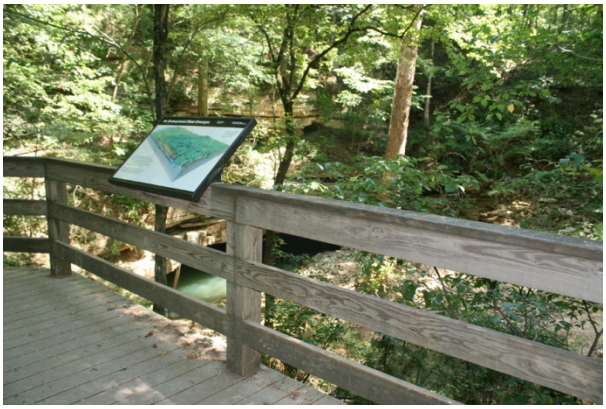


FIGURE 387. Some low profile interpretive signs are mounted on the wooden railings of overlooks.

There is also a variety of standard NPS signs and standard traffic regulatory signs associated with the Green River Ferry Crossing. These include the standard brown NPS sign with white letters identifying the ferry crossing and including a stop

sign (refer to Figure 372). There is also a standard stop sign located at the exit to the parking lot.

A two-sided kiosk sign structure is located in the parking lot for the Green River Ferry crossing. The kiosk contains informational signage and is constructed with wood and a small pitched roof with shingles.

Site Furnishings. Site furnishings within this character area include benches along some of the trails. The benches are constructed with wood slat seats and backs with iron supports (refer to Figure 378). This type of bench is located along the Green River Bluffs trail and at the Dixon Cave Entrance.

Built-in bench seating on the wooden overlook at the River Styx Spring is also provided (Figure 388).



FIGURE 388. Built-in bench seating at the River Styx Spring overlook.

Fences and Gates. There is three-rail split rail fencing associated with the parking lot at the Green River Ferry Crossing. It lines the entrance to the parking lot and the edge of the parking lot (refer to Figure 376).

There is also wooden barrier fencing along the Green River Bluffs Trail, and wooden fencing associated with the wooden stair and overlook structures near the Dixon Cave Entrance (refer to Figure 378 and Figure 383).

There is a standard brown NPS swing arm gate at the entrance to the Green River Ferry crossing (refer to Figure 372).

Lighting. There are several overhead standard street lights in the vicinity of the electrical poles and wires at the Green River Ferry Crossing parking lot. Solar lights are also present.

Utilities. The chlorinator building, the last intact structure at the site of the former wastewater/sewage treatment plant, is located within this character area. Other utilities include utility poles, a generator and propane tank, and overhead electrical lines in the vicinity of the Green River Ferry Crossing and parking lot. There is also a utility box housing the air quality camera adjacent to the interpretive sign on the Green River Bluffs trail at the view out to the river valley (refer to Figure 386).

Analysis and Evaluation

Introduction

This chapter consists of three sections: an evaluation of Mammoth Cave National Park in accordance with the guidance provided by the National Register of Historic Places with specific focus on the Core Visitor Services Area that is the subject of this study, a comparative analysis of historic and existing landscape conditions, and an assessment of historic integrity.

The significance evaluation that comprises the first section of this chapter identifies the important historical associations and qualities of the landscape according to the National Register of Historic Places Criteria for Evaluation. It begins with a summary of the National Register evaluations that have already been conducted for park resources. Suggestions for additional eligible properties follow. This section also describes the historic contexts represented by resources within the park and identifies the period of significance for the park and the Core Visitor Services Area.

The comparative analysis of historic and existing landscape conditions developed in the second section of this chapter examines the similarities and differences between historic and existing landscape conditions to provide an understanding of how much the Core Visitor Services Area and its resources today reflect their character and appearance during the period of significance. The primary goals of the comparative analysis are to:

- Understand which features survive from the period of significance
- Establish the basis for an integrity assessment
- Provide baseline of information that supports the development of a well-grounded treatment plan for the cultural landscape.

The analysis focuses on extant features and their dates of origin and identifies features that were present during this period, but which are now missing. It is illustrated with photograph pairs that compare historic with existing conditions within the study area, and other graphics.

One of the byproducts of the comparative analysis is an inventory of resources that survive from the period of significance. Those that retain integrity and are associated with the developed area's significant historic contexts are referred to as contributing features. Resources that originated after the period of significance and those that do not retain integrity or do not relate to the developed area's significant historic contexts are identified as non-contributing. Features that are known to have existed during previous periods of the site's history but are no longer extant are identified as missing resources. This information is summarized in Appendix A, a table that lists each of the features described in this chapter. The table conveys the names and alternate names for inventoried landscape features through time, identifies which features contribute to the significance of the landscape, provides a condition rating for each feature, and lists dates of origin and modification for each feature as known.

This work informed the final section of this chapter, the integrity assessment, which summarizes to what degree the property retains its ability to convey landscape conditions present during the period of significance. The assessment was developed according to the seven aspects defined by the National Register: location, design, setting, materials, workmanship, feeling, and association.

Evaluation of Significance

The *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study* (MPD-HRS) was prepared in 1990 and entered in the National Register of Historic Places on May 8, 1991.[212] A number of other park resources were listed in the National Register at the same time. One of these was the Mammoth Cave Historic District, which was listed at the time based on a discrete nomination form.[213] The MPD-HRS addresses resources throughout Mammoth Cave National Park, while the Mammoth Cave Historic District nomination specifically addresses resources associated with Mammoth Cave.

The MPD-HRS served as the preliminary basis for the assessment of resources located within the Mammoth Cave Core Visitor Services Area addressed by this CLR. While there are several resources located within the physical area addressed by the CLR that are already listed in the National Register, the comprehensive investigation into the history and evolution of the Mammoth Cave Core Visitor Services Area completed for this study suggested aspects, areas, and period of significance beyond that addressed in the 1991 documentation, which are incorporated into the discussion below.

Historic Contexts for Mammoth Cave National Park

The MPD-HRS accepted by the National Register in 1991 identifies four primary historical contexts for Mammoth Cave National Park that were evaluated for their historic significance and tied to physical resources. Each can also be tied to associated National Park Service history themes. These contexts and themes are as follows.

Context A. Exploration and Settlement in the Mammoth Cave Area, circa 1754–1927. This context is related to historic themes of Territorial Expansion, The Farmer's Frontier, Farming Communities, and The Civil War, as defined by the MPD-HRS. Churches within the park are considered eligible property types under this context, including the Good Spring Baptist Church and Cemetery, the Joppa Baptist Church and Cemetery, and the Mammoth Cave Baptist Church and Cemetery. None of these churches are located within the physical area addressed as part of this CLR.

The MPD-HRS also describes numerous additional properties that were surveyed under this context but not proposed for nomination to the National Register. They include forty-seven other cemeteries or grave sites and twenty roads or berms. Although many of the roads predate establishment of the national park, the CCC is known to have completed major road improvements within the park between 1933 and 1942, and other roads have been further improved during the post-World War II and Mission 66 eras. Therefore, the issue of historic integrity for the roads requires special consideration.

Context B. Discovery and Early Uses of Mammoth Cave, 1798–1849. This context is related to the historic themes of The War of 1812, Other Metals and Minerals, Extraction and Conversion of Industrial Raw Materials, Cemeteries, and Medicine, as defined by the MPD-HRS. The Mammoth Cave Historic District and the Old Guide's Cemetery are both considered eligible under this context. Both of these properties are within the study boundary of the CLR. The MPD-HRS notes that "both of these individual properties represent lone examples of their type."

The MPD-HRS notes that further historical research and field survey work is needed related to

212. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, prepared by Kelly A. Lally, Consultant, Kentucky Heritage Council, October 1, 1990, entered in the National Register, May 8, 1991

213. Lally, *National Register of Historic Places Registration Form, Mammoth Cave Historic District*.

the use of Mammoth Cave and other nearby caves in the production of saltpetre in the nineteenth century, as detailed in the 1986 HAER report.[214] Depending upon the results of further study, some of these caves may be individually National Register-eligible.

Context C. Commercial Cave Development and the Growth of Tourism in the Mammoth Cave Area, 1849–1926. This context relates to the historic theme of Recreation. The Mammoth Cave Historic District, the Old Guide's Cemetery, and Engine No. 4 and Coach No. 2 are considered eligible under this context. Also included are the Crystal Cave Historic District, the Colossal Cavern Entrance (now known as Colossal Cave Entrance), and the Great Onyx Cave Entrance that fall outside of the CLR study area.

Context D. Establishment of Mammoth Cave National Park, 1924–1941. This context relates to the historic theme of Origin and Development of the National Park Service. The Mammoth Cave Historic District is considered eligible under this context. Also listed in the National Register under this context are the Residential Area Historic District, the Maintenance Area Historic District, the Maple Springs Ranger Station, the Three Springs Pumphouse, the Bransford Spring Pumphouse, and the Superintendent's House that are located outside of the CLR study area.

The MPD-HRS notes the following with respect to CCC work at Mammoth Cave National Park, emphasizing the significance of these resources:

> The CCC initiated extensive development activity in Mammoth Cave National Park between 1933 and 1942. The CCC constructed the following kinds of buildings and structures to meet the operational needs of the new park: houses for park employees, ranger stations, campground comfort stations, pumphouses, garages, storage buildings, a fire hall, and rock retaining walls. . . . The park properties constructed by the CCC exhibit a rustic design and are faced primarily with wood or sandstone. . . . Most were originally built with either wood shingle or slate roofs. . . . The distinctive stone and wood work of the park's CCC resources are superior to that of more recent park properties in terms of both visual appeal and quality. . . . These buildings and structures are locally significant in the history of the Mammoth Cave area of Kentucky as representative examples of the CCC's role in the development of an infrastructure to support tourism and recreational use of the new national park.[215]

The MPD-HRS suggests an end date of the period of significance of 1941 for park resources relating to these contexts.[216] This represents the date at which Mammoth Cave National Park was officially established and coincides with the end of the major efforts by the CCC in park development (although some CCC work continued into 1942, before the last camp in the park was disbanded in July of that year).

In the more than twenty years since preparation of the MPD-HRS, several park features have reached the fifty-year age consideration, and additional research relating to the postwar era, including the National Park Service's Mission 66 program initiative that resulted in extensive physical changes to parks throughout the nation, has been completed.[217] Based on review of this research, and on the investigation conducted for this CLR, it is clear that either the period of significance for

214. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, B-8–B-9, citing Marsha A. Mullins, Historic American Engineering Record study of Mammoth Cave saltpetre works, 1986.
215. Ibid., D-20–D-21.
216. The MPD-HRS was completed in 1991. As a result, the year 1941 was chosen as the end date of the period of significance, as this represented fifty years prior to the completion of the MPD-HRS.
217. Sarah Allaback, *Mission 66 Visitor Centers: The History of a Building Type* (Washington, D.C.: National Park Service, Cultural Resources Stewardship and Partnerships, Park Historic Structures and Cultural Landscapes Program, 2000); Ethan Carr, *Mission 66: Modernism and the National Park Dilemma* (Amherst: University of Massachusetts, 2007).

Context D should be extended or a new context (Context E) established to capture the post-1941 development in the park, as further discussed below. Not only were some buildings designed during the New Deal period completed after 1941, much of the Mission 66 development in the park is now over fifty years old. Individual resources and districts within the park could be considered eligible for listing in the National Register if they represent significant components of the evolution of Mammoth Cave National Park or exemplify the design, planning, and interpretation qualities that characterized New Deal-era development or the Mission 66 program, as further discussed below.

National Register-listed Resources in Mammoth Cave National Park

National Register Criteria for Evaluation.

In order for a property to be eligible for inclusion in the National Register of Historic Places, it must possess significance under one of four criteria. The Criteria for Evaluation state:

> The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A. That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B. That are associated with the lives of persons significant in our past; or
>
> C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D. That have yielded, or may be likely to yield, information important in prehistory or history.[218]

There are currently nine historic districts and six individual resources listed in the National Register of Historic Places located within Mammoth Cave National Park. Engine No. 4 and Coach No. 2, the Mammoth Cave Historic District, and the Old Guide's Cemetery fall within the area addressed by this CLR, while the others are located elsewhere within the park.

Artifacts.

- Engine No. 4 (misidentified in the National Register documentation as Hercules) and Coach No. 2. These resources, listed together in the National Register, fall within the CLR study area. The locomotive and coach are significant in the area of engineering and transportation. The locomotive is one of four that worked the Mammoth Cave Railroad between 1886 and 1931, playing an important role in bringing visitors to the caves. It is described in more detail in the section titled Significance of the Core Visitor Services Area and its Resources below.

Churches.

There are three churches individually listed in the National Register. They are all located outside the CLR study area:

- Good Spring Baptist Church and Cemetery, a one-story wood-framed church building constructed circa 1900 and its associated cemetery, which dates to the early nineteenth century.[219]

- Joppa Baptist Church and Cemetery, a one-story wood-framed church building constructed circa 1900 and its associated

218. National Register Bulletin: *How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: Department of the Interior, 1995).

219. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Good Spring Baptist Church and Cemetery*, listed in the National Register, May 8, 1991. (Circa 1900 date of church as given in nomination.)

cemetery, which dates to the early nineteenth century.[220]

- Mammoth Cave Baptist Church and Cemetery, a one-story wood-framed church building constructed in 1927 and its associated cemetery, which dates to the early nineteenth century.[221]

Pumphouses.

There are two pumphouses currently listed in the National Register, both located outside of the Core Visitor Services Area that is the focus of the CLR. The structures are no longer functioning, as commercial water is piped from outside the park.

- Bransford Spring Pumphouse is a one-story two-room sandstone and wood building constructed in 1939 by the CCC. A 10 foot by 10 foot shed-roofed extension was later added to the west elevation at the front entrance. The Bransford Spring Pumphouse is significant under National Register Criterion A for its association with the development of the national park in the CCC era. The pumphouse, located in a wooded area on Flint Ridge, served the park headquarters, the hotel, the maintenance area, and the residential buildings also built by the CCC, and together with Three Springs Pumphouse provided water to the core area.[222]

- Three Springs Pumphouse is a one-story two-room sandstone and wood building constructed in 1938 by the CCC. The pumphouse is historically significant as an example of the construction of park facilities by the CCC. The pumphouse, set in a wooded area between Flint Ridge and Three Springs Hollow, served the park headquarters, the hotel, the maintenance area, and the residential buildings also built by the CCC, and together with Bransford Spring Pumphouse provided water to the core area.[223]

Cave Entrances and Old Guide's Cemetery.

- Mammoth Cave Historic District consists of the cave's primary Historic Entrance, in addition to several cultural features within the cave itself. This district falls within the CLR study area. The historic district encompasses the cave's Historic Entrance, extends for approximately 12 miles of underground passages, and includes manmade resources dating from prehistoric peoples through the nineteenth century to 1941 and later. It is described in more detail in the section titled "Significance of the Core Visitor Services Area and its Resources" below.[224]

- Old Guide's Cemetery is composed of several graves including those of tuberculosis patients who died in 1842–1843 searching for a cure through medical use of the cave, and a famous cave guide. It is located within the CLR study area and described in more detail in the section titled "Significance of the Core Visitor Services Area and its Resources" below.

220. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Joppa Baptist Church and Cemetery*, listed in the National Register, May 8, 1991. (Circa 1900 date of church as given in nomination.)
221. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Mammoth Cave Baptist Church and Cemetery*, listed in the National Register, May 8, 1991.
222. Kelly Lally, Kentucky Heritage Council, *National Register Nomination: Bransford Spring Pumphouse*, listed in the National Register, May 8, 1991.
223. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Three Springs Pumphouse*, listed in the National Register, May 8, 1991. The site was also used as a water source for the hotel, train, and local residents prior to establishment of the park.
224. Kelly Lally, Kentucky Heritage Council, *National Register of Historic Places Registration Form, Mammoth Cave Historic District*, June 1989; entered into the National Register, May 8, 1991. The nomination notes, "Though Mammoth Cave was explored and used by Indians several thousands of years ago, the prehistoric resources of the cave are outside the scope of this nomination."

Three additional cave entrances are individually listed in the National Register that fall outside of the area addressed by the CLR:

- Colossal Cavern Entrance (now known as Colossal Cave Entrance, E-19). This entrance is located approximately 1-1/2 miles east of the Core Visitor Services Area, south of Flint Ridge Road. At this site, a natural opening was improved by commercial cave operators with limestone slab stairs and a limestone retaining wall. The entrance, stairs, and walls are listed as contributing resources.[225]

- Crystal Cave District. This district is centered on a cave entrance approximately 2-1/2 miles east-northeast of the Core Visitor Services area. Contributing resources within the district include the cave entrance, a connecting path, the visitor gathering yard, the Collins House dating to the early twentieth century, the ticket office built in 1927, the sandstone stairway leading to the cave, and the sandstone retaining walls surrounding the entrance. This cave entrance was discovered in a natural sinkhole in 1917 on the Collins family farm.[226]

- Great Onyx Cave Entrance. This entrance is located approximately 2-1/2 miles northeast of the Core Visitor Service area. The entrance is entirely manmade and consists of a limestone structure built into a hillside after 1915. Within the structure, concrete-covered limestone steps descend into the cave. Contributing resources include the cave entrance, the gathering yard, the entrance building, adjacent stone retaining walls, and the metal door frame at the cave entrance.[227]

New Deal-era Buildings.

- The Maintenance Area District consists of three historic buildings constructed in 1939–1941 by the CCC, including the repair shop, the warehouse/ maintenance building, and the paint shed/oil house. The buildings feature sandstone exterior walls. Also located within the maintenance area are the fire hall (1958) and vehicle wash structure (1960s). These buildings and structures were identified as non-contributing in the district nomination.[228] The later additions to the maintenance area are discussed below and are considered potentially eligible to the National Register based on both the fifty-year rule and their association with the Mission 66 program. A Multiple Property Documentation Form on the Mission 66 Era of National Park Development, 1945–1972, should be developed for use in determining the National Register eligibility of all the Mission 66 resources in the park.

Additional CCC-era buildings and groups of buildings are located outside of the CLR study area:

- Residential Area District, consisting of six buildings constructed in 1937 by the CCC. The overall residential area of the park is relatively large, and the historic district is limited to a cluster of six residences encircled by a park roadway. The six residences are all similar one-story wood-framed buildings on sandstone foundations and are representative of CCC-era construction in the park. [229]The Residential Area District is located outside the

225. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Colossal Cavern Entrance*, listed in the National Register, May 8, 1991.
226. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Crystal Cave District*, listed in the National Register, May 8, 1991.
227. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Great Onyx Cave Entrance*, listed in the National Register, May 8, 1991.
228. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Maintenance Area District*, listed in the National Register, May 8, 1991.
229. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Residential Area District*, listed in the National Register, May 8, 1991.

CLR study area, about 3/4 mile east of the visitor center.

- Superintendent's House, constructed in 1941 by the CCC, is located at the east edge of the park's residential building group. It is a Colonial Revival style residence with stone masonry, wood siding, and a slate shingle roof. [230]

- Maple Springs Ranger Station, constructed in 1942 by the CCC, includes two buildings, a wood-framed residence with a sandstone foundation, and a sandstone masonry garage, used as an office. These two buildings are located north of the Green River, 1/2 mile off the Mammoth Cave Ferry Road. These two buildings are representative of New Deal-era construction in the park. [231]

Significance of the Core Visitor Services Area and Its Resources

Based on consideration of the collection of resources, their integrity, and association with significant historic contexts, it appears that the Core Visitor Services Area landscape as a whole does not represent a single coherent historic district. It is likely, however, that a smaller historic district may exist within it, as discussed below. The cultural landscape of this area also contains several individual resources that have already been listed, or are potentially eligible for listing in the National Register as representative of one of the historic contexts discussed earlier. The listed and potentially eligible resources are discussed below.

National Register Historic Districts and Individually-Listed Resources within the Core Visitor Services Area. Within the CLR study area, there are three resources individually listed in the National Register: the Mammoth Cave Historic District, the Old Guide's Cemetery, and Engine No. 4 and Coach No. 2.

Mammoth Cave Historic District. The Mammoth Cave Historic District encompasses four cave entrances as well as resources located underground within Mammoth Cave. The historic district encompasses the cave's Historic Entrance and extends for approximately 12 miles of underground passages, including the portions of the cave that were used historically for mining, medical, and other commercial purposes. Only the cave's Historic Entrance falls within the CLR study area. Other features within the district include the Carmichael Entrance and Violet City Entrance, located near one another approximately 1 mile south-southeast of the Core Visitor Services area; and the Frozen Niagara Entrance, located 2-1/2 miles southeast of the Core Visitor Services area. Gothic Avenue, a natural cave passage, is included as a contributing site. Eleven manmade features within the cave are included as contributing structures in the district, specifically Mushroom Beds, Rock Stairs and Walls near Olive's Bower, Saltpetre Mining Works, Rock Wall at the Bridal Altar, Rock Wall at Jenny Lind's Armchair, Rock Wall at the end of Gothic Avenue, Rock Stairs at the end of Gothic Avenue, two stone Tuberculin Huts, Albert's Stairway, and the Landing at Crystal Lake. The cable at Aerobridge Canyon within the cave is listed as a contributing object. [232]

As noted in the National Register nomination, the Historic Entrance is a naturally occurring sinkhole that provides access to Mammoth Cave. Manmade elements within the sinkhole, including the concrete stairway, handrails, and turnstile, are

230. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Superintendent's House*, listed in the National Register, May 8, 1991.
231. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Maple Springs Ranger Station*, listed in the National Register, May 8, 1991.
232. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Mammoth Cave Historic District*, listed in the National Register, May 8, 1991.

noted in the nomination as non-contributing elements. However, as the site through which visitors and others gained access to Mammoth Cave starting in the early nineteenth century, the Historic Entrance retains integrity of setting, feeling, and association. [233]

The MPD-HRS indicates:

> The Mammoth Cave Historic District is an exceptionally rare resource. . . . The Mammoth Cave Historic District is significant under criterion A based on historic associations with the areas of Entertainment/Recreation (tourism), Industry (saltpetre mining), Commerce (tourism, saltpetre mining, and mushroom beds), and Health/Medicine (tuberculin huts). Based on the critical role which Mammoth Cave saltpetre played in supporting the American military effort during the War of 1812, the importance of Mammoth Cave as an American tourist destination, the significance of the tuberculosis huts as an experimental effort to control a fatal disease, and the excellent state of preservation exhibited by the historic resources within the cave, national significance has been assigned to the Mammoth Cave Historic District. [234]

Although historic manmade features within the cave are included within the district as defined, the MPD-HRS suggested that the boundaries could be expanded in the future.

> Mammoth Cave itself should receive future study as a historic resource. In both prehistoric and historic times, the cave has served as the site of a variety of human activities. The extent of recent survey activity resulted in the nomination of the Mammoth Cave Historic District located within the cave's Historic Entrance. The cave should ultimately be evaluated as a historic resource whose limits extend beyond the current boundaries established for the Mammoth Cave Historic District. [235]

Old Guide's Cemetery. The Old Guide's Cemetery is also individually listed in the National Register. The National Register nomination for the Old Guide's Cemetery notes that the burial ground is the only above-ground resource at Mammoth Cave National Park that dates to the early nineteenth century period of discovery and initial use of Mammoth Cave. [236] As noted in the MPD-HRS:

> The Old Guide Cemetery is one of many cemeteries contained within the national park, . . . but the Old Guide Cemetery is the only example of this resource type nominated individually with no accompanying church. . . . The Old Guide Cemetery . . . contains the graves of former tuberculosis patients who died during an 1842–1843 experiment which attempted to establish a medical use for the cave. This cemetery . . . serves as a final resting place for famous cave guide Stephen Bishop who died in 1857. The Old Guide Cemetery is significant under criterion A based on historic associations with the areas of Entertainment/Recreation (grave of former cave guide) and Health/Medicine (graves of tuberculosis patients). [237]

Engine No. 4 and Coach No. 2. The historic locomotive Engine No. 4 (misidentified as Hercules in the National Register documentation) and Coach No. 2 are also listed individually (as one entry) in the National Register of Historic Places. The interpretive exhibit featuring the engine and coach, which includes a steel-framed shelter constructed in 1967, is situated on the historic route of the Mammoth Cave Railroad 100 yards east of the park amphitheater. The engine and coach car sit on a remnant railroad bed. (Based on available historic maps, the remnant

233. Ibid., sec. 7, 4.
234. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, B-7.
235. Ibid., C-12.
236. Kelly Lally, Kentucky Heritage Council, *National Register Nomination, Old Guide Cemetery*, listed in the National Register, May 8, 1991, sec. 7, 4.
237. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, B-7–B-8.

railroad bed seems to be located at the original terminus of the Mammoth Cave Railroad.) The locomotive and coach, and their association with the early rail line, are significant in the area of engineering and transportation. The locomotive is one of four that worked the Mammoth Cave Railroad between 1886 and 1931, playing an important role in bringing visitors to the caves. This locomotive was one of the last of its type in operation in the United States. [238]

Other Historic Resources Located within the Core Visitor Services Area Not Currently Listed in the National Register.

Cave Entrances. In addition to the cave's Historic Entrance, there are three other cave entrances within the park that are individually listed in the National Register. Other cave entrances exist, including two within the Core Visitor Services Area, that may be eligible for listing based on the assessment provided in the MPD-HRS:

> Entrances to commercial caves and their related structures and properties are found in a variety of locations within the boundaries of Mammoth Cave National Park. . . . Cave entrances and related structures associated with commercial cave exploitation are significant under Criterion A in the area of Entertainment/Recreation. . . . Resources nominated under this property type are all locally significant, although some of them might have additional significance at the state or national level. Cave entrances and related structures are the most visible reminders of the local development and importance of the tourist business in the Mammoth Cave area and the competition among cave owners for that business. . . . The process of establishing a national park also witnessed efforts to return the park landscape to a natural state which would exhibit little evidence of human habitation. Thus, most of the buildings associated with commercial cave exploitation in the area were razed. [239]

The Dixon Cave Entrance and White Cave Entrance are within the CLR study area. If it can be established that the entrances are connected underground to Mammoth Cave, consideration could be given to expanding the Mammoth Cave Historic District to include these entrances as contributing features. However, despite numerous attempts to find a connection, there are no known passages that can be traced between these entrances and Mammoth Cave. In addition, the relative positions of the entrances in relation to Mammoth Cave and its associated geological formation suggest that there may not be connections with the cave. [240]Alternately, these cave entrances could be individually listed based on their historic associations (see below) similar to the existing individual National Register listings for Great Onyx Cave, Crystal Cave, and Colossal Cavern.

Dixon Cave Entrance. Dixon Cave is located about 350 yards northwest of the Historic Entrance. This cave entrance does not include any extant buildings or structures. However, this cave entrance was historically used for saltpetre mining, and evidence of this commercial activity may exist within the cave or in the form of archeological remains. As noted in the MPD-HRS, the extent of mining activity and any surviving physical evidence require further investigation. If noteworthy manmade features can be identified, this cave entrance could be National Register-eligible under the theme Discovery and Early Uses of Mammoth Cave, 1798–1849. [241] Dixon Cave, together with Mammoth Cave, was one of two saltpetre-bearing caves known to early explorers at the end of the eighteenth century. Further research related to mining of saltpetre would be

238. Philip B. Hasting, Acting Chief Interpreter, Mammoth Cave National Park, *National Register Nomination, Hercules and Coach No. 2*, listed in the National Register, October 10, 1975.
239. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, C-7–C-8.
240. Correspondence by authors with Mammoth Cave National Park personnel.
241. Ibid., C-11.

needed to establish the historic significance of this specific cave.

White Cave Entrance. The White Cave Entrance is a small subterranean opening located less than one-half mile south-southwest of the cave's Historic Entrance. The MPD-HRS notes that, as with other small caves, White Cave has not yet been surveyed for historical resources. As a smaller enterprise, limited information specific to this cave exists in historical records identified to date.[242] Further research is required to determine whether White Cave was a saltpetre-bearing cave known to early explorers, in which case it may be National-Register-eligible under the theme Discovery and Early Uses of Mammoth Cave, 1798–1849, similar to Dixon Cave.

Resources Not Currently Listed in the National Register of Historic Places. Other cultural resources located within the CLR study area, and their eligibility for listing in the National Register, are as follows.

Mammoth Cave Visitor Center, Hotel, and Pedestrian Bridge. The visitor center, hotel, and pedestrian bridge, as originally constructed, served as important components of the visitor services area that also included associated roads, parking lots, and trails. Additions to the hotel in 1992 and the major renovation of the visitor center in 2007–2012 have significantly diminished the integrity of the complex as a whole.

Visitor Center. The park's Mission 66-era visitor center was completely demolished to its foundation and reconstructed in two phases beginning in 2007 and 2010 respectively. Following this work, little evidence of the original 1959–1961 design, construction methods, or materials remained. The modifications to the visitor center have eliminated or obscured the character of the Mission 66 structure. In Section 106 correspondence related to the recent renovation of the visitor center, the Kentucky SHPO indicated that the visitor center was not eligible for listing because the structure was less than fifty years old as of the date of that review (1999); was not designed by a prominent architect; and was not significant under the National Register criteria.[243] Due to the significant loss of integrity through recent renovations, the visitor center is not considered eligible for listing in the National Register.

Hotel. The existing hotel, constructed in 1965 as part of the Mission 66 program, is slightly less than fifty years old and was modified by additions and renovations in 1992. These modifications changed the footprint and altered the interior of the hotel, with additions such as the fast food service areas, and also affected the exterior appearance of the hotel, especially as viewed from the approach across the bridge from the visitor center, diminishing its integrity by interfering with the visual connection between the hotel and visitor center and reducing the similarity of architectural style and materials between the two buildings. The hotel was not designed by a prominent architect; the site plan for the hotel indicates that the architectural firm of Braun and Ryan designed the building, and based on research conducted as part of this CLR project, this firm does not appear to be well known or to have designed a significant body of work. Also, within the historic context of Mission 66 architecture, the hotel would not be considered a significant example of the style, based on the findings of this study. The hotel has been determined not eligible for listing in the National Register.[244]

As part of this study, consideration was given to evaluating the Heritage Trail wing, which is part of the Mission 66 hotel and remains more intact than the rest of the hotel, separately for its eligibility. Although the Heritage Trail wing itself retains

242. Ibid., C-4.

243. David L. Morgan, Director, Kentucky Heritage Council, and State Historic Preservation Officer, to Ronald R. Switzer, Superintendent, Mammoth Cave National Park, re: Visitor Center and Pavilion, September 27, 1999.

244. David L. Morgan, Kentucky State Historic Preservation Officer, to Ronald R. Switzer, Superintendent, Mammoth Cave National Park, May 7, 2002.

more integrity than the remainder of the hotel overall, this wing is not considered an independent structure and is therefore not eligible for listing.

Pedestrian bridge. The pedestrian bridge was completed in 1961 as part of development of the Mission 66 visitor center. The design of the bridge relates both to the use of modernist architectural principles during the Mission 66 era and also to the Mission 66 approach to public use and visitor access in a national park. The bridge also frames the pedestrian approach to the Historic Entrance of Mammoth Cave, and thus plays a key role in the visitor experience. The bridge itself has not been significantly altered since construction. However, as part of the complex of visitor center, bridge, and hotel, the integrity of setting and to a degree association of the bridge have been diminished by the recent modifications to the visitor center and earlier changes to the hotel. The bridge as part of the original complex is therefore not considered eligible for National Register listing. The park further determined that the bridge is a non-contributing structure as part of the hotel-visitor center complex, and that replacement of the bridge would constitute No Adverse Effect. (See additional discussion of Mission 66 resources, below.)[245]

Woodland Cottages. Sixteen Woodland Cottages were constructed north of the hotel in 1938–1939 with funds provided through the Mammoth Cave Joint Operating Committee.[246] These gable-roofed, one-story wood-framed buildings were designed by Nevin, Morgan, and Kolbrook Architects of Louisville, Kentucky. [247] The group included one four-room cottage, one three-room cottage, ten two-room cottages, and four one-room cottages. Landscaping and infrastructure work adjacent to the cottages was completed by the CCC. In 1949, five additional one-story two-room wood structures, matching the design of the earlier cottages, were added to the group. [248]

The exteriors of the Woodland Cottages are generally intact (interiors were not accessed as part of this study) and retain their historic character. Although the cottages were associated with the 1925 hotel that is no longer extant, because they were constructed as a separate group of structures this lack of association is not considered to diminish their integrity. This group of cottages conveys its historic sense of a complex of visitor accommodations within a wooded setting. The cottages also support understanding of visitor accommodations at the site during and after the New Deal era, as well as how this portion of the Core Visitor Services Area appeared during and after World War II. In addition, further research is recommended to compare these cottages with other visitor accommodations of the period in the national parks, with potential consideration of a thematic study to place this type of resource within a national context of similar efforts.

Based on a previous determination of eligibility prepared by the NPS Southeast Region with Kentucky SHPO concurrence, the Woodland Cottages are considered eligible for listing in the National Register of Historic Places under Criterion A in the Entertainment/Recreation area of significance. In addition, the first sixteen Woodland Cottages are locally significant under Context D, Establishment of Mammoth Cave National Park, 1924–1941, as defined in the MPD-HRS.[249] The five additional cottages built in 1949 would be considered National Register-eligible structures under an extended period of

245. Sarah Craighead, Superintendent, Mammoth Cave National Park, to Craig Potts, Kentucky State Historic Preservation Officer, February 27, 2015.
246. Memorandum for the Director, June 6, 1939, copy in park archives.
247. Drawing No. 135-2155, Cabin Development (September 1938).
248. Drawing No. 135-2193, Lay-out Plan for Additions Cabins, Cabin Area, Unit No. 1(December 1941, marked "Superseded by [drawing no. 135-]2027").
249. Consensus Determination of Eligibility for Thirty-Three New Deal-Era Buildings at Mammoth Cave National Park (untitled document prepared by Southeast Regional Office, circa 2009).

significance. (See further discussion of visitor accommodations potential historic district, below.)

Deluxe Cottages. In 1936–1937, the ten Deluxe Cottages were constructed southeast of Mammoth Cave Hotel with funds from the Mammoth Cave Joint Operating Committee. The gable-roofed wood-framed, one-story cottages, each containing a single room, are sited in a semi-circular pattern. The cottages were designed by the NPS Branch of Plans and Design, Eastern Division and constructed by Will Gill of Bowling Green, Kentucky, in association with Bass and Company.[250] CCC labor constructed the infrastructure necessary for the cottage group as well as the landscaping adjacent to the cottages.

In the MPD-HRS, the Deluxe Cottages were assumed to have been built in the 1960s. However, further research has confirmed that the ten Deluxe Cottages were actually constructed in the 1930s, suggesting reevaluation of their eligibility for listing in the National Register. At the time the MPD-HRS was prepared in 1991, it was believed that these buildings had not yet reached fifty years of age and were therefore excluded from further consideration of National Register eligibility.[251]

The cottages were constructed to accompany the 1925 hotel that is no longer extant, thus their integrity of setting is somewhat diminished by the removal of the hotel and by more recent construction nearby; however, this group of cottages as a whole retains its historic integrity. Based on a previous determination of eligibility prepared by the NPS Southeast Region with Kentucky SHPO concurrence, the Deluxe Cottages are considered eligible for listing in the National Register of Historic Places under Criterion A, under the Entertainment/Recreation area of significance.[252] In addition, the Deluxe Cottages are locally significant under Context D, Establishment of Mammoth Cave National Park, 1924–1941, in the Mammoth Cave National Park Multiple Property Submission.[253] (See further discussion of potential visitor accommodations historic district, below.)

Sunset Lodge. The first Sunset Lodge building was constructed to the west of the second Mammoth Cave Hotel in 1954. The one-story sandstone and wood structure, which included ten guest rooms, was typical of the motor lodges being constructed across the county at the time. [254]

The second building of Sunset Lodge, located northwest of the first building, is nearly identical to the earlier Sunset Lodge building. The one-story stone and wood structure was completed in 1958. The National Park Service constructed the parking lot, sidewalks, and utility connections for the new building.[255]

As post-1941 buildings, the lodges are not discussed in the MPD-HRS. Based on the findings of this study, the lodges are a significant example of the continuing improvement of park facilities after World War II. The lodges could also be considered significant as an example (albeit minor) of pre-Mission 66 modern architecture in National Parks. The design blends local and vernacular materials (sandstone, vertical siding) with a modernist design (horizontal emphasis, low slope roofs), characteristics of modernist architecture in the national parks. Further research is

250. NPS Drawing No. 135-1063, "Parking Area, Mammoth Cave Hotel" (April 1937).
251. Ibid., D-23–D-24.
252 . Consensus Determination of Eligibility for Thirty-Three New Deal-Era Buildings at Mammoth Cave National Park (untitled document prepared by Southeast Regional Office, circa 2009).
253. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study.*
254. NPS Drawing No. 135-2105B, "Multi-Cabin Unit, Headquarters Area" (August 25, 1953).
255. Memorandum from H. S. Sanborn, President and General Manager, National Park Concessions, Inc., to Perry E. Brown, Superintendent, Mammoth Cave National Park, August 23, 1957; Memorandum from H. Reese Smith, Acting Regional Director, to Director, Region One, National Park Service, August 27, 1957. National Archives, College Park Maryland, Record Group 79, entry 11, box 1025, folder 2.

recommended to determine if the lodges serve as a unique example of a motor lodge-style motel in a national park. (See further discussion of visitor accommodations potential historic district, below.)

Employee Dormitory. A new employee dormitory that also houses a laundry was constructed in 1985 south of the Sunset Lodge. As a post-1941 building, the dormitory is not discussed in the MPD-HRS. Given the age of the structure, and its lack of architectural distinction, it is not considered eligible for the National Register.

Landscape Features and the Grounds Surrounding the Hotel and Visitor Center Facilities. Several historical landscape features are located on the grounds surrounding the hotel. These include shuffleboard and tennis courts built in 1939, as well as extant Eastern red cedar trees. Cedar tree groves existed in association with the circa 1920s and 1930s arched entrance approach to the Mammoth Cave Hotel and grounds and are surviving on the site today. This roadbed and associated cedar grove are visible from the southeast boundary of Character Area 1: Historic Core Landscape. There are also rows of cedar trees at the site of the 1925 hotel. (Refer to comparative photographs later in this chapter for images of the cedar groves and rows.)

Extant deciduous trees evident around the Deluxe Cottages landscape appear on the site plan for this area developed by NPS and dated March 1937. Cultural vegetation exists in the historic core landscape in association with the Historic Entrance Road, the hotel, and the Deluxe Cottages. These trees are significant. (Refer to comparative photographs later in this chapter.)

Picnic area and associated structures and features. The present-day picnic area was originally a campground with an adjacent picnic area, developed and constructed in 1940–1941 by the CCC on a rise north of the Historic Entrance. (Refer to site plan of the original campground and associated picnic area in Appendix B dated 1939.) The original picnic area, which extended over the south half of the present-day picnic area, was expanded to include the 1940–1941 campground after the new campground opened in 1964. Part of the original picnic area was later abandoned. There is a concrete foundation in the grass that was the site of a comfort station for the 1940–1941 picnic area.

The original loop road of the campground remains today as well as the secondary road associated with the picnic area. The curving campground drive was paved in crushed stone and extends up the hill to become a large loop drive. This loop drive exists today, although interior drives have been removed, and the campground put into use as part of the current expanded picnic area.

The road in the picnic area was designed and constructed of crushed stone by the CCC. This road extends off what was the campground road to terminate in a circle drive from which the trail to Dixon Cave can be accessed. Remaining features of the original picnic area include a low stone wall that forms the edge of the south parking lot in the picnic area, with stone steps to a grassy plateau.

In 1947 a twenty-car parking lot with a median separating it from the road was planned midway along the secondary (south road) of the existing picnic area on the north side. This parking exists today. Pull-off parking for thirty-five cars was planned at the beginning of the south road, but exists today with twenty regular parking spaces and one universally accessible space. This lot has parking on both the north and south sides of the secondary road. The secondary road (south road), the circle terminus, and both asphalt-paved parking lots maintain a high degree of integrity and are considered contributing resources.

The Earth House, originally constructed by the CCC in 1940–1941, also remains in the former campground. It was expanded circa 1949 based on plans prepared in 1942. Although implementation of these additions was delayed by World War II and its aftermath, the additions are faithful to the original design. The 1991 evaluation concluded that this building is not significant; however, it is likely that this finding was related to the age of the building at the time of the assessment. Further

consideration should be given to this building as a contributing resource, since it was constructed by the CCC and modified early in its history in a manner compatible with the original design.

The picnic area also contains one comfort station and three picnic shelters. The comfort station was built in the Mission 66 era but was significantly renovated circa 1990s. Due to a loss of integrity, it is not considered eligible for listing in the National Register. The date of construction of the three picnic shelters is not known with certainty, but likely was near the end of the Mission 66 era. One of the shelters was significantly renovated and enclosed circa 1990s; due to a loss of integrity, it is not considered eligible for listing in the National Register. The remaining two shelters could be considered, pending further research to confirm their date(s) of construction and further consideration of extending the period of significance of the site.

Pending further consideration under proposed extended historical context and period of significance, the picnic area (inclusive of the original campground, Earth House, and two open-air picnic shelters) should be managed as a cultural resource.

Mammoth Cave Campground. The Mammoth Cave Campground was constructed in 1964 and included four loops, four comfort stations, and a check-in station at the entrance. Circa 2004, the entrance station was demolished and replaced. The four Mission 66-era comfort stations and one later comfort station were originally similar in design to other comfort stations constructed in national parks during the Mission 66 era but were significantly altered circa 2004. The campground is a good representative example of a Mission 66 campground. Given the design and age of the campground and its existing character as an intact Mission 66 example of this type of visitor amenity, further research—especially comparison to other Mission 66 era campgrounds in the national parks—is recommended to determine whether the campground is eligible for listing in the National Register.

Camp Store and Service Center. A camp store and service center building was constructed adjacent to the campground in 1963. Given the lack of architectural distinction of the structure and remodeling in 2001, it is not considered eligible for listing in the National Register.

Amphitheater. The original amphitheater was constructed west of the present location of the Mammoth Cave Campground in 1938–1939 by members of the CCC. Many features of the amphitheater were replaced in 1964 as part of Mission 66 era work, when new benches, paving, and a stage building were constructed. In 2010, the amphitheater was modified with new concrete paving and benches, the addition of a ramp for universal accessibility, and alterations to the building. The amphitheater is significant for its association with the CCC and with Mission 66; however, it is has little integrity due to later changes. Due to the loss of integrity of materials and design, the amphitheater is not considered eligible for listing in the National Register.

Tour shelters. The tour shelters were constructed in 2010, as part of the first phase of recent renovation of the visitor center. The shelters are considered non-contributing resources.

Hiking trails are located in the immediate area bounded on the north by the Green River bluffs and on the south by Echo Spring, and also include the beginning segment of the multi-use trail to Park City. The trails in the Core Visitor Services Area include Green River Bluffs, River Styx Spring, Dixon Cave, Mammoth Dome Sink, White Cave, and Echo River Spring. Segments of the existing trails are located on road traces as indicated on the USGS map provided by the park and dated 1930, although the alignments of some trails have been altered over time, as further discussed below. Trails with segments on road traces include the White Cave Trail, the Echo River Spring Trail, the Mammoth Dome Sink Trail, and the trail to the Historic Entrance. Some of the trails, including the Old Guide's Trail and the Old Mammoth Cave entrance road, were constructed during the period of early development of tourism and lodging at Mammoth Cave and their alignments maintain integrity to that period. These trails are therefore

contributing features to this period of significance associated with the development of tourism and lodging. Most of the other trails date to the CCC era at Mammoth Cave National Park. The trails are present in a 1937 plan of trails and trail markers developed by the park and stamped as job completed. (Refer to Figure 4 in Appendix B). Most of these alignments survive with integrity, and thus contribute to the significance of the historic landscape. Portions of the trails on the 1937 plan were removed or re-aligned to accommodate connections to the current picnic area, development and construction of the visitor center area and the hotel/lodging area, and associated vehicular circulation and parking. Segments that retain alignments from old farm traces add to the integrity of the trail resource and offer an expanded way to interpret the landscape associated with the old road traces. The trails have been improved over the years to address erosion control problems through grading, the addition of water bars, and resurfacing. The integrity of current trail alignments may need further study due to these changes. Also, many of the trails incorporate stair sections. These sections are constructed of a variety of materials, including wood and gravel, stone, and asphalt. Most of these changes are more recent additions that postdate the overarching period of significance and do not significantly diminish the integrity of the trails.

Contemporary trails. The trailhead for the Mammoth Cave Railroad Bike and Hike Trail to Park City is located at the south edge of the hotel parking lot next to the historic landscape core. Parts of the trail follow remaining sections of the old berm of the Mammoth Cave Railroad. None of the trail in the study area is on the old berm. It is constructed with packed dense grade gravel. The trail was completed and opened in 2007. As such, it is not considered a historic resource, and is assessed as not eligible for listing in the National Register.

Green River ferry crossing. The Green River Ferry Crossing accommodates an auto ferry that connects the north entrance road in the park with Green River Ferry Road. Ferry service began in 1939 with the completion of Green River Ferry Road by the CCC. The crossing maintains a high degree of integrity and is a contributing feature.

Large stone retaining walls edge both sides of Green River Ferry Road adjacent to the concrete landing. Although not documented in the archival materials reviewed for this study, the retaining walls were likely constructed by the CCC. The walls survive with integrity and are likely a contributing feature, if the ferry crossing area is determined to be eligible for listing in the National Register.[256]

The YMCA Cave Entrance is located across the road from the Green River Ferry parking area and is associated with the former YMCA camp dating to circa 1928. A USGS map locates the campsite structures in the general location of the current parking area on the Green River Ferry Road. No remnants of the camp survive, and the parking lot is currently used for the ferry crossing and access to trails. The cave entrance is gated with a bat-friendly gate, and there is no public access. The YMCA Cave Entrance could be considered a contributing feature, if the ferry crossing area is determined to be eligible for listing in the National Register.

Old Ferry Crossing. A road trace near the River Styx leads to a second historic ferry crossing location on the Green River. On the opposite side of the Green River from the old ferry crossing is the historically notable Dossey Domes Cave and community (outside the CLR study boundary). When Lock No. 6 was completed along the Green River downstream at Brownsville, Kentucky, in 1906, steamboats were able to navigate upstream to Mammoth Cave. Travelers disembarked at this ferry landing to visit the cave via the Historic Entrance.[257] The ferry site has been investigated

256. Mark Dennen, Kentucky State Historic Preservation Officer, to Patrick Reed, Superintendent, Mammoth Cave National Park, June 21, 2010; August 20, 2010; and March 25, 2011.
257. Ibid., C-2.

archeologically.[258] Given its connection to the historic tourist use of Mammoth Cave, the Old Ferry Crossing should be evaluated for its National Register eligibility.

Chlorinator house. The MPD-HRS notes that the chlorinator house was constructed by the CCC in 1939 and recommends further study to determine its National Register eligibility.[259] (All other former structures associated with the sewage treatment plant, which consisted of partially above ground concrete tanks, have been removed.[260]) This structure could be evaluated together with other CCC support structures in the park with which it is associated historically and functionally but which that are not within the Core Visitor Center Area. The integrity of setting for the chlorinator building has been reduced by the removal of other features associated with the original sewage treatment plant; however, these other structures were low, partially underground features. The chlorinator building itself retains moderate integrity overall, including its original sandstone masonry walls and historic wood shingle roofing material.

Other Landscape Features. In addition to the landscape features discussed above, several additional landscape features exist within the Core Visitor Service Area.

- Underground ventilation tunnel connecting from the visitor center to the cave, along the trail to the Historic Entrance. Originally intended to provide summertime cooling for the visitor center, the tunnel was abandoned when a new air conditioning system was installed in 1976.
- Road traces from earlier periods of development are visible in the landscape of the Core Visitor Services Area. The major road trace is the old entrance road that likely predated the 1925 hotel, but eventually led visitors to the 1925 hotel entrance and associated parking. The trace is visible from the edge of the parking lot of the camp store and service center. Parts of the trace are also visible within the campground area. Flint Ridge Road, formerly known as the Northtown-Mammoth Cave Road, intersects Mammoth Cave Parkway near the visitor center. This road once led through the core area, intersecting with the old entrance road close to the terminus of the railroad line, and leading southward to become what is now called Joppa Ridge Road south of the Green River Ferry Road. The trace between Mammoth Cave Parkway and Green River Ferry Road constitutes a good length of White Cave Trail and is a contributing feature of the landscape. In the 1930s dirt roads led from Flint Ridge Road to various farmsteads and down to the Green River to the approximate location of the current ferry. One of these routes is followed in part by the trail that links Mammoth Dome Sink Trail and Echo River Spring Trail. The Echo River Spring Trail follows an old farm road. The River Styx Spring Trail runs along the trace of the old ferry road that led down to and past the Historic Entrance. These traces are all contributing features. (Refer to USGS maps dated 1922 and 1930 in Appendix B, as well as the period plans in the Site History chapter).
- Stone retaining walls and other site features constructed by CCC throughout the park are

258. Ibid., C-3, citing Guy Prentice, *Mammoth Cave National Park Archeological Inventory Project Interim Report—1988 Investigations* (Tallahassee, Florida: National Park Service Southeast Archeological Center, October 1989), 43–44. The remains of an old ferry or barge are located in the riverbed at the mouth of River Styx. (Correspondence by the authors with Mammoth Cave National Park personnel.)

259. *National Register of Historic Places Multiple Property Documentation Form, Mammoth Cave National Park Historic Resource Study*, D-24. The roof of the chlorinator house was replaced, probably in the 1980s. (Correspondence by the authors with Mammoth Cave National Park personnel.)

260. Correspondence by the authors with Mammoth Cave National Park personnel.

identified as significant in the MPD-HRS. (Refer to discussion below on the stone walls at the ferry landing.)

- Springs. The groundwater that flows underground from the sinkhole plain south of the park into the Green River finds its outlet through numerous springs. Two of the most notable in the park are located in the Core Visitor Services Area: the River Styx Spring and the Echo River Spring. Both are semi-subterranean waterways that emerge onto the surface in the core area. From their point of emergence, they flow into the Green River. These springs are a significant natural resources.

Evaluation of Core Visitor Services Area as National Register Historic District

As discussed above, in terms of its above-ground resources the Core Visitor Services Area landscape as a whole does not constitute a distinct historic district. Alterations to the landscape, roads and trails, and built features within the area have led to substantive changes in its overall appearance and diminished its integrity over time. Nonetheless, there remain several resources and smaller enclaves of the overall Core Visitor Services Area that are already listed or are eligible for listing as individual resources or districts. Based on findings of this CLR, one potential historic district encompasses the collection of resources related to visitor accommodations, as further discussed below. Certain other individual structures that may be eligible for listing in the National Register could be considered as possible additions to the Mammoth Cave Historic District. For example, the Old Ferry Crossing and road trace leading to the ferry crossing from the Historic Entrance, which are not assessed in the MPD-HRS as part of the existing National Register documentation, could be considered contributing features that could be added to the existing Mammoth Cave Historic District.

The findings of this study thus support and augment a Determination of Eligibility prepared by the National Park Service Southeast Region that identifies a National Register-eligible historic district within the Core Visitor Services Area, consisting of selected resources that represent the evolution of visitor accommodations within Mammoth Cave National Park.[261] The DOE identifies a potential district composed of the Deluxe Cottages, Woodlands Cottages, and two concessions buildings (as discussed below), and finds that this collection of resources is significant under Criterion A in association with the Entertainment/Recreation area of significance, and under Context D of the Multiple Property Submission, Establishment of Mammoth Cave National Park, 1924–1941.[262] The buildings included in the historic district identified in the DOE are the following:

<u>Deluxe Cottages (1936–1937)</u>

- Deluxe Guest Cottage 8
- Deluxe Guest Cottage 9
- Deluxe Guest Cottage 10
- Deluxe Guest Cottage 11
- Deluxe Guest Cottage 12
- Deluxe Guest Cottage 13
- Deluxe Guest Cottage 14
- Deluxe Guest Cottage 15
- Deluxe Guest Cottage 16
- Deluxe Guest Cottage 17

<u>Woodland Cottages (phase 1, 1938–1939)</u>

- Woodland Cottage 67, three-room
- Woodland Cottage 68, two-room
- Woodland Cottage 69, two-room
- Woodland Cottage 70, two-room
- Woodland Cottage 71, two-room
- Woodland Cottage 72, one-room
- Woodland Cottage 73, one-room
- Woodland Cottage 74, one-room
- Woodland Cottage 75, one-room

261. Consensus Determination of Eligibility for Thirty-Three New Deal-Era Buildings at Mammoth Cave National Park.

262. Ibid.

- Woodland Cottage 76, two-room
- Woodland Cottage 77, two-room
- Woodland Cottage 78, two-room
- Woodland Cottage 79, two-room
- Woodland Cottage 80, four-room
- Woodland Cottage 81, two-room
- Woodland Cottage 82, two-room

Woodland Cottages (phase 2, designed 1941, built 1949)

- Woodland Cottage 83, two-room
- Woodland Cottage 84, two-room
- Woodland Cottage 85, two-room
- Woodland Cottage 86, two-room
- Woodland Cottage 87, two-room

The DOE also mentions two structures from this period that are not included in the study area for this CLR. These include the Concessions Workshop 52 (1939–1940), and the Concessions Warehouse 55 (1939–1940). Both of the above buildings were constructed in 1939–1940, following plans developed by the Park Service Branch of Plans and Designs in 1938.

The Woodland Cottages and Deluxe Cottages represent small-scale structures constructed to house visitors in the 1930s and 1940s. Although the hotel itself is not considered eligible for the National Register due to loss of integrity, as discussed above, the cottages and lodge present a coherent expression of specific lodging types. As a collection of structures and associated site features, the visitor accommodations therefore merit further consideration as a potential historic district.

In evaluating the Woodland and Deluxe Cottages, together with the two concessions buildings, the DOE notes that the cottages and associated structures:

> . . . represent an overlooked but equally important aspect of New Deal funding and construction at the park. MACA's evolution from a collection of commercial cave attractions and parcels of privately owned rural land into a National Park involved numerous organizations that garner little attention today. These included The Mammoth Cave National Park Association, The Kentucky National Park Commission, and The Mammoth Cave Joint Operating Committee. These organizations shepherded the planning and construction of concessionaire buildings and guest accommodations at MACA during the park's formative years from 1924 to the official creation of the National Park in 1941. That these buildings remain standing today is tribute to the logical planning, sound architectural design, and skilled workmanship employed by the above organizations and the contractors they hired, all of whom worked closely with the CCC and the NPS as MACA grew to become a National Park. [263]

The DOE also notes that it takes a broader approach to interpreting Context D, Establishment of Mammoth Cave National Park, 1924–1941, than that defined in the 1991 MPD-HRS. The DOE notes:

> . . . to restrict National Register eligibility only to those resources constructed by the CCC ignores the varied and often overlapping funding and construction history that typified this period at MACA. Our recent research has revealed that, whether constructed by the CCC or contractors, all the buildings and infrastructure in this period were the result of a coordinated effort between all organizations involved, including partnerships between private and public sector employees, designers, and planners. [264]

This study supports the DOE's finding that Deluxe Cottages 8 through 17, Woodland Cottages 67 through 82 (together with Concession Workshop 52 and Concession Warehouse 55, which are outside the scope of this study) are eligible under Criterion A in association with the Entertainment /Recreation area of significance, and are locally significant under Context D, Establishment of Mammoth Cave National Park, 1924–1941. This study also supports the DOE findings that

263. Ibid.

264. Ibid. The DOE notes that it is anticipated that the existing National Register documentation will be amended accordingly.

Woodland Cottages 83 through 87 are also eligible under Criterion A in association with the Entertainment/Recreation area of significance; although constructed later (1949) they were based on the 1938 plans by Nevin, Morgan & Kolbrook Architects and Engineers that guided the construction of the other similar Woodland Cottages. The later cottages also appear on the 1941 Layout Plan for Additional Cabins, and the DOE notes that cabins could have been built in or soon after 1941 if not for America's entry into World War II. Therefore, these cottages are also considered eligible under Context D, Establishment of Mammoth Cave National Park, 1924–1941.

Also, findings of this study indicate that Sunset Lodge, although constructed later than the Woodland and Deluxe Cottages, is an appropriate addition to the historic district identified in the DOE. This group includes the following:

Sunset Lodge
- Sunset Lodge phase 1 (1954)
- Sunset Lodge phase 2 (1958)

The Sunset Lodge group represents a continuation of the development of visitor accommodations at Mammoth Cave, following the earlier groups of cottages. Sunset Lodge is also locally significant in relation to a proposed extended historical context addressing establishment and further development of the park through 1972, as further discussed below. Further research is recommended to place Sunset Lodge within the context of development within the park during this period. Sunset Lodge is also of interest as an example of how visitor accommodations evolved in the years after World War II. Further research is also recommended to amplify understanding of the evolution of visitor accommodations in the National Parks, and how changes in the nature of accommodations provided are represented by the cottages and lodge at Mammoth Cave National Park.

In addition to the structures identified by the DOE for a potential historic district, consideration should be given to including within a potential historic district the picnic area and the present-day campground within the Core Visitor Services Area. These areas contain landscape resources that are an important part of the visitor experience and the development of the core area, and are related to the function of the visitor accommodations resources.

All of the visitor accommodation structures and related resources listed above have been in use since their construction and, despite alterations, retain their integrity in regard to location, design, setting, materials, workmanship, feeling, and association. The resources described above could be grouped within a non-contiguous historic district. Alternately, several individual but related historic districts could be defined.

Period of Significance

The MPD-HRS identifies four historic contexts associated with several periods of evolution of Mammoth Cave National Park. These contexts include: Context A, Exploration and Settlement in the Mammoth Cave Area, circa 1754–1927; Context B, Discovery and Early Uses of Mammoth Cave, 1798–1849; Context C, Commercial Cave Development and the Growth of Tourism in the Mammoth Cave Area, 1849–1926; and Context D, Establishment of Mammoth Cave National Park, 1924–1941. To capture the post-1941 resources, it is recommended that Context D of the MPD-HRS be extended to 1972 and that additional documentation be added to the same. As noted earlier in this report, because some of the buildings constructed after 1941 were actually designed before then (Woodland Cottages), and because some buildings were designed just prior to the Mission 66 program (Sunset Lodges), the broader period of significance of 1924–1972 can cover the entirety of park development. It is also recommended that the additional documentation correct some chronological errors in Context D as prepared in 1991, specifically, a re-analysis of the Deluxe Cottages that were thought to have been built after 1941 but were actually built in the 1930s.

As specifically related to the Core Visitor Services Area, three of the four historic contexts identified in the MPD-HRS are represented by existing above-ground resources, while the context of

Exploration and Settlement in the Mammoth Cave Area, circa 1754–1927, is not. The context of Discovery and Early Uses of Mammoth Cave, 1798–1849, is represented within the Core Visitor Services Area by the Historic Entrance (which is part of Mammoth Cave Historic District) and the Old Guide's Cemetery; the context of Commercial Cave Development and the Growth of Tourism in the Mammoth Cave Area, 1849–1926, is also represented by the Mammoth Cave Historic District and the Old Guide's Cemetery; and the Establishment of Mammoth Cave National Park, 1924–1941 (with the extension of the period of significance for this latter context to 1972).

An overarching period of significance of 1806–1941 has been established for Mammoth Cave National Park, based on the findings of the MPD-HRS and the periods of significance established for resources within the park previously listed in the National Register.[265] This overarching period of significance is also appropriate for the Core Visitor Services Area, and incorporates the periods of significance identified in existing National Register nominations for resources with this study area, as follows:

- The National Register nomination for the Mammoth Cave Historic District defines three overlapping periods of significance for the district: 1816–1941, covering the theme of entertainment and recreation related to the ongoing tourist use of the cave; 1806–1814, covering the theme of industry as related to saltpetre mining in the cave; and 1842–1843, covering the theme of health/medicine as related to the tuberculosis hospital in the cave.

- The National Register nomination for the Old Guide's Cemetery defines a period of significance to 1842–1843, related to burials in the cemetery connected to the tuberculosis hospital in the cave, and the specific date of 1857, as related to the death and interment of early cave guide Stephen Bishop.

- The National Register nomination for Engine No. 4 and Coach No. 2 does not specifically define a period of significance but notes that the locomotive was manufactured in 1888 and completed its final run in 1931.

In addition to their association with the contexts discussed above, the individual resources listed in or considered potentially eligible for the National Register have specific dates or periods of significance within the historic contexts outlined above.

Thus, the Core Visitor Services Area does not have a separate period of significance, but contains resources that pertain to the sub-periods and historic contexts identified for Mammoth Cave National Park as well as resources that pertain to a potential Mission 66 historic context and period of significance.

A period of significance of 1936–1972 is recommended for the potential historic district encompassing the visitor accommodations and associated resources, including the Woodland Cottages, Deluxe Cottages, Sunset Lodge, campground, and picnic area. The addition of Sunset Lodge and campground to the proposed historic district extends the period of significance from 1941, the current end date of the overarching period of significance noted previously, to 1972. These dates include the Mission 66 historic context, and resources dating to the Mission 66 era within the park will reach fifty years of age within the next few years. As noted above, it is recommended that Mission 66 resources throughout the park (including those within and outside of this study area)—including patterns of spatial organization, circulation features, and campgrounds and picnic areas—be evaluated for

265. The 1806 date is based on the start of saltpetre mining in Mammoth Cave according to Mammoth Cave National Park personnel, although documentation of this date could not be located during this study. The 1941 date was apparently selected to coincide with the official establishment of Mammoth Cave National Park; however, a closing date of 1942 and the end of CCC work at the park would encompass all of the features built during the New Deal era development of the park.

significance as part of the development of a Multiple Property Documentation Form for the Mission 66 Era of National Park Development, 1945–1972, leading to the extension of the overarching period of significance for the park (and the Core Visitor Services Area) to 1972. This revised period of significance also includes the period in which work was completed within the park by the Job Corps program. This program, which began in the mid- to late 1960s , built numerous structures within the park and also construction or completed some of the planned Mission 66 structures that had not been funded or completed under that program. Refer to the next section of this chapter for further analysis and to Appendix A for a table of information about individual resources.

Comparative Analysis of Historic and Existing Conditions

Overview

To support continued protection of the historic qualities and character-defining features of the Core Visitor Services Area, the comparative analysis conveyed below provides a detailed understanding of the value and contribution of extant resources to the site's historic significance that can be used to guide necessary change in the future. As noted previously, the period of significance for the Core Visitor Services Area extends from the context of Discovery and Early Uses of Mammoth Cave beginning in 1806 to the Development of Mammoth Cave National Park ending in 1941. Resources that may be considered individually significant or part of a significant historic district that postdate the current end date of the period of significance would be evaluated under the proposed extension of the period of significance to an ending date of 1972.

When comparing the landscape of the Core Visitor Services Area during its periods of significance to present-day conditions, many of the extant landscape features were present by 1941: landform and topography, water resources, the cave system, the cave entrances, primary road corridors, trails, secondary woodland vegetation, and the relatively undeveloped character of the surrounding Mammoth Cave National Park landscape. The current complement of visitor services related to hotel lodging and the visitor center features were in place by 1972; however, several of the features have since been extensively modified and have lost integrity. As noted previously, in terms of its above-ground resources, the Core Visitor Services Area landscape as a whole does not constitute a distinct historic district due to the alterations to the landscape, roads, trails, and built features that have modified its appearance and affected its integrity, such that the overall area does not clearly convey its historic character during any of the established historic contexts. There are, however, individual resources within the study area that are listed in the National Register of Historic Places or eligible for listing.

In addition, there are several landscape changes that postdate 1972, including renovation of the visitor center and associated parking, and additions to the hotel. The visitor center was demolished to its foundations and rebuilt beginning in 2007 (Figure 389). This work also entailed major changes to both vehicular and pedestrian circulation for the visitor center and the hotel complex. The tour shelters are a recent addition constructed together with the recent renovation of the visitor center. The paved Mammoth Cave Railroad Bike and Hike Trail to Park City was opened in 2008; some segments of the trail follow remaining portions of the old berm of the Mammoth Cave Railroad, however none of these segments are in the study area for this document. The existing Mammoth Cave Hotel, constructed in 1965, was modified by additions and renovations in 1992. The hotel complex and associated circulation were also affected by the renovation of the visitor center and construction of the tour shelters in 2011. Other additions include the concessions dormitory constructed in 1985 south of Sunset Lodge and a pet kennel south of the tennis courts.

The origin, evolution, and historic significance of each of the landscape resources located within the Core Visitor Services Area is described in detail below, organized by landscape characteristic.



FIGURE 389. Construction at the visitor center in 2011.

Natural Systems and Features

Cultural landscapes reflect the interaction of human activity with the natural systems—geography, geology, hydrology and biology—of a place. The cultural landscape of the Core Visitor Services Area exhibits evidence of repeated cultural occupation and use beginning in 1798. Based on archeological investigations, natural features appear to have served to support human needs since before recorded history. Human occupation was supported by the presence of fertile soils, plentiful water sources, and elevated terrain that afforded views of the surrounding terrain.

Each of the extant natural systems and features associated with the Core Visitor Services Area has been present since the period of significance, and survive today with a high degree of integrity. Natural systems and features associated with the Core Visitor Services Area that contribute to its historic significance include the cave entrances leading to the immense underground cave resources, landforms, topography, water resources, and plant communities, including the Green River Bluffs, the Green River, springs and stream corridors, the Mammoth Dome Sink, and successional hardwood forest. Two of these form boundaries of the Core Visitor Services Area; the Green River forms its western boundary and the Green River Bluffs form its northern boundary.

Cave Entrances. The most notable natural resource within the Core Visitor Services Area is the Historic Entrance to Mammoth Cave and the miles of cave passages underneath the ground (compare Figure 390 and Figure 391). The Historic Entrance is a naturally occurring sinkhole that provides access to Mammoth Cave. This entrance is documented through surveys and photographs taken during the period of significance. Visitors have used this entrance since the early 1800s; underground tours began in 1816.

The Dixon Cave and White Cave entrances are also within the core area. Although these cave entrances are not eligible for inclusion in the Mammoth Cave Historic District due to a lack of a known underground connection with Mammoth Cave, they remain important natural resources that survive from the period of significance. Neither cave entrance is open for public access, although they are located adjacent to trails in the core area and are interpreted.

The YMCA Cave Entrance does not fall within the boundary of this CLR study, but was considered as part of this report at the request of park staff. This cave entrance is located across the Green Ferry Road from the parking area. A 1922 USGS map locates the former camp site structures in the

general area of the current parking lot.[266] No remnants of the camp survive and the parking lot is used for the ferry crossing and access to trails. The cave entrance is gated and there is no public access.



FIGURE 390. Ed Bishop at the Historic Entrance to Mammoth Cave. Source: Mammoth Cave National Park.



FIGURE 391. Historic Entrance to Mammoth Cave in 2011.

Changes associated with the cave entrances are culturally derived additions that respond to access needs, visitor safety, and protection of wildlife. Physical changes at the Historic Entrance have included removal of structures associated with the saltpetre works, relocation of steps from the left of the entrance to the right side as viewed from outside the cave, and construction of a new cave trail. In 2007, a bio-security mat apparatus was placed at the Historic Entrance in response to the spread of white-nose syndrome in bats (see the following section on Responses to Natural Systems and Features). This apparatus is simply placed on the ground and is moveable, not fixed in place. Alterations at the Dixon Cave Entrance have included the wooden platforms and steps constructed to prevent visitors from entering the cave. Gates block access by people at both the White Cave and YMCA Cave entrances.

Some physical alterations have occurred over time to the Historic Entrance to accommodate the necessary structures for safe visitor access to the cave. These changes have not diminished the integrity of this resource. There has been little physical change to the other cave entrances within the Core Visitor Services Area because access for visitors has been limited and no complex structures have been constructed to access these entrances into the caves.

Refer to Figure B-6 and Figure B-9 in Appendix B.

Green River. The Green River is one of North America's most diverse ecosystems and the most biologically diverse branch of the Ohio River system. This river is integrally linked to the hydrology of Mammoth Cave and its aquatic biotic community. The U. S. Department of Agriculture and the Commonwealth of Kentucky have agreed to implement a Conservation Reserve Enhancement Program to restore up to 99,500 acres in south central Kentucky's Green River Watershed, which will help protect the river's biodiversity. The river system remains a vital natural feature that passes through the park and survives from the period of significance within the

266. United States Geological Survey, map of Mammoth Cave, Kentucky, 1922.

Core Visitor Services Area, and is part of the recreational and interpretive experience of visitors.

Springs. The groundwater that flows underground from the sinkhole plain south of the park into the Green River finds its outlet through numerous springs. Two of the most notable springs in the park are located in the Core Visitor Services Area: the River Styx Spring and the Echo River Spring. Echo River and River Styx are subterranean waterways that emerge as springs and seeps within the core area. From their point of emergence, these water resources flow into the Green River. These springs and rivers survive from the period of significance and are associated with trails in the Core Visitor Services Area and are interpreted as natural features within the park.

Mammoth Dome Sink. Mammoth Dome Sink is located along the Mammoth Dome Sink Trail, which descends from the Heritage Trail. This sinkhole is approximately 30 feet deep, and funnels groundwater to the underground cave system. Water runs along the ridge tops until captured by the sink, which creates a vertical shaft within the cave system. This natural feature is indicative of the karst landscape and sinkhole topography prevalent in this area of the park. This natural feature survives from the period of significance and is identified and interpreted along the trail.

Green River Bluffs. The high bluffs above the Green River are located in the northern portion of the Core Visitor Services Area. The bluffs afford expansive views from trails to the river valley below. Most of the developed area of the Core Visitor Services Area is located on a ridge, surrounded by the steep bluffs, which are covered in forest vegetation. The Green River Bluffs survive from the period of significance and have not been altered except for the construction of park trails (see Responses to Natural Resources), which has not diminished the integrity of this natural resource.

Successional deciduous hardwood forest. From 1930s aerial photography, it is evident that much of the high, flat landscape of what is now the Core Visitor Services Area was cleared for settlement and cultivation, and later used to construct the Guide House, related landscape functions, and access to the Historic Entrance, once visitors began to arrive to visit the cave. This open area is located on the ridge top, which is surrounded by steep wooded slopes. Park development today occupies this same ridge. Portions of the open landscape are occupied by various kinds of successional hardwood or evergreen forests and by remains of tree plantings associated with conservation work conducted by the CCC. Construction of park facilities precluded any major secondary forest growth in this open landscape. If any existed at the time of construction, the landscape area was again cleared, and plantings associated with park buildings were introduced into the resulting open landscape. Successional woodland vegetation is present on the slopes and areas surrounding the developed ridge in areas that were formerly logged. Areas of mature hardwoods and stands of evergreens are evident on the bluffs and ravines in the Core Visitor Services Area, and herbaceous wildflowers are associated with the river bottoms, narrow valleys, sinks, hillsides and ridge tops. All of the forest surrounding the Core Visitor Services Area is managed and administered for recreation and conservation of natural resources. The park landscape contains rare plant communities such as the Central Limestone Glade, the Chinquapin Oak Un-glaciated Bluff Woodland, the Western Highland Rim Escarpment Post Oak Barrens, the Shumard Oak-Chinquapin Oak Mesic Limestone Forest, the Highland Rim Limestone Cliff/Talus Seep, and the Southern Red Oak Flatwood Forest. The park also contains the "Big Woods," an approximately 300-acre area containing old growth trees, some 100 feet or more in height. The Big Woods are not part of the Core Visitor Services Area.

Fire suppression and colonization by non-native species such as tree of heaven *(Ailanthus altissima),* Japanese honeysuckle, Empress tree *(Paulownia tomentosa),* Oriental bittersweet *(Celastrus orbiculatus),* multiflora rose, and kudzu *(Pueraria lobata)* have altered the newer forests from their

original state. Some important forest trees have also been threatened and/or lost since the nineteenth century due to plant pathogens. These include the American chestnut (*Castanea dentata*) and the American elm (*Ulmus americana*). The American chestnut is still present but is only found as saplings or young trees, which are typically attacked by the blight before they reach maturity. The American elm is still present in the park as a true forest tree, but is threatened by disease. The butternut (*Juglans cinerea*) is also threatened by disease.

Change has occurred in association with natural features and systems in some areas of the Core Visitor Services Area due to expansion of successional deciduous hardwood forest into areas of the landscape that were formally cleared for agriculture or settlement. Nonetheless, the natural systems and features present within the Core Visitor Services Area survive with integrity from the period of significance, and contribute to the overall significance of the historic landscape, and form an underpinning or basis for the majority of the development within the core area.

Contributing Natural Systems and Features

- Historic Entrance to Mammoth Cave
- Dixon Cave Entrance
- White Cave Entrance
- YMCA Cave Entrance (has not been surveyed for historical resources. Further research is required.)
- Karst topography
- Ridge and adjacent slopes
- Green River
- Green River Bluffs
- Mammoth Dome Sink
- River Styx Spring/River Styx
- Echo River Spring/Echo River
- Successional deciduous hardwood forest

Non-contributing Natural Systems and Features

- Invasive plant species

Missing Natural Systems and Features

- None identified

Responses to Natural Resources

Several responses to natural resources are character-defining for the Core Visitor Services Area as a component of Mammoth Cave National Park, including the provision of access to the cave for tourism and recreation purposes, the development of trails to provide access to the site's key features, clustering of development on the ridge top, and the use of native stone in constructing storm water management and other features.

The extant cultural responses to natural resources that survive with integrity include the siting of trails to provide access to cave entrances; bluffs, springs, and the Green River: siting of the Old Guide's Cemetery and the park developed area on a relatively level ridge above the steep bluffs and ravines; and the use of several methods to manage storm water.

There are only a few examples of responses to natural resources that postdate the period of significance and therefore do not contribute to the Core Visitor Services Area historic landscape. These include the use of waterbars along trails to direct storm water runoff of the surface and diminish potential erosion, the use of corrugated pipe to culvert water beneath circulation systems; and the establishment of a recycled plastic and wood boardwalk with overlooks on trails for universal access or to cross natural features. Missing are the residential and farm community features that were present in the area prior to national park establishment.

Mammoth Cave as a Tourist Destination and Inspiration for Artists and Writers. Mammoth Cave serves as an important landmark and destination for local and state residents as well as travelers from all over the world. This response to natural resources is predicated on a long history of similar cultural activities. Mammoth Cave has attracted visitors for centuries. Many who have visited the cave have been inspired to describe their experience and share it with others. Today, engravings and drawings, travel journals, narratives, and historical accounts of religious experiences survive to document the extent of the

emotional response evoked by the cave, the natural features inside the cave, and the landscape around the cave.

After saltpetre production stopped at Mammoth Cave, small numbers of visitors came to the cave due to curiosity about this unusual and large natural resource. With the construction of the small log inn in 1828 and its subsequent expansion, and the beginnings of rail and river transportation, tourists flocked to the cave. In her article "Mammoth Cave and the Making of Place," Katie Algeo states:

> Mammoth Cave became a candidate for the American version of the Grand Tour, the circuit of significant sights that a cultured person should visit, through the writings of early travelers. The earliest of these descriptive narratives took the form of letters published in newspapers, such as the letter 'from a gentleman in Bowling Green, Kentucky, to his friend in Russellville Kentucky' that appeared in the April 20, 1810 issue of *The Richmond Virginia Enquirer*. The author, who thought his friend 'may perhaps not deem it uninteresting to have some information respecting the largest cave now known,' touched upon the major themes that would become part of the Mammoth Cave meta-narrative through repeated use by later travel writers. Although more measured in tone than many later authors, he did call upon the language of Romanticism in depicting 'one of the most sublimely beautiful and picturesque amphitheaters in the world' and likening the cave formations to 'the different orders of gothic architecture, columns, moldings and pilasters in embossed and stucco work. ' He described a place that was essentially unknowable without the direct experience of being there, for 'the most elaborate effort of the pencil would fail to do justice to the rich scenery and varied drapery with which the senses are delighted.'[267]

The cave remained attractive as a tourist destination into the twentieth century. In an attempt to capitalize on the popularity of Mammoth Cave, several local residents began searching for other caves in the area that might attract tourists. By the turn of the twentieth century, approximately ninety caves had been discovered near Mammoth Cave, including Colossal Cavern, Great Onyx Cave, and Crystal Cave.

Today, as part of Mammoth Cave National Park, the cave entrance and miles of passages have remained a tourist destination for travelers from all over the world and the centerpiece of the visitor experience of the park.

Trails and transportation features and their relationship to the natural environment. Trails present with the Core Visitor Services Area connect visitors with natural resources features and interpretive features relating to rail and river transportation. These circulation features follow alignments intended to provide visitors with access to key features of the natural environment such as the Green River Bluffs, the Green River, cave entrances, and the River Styx Spring and Echo River Spring. These responses to natural features generally survive with integrity and contribute to the significance of the historic landscape.

Storm water management. Storm water management features that postdate the period of significance include culverts built after 1972, particularly those built with non-character-defining materials such as plastic. Waterbars and wood timber structures used along the trails as stairs and to direct storm water from the travel surface also generally postdate the period of significance and do not contribute to the significance of the Core Visitor Services Area. Construction of bridges, boardwalks, and raised platforms used to provide trail crossings of streams and low wet areas, or to create elevated overlooks to view natural resources, may have begun before 1972; however, many of the extant bridges, boardwalks, and structures appear to be replacements that are not consistent with the

267. Katie Algeo, "Mammoth Cave and the Making of Place," *Southeastern Geographer* 44, no. 1 (May 2004), 27–47.

original rustic materials and features originally used. As such, they do not contribute to the significance of the developed area.

Contributing Responses to Natural Resources

- Mammoth Cave as a tourist destination and inspiration for nature writing, artistic depiction, and personal pilgrimages
- Siting of the developed areas on the ridge
- Establishment of trail and other features to provide access to key features of the natural environment
- Use of culverts, drop inlets and channelized swales to convey storm water beneath paths and roads
- Use of native rock to construct culverts and other storm water management features
- Use of bridges to cross stream corridors and wet areas.
- Siting of the Old Guide's Cemetery on the ridge

Non-contributing Responses to Natural Resources

- Waterbars and ditches along trails to redirect storm water
- Replaced bridges and use of recycled plastic

Missing Responses to Natural Resources

- Residential/community development
- Farming and agricultural lands
- Farm ponds sited on relatively level areas

Patterns of Spatial Organization

Character-defining patterns of spatial organization associated with the Core Visitor Services Area include road corridors edged by dense woodlands and the defined open spaces of the developed area characterized by turf lawn punctuated by evergreen groves and mature deciduous shade trees set within areas of thick woodland and steep topography, as well as the arrangement of building and landscape features associated with the Deluxe Cottages. The park development is generally sited on level land to avoid excessive grading and cut and fill. Other spatial patterns include the trail system that meanders through dense woodland and connects the visitor center and hotel complex to natural and cultural resources. The campground and picnic area demonstrate spatial organization with loop road corridors through woodland vegetation and clearings to accommodate comfort stations, parking, shelters, the campfire circle, and other associated amenities.

Initial development around Mammoth Cave began in 1806, followed by the intensive saltpetre mining which required clearing of forest for construction of the slave log cabins outside the cave and the buildings which formed the first Mammoth Cave Hotel. As tourism increased in the decades before 1860 and the hotel was enlarged, more open space was required for lodging, visitor access to the hotel and cave, and the construction of new roads, all requiring changes over time to the spatial character of the area. After the Civil War, a new water system and the Mammoth Cave Railroad were constructed, both introducing new spatial character and open utility and transportation corridors. Some semblance of the spatial corridor of the railroad remains on the site, but the overall spatial character continuously evolved and changed through the nineteenth and early twentieth centuries.

A 1929 aerial photograph of the Guide House and 1930s aerial photographs of the site (Figure 392) indicate patterns of spatial organization within the Core Visitor Services Area prior to park development, and the degree to which these patterns have changed when compared with a

contemporary view (Figure 393). The landscape on the ridge above the Historic Entrance was likely forested prior to development. Open space devoid of woodland vegetation was created in association with small settlement fields, construction of the Guide House and other buildings and access to the Historic Entrance. As the park developed, the primary visitor services and lodging accommodations were sited on this ridge. Successional forest vegetation most likely developed in some areas and was again cleared as the park progressed from one phase of development to the next. The spatial quality of the open ridge, surrounded by woodland vegetation on steep slopes, remains today. This spatial organization contributes to the significance of the historic landscape within the Core Visitor Services Area.



FIGURE 392. Aerial view of the Core Visitor Services Area in 1929, including Guide House. Source: Mammoth Cave National Park.



FIGURE 393. Aerial view of the Core Visitor Services Area in 1968. Source: Mammoth Cave National Park.

Related to this pattern of spatial organization are the enclosed road corridors of Mammoth Cave Parkway and Green River Ferry Road. The parkway corridor is surrounded by vegetation until it opens up at the intersection with Green River Ferry Road and the core developed area of the park becomes visible as the parkway continues to the visitor center parking (Figure 394). The Green River Ferry Road corridor is also surrounded by vegetation until it reaches the Green River Ferry Crossing (Figure 395). The crossing and the associated parking lot become visible as the road descends to the river (Figure 396).

Patterns of spatial organization are also associated with the trail corridors within the Core Visitor Services Area. The trails are predominantly enclosed corridors with small areas of space that open up to accommodate overlook platforms and natural or cultural resource features. These features include the cave entrances, springs and sinks, and the Old Guide's Cemetery. The paved trail to the Historic Entrance descends through a corridor of steep slopes with tree cover. The enlarged area for the Historic Entrance creates a distinct space defined by the surrounding slopes, vegetation and cave (Figure 397). The enclosed spatial pattern is also present on the Heritage Trail as it leads to the open space of the Old Guide's Cemetery (Figure 398). These road and trail patterns survive with integrity and contribute to the significance of the historic landscape of the Core Visitor Services Area (Figure 399).



FIGURE 394. Mammoth Cave Parkway looking south from the visitor center parking.



FIGURE 395. Green River Ferry Road corridor with surrounding vegetation.



FIGURE 397. Historic Entrance area along the paved portion of the River Styx Spring Trail.



FIGURE 396. Green River Ferry Road corridor descending to the ferry crossing.



FIGURE 398. View to the open space of the Old Guide's Cemetery from the Heritage Trail.



FIGURE 399. Green River Bluffs Trail corridor.

Both the picnic area and campground are accessed from Mammoth Cave Parkway. The picnic area entrance connects with the circular roadway around the visitor center parking lot. Both areas are designed as individual sites with curvilinear road corridors that cut through woodland vegetation. The spatial organization of the extant picnic area was established in 1941 through the loop road system constructed for use as a campground. The spatial organization for the campground was established during its construction in 1964. South of the extant picnic area are the Woodland Cottages, with spatial organization created by the siting of the structures, the path system connecting the cottages, and the surrounding vegetation. These patterns survive today with integrity and contribute to the significance of the historic landscape of the Core Visitor Services Area (compare Figure 400 and Figure 401).



FIGURE 400. Historic photograph of the Woodland Cottages. Source: Mammoth Cave National Park.



FIGURE 401. Wooden cottages and paved pathways in 2011.

The spatial quality of the landscape area south of the hotel parking and north of the camp store and service station parking is organized through open grassy sites punctuated by groves of evergreen trees and scattered large mature deciduous species. Extant topography reveals the road trace to the old hotel, the railroad berm, and the site of the second hotel, constructed in 1925 and demolished in 1979 (compare Figure 402, Figure 403, and Figure 404). The open space and vegetation create a sense of place and distinct space within the Core Visitor Services Area (Figure 405 through Figure 407). This pattern of spatial organization survives with high integrity from the period of significance and constitutes the heart of the historic landscape that survives.



FIGURE 402. Historic photograph of the second hotel after 1925. Source: Mammoth Cave National Park.



FIGURE 403. Site of the second hotel and associated vegetation in 2011.



FIGURE 404. Historic photograph of the grounds of the original hotel, 1915. Source: Mammoth Cave National Park.



FIGURE 405. View south from the hotel parking lot to the site of the second hotel in 2011.



FIGURE 406. View north from the camp store and service station parking to the old entrance road trace, open landscape and groves of cedars.



FIGURE 407. View south from the hotel parking to the open space, grassed landscape and groves of evergreen trees.

Within this same landscape area, distinct spatial features include the Deluxe Cottages, organized in a semi-circle with associated surrounding vegetation, and the amphitheater, with its distinct spatial definition created by grading and the surrounding vegetation (compare Figure 408 and Figure 409 and compare Figure 410 and Figure 411). These features survive with high integrity and contribute to the significance of the historic landscape.



FIGURE 408. Deluxe Cottages and associated vegetation in the 1940s. Source: Mammoth Cave National Park.



FIGURE 409. Semi-circular pattern of the Deluxe Cottages and associated vegetation in 2011.



FIGURE 410. Deluxe Cottages and associated vegetation in the 1940s. Source: Mammoth Cave National Park.



FIGURE 411. Deluxe Cottages with grassy open space and associated trees in 2011.

Contributing Patterns of Spatial Organization

- Woodland along the road margins
- Clearings associated with developed complexes
- Amphitheater
- Picnic area
- Historic Entrance
- Old Guide's Cemetery
- Old Guide's Trail corridor
- Trail corridors and overlooks
- Woodland Cottages
- Deluxe Cottages
- Open landscape and vegetation patterns in the historic landscape core
- Patterns of steep topography
- Sunset Lodge and associated circulation

- Mammoth Cave Parkway entrance road and corridor*
- Campground*

* Requires further evaluation under proposed extension to the period of significance.

Non-contributing Patterns of Spatial Organization

- Mammoth Cave Hotel and associated circulation and parking
- Mammoth Cave National Park Visitor Center and associated circulation and parking.

Missing Patterns of Spatial Organization

- Settlement and agricultural open space
- Ponds

Topographic Modifications

Several topographic modifications contribute to the significance of the Core Visitor Services Area. These include the manner in which the roads, trails, and buildings are generally aligned to fit the landform and terrain, the movement of earth for the required cut and fill for construction and drainage of roads, the smaller requirements of earth movement for the construction and drainage of trails, the leveling and some excavation of sites for buildings and structures, the use of the ridge to site the developed-area features, and the sensitive use of site engineering in the form of retaining walls, paving, and graded earth designed to minimize cut and fill and extensive changes to natural landform and topography.

Evidence of topographic modifications surviving from the period of significance is present in several locations within the Core Visitor Services Area. These include the Old Guide's Trail, the Historic Entrance Road, the road trace through the campground and the road trace to the north of the camp store and service station parking lot, the Mammoth Cave Parkway and Green River Ferry road corridors, the amphitheater, the railroad berm, the Deluxe Cottages, the Woodland Cottages, the south road and loop road in the picnic area, the renovations and construction associated with the extant picnic area as it replaced the original campground, and the new campground, constructed in the early 1960s.

The road corridors of Mammoth Cave Parkway and Green River Ferry Road and associated parking were established through grading. The parkway corridor winds gently along the ridge topography and serves as the entrance to the Core Visitor Services Area. The Green River Ferry Road, originally graded and constructed by the CCC, descends from Mammoth Cave Parkway to the Green River Ferry Crossing.

Grading was used to create trails connecting the major developed features in the Core Visitor Services Area to natural systems and features. Trails take visitors from the visitor center, hotel complex, picnic area, and campground to numerous natural and cultural features including

cave entrances, Green River Bluffs, Green River, Echo River Spring, River Styx Spring, Mammoth Dome Sink, the old Mammoth Cave Ferry Crossing, and the Green River Ferry. Trails also lead to the Old Guide's Cemetery and from the hotel area to the Historic Entrance. The Heritage Trail has been rehabilitated to accommodate universal accessibility and other sections of the trail have been changed or modified over time. On the other trails as well, modifications have occurred over time due to the necessity of repair, rehabilitation, or alignment change. This makes it difficult to distinguish the integrity of each trail. However, comparison to Figure B-4 in Appendix B is useful to see where the trail alignments retain integrity to their location in 1937. Some of the trail segments seem to follow old road traces. Exact segments are difficult to highlight due to limited historic mapping resources of the trails and road traces and the need for intensive field work required to match the segments. With the exception of these changes on the trails, grading associated with their alignments and corridors survives with integrity and contributes to the significance of the historical landscape of the core area.

Grading has been used to construct stone retaining walls at the Green River Ferry Crossing and the Historic Entrance. Evidence of grading conducted is visible within the present-day picnic area, in both the original campground portion and the original picnic area portion. A small stone wall and steps define a grass plateau that contains a concrete foundation from the CCC-constructed comfort station for the original picnic area, now demolished. Also, two major roadways within the picnic area survive from construction of the campground in 1941. These topographic modifications survive with integrity and contribute to the significance of the Core Visitor Services Area historic landscape.

Topographic modifications established through grading are also evident at the Woodland Cottages and the Deluxe Cottages. The Woodland Cottages are sited on a gentle hillside south of the picnic area and include associated parking. The Deluxe Cottages form a semi-circular pattern in the landscape with walkways connecting all of the structures. The landscape context for the Deluxe Cottages also contains the extant tennis courts, shuffleboard courts, and the amphitheater. Original grading for the amphitheater was completed in 1938–1939 and improvements were made in 1964. Improvements to the amphitheater have also occurred more recently—within the last five years. Grading was used to establish all of these features in the landscape and survives with integrity. Grading was also used to accommodate the camp store and service station (1963) and its associated parking.

Grading was conducted to establish the campground loop roads in 1964. The road, small parking area near the entrance station, comfort station buildings, and campground kiosk were constructed on sites graded to be level or smoothly-sloped. Drainage associated with the road corridor was accommodated in drop inlets and culverts that convey water beneath the pavement. Later post-Mission 66 changes have included check-in-station grading, small parking lot grading, the exposed aggregate concrete area for dumpsters and recycling, and the pervious paved parking areas.

Other topographic modifications that postdate the period of significance are limited to the renovations and construction of the visitor center/museum and associated circulation area, completed in 2012, the construction of the concessionaire dormitory and pet kennel in 1985, improvements to the Mammoth Cave Hotel in 1992, improvements made to the amphitheater in 2009, and lift stations associated with the existing sewer system.

Contributing Topographic Modifications

- Grading associated with the Old Guide's Trail
- Grading associated with the Green River Ferry Road
- Grading associated with the Historic Entrance Road
- Grading associated with the original campground
- Grading associated with the picnic area

- Grading associated with some of the trailheads and the trail system
- Grading for the amphitheater
- Grading to accommodate Woodland Cottages and associated circulation, parking, and access
- Grading to accommodate Deluxe Cottages and associated circulation
- Grading to accommodate tennis and shuffleboard courts
- Grading associated with the Green River Ferry Crossing
- Grading for the railroad bed
- Grading to accommodate Sunset Lodge and associated parking and circulation
- Grading in association with the construction of retaining walls at Sunset Point and the amphitheater renovations*
- Grading associated with the camp store and service station*
- Grading associated with the campground and associated loop roads*
- Grading associated with Mammoth Cave Parkway*
- Grading associated with retaining walls, landscape steps and terraces, concrete stairs and metal rails associated with the Historic Entrance.*

* Requires further evaluation under proposed extension to the period of significance.

Non-contributing Topographic Modifications

- Grading to accommodate the concessionaire dormitory and the pet kennel
- Grading to accommodate larger footprint of the visitor center, tour shelters and associated circulation paths and terraces
- Grading associated with universal accessibility on the Heritage Trail
- Grading to accommodate the check-in-station, small parking lot, exposed aggregate concrete area for dumpsters and recycling, and the pervious paved parking areas within the campground
- Grading associated with the boardwalk and stairs connecting to the Dixon Cave Trail from the picnic area

Missing Topographic Modifications

- Grading associated with agricultural uses or settlement
- Any grading associated with the Guide House and other support buildings

Land Uses and Activities

Land uses that are character-defining for the Core Visitor Services Area are associated with the provision of visitor services and opportunities for travelers to better connect with Mammoth Cave from the Historic Entrance and with the natural resources present within the core area. The majority of the land uses present within the core area today were established during the period of significance, continue to function as intended, and contribute to the significance of the site. These uses include cemetery, commemorative, commercial, interpretive/museum/educational, lodging, recreational, transportation, utility, visitor services, and artistic endeavors. Those uses that are no longer represented on site include agricultural, industrial, religious (sources indicate that services were held in the cave), and residential.

Cemetery. Cemetery land uses in the Core Visitor Services Area are represented in the Old Guide's Cemetery. This cemetery dates to the early nineteenth century period of discovery and initial use of Mammoth Cave. The Old Guide's Cemetery contains the graves of former tuberculosis patients who died during an 1842–1843 experiment that attempted to establish a medical use for the cave. The cemetery serves as a final resting place for famous cave guide Stephen Bishop who died in 1857. The cemetery survives with integrity from the early nineteenth century period of significance within the context of Discovery and Early Uses of Mammoth Cave and contributes to the significance of the landscape.

Commemoration. Commemorative land uses are represented at the visitor center area. Located in front of the visitor center is a bronze plaque, commemorating the designation of Mammoth Cave National Park as a World Heritage Site in 1982. There is also a commemorative marker along the walkway in front of the visitor center. The bronze plaque, mounted within a boulder, honors Stephen Mather's accomplishments for the National Park Service. Many similar plaques were made and installed in parks beginning in 1932.

Commercial. Commercial land uses in the core area today are primarily associated with the book store in the visitor center, book store and restaurants within the main hotel lodge, and the convenience store and post office within the camp store and service center building. Commercial uses in the Core Visitor Services Area are administered by concessionaires. Commercial land uses within the core area preceded development of park facilities. The first owners of Mammoth Cave sold tickets for cave tours and actively advertised Mammoth Cave as a vacation destination. Railroad advertisements promoted a weekend excursion trip to Mammoth Cave from Cincinnati in 1913 and provided costs for tickets including two routes through Mammoth Cave and guide fees. Beginning in the nineteenth century, the Mammoth Cave Hotel catered to tourists and provided fresh meals in the dining rooms and drinks in the bar. The dining room of the 1925 hotel could seat 300 people. The hotel also offered a souvenir store and photography shop. In the 1920s and 1930s, Demunbrun Store was located next to the terminus of the Mammoth Cave Railroad. It served as a grocery store, post office, and souvenir shop. Demunbrun Store was demolished in 1939. The commercial land uses associated with the establishment of the park survive in the Mission 66 era buildings of the hotel complex and camp store and service station, and the renovated visitor center completed in 2011. Though these buildings may not be contributing to the period of significance, the historic pattern of commercial land use survives from the period of significance and contributes to the significance of the Core Visitor Services Area.

Interpretive/Museum/Educational. These land uses have been an important component of the Core Visitor Services Area since the early the cave tours began after the War of 1812. One of the first enslaved guides was Stephen Bishop, in 1838. The Mississippi War Museum, a wooden boat structure crowded with Civil War relics and other souvenirs, was located on the Green River in 1908. The historic *Hobson* was educational and privately owned. It was docked at the ferry landing at Mammoth Cave (Figure 412).



FIGURE 412. Postcard with image of "The Hobson" with a sign Mississippi War Museum. Source: Mammoth Cave National Park.

During park development, interpretation of natural resources began through signage and programs related to the visitor center and tours of the cave. Interpretive signs were located on the trails, in the historic landscape core, and at the old and new ferry crossings on the Green River. This was a comprehensive interpretation of the history of transportation at Mammoth Cave. Interpretation of the natural resources and specifically Mammoth Cave and the cave system are continually part of the interpretive plans for the park. Programs, tours, books and other educational and interpretive information are associated with the visitor center. Interpretive signage is located at the Historic Entrance and along the trails at other cave entrances. Interpretive land uses contribute to the significance of the Core Visitor Services Area.

Lodging. Lodging uses are currently associated with the Mammoth Cave Hotel, including the Main Lodge, Heritage Trail wing, Sunset Lodge, Deluxe Cottages, Woodland Cottages, and the campground. The extant hotel complex was completed in 1965. The Deluxe Cottages were constructed from 1938–1939 and the Woodland Cottages were built from 1939–1941 and in 1949. The original campground was built in 1939, and the current campground was completed in 1964. These lodging structure accommodations, all part of the Mammoth Cave Hotel, are run by concessionaires. The campground is not part of the hotel and has been operated by the NPS for over 30 years. The extant lodging structures were preceded by the first hotel. In operation from 1828, the original construction was composed of log cabins. The cabins formed the core of the building, and were later connected and weatherboarded under the cave ownership of Franklin Gorin from 1837 to 1839, and expanded several times over the course of the nineteenth century. The first hotel burned down in 1916 and was replaced in 1925 by the second hotel located south of the first hotel site. An addition was built to the hotel in 1930. The hotel was demolished in 1978–1979 because it no longer met safety regulations and renovation was considered impractical. This land use survives with integrity from the period of significance and contributes to the significance of the historic landscape.

Recreation. Like interpretation, recreation has been a key land use of the Core Visitor Services Area since the early 1800s when Mammoth Cave was opened for tours and the popularity of Mammoth Cave as a tourist destination grew in the mid-nineteenth century. During park development, trails were constructed by the CCC on old road traces or paths where possible and connected the cave entrances to the more developed areas of the visitor center, hotel, picnic area and campground. The extant paved trail to the Historic Entrance was constructed on the old ferry road, as seen in historical photographs. The core area also contains a picnic area converted in the early 1960s from a campground, and a new campground constructed in 1964. Construction of the Green River Ferry Crossing in the 1930s provided a recreational boat launch that is used today. All contribute to the significance of the historic landscape. Tennis and shuffleboard are available for hotel guests on the facilities built in 1938. Historic recreational activities that have been enjoyed within the core area include hiking, both on the landscape surface and below ground in the cave tours, as well as shuffleboard and tennis. Many recreational features survive from the period of significance and contribute to the significance of the historic landscape.

The YMCA Camp Mammoth Cave is indicated on the 1922 USGS map. The facilities were located approximately in the area of the existing parking lot at the Green Ferry Crossing. The cave entrance

south of the Green Ferry Road and across the street from the former site of the camp remains in its original location. This entrance is the only extant feature associated with the camp and recreational land on this site. The cave entrance is not within the boundary of the CLR study, but is considered in the context of the former camp site located on the north side of Green Ferry Road. Further study is required to determine the historical significance of this cave entrance.

Transportation. Transportation has been an important land use in the area of Mammoth Cave and the region since significant improvements were made in the 1850s. In 1859, the Louisville and Nashville Railroad initiated passenger rail service between Louisville and Nashville with a stop at Glasgow Junction, and from there stagecoaches travelled to Mammoth Cave. An 8. 7-mile extension was completed from the Glasgow Junction Depot to the Mammoth Cave Hotel in 1886, and service on the Mammoth Cave Railroad Dummy Train began the same year. The Mammoth Cave Railroad ended just beyond the Demunbrun Store and guests would walk on a short footpath to the Mammoth Cave Hotel. Evidence of the railroad bed survives in the extant landscape within the Core Visitor Services Area north of the campground and camp store and service station parking lot. The Engine No. 4 and Coach No. 2 exhibit and shelter were located at the approximate site where passengers would disembark and walk to the hotel (compare Figure 413 and Figure 414).



FIGURE 413. Engine No. 4 and Coach No. 2 Train Exhibit, with the wooden shelter that was built in the 1930s. Undated view prior to 1967. Source: Mammoth Cave National Park.



FIGURE 414. Engine No. 4 and Coach No. 2 Train Exhibit, with shelter built in 1967. Source: Mammoth Cave National Park.

The first automobile arrived at the cave in 1903 from Chicago, Illinois, heralding the start of increased visitation as automobiles became the popular mode of transportation and roads to the Mammoth Cave Hotel were improved.[268] The old entrance road with the arched sign was used in the 1920s and 1930s until the period of park development. The road trace is evident in the landscape, with the accompanying groves of cedar trees and deciduous trees.

River traffic was also prevalent in the early 1900s. Locks and dams on the Green River brought steamboats and towboats from Bowling Green and Evansville to Mammoth Cave. The Myers Packet

268. *The Horseless Age,* XII, no. 4 New York, July 22, 1903. 3–6. .

Company had a route to the cave, landing at the old Mammoth Cave Ferry Crossing as did the Evansville & Bowling Green Packet Company. The old ferry crossing is accessible and interpreted from the River Styx Spring trail. The extant Green River Ferry Crossing, built by the CCC in the late 1930s approximately 1/2-miledownstream from the old Mammoth Cave Ferry site, is still in use for vehicular traffic in the park. Transportation land uses survive from the period of significance and contribute to the significance of the historic landscape.

Utilities. Prior to 1871, water had to be brought up from the Green River to serve the visitors at the first hotel. Men's and women's privies were located north of the hotel building. In 1871, David L. Graves had a new water system installed to serve the hotel. Graves had pipes laid to the Three Springs area, which supplied storage tanks at the hotel. Water was also supplied to the new hotel constructed in 1925 and stored in water tanks on the site. None of these tanks are extant. In 1939, the water system was extended to the Deluxe Cottages. The CCC constructed water systems encompassing four concrete reservoirs, two pumping stations, four miles of cast iron water mains, and two sewer systems (one of which served the hotel, cottages, and tennis court comfort station in the study area covered by this CLR). The core area was also served by the spring, pumphouse, and reservoir at Bransford Spring, four miles to the east.

In 1940, a sewer system and chlorinator house were constructed by the CCC to serve what is now the Core Visitor Services Area. The chlorinator house survives but the other associated features have since been removed. This sewer system in the core area served the hotel, cottages, and tennis court comfort station and drained to an Imhoff tank (a type of two-level septic tank that encourages settling and anaerobic digestion of sludge) and chlorinating basin before discharging into the Green River. Sewer system improvements were made in the 1990s, and in 2007 a new sewer and water system was installed for the Core Visitor Services Area. Lift stations associated with this sewer system are present on the site. In 2004, oil and grit separators were installed for protection of the cave and underground hydrology from pollutants carried by storm water runoff.

Visitor Services. Visitor services are afforded in the visitor center, renovated in 2011 with associated tour shelters, restrooms, and newly aligned circulation patterns. The hotel, completed in 1965 also offers visitor accommodations and services. Parking lots at the main hotel lodge, the visitor center, and the Woodland Cottages are other visitor services offered within the Core Visitor Services Area.

Additional visitor services are provided in the camp store and service station including a post office, laundry, and showers. The campground provides comfort station facilities and picnic/grill features at the various camping sites. Visitors services are afforded at the large picnic area north of the visitor center that include picnic tables, grills, covered shelters, restrooms, and parking.

Since the demise of the saltpetre industry at Mammoth Cave after 1812, the prominent land use centered on the cave as a major tourist attraction. Visitors came to the cave beginning as early as the 1810s and it attracted national and international attention by the middle of the nineteenth century. Famous visitors at that time included Jenny Lind, the Swedish opera singer, and the Grand Duke Alexis of Russia.[269]

Current park services perpetuate uses provided as early as 1816 when cave tours began. Also by the 1830s, visitors were staying at the rustic Mammoth Cave Inn constructed near the cave entrance. It was John Croghan that was most instrumental in the development of tourism and visitor services as he used his own fortune to expand tourism infrastructure and conversion of the hotel into a grand structure with a ballroom, billiard room, bowling alley, and veranda. After Croghan died, trustees of the Mammoth Cave estate controlled the operations at Mammoth Cave until it was turned into a National Park. The National Park

269. Algeo, 36–37.

Service has continued to provide infrastructure, facilities, and services for the enhancement of the visitor experience. The visitor services land uses associated with the Core Visitor Services Area contribute to the significance of the historic landscape.

Related Land Uses

Artistic Endeavors. There was a substantial body of literary, artistic, and scientific material produced about Mammoth Cave during the nineteenth century. Writings were featured in regional journals such as *Debow's Review* and *The Southern Lady's Companion.* In mass market magazines, the cave was featured in *Scientific American, Vanity Fair, Appleton's Journal, Scribner's Monthly, Science,* and *The Century Magazine*.

In addition to infrastructure, John Croghan hosted leading poets, artists, and scientists, sometimes for extended periods, with the expectation that they would write about or otherwise portray the cave in their works. Poet Ralph Waldo Emerson described a visit made to Mammoth Cave years earlier in the essay "Illusions," published first in the inaugural issue of *Atlantic Monthly*, and artist **George Brewer** (1814–1852) spent nine weeks during 1845 making sketches of the cave for his panorama *Natural Wonders of America*. [270]

Several additional artists who visited Mammoth Cave and created artistic works during the nineteenth and twentieth centuries include the following.

Robert Montgomery Bird (1806–1854) executed three watercolors of Mammoth Cave in 1835 and 1833 and also wrote the classic account of Mammoth Cave in 1837. His article was one of the earliest descriptions of the cave and described with considerable detail. **Marie-Francois Regis Gignoux** (1816–1882) painted the interior of Mammoth Cave, the site of the Rotunda looking toward the entrance. The New York Historical Society did a recent restoration of the 1843 painting. **Joachim Ferdinand Richardt** (1819–1895) visited Mammoth Cave in 1857. He spent a week and was guided by Mat and Nick Bransford. He did twenty drawings of the cave and one of each of his guides (Figure 415). He exhibited six paintings of Mammoth Cave in an exhibition at New York's National Academy of Design. The Park has sixteen of his drawings in their collection.



FIGURE 415. Mixed media drawing of Nick Bransford by J. F. Richardt. Source: Mammoth Cave National Park.

Clement Reeves Edwards (1820–1898) was a photographer, portrait and landscape artist who painted the Bridal Chamber at Mammoth Cave in 1859. He also produced eight *cartes de visite* that can be seen in the library at Western Kentucky University in Bowling Green. **Max Eyth** (1836–1906) was an engineer, author, poet, and artist born in Germany. He wrote and published a book in 1905 entitled *In the Current of Our Time,* which describes his experiences at Mammoth Cave in 1866. He also produced a map and paintings of the cave. **Carolus Brenner** (1865–1929) was an artist from Louisville, Kentucky. In 1890 he visited and painted Mammoth Cave. The Filson Historical Society in Louisville has an oil painting on display of Mammoth Cave entitled *Natural Entrance,*

270. Algeo, 36–37.

Mammoth Cave 1890. **C. Winston Haberer** (1905–1958) was also an artist from Louisville. He is noted for his etchings, ink drawings and oil paintings of the Kentucky region. Several of his etchings of Mammoth Cave include: *Old Entrance*, *Ruins of Karnack*, and *Echo River*. These etchings were made before World War II.[271]

In addition to representations in literature and art, the place of Mammoth Cave in nineteenth century culture was tied to a growing interest in science. Mammoth Cave became a field site for professional archeologists, biologists, and geologists, and both mass market literary magazines and popular science journals carried reports of their research. Between 1845 and 1869, twenty-five separate items in *Scientific American* refer to Mammoth Cave. Popular science accounts reinforced literary images of the cave to associate a sense of discovery with Mammoth Cave in the public imagination.[272]

The fascination and recognition of the beauty and mystery of Mammoth Cave and its below ground and above ground landscapes continues today with landscape artists such as Kathy Wright whose current project, an exploration of Mammoth Cave National Park (2012), was funded through USA Projects, an online initiative of United States Artists.

Due to the high integrity of the natural resources at Mammoth Cave, they retain their inherent qualities that continue to be a source of inspiration for artists, writers, photographers and scientists. This land use contributes to the significance of the historic below and above ground landscape of Mammoth Cave.

Contributing Land Uses and Activities

- Artistic endeavors
- Cemetery
- Commemoration
- Commercial
- Interpretative/Museum/Educational
- Lodging
- Recreation
- Transportation
- Utility
- Visitor Services

Non-contributing Land Uses and Activities

- None identified

Missing Land Uses and Activities

- Agriculture
- Industrial
- Residential
- Health Services

271. Bob Thompson, *Historic Paintings of Mammoth Cave,* National Speleological Society, Inc. News 60, no. 4 (April 2002), 108–113.

272. Algeo, 38–39.

Circulation

Circulation features of the core area are organized around Mammoth Cave Parkway, which leads into the park from Interstate 65, Exit 48 at Park City, Kentucky. Many visitors also arrive from Cave City using Exit 53 of Kentucky Highway 70/255, which eventually intersects Mammoth Cave Parkway. Extending from the parkway are the Green River Ferry Road, which was constructed by the CCC and leads west to the river, and Maintenance Road, which leads east to the park's operations center. Farther north, a much older road, Flint Ridge Road, leads eastward from the parkway.

The parkway ends at the visitor center parking lot, from which leads the road into the picnic area and a short driveway to the Woodland Cottages parking area. South of the Mammoth Cave Hotel, a road leads into the campground and provides access to the campground's store and post office. Leading from these use areas are a number of trails, some following the traces of roadways abandoned after the 1960s.

Mammoth Cave Parkway. Mammoth Cave Parkway within the study area was constructed around 1960 in preparation for the development of a new visitor center and new campground for the park, which were developed in the early 1960s.[273] It replaced and almost paralleled the old entrance road, which was abandoned once the parkway was completed. Portions of the old entrance road became the central spine of the campground and a few segments were reused for park trails. The trace of the road is visible when viewed from within the campground, looking south. It is also visible in the landscape when viewed from just north of the camp store and service station, looking north. The trace contributes to the historical significance of the core area. The parkway itself postdates the 1806–1941 period of significance. Further study is needed to determine whether the parkway and other resources developed during the Mission 66 era are significant under the proposed extension to the period of significance. The parkway should therefore be managed as a cultural resource.

The railway line that led into the park ran parallel to the old entrance road. Established to handle increased visitation to the cave after the Civil War, the railroad was incorporated in 1874 and completed in 1886.[274] The railroad was purchased by the Mammoth Cave National Park Association in 1931 and dismantled that year.[275] Decline in visitor use of the railway line was due to the increased use of automobiles.

In 1967, a second shelter was constructed to house and protect Engine No. 4 and Coach No. 2, two cars from the defunct railroad. The first wood framed canopy shelter was built in the 1930s. The two cars rest on tracks set at the terminus of the original railroad bed. The railroad bed is still visible in the landscape, and segments of the Mammoth Cave Railroad Bike and Hike Trail follow remaining portions of the old railroad berm. None of these segments that follow the berm are in the study area for this document. The railroad bed is a contributing feature.

Flint Ridge Road. Flint Ridge Road, formerly known as the Northtown-Mammoth Cave Road, intersects Mammoth Cave Parkway near the visitor center. This road once led through the core area, intersecting the old entrance road close to the terminus of the railroad line, and leading southward to become what is now called Joppa Ridge Road south of the Green River Ferry Road. There is speculation by park staff that this road was built by Dr. Croghan; however, this has not been verified by current research for this CLR. The trace between Mammoth Cave Parkway and Green River Ferry Road constitutes a good length of White Cave Trail and contributes to the significance of the landscape.

In the 1930s, dirt roads led from Flint Ridge Road to various farmsteads and down to the Green

273. MACA-D102 Completion Report: Visitor Center, 1963; MACA-D108 Completion Report: Parking Landscaping, 1964; MACA-D107 Completion Report: Guard Rail, 1965.

274. Elmer G. Sulzer, "The Mammoth Cave Railroad," manuscript, n. d. , 31–32.

275. Ibid, 38–40.

River, to the approximate location of the current ferry. One of these is followed in part by the trail that links Mammoth Dome Sink Trail and Echo River Spring Trail. Echo River Spring Trail itself follows an old farm road. The River Styx Spring Trail runs along the trace of the old ferry road that led down to and past the Historic Entrance. The Dixon Cave Trail may also follow an old farm road. These road traces also contribute to the significance of the landscape.

Green River Ferry Road. Green River Ferry Road was constructed by the CCC and completed in 1939. The road was built of crushed limestone to lead to a new ferry crossing at the Green River.[276] It was eventually paved in asphalt and an asphalt parking lot constructed on the river banks above the ferry landing. The parking lot was built on the site of the YMCA Camp Mammoth Cave, which was also the former site for the Miss Green River tour boat concession. Green River Ferry Road contributes to the significance of the landscape (compare Figure 416 and Figure 417). Further research is required to determine the significance of the parking lot.



FIGURE 416. 1941 photograph of the Green River Ferry looking north. The retaining wall on the south side of the river is not constructed in this photograph. Note the concrete gutter and stacked limestone retaining walls on both sides of the river. Source: Mammoth Cave National Park.



FIGURE 417. A similar view in 2011. The concrete gutters and retaining walls are still present.

Campground Loops and Parking Areas, 1930s. As part of the development of the park in the 1930s, a campground was developed on a rise north of the Historic Entrance. A curving drive to the campground was laid out, paved in crushed stone, and extended up the hill to become a large loop drive. From the loop, numerous smaller drives provided smooth access to pull-off parking. The layout of the loops is derived from a campsite design adopted in the 1930s by the U. S. Forest Service and later refined by the National Park Service. The design made it convenient for drivers to easily locate empty sites and park quickly without having to turn around or pass other cars.[277] The design also provided longer parking areas to accommodate trailer pull-off. While the access road, now known as Picnic Area Road, and the loop remain today, the interior drives have been removed and the campground put into use as a picnic area. Some pull-in parking has been added along the loop. All have been paved in asphalt. The access road and loop configuration contribute to the significance of the landscape.

A secondary road, designed and constructed of crushed stone in the 1930s, extends off what was the campground road to terminate in a circle drive. The area through which this road passes was intended as the park's picnic area through which 3-foot-wide trails would traverse. Individual picnic sites, complete with tables and grills, were widely

276. Memorandum for the Acting Superintendent from G. R. Allison, Coordinator CCC, December 4, 1939. Mammoth Cave National Park Archives.

277. E. P. Meinecke, *Camp Planning and Reconstruction* (California Region: U. S. Forest Service, n. d., circa 1934), 7, 34.

spaced, allowing each picnic site a modicum of privacy.

In 1947, a twenty-car parking lot with a median separating it from the road was planned midway along the secondary road on the north side. This parking exists today and is paved in asphalt. Pull-off parking for thirty-five cars was planned at the beginning of the secondary road, but exists today with twenty regular parking spaces and one universal access space. This lot has parking on both the north and south side of the secondary road. It is also paved in asphalt. Pull-in parking exists at the picnic shelter on the south side of the road across from the twenty-car lot with a median. The pull off parking is paved with gravel. With the exception of the pull-off parking associated with the picnic shelter, the secondary road, the circle terminus, and both asphalt-paved parking lots maintain a high degree of integrity and contribute to the significance of the landscape.

Campground Loops and Parking Areas, 1960s. In 1964, a new and larger campground was constructed south of the 1925 hotel and amphitheater. It comprised four loops, four comfort stations (with a fifth comfort station built later), and a check-in station (campground kiosk) at the entrance.[278] In 1963, a new camp store and service station building was constructed just north of the campground.[279] Both the campground and the store were accessed from the newly-constructed Mammoth Cave Parkway. Of these features constructed as part of Mission 66 program at the park, the parkway and campground loops survive with integrity and would be contributing features should the significance of the area be determined eligible for listing in the National Register under the proposed extension of the period of significance to an ending date of 1972.

The central drive of this campground area was constructed close to the alignment of the old hotel entrance road and the camping loops extend from it. The old entrance road was also the main north-south road through the Mammoth Cave area. As with the 1930s campground, pull-offs and diagonal back-in spaces along each loop make it easy to locate empty sites and park quickly without having to turn around or back up.

Paths provide pedestrian access through the campground and to the camp store and service station. A longer path leads from the campground through the woods along a stream and down to the amphitheater southeast of the Deluxe Cottages. This path is considered a contributing feature to be managed as a cultural resource for Mission 66 era and needs further study. Other paths extend off of this one, including one that leads to the small stone campfire circle. The stone campfire circle dates to the 1980s and 1990s.

Woodland Cottages. In 1938–1939, sixteen small, one-story wooden structures were built for visitor accommodations. Two parking areas served the complex, one to the south and one along its east side. Several crushed stone paths led into the complex from these parking areas. The complex was generally organized around a loop path from which shorter paths provided access to individual buildings. In 1949, five new cottages were constructed and the pathway system extended to include them.[280] Of these two parking areas, only the one on the east side remains.

When Mammoth Cave Parkway was built in the 1960s, the roadway encroached upon the cottage complex, decreasing the setback from the road to the picnic area from approximately 100 feet to approximately 40 feet and shortening the access paths. However, most of the internal pathways of the complex remain as designed, although they are now paved in asphalt. The internal circulation patterns of the Woodland Cottages and the parking lot on the east side, although now all paved in asphalt, contribute to the significance of the landscape.

278. Drawing No. 135-3110B, Campground Roads - Mammoth Cave National Park, National Park Service, 1962.

279. Drawing No. 135-8085, Camp Store and Service Station, Joseph Wick, Architect, 1963.

280. Mammoth Cave National Park NPS/NPCI Building Survey and Recommendations.

Visitor center and hotel parking and walkways. In the 1930s, the old entrance road terminated at the north end of the 1925 hotel where it formed a loop for passenger drop off. From there, another driveway led to the west side of the hotel, likely for deliveries and service vehicles. A number of dirt tracks scattered out from the loop road, forming a web of tracks and paths, some located between the hotel and the cave entrance.

In 1936–1937, ten Deluxe Cottages were built in a semi-circle adjacent to the hotel. A flagstone pathway leading along the front of the hotel was extended in a semi-circle around the rear of the cottages. An amphitheater was constructed east of the cottages in 1938–1939 and was accessed via a path leading from the flagstone pathway. Although the material of the pathway around the cottages has since been replaced with concrete, its alignment contributes to the significance of the landscape.

A parking lot was established in the 1930s in place of the loop road to serve the hotel and the new Deluxe Cottages. (Refer to Figure B-3 in Appendix B.) From the parking lot, a road led to the west to the campground and picnic area. A survey from 1953 indicates what may been tent platforms on the topographic point southwest of the tennis courts.[281] Some extant grill features are present in the area between the Heritage Trail and the Sunset Lodge indicative of a previous campground or picnic area. Documentation of this site in park records has not been found to date or substantiate the presence of a previous campground.

The park became increasingly popular after the end of World War II. The 1953 survey shows a large parking area delineated with posts and wire in the field west of the paved parking lot. This parking lot was eventually paved and is the large lot existing today north of the tennis courts. The dirt road to the campground passed through the lot and then connected to another dirt road that connected to a trail that eventually became the Heritage Trail.[282] Both roads have been reconfigured to their current alignment.

In 1954, the first Sunset Lodge building was constructed west of the 1925 hotel. A second and matching lodge was built next to it in 1958. The access road, parking, and paths were also part of each phase of the Sunset Lodge buildings (refer to Figure 58 in the Site History chapter). This parking configuration exists today, but a few spaces were added at its western end to accommodate accessible parking for the Heritage Trail. The Sunset Lodge buildings merit further consideration for their eligibility for listing in the National Register of Historic Places under the proposed extension of the period of significance to an ending date of 1972. The Sunset Lodge and related circulation features should thus be managed as cultural resources.

In 1960–1961, a 380-car asphalt-paved visitor center parking lot was constructed in conjunction with the new visitor center. A small employee parking lot was constructed west of the visitor center, adjacent to the administrative wing.[283] It was expanded in 1967 to provide a total of twenty-six spaces.[284] This parking lot was accessible via a driveway leading from Mammoth Cave Parkway, which also provided access to the hotel parking lot. A stub off the drive between the two lots led to the road to the old ferry landing, passing the Historic Entrance. A portion of the drive from the visitor center area to the Historic Entrance, now called the Historic Entrance Road, was paved in asphalt shortly after the new visitor center opened in 1961, and a new stone landing and stairway built leading down to the Historic Entrance.[285] Also, a concrete pedestrian bridge was built from the visitor center to the hotel area. The remainder of

281. NPS Drawing No. 135-2108, Topographic Map, Headquarters Area, 1953.
282. NPS Drawing No. 135-2108, Topographic Map, Headquarters Area, 1953.
283. NPS Drawing No. 135-3002, Visitor Center - Mammoth Cave National Park, Bellante & Clauss Architects, 1956.
284. NPS Drawing No. 135-3219, Employee Parking Expansion - Mammoth Cave National Park. National Park Service, 1967.
285. Drawing No. 135-3039A Approach Walk Steps and Parking at the Historic Entrance - Mammoth Cave National Park, National Park Service, July 25, 1960.

the drive west of the Historic Entrance remained unpaved, and is now called the River Styx Spring Trail. While improvements to the Historic Entrance such as new handrails have been installed since, these features remain much as constructed in 1960–1961. The mats for the bio-security are placed on the landscape and not built into the ground and thus constitute a reversible condition that can be removed at any time. The alignment of the Historic Entrance Road and River Styx Spring Trail contributes to the significance of the landscape.

A new Mammoth Cave Hotel was constructed in 1965, between the 1925 hotel and the visitor center. The new hotel construction resulted in reconfiguration of the 1930s parking lot, which was expanded westward to more than double its size. This parking lot exists today.

With the exception of the alignment of the cottage pathways and the Historic Entrance Road/River Styx Spring Trail, none of the features related to parking or circulation around or between the visitor center and the 1965 hotel contribute to the significance of the landscape.

The amphitheater was reconstructed in 1964. New seating and lighting were installed at this time.[286] Further changes were made to the amphitheater circa 2010.

Historic Entrance Road and River Styx Spring Trail. Together, these two circulation features were originally developed to provide access to the Historic Entrance, as well as to the old ferry landing. The Historic Entrance Road was also the primary local north-south road through the park. They retain their historic alignment and many of the features present during the period of significance. These features have a high degree of integrity and contribute to the significance of the landscape.

Old Guide's Trail. Based on available mapping, the earliest known documentation of the location of the Old Guide's Trail dates to 1926, although the trail itself is presumably older than 1926. In the 1926 maps, the trail connected the Guide House, service house, and hotel to the Historic Entrance to the cave (refer to Figure 25 in the Site History chapter, Period Plan for Historic Core, 1926). The terminus of the trail, directly across the Old Mammoth Cave Ferry road to the Historic Entrance, is clearly documented in available mapping. The 1926 alignment of the trail is also the alignment depicted on the 1935 topographic map (refer to Figures B-1 and B-2 in Appendix B), and the terminus of the trail remains directly across the Old Ferry Road from the Historic Entrance. This condition is also clear in a photograph from 1931 (Figure 420). In research for this study, no mapping evidence for the existence of the trail prior to the 1926 location was found. However, there is an indication on early topographic maps of grading for a trail likely existing before 1926. Historic photographs depict what is likely the pre-1926 trail. As indicated in the photograph, the terminus of the pre-1926 trail was on the Old Mammoth Cave Ferry Road, east of the Historic Entrance, much like the condition that exists today (Figure 418).



FIGURE 418. This historic photograph depicts the pre-1926 trail alignment up the slope toward the hotel, with a terminus on the Old Mammoth Cave Ferry Road, east of the Historic Entrance. Source: Mammoth Cave National Park.

It is hard to gain any clarity from the 1910 postcard (Figure 419) as to the original alignment of the Old Guide's Trail. The 1926 trail location appears on maps until 1945, when a planning document was

286. Drawing No. MP-3123A, Amphitheater, National Park Service, August 1964.

developed that showed a new trail to connect the Historic Entrance to the hotel area. This trail was visible on referenced mapping by circa late 1940s to 1953 (refer to Figure B-5). Mapping dated 1953 shows the trail in its current alignment. This 1953 alignment follows the alignment of the present day trail. The existing trail alignment and any remnant evidence of CCC stone construction along this alignment, are therefore contributing features within this character area.

Existing conditions at the terminus of the Old Guide's Trail include stone drainage structures associated with the road, a stone supported wooden bridge, stone retaining walls, and stone steps at the terminus of the Old Guide's Trail. The date these features were installed is undetermined, but they reflect the historic use of materials along the Old Guide's Trail. The drainage structures appear in the drawings dated 1960 for the upgrade of the Historic Entrance area, but the drawings do not confirm that the other features were installed as part of that project.



FIGURE 419. A postcard view of the Old Guide's Trail, circa 1910. Location of this trail terminus above and in the photograph by E. A. Martel from 1912 is likely the pre-1926 trail, with the terminus east of the Historic Entrance. Source: Mammoth Cave National Park.



FIGURE 420. A view of the previous Old Guide's Trail, 1931. The photograph indicates the direct connection of the terminus of the Old Guide's Trail and the Historic Entrance to Mammoth Cave. Source: Mammoth Cave National Park.

Heritage Trail and Mammoth Dome Sink Trail. Portions of the Heritage Trail and the Mammoth Dome Sink Trail are part of a trail that was installed by the CCC in the 1930s. It led around the hilltop on which the Old Guide's Cemetery was located and to Sunset Point, where the CCC built a stone overlook structure. Between the Heritage Trail and the Sunset Point Lodge there are remnant grills indicative of what might have been a picnic area or campground. This area has not been documented or found in historical research of park plans and development. Since that time, the trail has been reconfigured to render it universally accessible. Potions of the original CCC trail are now part of the Mammoth Dome Sink Trail. Those portions of the Heritage Trail and the Mammoth Dome Sink Trail that survive with integrity contribute to the significance of the landscape.

White Cave Trail. Approximately half the length of White Cave Trail follows the trace of Flint Ridge Road that formerly passed through the park area to the south. It is not known when the trail was developed. The northern portion of the trail that follows the road trace contributes to the significance of the landscape.

Echo River Spring Trail. The Echo River Spring Trail follows the trace of a farm road that led along the east side of a cultivated field maintained on the banks of the Green River. The historic trail contributes to the significance of the landscape.

Other trails. It is possible that other trails within the core area follow the alignments of older farm roads and may contribute to the significance of the landscape. Further research and investigation is needed to confirm the status of these routes. These trails include the Green River Bluffs Trail, the trail from the Echo River Spring Trail up the hill to Sunset Point, and the Dixon Cave Trail. Refer to Figure B-4 in Appendix B.

Contributing Circulation

- Flint Ridge Road
- Green River Ferry Crossing
- Green River Ferry Road
- Old Green River Ferry Crossing
- Old Guide's Trail alignment and remnant CCC stone construction
- Trace of old Mammoth Cave Hotel entrance road
- Picnic area loop road
- Picnic area road to turnaround
- Woodland Cottages interior pathways
- Alignment of Deluxe Cottages walkways
- Alignment of Historic Entrance Road and River Styx Spring Trail
- Drainage features related to Historic Entrance Road engineering
- Portions of Heritage Trail and Mammoth Dome Sink Trail
- Portions of Green River Bluff Trail
- Portions of Echo River Spring Trail
- Portions of Dixon Cave Trail
- Portions of White Cave Trail
- Sunset Lodge drive and parking areas
- Mammoth Cave Parkway*
- Campground loop roads*
- Parking bays on campground loop roads*
- Pedestrian paths to the comfort stations*
- Exposed aggregate concrete sidewalks and patios at Sunset Lodge*
- Walkway to the amphitheater from the Deluxe Cottages*
- Stone retaining walls, steps, and stone-base wooden bridge at the terminus of the existing Old Guide's Trail*
- Terrace and stairway into Historic Entrance of the cave*

* Requires further evaluation under proposed extension to the period of significance.

Non-contributing Circulation

- Boardwalk and stairs to Dixon Cave Trail from picnic area
- Twenty-car parking lot on picnic area road to turnaround
- Mammoth Cave Railroad Bike and Hike Trail
- Woodland Cottages entrance road and parking area
- Gravel pull-in parking at the picnic shelter
- Packed-earth social trails in the picnic area
- Exposed aggregate concrete paths associated with picnic area structures

- Asphalt paths through the picnic area
- Grass-paver pull-ins at the campground
- Gravel service road providing access to the dormitory and kennel
- Campground access drive
- Camp store and service station drive and parking lot
- Visitor center parking lot walkways, plazas, stairs and shelters
- Pedestrian bridge between the visitor center and hotel
- Hotel entrance road
- Visitor center bus loop and unloading area
- Gravel and pervious paver access road north of Sunset Lodge
- Employee parking lot
- Parking at the Green River Ferry
- Hotel parking lot and walkways
- Trail associated with the campfire circle

Missing Circulation

- Interior drives in old campground/picnic area
- Old Mammoth Cave hotel entrance road
- Farm roads
- Earth road to Old Guide's Cemetery
- Walkways associated with the 1925 hotel and Guide House
- Mammoth Cave Railroad tracks
- Picnic area paths shown on the 1953 plan
- Sandstone steps into the Historic Entrance to the cave
- Old Mammoth Cave Ferry Road
- Macadam road between 1925 hotel and picnic area
- Stone surface parking areas with stone curbs
- Crushed stone walk between the 1925 hotel and the picnic area
- Old Mammoth Cave ferry

Cultural Vegetation

Existing cultural vegetation within the Mammoth Cave Core Visitor Services Area includes the native hardwood forest that cloaks most of the area; remnant cultural vegetation, and lawn associated with the 1925 Mammoth Cave Hotel, the 1930s Deluxe Cottages, and the 1940s Woodland Cottages; as well as more recently planted shade trees and ornamental shrubs associated with the 1960s hotel and renovated Mammoth Cave National Park Visitor Center.

The native hardwood forest contains deciduous secondary growth over former agricultural fields present on the site prior to national park establishment. Forty-five percent of park lands were forested when the park was established. When acquired by the NPS, large parts of Character Area 1: Historic Core Landscape, Character Area 5: Mammoth Cave Hotel and Lodging, and Character Area 6: Visitor Center Complex, and a stretch of land along the riverbank from the old ferry crossing to the new ferry crossing, were not forested (Figure 421). The area surrounding the 1925 hotel on its east, west, and north sides was kept in open lawn with a scattering of trees, pasture, and what appears to be a vegetable patch or garden associated with the hotel. The area north of the cave ravine was similar, with uses related to a small farmstead located there, including crop fields, pasture, and most likely a manmade cattle pond.

The open woodland to the east of the hotel included a grove of Eastern red cedar trees (*Juniperus virginiana*) that lined both sides of the original hotel entrance drive (compare Figure 422 and Figure 423). This grove is extant and contains trees that date to the late 1800s. In addition, a row of Eastern red cedars were cultivated along the east side of a walkway that led parallel to the east side of the hotel (compare Figure 424 and Figure 425). Four of the approximately seven original cedars are extant and date to the period of the hotel construction in 1925 or possibly before.

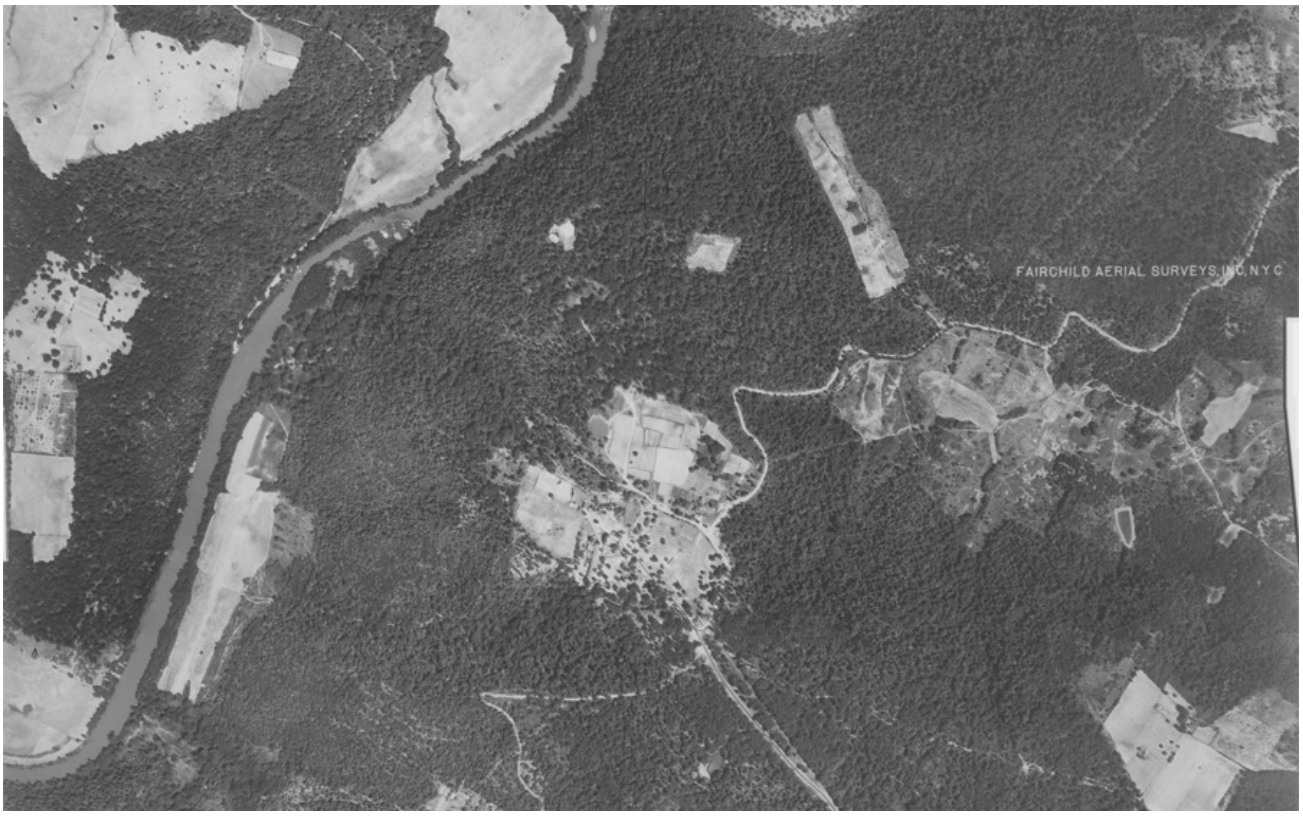


FIGURE 421. Extent of woodland cover, circa 1930. Source: Mammoth Cave National Park.

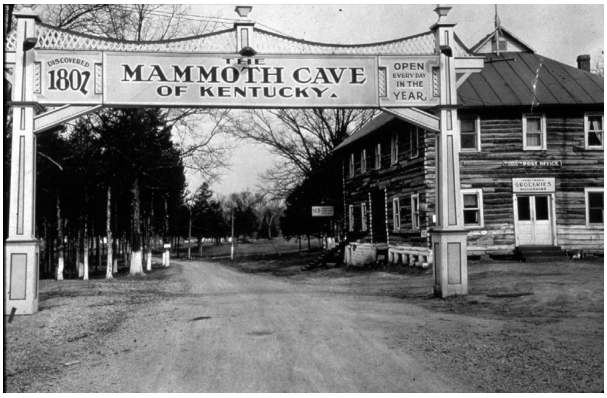


FIGURE 422. Mammoth Cave entrance road, flanked on one side by eastern red cedars, unknown date. Source: Mammoth Cave National Park, Program Services Archives. Source: Mammoth Cave National Park.



FIGURE 423. A similar view in 2011 shows that many of the cedars remain extant.



FIGURE 424. Eastern red cedars lining a path between the 1925 hotel and yard, unknown date. Source: Mammoth Cave National Park.



FIGURE 425. A similar view in 2011; four of the trees survive as shown.

Between these groupings of cedars was an open lawn with a scattering of shade trees, including oak (*Quercus* spp.), sycamore, hackberry, and persimmon (Figure 426). Of this group of scattered shade trees, approximately fifteen remain.



FIGURE 426. Deciduous trees in the hotel yard, unknown date. Source: Mammoth Cave National Park.

In the 1930s, the CCC planted many shade trees, flowering trees, and shrubs in the area around the 1925 hotel, its parking lot, and the tennis and shuffleboard courts, as well as around the newly-constructed Deluxe Cottages. Plants installed in Character Area 1: Historic Core Landscape included native trees, such as redbud (*Cercis canadensis*), flowering dogwood, flowering locust (*Robinia viscosa*), Eastern red cedar, white oak, red oak, sugar maple, red maple, sycamore, and flowering plum (*Prunus triloba*); native shrubs such as smooth sumac (*Rhus glabra*), blackhaw (*Viburnum prunifolium*), coralberry (*Symphoricarpos vulgaris*), hazelnut (*Corylus americana*); and St. John's wort (*Hypericum* sp.), a shrub native to Europe.[287] These new plantings appear in early photographs of the Deluxe Cottages, but only a small number of the planted trees and none of the shrubs remain (compare Figure 427 and Figure 428). There are also a few yucca (*Yucca spp.*) specimens around the Deluxe Cottages that have survived from the period of significance, although it is not known if they were planted by the CCC.

287. Drawing No. 135-2094-1-1, Planting Plan for Old Entrance Hotel Area, Mammoth Cave National Park, completed 1939.



FIGURE 427. Ornamental vegetation at one of the Deluxe Cottages, unknown date. Source: Mammoth Cave National Park.



FIGURE 428. A similar view in 2011; as shown, few of the plantings remain.

Most of the ornamental plantings within the core area are associated with the Mission 66 hotel and restaurant building and the recently renovated visitor center, and have been planted within the last twenty years. According to construction documents, efforts were made at the new visitor center to preserve many of the larger tree specimens and to use native plant material.[288]

Plants installed in Character Area 2: Picnic Area and Woodland Cottages included native trees such as serviceberry (*Amelanchier canadensis*), redbud, flowering dogwood, hazelnut, tulip tree, flowering plum, and winged elm (*Ulmus alata)*; native shrubs such as highbush blueberry (*Vaccinum* sp.), Kentucky viburnum (*V. molle*), spice bush (*Benzoin aestivale),* wahoo (*Euonymus americana*), witch hazel (*Hamamelis virginiana*), smooth hydrangea (*Hydrangea arborescens*), Carolina buckthorn (*Rhamnus caroliniana*), elder (*Sambucus canadensis*), and coralberry; and the non-native St. John's wort.[289] The character area remains heavily shaded by large deciduous trees, some likely planted in the 1930s.

Most of the vegetation associated with the picnic area and campground appears to be native woodland that was present on the site at the time these features were developed; it may have been supplemented by the CCC in the 1930s during its tree planting project in the park.

Contributing cultural vegetation

- Native hardwood forest.
- Eastern red cedar grove lining the old entrance road trace.
- Four Eastern red cedars, part of line of cedars that shaded the walkway to the east of the 1925 hotel.
- Remaining deciduous shade trees in open lawn between the 1925 hotel site and the old entrance road trace.
- Maintained and mowed open turf lawn
- Remaining deciduous shade trees and flowering trees around Woodland Cottages.

Non-contributing cultural vegetation

- Ornamental plantings of trees, shrubs, and groundcovers related to the construction of the hotel and visitor center.

Missing cultural vegetation

- Most trees and shrubs planted by the CCC in the 1930s in Character Areas 1 and 2.
- Pre-1930 vegetation in character areas cleared and re-landscaped by the CCC. (Refer to the Site History chapter for a discussion of CCC activity at the park.)
- Eastern red cedar that were part of the cedar grove that lined the old entrance road.
- Eastern red cedar and other trees that shaded the walkway to the east of the 1925 hotel.
- Pasture and farm garden vegetation before parkland acquisition.

288. Drawing No. 135-80092A, sheet L1.

289. Drawing No. 135-2155, Cabin Development Unit No. 1, completed 1941.

Buildings and Structures

Buildings that are character-defining for the Core Visitor Services Area include structures that were constructed by the CCC during the initial development of Mammoth Cave National Park. There are also a number of structures constructed during the Mission 66 era in the core area.

Several historic buildings in the Core Visitor Services Area survive with integrity. These structures include the Deluxe Cottages, the Engine No. 4 and Coach No. 2 exhibit, the Earth House, Woodland Cottages, Sunset Lodge, Chlorinator Building, and two open-air picnic shelters.

Buildings and structures that have lost their integrity due to changes in their configuration, use, and/or primary materials include the amphitheater, camp store and service station, Mammoth Cave Hotel, the visitor center, the picnic area comfort station, and the enclosed shelter in the picnic area. Due to alterations to surrounding structures, the pedestrian bridge has diminished integrity.

Buildings and structures that postdate the period of significance include the newly built tour shelters, the concession dormitory/laundry, and the lift stations.

Many buildings and structures once present at the Core Visitor Services Area are no longer extant. The first hotel and the 1925 second hotel are both gone from the site. Also, outbuildings associated with the first Mammoth Cave Hotel and the 1925 Mammoth Cave Hotel are no longer extant. Other buildings no longer extant include the Pavilion (Technician's Office), E.L.W. Office (Park Headquarters), Guide House, Lantern Houses, the Gas House, Demunbrun Store, old water tower and garage, and the Hotel Manager's Cottage. Refer to the heading Missing Buildings and Structures, below.

Deluxe Cottages. The Deluxe Cottages were constructed from 1936–1937to accompany the Mammoth Cave Hotel constructed in 1925. While their setting and context have been diminished by the demolition of the hotel and the construction of newer structures nearby, the cottages themselves have seen minimal changes since their original construction. As a result, the Deluxe Cottages retain a high degree of integrity and are considered a contributing resource of the Core Visitor Services Area.

Engine No. 4 and Coach No. 2 Exhibit. The interpretive exhibit featuring the engine and coach includes a steel and wood framed shelter constructed in 1967. The historic locomotive and coach are listed on the National Register, and the exhibit is situated on the location the Mammoth Cave Railroad operated in the late nineteenth and early twentieth century. As a result the Engine No. 4 and Coach No. 2 exhibit retains a high degree of integrity of location, and is considered a contributing feature to the Core Visitor Services Area.

Amphitheater. The amphitheater was constructed by members of the CCC in 1938–1939. Originally rustic in appearance, the amphitheater consisted of log benches, and a wood framed stage and dressing room (Figure 429). In 1964–1967, modifications were made to the amphitheater which included construction of a new stage and dressing room, as well as the installation of new seating and lighting. While the basic configuration of the amphitheater remained the same, the changes in the structure's design and materials significantly diminished its integrity (Figure 430), and little remains of the CCC amphitheater aside from the site grading. In recent years, further modifications were made to allow for universal access to the amphitheater, including replacement of the paving and all of the benches. While the current amphitheater serves as an example of Mission 66 developments seen in the Core Visitor Services Area, the recent reconstruction of the seating area has resulted in a loss of integrity. As a result the amphitheater is not considered a contributing feature of the Core Visitor Services Area.



FIGURE 429. A view of the amphitheater shortly after opening in 1939. Source: Mammoth Cave National Park.



FIGURE 430. A similar view in 2011; note the differences in the stage and the seating.

Earth House. Constructed as a comfort station at the original campground (present-day picnic area) by members of the CCC in 1941, the stone and wood frame structure contained restroom facilities as well as an open-air laundry porch. Circa 1949, an addition containing bathing and laundry facilities was constructed at the building. The addition had been designed in 1942 and matched the style and materials of the original structure. In recent years, the building was converted for use as an educational center. Despite the change in function, the exterior of the Earth House has remained relatively unchanged since the 1949 addition. The Earth House is therefore considered a contributing feature of the Core Visitor Services Area.

Woodland Cottages. Sixteen one-, two-, three-, and four-bedroom cottages were constructed by the CCC in 1938–1939. Five additional two-bedroom cottages were constructed in 1949. Limited modifications have been made to the wood-framed structures since their construction. The Woodland Cottages therefore retain a high degree of integrity and are considering a contributing resource of the Core Visitor Services Area.

Camp Store and Service Center. As constructed in 1963, the one-story building included a gas station, camp store, post office, showers, and restrooms. Since original construction, several changes have been made to the structure, including the enclosure of the automotive service bays at the east side of the building. An expanded convenience store took the place of the former service bay area, and new storefront windows were installed. The former camp store space is now office space for the concessionaire. In recent years, gas pumps were removed. The substantial changes to the structure have diminished its integrity. The building lacks architectural distinction, and it is not considered a contributing resource of the Core Visitor Services Area.

Sunset Lodge. In 1954, the first Sunset Lodge building was constructed. Consisting of ten units, the one-story structure was typical of motor lodges being constructed across the country at the time. A second building, nearly identical to the structure constructed in 1954, was built in 1958. Interior renovations were made to the units at Sunset Lodge in the 1980s. With the exception of these, there have been few changes to the buildings. The Sunset Lodge possesses a high degree of integrity and is considered a contributing resource of the Core Visitor Services Area.

Mammoth Cave Hotel. Mammoth Cave Hotel was constructed in 1965 and was the third hotel to be constructed at the site (Figure 431). The new hotel consisted of two structures connected by a covered walkway. The concrete, steel, and masonry structures contained guest rooms for overnight accommodations, a restaurant, coffee shop and book store. The hotel was connected to

the nearby visitor center by a pedestrian bridge. All three structures were built as part of the Mission 66 program.

Several modifications were made to the hotel in 1992. An addition was constructed to connect the restaurant and concession building with the structure that housed overnight accommodations (Figure 432). An addition containing a fast food restaurant was also built at this time, significantly altering the center portion of the building. Although the additions were constructed using similar materials to the original building, the integrity of the building was compromised.

Significant recent modifications to the nearby visitor center have diminished the integrity of setting and association of the hotel. As a result, the Mammoth Cave Hotel is not considered a contributing resource of the Core Visitor Services Area.



FIGURE 431. A view of the Mammoth Cave Hotel shortly after opening in 1965. Source: Mammoth Cave National Park.



FIGURE 432. A similar view of Mammoth Cave Hotel in 2011.

Pedestrian Bridge. The concrete pedestrian bridge was constructed in 1961 to connect the newly constructed visitor center to the hotel area. Few modifications have been made to the bridge since its initial construction. As part of the recent construction work at the visitor center, two stone clad piers were constructed at the north end of the bridge. Modifications made to the hotel and visitor center have led to a loss of integrity of setting and association for the bridge. Thus, the pedestrian bridge is considered a non-contributing structure as part of the hotel-visitor center complex. However, the bridge retains integrity of design, and therefore it should be managed as a cultural resource pending further consideration of its potential for individual listing in the National Register. Assessment of the bridge by the Federal Highway Administration in 2014 noted concrete delamination and spalling, and identified recommended repairs to bridge.[290] Further assessment of the bridge by the NPS revealed that deterioration including bridge deck spalling was more extensive than originally thought. The decision was then made to replace the existing bridge with work planned for the fiscal year 2016.

290. Jorgomai Ceesay, "Federal Lands Highway Emergency Inspection Report" (Federal Highway Administration, February 19, 2014); Hratch Pakhchanian, Bridge Engineer, FHWA, to Kent Cochran, NPS Southeast Region, May 19, 2014; and Hratch Pakhchanian, Bridge Engineer, FHWA, to Kent Cochran, NPS Southeast Region, July 10, 2014.

Visitor Center. The original visitor center was constructed in 1959–1961 as part of the Mission 66 development at Mammoth Cave National Park (Figure 433). The original structure consisted of two wings connected by an open-air breezeway. The building, as constructed, was typical of visitor centers constructed during Mission 66. In 2007, construction began on substantial alterations and additions to the visitor center. The original building, which was an example of the park service modern style characteristic of Mission 66, was transformed into an interpretation of a rustic-style structure. The former administration wing was replaced first, while the museum wing remained (Figure 434). Work began on the museum portion of the building in 2010 and was completed in 2012. The significant modifications made to the visitor center have resulted in loss of integrity. The visitor center is therefore not considered a contributing structure.



FIGURE 433. An undated view of the pedestrian bridge and visitor center. Source: Mammoth Cave National Park.



FIGURE 434. A similar view of the altered visitor center and the pedestrian bridge, 2011.

Missing Buildings and Structures.

Original Mammoth Cave Hotel. The oldest portion of the first Mammoth Cave Hotel was constructed in 1812 by saltpetre miners. First opened in the 1830s by Franklin Gorin, the hotel was expanded and improved under the ownership of Dr. John Croghan. By the 1850s the hotel could accommodate up to 150 guests in single and double rooms. Log buildings were also available for larger parties such as families. In the 1880s a kitchen, souvenir store, and photography shop were added to the hotel, while the dining room and guest rooms were remodeled. In 1916, the original hotel was destroyed by a fire.

Second Mammoth Cave Hotel. Constructed in 1925 to replace the original Mammoth Cave Hotel destroyed by fire in 1916, the second Mammoth Cave Hotel was a two-story, wood-sided structure with forty-three guest rooms (Figure 435). In the late 1930s and early 1940s, members of the CCC completed small renovation projects at the hotel. The hotel was demolished in 1979, after it was determined by the National Park Service that the building was unsafe for guests. The extensive repairs required were found to be not feasible economically.

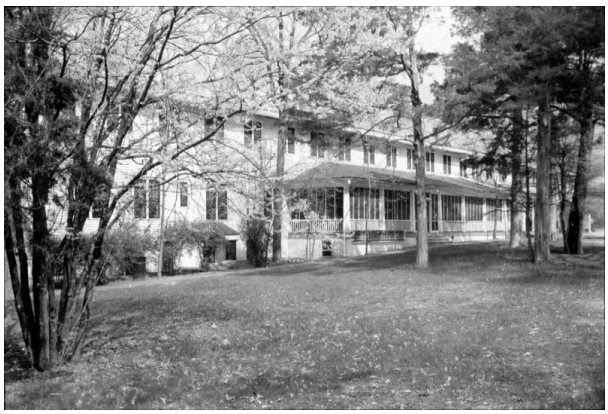


FIGURE 435. An undated view of the second Mammoth Cave Hotel. Source: Mammoth Cave National Park.

Contributing Buildings and Structures.

- Deluxe Cottages
- Engine No. 4 and Coach No. 2
- Earth House
- Woodland Cottages
- Chlorinator Building

- Retaining walls at the Green River Ferry Landing
- Sunset Lodge Buildings
- Open-air picnic shelters*

* Requires further evaluation under proposed extension to the period of significance.

Non-contributing Buildings and Structures.

- Amphitheater
- Enclosed picnic shelter
- Picnic area comfort station
- Camp store and service center building
- Telephone equipment building
- Campground kiosk
- Campground comfort stations (5)
- Mammoth Cave Hotel
- Pedestrian Bridge from the Visitor Center to the Hotel
- Shelter structure for Engine No. 4 and Coach No. 2
- Concessions dormitory/laundry
- Visitor center
- Cave information kiosk
- Wild cave tour shelter
- Cave tour shelters (2)
- Lantern tour shelter and storage building
- Lift station buildings
- Kennel
- Hose house

Missing Buildings and Structures.

- First Mammoth Cave Hotel and associated outbuildings
- Second Mammoth Cave Hotel and associated outbuildings (Store house, annex, ranger office)
- Guide House
- Lantern houses
- Gas house
- Telephone exchange
- Hot water utility building and linen storage building east of Woodland Cottages
- Demunbrun store
- Old water tower and garage
- Old garage and associated driveway
- Old comfort station
- Hotel Manager's cottage
- Pavilion (Technician's Office)
- Post Office
- E.L.W. Office (Park Headquarters)
- Chlorinating House
- Old gas station
- Former campground kiosk
- Photo Shop
- Service House
- Tool house, laundry, reservoirs, and other utility buildings
- Former location of dog kennel
- Buildings associated with settlement before park development
- Dallas Huts (formerly located west of Deluxe Cottages)
- Employee Quarters (formerly located west of Deluxe Cottages)

Views and Vistas

The Green River Bluffs are located in the northern portion of the Core Visitor Services Area. The developed portion of the core area is situated on a ridge with surrounding bluffs and ravines associated with the Green River valley. The bluffs afford views below to the river valley and the steep forested hills on the other side of the Green River. Historic settlement patterns occurred on the ridge elevations above the bluffs and required removal of vegetation to accommodate agriculture and development. Views were afforded during the period of significance due to settlement patterns and later due to park development, most specifically the extant trail system. The Green River Bluff Trail overlook provides an expansive view to the river and river valley and interprets these natural resources (Figure 436). The Sunset Point Overlook on the Heritage Trail also provides an expansive view to the vegetated bluffs (Figure 437). The Heritage Trail is located on a ridge that extends west from the Old Guide's Cemetery. Natural resources are interpreted at Sunset Point.



FIGURE 436. View to the Green River Valley from the Green River Bluffs Trail.



FIGURE 437. View to the Bluffs from Sunset Point along the Heritage Trail.

Additional views that contribute to the significance of the historical landscape in the Core Visitor Services Area include: the views to the original hotel site across the open landscape, with extant mature vegetation, maintained lawn, and groves of Eastern red cedar trees(Figure 438); the views to the road trace associated with the arch entrance of the 1920s and 1930s (compare Figure 439 and Figure 440); and the views of the old entrance road trace through the campground (Figure 441).

Additional views that survive from the period of significance with integrity and contribute to the significance of the historic landscape include the view to the Deluxe Cottages, the Woodland Cottages, the corridor of the Old Guide's Trail, views along the Historic Entrance Road, and views to the Historic Entrance to Mammoth Cave.



FIGURE 438. View to the site of the 1925 Mammoth Cave Hotel.

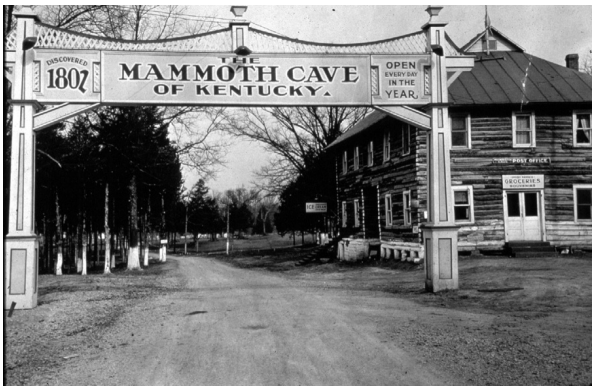


FIGURE 439. View north to old entrance road and arch sign, circa 1930s. Source: Mammoth Cave National Park.



FIGURE 440. View to the road trace associated with the arch entrance of the 1920s and 1930s.



FIGURE 441. View to the old entrance road trace through the campground.

Contributing Views

- Views from the Green River Bluff Trail Overlook
- Views from Sunset Point Overlook on the Heritage Trail
- Views to the old hotel site across the open landscape
- Views across the open landscape to the Deluxe Cottages
- Views into the Woodland Cottages area
- Views along the Historic Entrance Road
- View into the Historic Entrance of Mammoth Cave
- Views along the corridor of the Old Guide's Trail
- Views along trails to natural features
- View to Green River and Ferry from the Green River Ferry Road
- Views to the old entrance road trace associated with the arch entrance of the 1920s and 1930s
- Views of the old entrance road trace through the campground

Non-contributing Views

- Numerous views throughout the Core Visitor Services Area associated with the various phases of development and change within the area from the period of significance through the existing conditions on the site today.
- View to visitor center parking lot from the Woodland Cottages
- Limited views due to heavily wooded areas
- Views across the visitor center parking lot from the visitor center

Missing Views

- None identified

Small-scale Features

A few small-scale features within the Core Visitor Services Area survive from the commercial tourism and early park development periods, and contribute to the significance of the historic landscape. These include cemetery headstones, at least one drinking fountain, a water spigot along the old road trace, and portions of the fence surrounding the tennis court.

Cemetery Headstones. The oldest extant features in the Core Visitor Services Area are several headstones located in the Old Guide's Cemetery. As mentioned previously, the cemetery is individually listed in the National Register. Headstones of tuberculosis victims in the cemetery date to 1842–1843, and the headstone dedicated to Stephen Bishop (died 1857, although the headstone states his death was in 1859) was placed in 1881.

Site Furnishings. Site furnishings used in the study area to accommodate visitors include benches, picnic tables, grills, trash and recycling receptacles, dumpsters, bike racks, and drinking fountains. The only feature known to survive from the period of significance is a drinking fountain in the picnic area, installed in late 1940. The drinking fountain, constructed of sandstone with a metal bubbler and foot-operated pedal, is consistent with the rustic style of site furniture installed during early park development. A design drawing dated May 1940 details the construction and interior plumbing of the fountain and two 1940 memos note the construction of nine drinking fountains in the picnic area. [291]The existing bubbler on the fountain does not match the design drawing; it is unknown when this portion of the fountain was replaced. Design drawings of the picnic area indicate that several drinking fountains were located at path intersections and within the loop road which was formerly the campground. The other eight fountains are no longer present, and the paths and other circulation features associated with both the extant and missing fountains are also missing.

Fences. The tennis courts, located south of the hotel parking lot, were originally installed in 1939. The court is surrounded by a chain link fence with 10-foot-tall and 6-foot-tall portions. The 6-foot portions are located on the east and west sides of the courts and appear to postdate the period of significance. However, it is likely that the existing 10-foot sections of the tennis court fence survive from that time period and contribute to the significance of the landscape. A May 1937 location plan of the tennis and shuffleboard courts shows the courts to be partially surrounded by a backstop. [292] A 1939 memo notes the construction of the asphalt courts, surrounded by a "2 [inch] pipe fence, 10 [feet] high, screened with wire netting," and an accompanying photograph shows the completed court in use with the fence visible at the edge (Figure 442).[293]

291. Drawing No. 135-2181, Drinking Fountain, Camping and Picnic Areas, Mammoth Cave National Park, May 1940; Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. August 30, 1940. Mammoth Cave National Park Archives; and Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. October 1, 1940. Mammoth Cave National Park Archives.
292. Drawing No. 135-2089, Location Plan for Tennis and Shuffleboard Courts, Mammoth Cave National Park, May 1937.
293. Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. September 1, 1939. Mammoth Cave National Park Archives.



FIGURE 442. Photograph showing the newly completed tennis court and fence. Structures in the background are the Guide House on the right and a service structure on the left. Refer also to Figure B-10 in Appendix B. Source: Mammoth Cave National Park.

Grills/Fireplaces. Between the Heritage Trail and the Sunset Point Lodge there are remnant fireplace grills. According to park staff, they are indicative of what may have been a picnic area in association with the 1925 hotel. This area is not recorded in archival documentation of park plans and development reviewed for this study. However the remnant features are shown in the existing conditions photographs below and they are located on the existing conditions map. Though no date is confirmed, they are likely contributing features (Figure 443 and Figure 444).



FIGURE 443. Remnant fireplace grills are located north of the Sunset Lodge. Source: Mammoth Cave National Park.



FIGURE 444. Remnant fireplace grills are located north of the Sunset Lodge. Source: Mammoth Cave National Park.

Fossil Rock. The large fossil rock currently in the visitor center museum is part of the park collections and a contributing small-scale feature. The fossil rock was formerly on display in the hotel yard and documented through photographs.

Several existing small-scale features relate to the proposed context, Further Development of Mammoth Cave National Park and the Mission 66 Era, 1941–1966. If this context is determined to be significant, these resources may be considered contributing. Features that potentially date to this period are denoted with a star on the list of resources at the end of this section. These features include site furnishings in the campground (constructed circa 1963), improvements to the Historic Entrance (circa 1963), and the replacement of seating and lights at the amphitheater (1964).

Missing Small-scale Features. Numerous small-scale features associated with the commercial tourism and early park development period are missing today. Several of these features are visible in historic photographs and were associated with other resources and buildings that are no longer present. These features, which include lanterns, benches, signs, cedar arbors, and picnic tables, designed to blend with the natural setting, as part of the rustic style. Many of these missing features have been replaced by like features in similar locations, but the new features

do not have the same character or materials as those that are missing.

Signs. There is no record of signs during the commercial tourism period (although they were likely present), but signs were a feature of the early park development period, as further discussed below.

Map Cases. A September 1939 memo, accompanied by a photograph, notes the construction of two "map cases" in the study area (Figure 445). The memo reads:

> Three Map Cases were completed during the month. These are double-faced, glass enclosed frames for the display of park maps on one side and notices of interest to the public on the other. A case has been placed at each of the hotels and at the new cabin group. They are a decided help in getting tourist oriented and in giving out information and instructions.[294]



FIGURE 445. Photograph of map cases from a 1939 memo. A log bench is visible in the foreground.

One of the two hotels was likely the 1925 hotel at Mammoth Cave. The second hotel referenced was likely Frozen Niagara, while the "new cabin group" most likely refers to the Woodland Cottages, which opened to guests in May 1939. These map cases are no longer present, though it is not known when they were removed. Modern fiberglass wayside exhibits now perform the function of orienting and informing visitors.

Trail signs. A 1940 memo indicates that trail signs have been completed, but does not describe the materials used in construction. [295] The memo notes that "additional plaques were cut and stored for future use" which could indicate that the signs were made of wood. The 1941–1942 Annual Report indicates that all trail signs were repainted and varnished, and that fifteen new trail signs were installed. [296] The fact that the signs were repainted and varnished also indicates that they were wood, possibly with carved letters which would need repainting. Existing signs along the trails are wood with carved letters, painted white. Most of these signs appear new; it is unlikely that any signs are extant from the period of significance, but the presence of wood signs along trails is a historic condition.

Site Furnishings. Site furnishings were present in association with both the commercial tourism period and the early park development period.

Drinking fountains. As mentioned above, nine stone drinking fountains were installed in 1940 in what is now the picnic area. Eight of these fountains are currently missing; it is not known when they were removed.

Bleachers. Numerous historic photographs show tour groups sitting on wood bleachers at the Historic Entrance, from the early 1900s up until the 1960s (Figure 446). Presumably, these bleachers were removed when the Historic Entrance was renovated circa 1963 as part of the Mission 66 program.

294. Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. September 1, 1939. Mammoth Cave National Park Archives.
295. Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. August 1, 1940. Mammoth Cave National Park Archives.
296. Memorandum for Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. 1941–1942 Annual Report, June 11, 1942. Mammoth Cave National Park Archives.



FIGURE 446. Two guides, Matt Bransford and "Dad" Lively, are shown with Dorothy Ranshaw, niece of Mammoth Cave lessee Willis Ranshaw, on the wood bleachers at the Historic Entrance, circa 1911. Source: Mammoth Cave National Park.

Benches. Backed wood benches along the trail to the Historic Entrance and near the hotel are also visible in photographs taken before the establishment of the park (compare Figure 447and Figure 448). These benches are no longer present. Modern benches, composed of wood slats with metal supports, are present along the Historic Entrance trail; although the current benches do not resemble the historic ones, the presence of wood benches along this trail is consistent with historic conditions.



FIGURE 447. A tour group at the Historic Entrance, early 1900s. Note the metal railing and benches along the trail. A wooden footbridge is visible in the background. Source: Mammoth Cave National Park.



FIGURE 448. A similar view in 2011.

A historic photograph of the Guide House, likely dating to about 1940, shows two log benches, built of half round logs on full round supports (Figure 449). The benches are similar in style to benches detailed in a 1937 design drawing.[297] Similar benches appear in historic photographs of the amphitheater, completed in 1939 by the CCC (Figure 450). A February 1939 memo notes the completion of 60 benches in the amphitheater.[298] A second memo from June 1939 indicates that twenty-two additional benches were constructed, bringing the seating capacity of the amphitheater to 350 people.[299] These benches were repaired and rebalanced in 1947, and replaced circa 1964 as part

297. Drawing No. 135-2093, Trailside Seats, Mammoth Cave National Park, Approved September 1937, Completed August 1938.
298. Memorandum to the Director. February 4, 1939. Mammoth Cave National Park Archives.
299. Memorandum to the Director, Activity Report for May 1939. June 5, 1939. Mammoth Cave National Park Archives.

of the Mission 66 program. [300] None of these log benches are still present in the study area.



FIGURE 449. Two log benches and a rustic lamp are visible in a photograph of the Guide House, circa 1940. Source: Mammoth Cave National Park.



FIGURE 450. 1939 photo of the amphitheater. Source: Mammoth Cave National Park.

Picnic tables. Forty picnic tables were constructed by the CCC and placed in the picnic area in March–April 1940.[301] The design drawing indicates that these tables were composed of round and half-round cedar planks, with countersunk bolts and screws.[302] It is not known when these tables were removed; the current tables are composed of wood slats with metal supports, set on a concrete base.

Fireplaces. In addition to the picnic tables, approximately seventy-five fireplaces were also constructed in the picnic area in 1940.[303] There is no indication of size, material, or location of these fireplaces in the available sources, and no detail drawings have been located at this time. The use of the word "constructed" indicates that the fireplaces were not prefabricated, and may have been stone masonry structures. Firepit remains (a probable remnant of the previous picnic area) are present south of the comfort station foundation, out to the break of the hill above the Historic Entrance.

Railings. Photographs of the Historic Entrance taken prior to the establishment of the park show an iron handrail along one side of the concrete steps and behind the wood bleachers (Figure 451). It is unknown if this original handrail had already been removed prior to the circa 1963 renovations at the Historic Entrance. The current handrail is a metal pipe rail, embedded into the rock wall; it does not match the original railing, but the presence of a metal handrail to guide visitors into the cave is a historic condition.

300. Memorandum from L. E. Reynolds, Maintenance Foreman. May 23, 1947. Mammoth Cave National Park Archives.
301. Memorandum to Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. March 1, 1940. Mammoth Cave National Park Archives; Memorandum to Superintendent Hoskins from CCC Coordinator [illegible]. April 1, 1940. Mammoth Cave National Park Archives.
302. Drawing No. 135-1052, Construction Plan for Combined Picnic Bench & Table, Mammoth Cave National Park, Approved July 1935, Completed April 1940 (Job 267).
303. Memorandum to Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. July 1, 1940. Mammoth Cave National Park Archives.

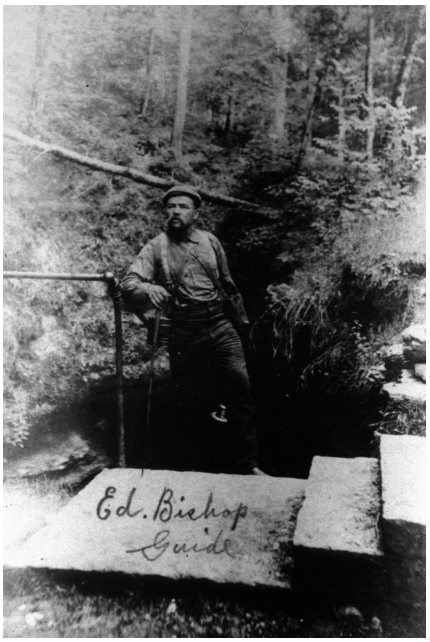


FIGURE 451. The metal railing at the Historic Entrance is visible in this photograph of cave guide Ed Bishop circa 1909–1916. Source: Mammoth Cave National Park.

Lighting. Lighting features were present in the study area in association with both the commercial tourism period and early park development.

Hotel lanterns. Lighting features associated with the commercial tourism period include pole-mounted lanterns at the old hotel, visible in historic photographs (Figure 452 and Figure 453). These lights were constructed of a roughly cut wood post, about 6 or 7 feet tall, with a metal lantern affixed to the top. The metal lanterns were not all identical; several are cylindrical gas or oil lanterns with glass globes, while others have a boxier profile.



FIGURE 452. A group of cave guides; a lantern at the hotel is visible at the right, early 1900s. Source: Mammoth Cave National Park.



FIGURE 453. Another type of gas lantern, visible behind the stagecoach, unknown date. Source: Mammoth Cave National Park.

Hanging lantern. A historic photograph dated 1916 shows a lantern hanging from the arm of an approximately 10-foot-tall post of indeterminate material (Figure 454). The lantern appears to be in the hotel yard, but it is not known if more of these lights were present in the landscape.



FIGURE 454. A hanging lantern in the hotel yard, 1916. Source: Mammoth Cave National Park

Rustic lamps. A July 1940 memo, accompanied by a photograph, describes newly installed lights in the Woodland Cottages area.[304] The lights were rustic log standards with wrought iron lanterns, placed along the walk from the hotel to the cabin area (Figure 455). An identical light is visible adjacent to the log benches in front of the Guide House (refer to Figure 449). These lights are no longer present. Residential-scale lights are currently located along the paths in the Woodland Cottages area; although they do not match the rustic lamps in style or material, the presence of light posts in this area is a historic condition. Park staff have speculated that the lamps originally placed in the Woodland Cottages were made of old Mammoth Cave grease lamps. They may also have been replicas, but they were original to the Woodland Cottages.



FIGURE 455. The rustic lamps at the Woodland Cottages area were manufactured at Mammoth Cave, 1940. Source: Mammoth Cave National Park.

Cedar arbor. Park staff speculated that two cedar arbors existed, one at the bridge that crosses the intermittent stream on the Old Guide's Trail and one near the hotel. Historic photographs show the cedar arbor at the bridge and its use as a backdrop for photographic portraits (Figure 456 and Figure 457). No photographic evidence or documentation on historic maps was found for the arbor at the hotel.



FIGURE 456. The cedar arbor at the intermittent stream was used as a backdrop for photographic portraits. Source: Mammoth Cave National Park.

304. Memorandum to Superintendent Hoskins from Thomas J. Nelson, Resident Landscape Architect. July 1, 1940. Mammoth Cave National Park Archives.



FIGURE 457. The cedar arbor at the intermittent stream was used as a backdrop for photographic portraits. Source: Mammoth Cave National Park.

Contributing Small-scale Features

- Headstones of tuberculosis victims in Old Guide's Cemetery
- Stephen Bishop headstone in Old Guide's Cemetery
- Sandstone drinking fountain in picnic area
- 10-foot portions of tennis court fence
- Remnant stone fireplaces/grills north of Sunset Lodge
- Presence of wood trail signs
- Presence of backed wood benches along the trail to Historic Entrance
- Presence of wood benches in the amphitheater
- Presence of residential-scale lighting in Woodland Cottages area
- Presence of metal handrails at Historic Entrance
- Presence of picnic tables and grills in the picnic area
- Presence of stone culvert headwalls
- Collections – Fossil rock
- Metal handrails, concrete steps, and stone retaining walls at Historic Entrance*
- Stone culvert and spillway at Historic Entrance*

* Requires further study and evaluation under proposed extension to the period of significance.

Undetermined Small-scale Features

- "Natural Entrance" sign
- Round timber fence on Green River Bluff Trail overlook

Non-contributing Small-scale Features

- Commemorative markers adjacent to the visitor center
- Low-profile wayside interpretive signs
- Upright wayside signs
- Wood trail directional signs with white letters
- Regulatory signs
- Wood slat benches
- Metal chairs and tables at Sunset Lodge and Deluxe Cottages
- Litter, ash, and recycling receptacles
- Dumpsters
- Metal bicycle racks
- Basketball hoop in tennis court
- Wood split-rail fencing
- Metal fence around the Old Guide's Cemetery
- 6-foot fence portions of tennis court fence
- Screen fencing around dumpsters
- Overhead lighting in Woodland Cottages parking area
- Overhead lighting in the parking lots
- HVAC & electric utility boxes
- Fire hydrants
- Features associated with the renovated visitor center such as signs, trash receptacles, bollards, etc.
- Small brown bollard lights
- Grey bollard lights at the hotel
- Benches in the campfire circle
- Campsite markers
- Water pumps in picnic and camping areas
- Low box grills in the picnic area
- Residential style lanterns in Woodland Cottages areas
- Hitching post with iron rings near shuffleboard court

- Metal gates in the campground
- Wood and metal picnic tables in picnic and camping areas
- Low round grills in camping area
- Upright grills in picnic and camping areas
- Concrete picnic tables in campground area
- Hooks in campground
- Wood sign to campground and campfire circle.

Missing Small-scale Features

- Map cases (one at 1925 hotel, one at Woodland Cottages)
- Original trail signs
- Wood bleachers at Historic Entrance
- Backed wood benches along trail to Historic Entrance
- Log benches in front of Guide House and at amphitheater
- Cedar picnic tables in picnic area
- Original fireplaces in picnic area
- Original metal handrails at the Historic Entrance
- Old gas lanterns at old hotel
- Hanging yard lights
- Rustic type lamp in Woodland Cottages area
- Cedar arbor at intermittent stream on Old Guide's Trail

Integrity Assessment

The primary objective of this section is to determine to what degree the Core Visitor Services Area retains the ability to convey its historical associations with significant events in American history. National Register Bulletin: *How to Apply the National Register Criteria for Evaluation* states that

> Integrity is the ability of a property to convey its significance . . . . Historic properties either retain integrity (that is, convey their significance) or they do not. Within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity.
>
> To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey significance. Determining which of these aspects are most important to a particular property requires knowing why, where, and when the property is significant. [305]

Assessment of integrity is based on an evaluation of the existence and condition of physical features dating from a property's period of significance, taking into consideration the degree to which the individual qualities of integrity are present. The seven aspects of integrity included in the National Register criteria are location, design, setting, materials, workmanship, feeling, and association. As noted in Bulletin 15:

> Location is the place where the historic property was constructed or the place where the historic event occurred; setting is the physical environment within and surrounding a property; design is the combination of elements that create the form, plan, space, structure, and style of a property; materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property; workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory; feeling is a property's expression of the aesthetic or historic sense of a particular period of time; and association is the direct link between an important historic event or person and a historic property.[306]

The Integrity of the Core Visitor Services Area Landscape

Based on comparative analysis of historic and existing conditions conveyed previously in this chapter, the Core Visitor Services Area possesses sufficient integrity for the 1806–1941 period of significance to convey the important historical associations of several significant individual resources and collections of resources that comprise National Register eligible historic districts.

Insufficient aboveground evidence survives for earlier periods of development tied to initial European-American Exploration and Settlement in the Mammoth Cave Area between circa 1754 and 1806 to convey significance under this context prior to 1806. Although these eighteenth century developments have lost integrity, it is possible that information potential resides in the archeological record to convey significance under Criterion D, although assessment of this potential is beyond the scope of this project.

Recommended as part of this CLR for further assessment is the significance of post-1941 park developments that relate to the evolution of lodging to accommodate tourists, and Mission 66-era park improvements to benefit visitors, between circa 1941 and 1972. As noted previously, specific developments associated with the visitor center and Mammoth Cave Hotel constructed during this potential period of significance have lost integrity due to post-1972 alterations. However, the lodging elements and several amenities developed for visitors, such as the picnic area and campgrounds and several circulation features possess sufficient

305. National Park Service, National Register Bulletin 15: *How to Apply the National Register Criteria for Evaluation,* 44.

306. Ibid., 44–45.

integrity to continue to convey their important historic associations.

Many of the surviving features and landscape characteristics constructed during the overarching 1806–1941 period of significance were first developed in response to the presence of the cave itself and early cultural uses that included saltpetre production, early tourism in the 1820s and 1830s, and the treatment of tuberculosis patients during the 1840s. These cultural features were carefully considered for their relationship to the cave and the natural features of the landscape; this important connection between cultural resources and the natural environment survives with integrity today. Natural features such as the cave entrances, the Green River and multiple springs; steep karst topography, and the flat ridge plateau above the steep slopes that has been used for cultural settlement, transportation and recreational purposes; as well as the native woodland plant communities contribute to the Core Visitor Services Area's integrity of location, association, feeling and setting. The designed cultural features and patterns of spatial organization such as the open lawn area with groves of trees, the Deluxe and Woodland Cottages and associated circulation and the alignment of roads in the picnic and former campground areas also contribute the site's integrity of location, association, feeling, and setting as a designed historic landscape. The recreation areas and features that survive from the period of significance were constructed based on designs implemented in the rustic style and contribute to the site's integrity of design, materials and workmanship.

There are a number of landscape changes and additions that postdate the period of significance for the Core Visitor Services Area and detract from and diminish the property's integrity of feeling, setting, design, materials, and workmanship. These include alterations to the hotel/lodge complex and expansion of parking, and the 2011 expansion and construction of the visitor center complex and associated bus loops, staging areas, circulation, and parking.

Integrity Assessment by Aspect

The Core Visitor Services Area possesses integrity of **location** as the original site of the entrance to Mammoth Cave, known to pioneer settlers since 1798. Although there is a paucity of above ground resources relating to the early industrial period for Mammoth Cave, there are surviving resources from the Early tourism development at Mammoth Cave from 1812 to 1850 that centered around the natural beauty of the cave and the surrounding natural resources and surviving resources relating to the later periods of development, all centering on access and proximity to the Historic Entrance to Mammoth Cave.

The Core Visitor Services Area possesses integrity of **setting** due to the relatively undeveloped character of the landscape on the wooded and steep slopes below the ridge plateau and the developed character of the ridge, as the area of the evolution of development related to visitor services and access to Mammoth Cave. The wooded landscape of Mammoth Cave National Park that constitutes the Core Area's setting continues to convey a rural character similar to that present during the period of significance. An increase in woodland cover has affected the Core Area site, as land formerly used for agriculture and settlement was replaced with park facilities or woodland cover. Changes to the setting have involved the expansion of development on the ridge of larger facilities and circulation to provide for visitor needs, access and safety within the Core Visitor Services Area. These changes diminish to a limited degree the integrity of setting.

The Core Visitor Services Area possesses integrity of **feeling** and **association** for the period of significance due to the presence of historic circulation routes, original landform and topography, the connections between the road and trail alignments and natural features and conditions, historic spatial organization and cultural vegetation that survives on the landscape, the cemetery and grave markers, the Historic Entrance, and other cave entrances. Integrity of feeling and association are also conveyed through the surviving land patterns created by the work of the CCC and reflected in the surviving picnic area,

roads and trails throughout the woodlands surrounding the visitor facilities.

The Core Visitor Services Area's integrity of **design, materials, and workmanship** is diminished by the loss of some of the built features that characterized the landscape during the period of significance, such as the first and second hotels, the Guide Houses, numerous other buildings and structures mentioned previously in this chapter, and original park furnishings from the CCC era. Surviving evidence of design includes the alignment of the Green River Ferry Road, trail alignments, open mown landscape with groves of cedar trees, the Deluxe Cottages and associated pedestrian circulation, the Woodland Cottages and associated pedestrian circulation, and the roads systems both in the picnic area and the campground.

Treatment Plan

Introduction

Treatment is a preservation strategy for long-term management of a historic property, intended to direct physical work on the landscape so that the distinguishing characteristics and features that contribute to the significance of the property are preserved. This treatment plan has been prepared to provide the National Park Service with an overall vision for the cultural landscape of the Core Visitor Services Area of Mammoth Cave National Park. The plan is intended to guide and support long-term management and interpretation of this area of Mammoth Cave National Park and its resources. It is comprised of treatment guidelines and recommendations, and suggestions for future implementation projects.

The treatment plan carefully considers the needs and goals for site management identified in various park planning documents, including the 1970 Mammoth Cave Master Plan, the 1983 General Management Plan (GMP), the 1991 Cultural Resources Management document, and the 2011 Mammoth Cave Hotel Improvements Environmental Assessment. In conjunction with these documents, the treatment plan also responds to the specific management issues, concerns, and objectives provided to the CLR team by park and regional National Park Service personnel during a start-up meeting conducted on behalf of this project, while also addressing stewardship of historic natural and cultural resources of the cultural landscape in accordance with federal guidelines.

The treatment plan also considers the designation of Mammoth Cave National Park as a Biosphere Reserve. Treatment recommendations for the Core Visitor Services Area within the context of the park cannot be fully addressed without the awareness of the mandate the park has as a Biosphere Reserve to fulfill three basic functions. These functions include: 1) conservation of important biological resources; 2) development of environmentally sound economic growth; and 3) support for research, monitoring, education, and information exchange related to conservation issues. Guided by this mandate, this treatment plan has been developed based on the assumption that both natural and cultural resources merit careful stewardship and conservation strategies, which may at times suggest the need for research and archeological investigation, and support on the part of the public solicited through education and interpretation.

This treatment plan is divided into six sections.

1. **Park Management Goals, Issues, and Concerns** describes the issues identified in the GMP and raised by the park for consideration within the CLR treatment plan.

2. **Recommended Treatment Approach** presents the four approaches recognized by the Secretary of the Interior for treating historic properties, and identifies the approach recommended for the Core Visitor Services Area landscape as part of this CLR.

3. **General Management and Design Guidelines for Treatment** provides an overarching set of guidelines that applies to all resource management activities conducted within the Core Visitor Services Area landscape.

4. **Treatment Concept** conveys the overarching vision or concept for landscape

treatment within the park to meet the National Park Service issues, goals, and concerns identified as part of this project.

5. **Treatment Recommendations** provides cultural landscape treatment recommendations that identify the individual actions required to address the park's management goals, issues, and concerns. Recommendations are organized by character area.

6. **Implementation Projects identifies projects that could be used in the future to effect implementation** of the CLR treatment recommendations, once additional recommended research, investigation, documentation, and planning efforts are completed.

Park Management Goals, Issues, and Concerns

The management goals, issues, and concerns to be addressed by this treatment plan were identified in two ways. The majority were conveyed during a project kick-off meeting held on August 16, 2011, at the park and attended by National Park Service park and regional personnel and members of WJE/JMA's CLR team. Others were gleaned from field investigations and review of previously prepared planning and inventory documents. The primary issues identified for the CLR team by the National Park Service are discussed below.

1. **Siting of additional parking and other features associated with the planned renovations of the Mammoth Cave Hotel.** In November 2013, the park completed the *Improvements to Concession Facilities Environmental Assessment* in order to assess alternatives for the renovation and expansion of the Mammoth Cave Hotel and associated parking areas. The study is complete and planning alternatives have been finalized. The assessment encompasses the existing Mammoth Cave Hotel building, parking, and improvements to the Sunset Lodge. The footprint of the preferred alternative planned expansion of parking could impact above ground historic landscape resources and archeological resources. Careful planning and design of the parking location and configuration will be necessary to ensure the protection of the cultural landscape. Also, future storm water management BMPs need to be included in any design of the parking to ensure that storm water drains through an existing oil/grit separator or related filtering system. Work around the primary Mammoth Cave Hotel building will likely require some level of tree removal for the planned improvements. Plans are needed to ensure significant vegetation is not removed or damaged beyond repair.

2. **Trails and overlooks – integrity, surfacing materials, viewsheds, and drainage structures associated with the trails.** The trail system within the Core Visitor Services Area traverses the steep topography that surrounds the ridge where the visitor facilities, lodging, and parking are located. The trails that lead visitors through the woodlands and to the cave entrances are currently surfaced with a gravel mixture that is susceptible to erosion due to visitor use, extreme slopes, and storm water runoff. Gullies have formed in the middle of the Green River Bluffs Trail and wash out has occurred on the Old Guide's Trail. The measures employed to control erosion and loss of surfacing material and any repair or rehabilitation of drainage structures associated with the trails need to consider their compatibility with the historic character of the core area and the trails. Any plans for rehabilitation of any trails will require identification of historic natural and cultural resources such as trail traces and drainage structures and careful design of new alignments that are compatible with the historic setting, the natural features, and the natural topography. There is also the need to discuss any goals and objectives for universal accessibility before any new trails are designed or constructed.

3. **Vegetation management.** The elevated positions of some of the trails and the overlooks associated with the trails have historically provided views to surrounding natural resources that are interpreted as part of the visitor experience. These viewsheds can quickly become obstructed due to rapid growth of woodland vegetation. Vegetation management is needed to maintain the view from Sunset Point and Green River Bluff overlooks. Careful removal of vegetation will need to be conducted carefully and result in a condition that is compatible with the character and configuration of the historic viewsheds to the natural and cultural resources.

4. **Pedestrian bridge between the Visitor Center and the Mammoth Cave Hotel.** The park has decided to replace the pedestrian bridge. Although the bridge has lost integrity, particularly through changes to the visitor center-hotel complex of which it is a part, and has been determined to be non-contributing, the bridge is of interest as a Mission 66-era engineering structure. Documentation of the bridge to Historic American Engineering Record standards (HAER), even if limited, is recommended prior to demolition.

5. **Site furnishings – need for rehabilitation, replacement, and design consistency of site furnishings associated with the trails, overlooks, picnic area and campground area.** The picnic tables present in the picnic area reflect different design and construction styles. Also some of the benches along the trails and in the overlooks are in need of repair or replacement. Plans need to be developed for design and construction consistency throughout these areas of the Core Visitor Services Area. Universal access should be considered in repair and replacement of fixtures and furnishings.

6. **Plantings –design intent, integrity, and condition.** One of the character defining qualities of the Core Visitor Services Area is the open landscape composed of broad grass lawn framed by groves and rows of cedar trees and mature deciduous shade trees south of the Mammoth Cave Hotel and parking. Some of the individual trees and the established spatial organization of the open space and tree massings retain high integrity to the period of significance for the area. Some of the older plantings are over mature, dead or dying, or in need of care and maintenance. The park does not currently have a tree replacement policy for plantings associated with the historically significant core of the CLR study area. New conceptual planting and design plans are needed to guide future plantings that relate to interpretation of the historic landscape and preservation of established spatial organization.

Recommended Treatment Approach

The four treatment approaches recognized by the Secretary of the Interior for historic properties were considered in conjunction with the park's objectives in developing this CLR in order to determine the approach most suitable for the Core Visitor Services Area of Mammoth Cave National Park.

The four treatment approaches include: preservation, rehabilitation, restoration, and reconstruction. Described in *The Secretary of the Interior's Standards for Historic Properties* as forming "the philosophical basis for responsible preservation practice and enable long-term preservation of a landscape's historic features,

qualities, and materials," the approaches are defined as follows:[307]

> **Preservation:** the act or process of applying measures necessary to sustain the existing form, integrity, and material of a historic property. Includes stabilization work, where necessary, as well as ongoing preservation maintenance and repair of historic materials and features.
>
> **Rehabilitation:** the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.
>
> **Restoration**: the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by removing features from other periods in its history and reconstructing missing features from the restoration period.
>
> **Reconstruction**: the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Recommended Treatment Approach for the Core Visitor Services Area of Mammoth Cave National Park

Based upon the park's need to meet current and projected future interpretive, functional, and management goals, **rehabilitation** is recommended as the most appropriate overarching treatment approach for the Core Visitor Services Area of Mammoth Cave National Park landscape. Because rehabilitation is defined as the act or process of making possible a compatible use for a property, this approach allows for protection of the site's historic character and resources while carefully addressing the need for limited enhancement of interpretive opportunities and circulation routes, ecological maintenance and restoration, and the improvement of visitor amenities.

As part of rehabilitation; stabilization, protection, and preservation of historic and natural resources are assumed even when new uses are accommodated. Areas of the landscape that are particularly sensitive to change and disturbance, such as sites of known and potential archeological resources, should be treated with great care. In general, the CLR recommends preservation of archeological resources unless a compelling research question or informational need justifies disturbance or excavation, or mitigation to accommodate unavoidable change as necessary.

In considering the other treatment alternatives recognized by the Secretary of the Interior for the Core Visitor Services Area of Mammoth Cave National Park cultural landscape, the CLR found them inappropriate for the following reasons:

Preservation is overly restrictive because it does not allow for the changes to the landscape to accommodate contemporary needs, such as universal accessibility enhancements, proposed changes to the Mammoth Cave Hotel, and rehabilitation of the Old Guide's Trail, from the hotel areas to the Historic Entrance.

Restoration and **reconstruction** are not practical because they assume, as a prerequisite, that sufficient documentation exists to accurately portray a lost historic condition. At this time, it does not appear that there are documentary sources detailed enough to support comprehensive restoration or reconstruction of the Core Visitor Services Area cultural landscape to a particular time period, and because too much change has occurred both within and around this area of the park to render this approach

307. Robert R. Page, Cathy A. Gilbert, and Susan A. Dolan, *A Guide to Cultural Landscape Reports; Contents, Processes, and Techniques* (Washington, D.C.: Department of the Interior,1998), 82.

successful. Removal of some features that postdate the likely period of significance is also not currently recommended.

Secretary of the Interior's Standards for Rehabilitation

The following section summarizes the standards for rehabilitation espoused by the Secretary of the Interior for historic properties. The ten basic principles that comprise the standards are intended to help preserve the distinctive character of a site while allowing for reasonable change to meet new needs. The standards (36 CFR Part 67) apply to historic properties of all periods, locations, sizes, conditions, and uses. These standards create a baseline of guidance to which intended changes to the historic landscape must be compared. These standards are neither technical nor prescriptive, but promote responsible preservation practices. They include:

- A property will be used as it was historically, or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

General Management and Design Guidelines for Treatment

The following section provides general guidelines for the treatment of the Core Visitor Services Area of Mammoth Cave National Park landscape that are intended to support the rehabilitation approach and the treatment recommendations provided later in the chapter. They are to be used in conjunction with the Secretary of the Interior's Guidelines for Rehabilitation cited above and in connection with each of the proposed landscape treatments included in this report. These guidelines relate to a philosophy of cultural landscape treatment based on *The Secretary of the Interior's Standards for the Treatment of Historic Properties* with *Guidelines for the Treatment of Cultural Landscapes*, and a comprehensive view of the project area. The guidelines should be used when planning for any and all landscape change.

Natural Systems and Features

- Practice integrated pest management (IPM) in accordance with National Park Service policies. Avoid the use of pesticides and herbicides unless absolutely necessary. If chemical controls are used, apply the minimum necessary to achieve the proposed effect. Allow only qualified applicators to apply chemicals.

- Remove, when necessary, existing trees using a method that minimizes the potential impacts on known and potential cultural and archeological resources and other vegetation, as well as storm water management systems. Undertake tree removal from areas with known or potential cultural and archeological resources when ground disturbance will occur, under the guidance of a historical landscape architect and archeologist. This oversight is not necessary for cutting trees. Stump removal poses a greater threat to archeological resources.

- Employ best management practices (BMPs) for thinning and clearing woody growth areas. Undertake clearing and thinning operations with the goals of reducing fuel loads, opening viewsheds, and returning vegetation to the character and composition recommended in planting plans associated with the period of significance. Best Management Practices (BMPs) are often used in clearing operations or removal of invasive species to control soil loss and reduce water quality degradation caused by nutrients, animal wastes, toxins, and sediment moving from the land to surface or ground water, or to otherwise protect water quality. The BMPs can be innovative and dynamic, and provide improved environmental protection practices for landscape management procedures of many types. They may target a variety of endeavors, including tree clearing mentioned above as well as landscape installation, landscape maintenance, riparian buffer preservation, or turf management. The treatment plan suggests that the park establish and utilize BMPs to address desired landscape change and management within the park, particularly the clearing of existing woodland areas, and the establishment of turfgrass cover.

- Mark all vegetation to be thinned or cleared prior to beginning work. Employ an arborist, natural resource manager, and/or landscape architect familiar with the park to mark the vegetation to be removed or thinned.

- Remove dead trees and shrubs identified as potentially hazardous to individuals or resources because of their health or condition.

- Protect slopes from erosion by maintaining healthy vegetative cover with a fibrous root system on all slopes.

- Avoid altering existing topography.

Land Use

- Monitor and regulate use of the landscape to minimize immediate and long-term damage to cultural resources.

- Avoid land use activities, permanent or temporary, which threaten or impair known or potential archeological resources.
- Limit, monitor, and control access to areas that are vulnerable to damage from human access or use.
- Consider equally both natural and cultural features of the project area in treatment and land use decisions.

Spatial Organization

- Use ecologically sound techniques and BMPs when restoring any historic patterns of spatial organization relating to vegetation.

Buildings and Structures

- Consider the interpretive value of non-intrusive, non-contributing buildings and structures, and retain them when possible.
- Consider the removal of non-contributing structures that are intrusive to the historic landscape only if they are found to be without historical or functional merit or value.
- Avoid conjectural reconstruction of historic buildings and structures.

Circulation

- Minimize the visual impacts of vehicles and vehicular access systems. Consider the impact on views when proposing new circulation systems. Also consider noise and other impacts that parking will have on the visitor experience and historic resources.
- Encourage pedestrian circulation throughout the Core Visitor Services Area as an alternative to vehicular access.
- Minimize the visual impacts of pedestrian access systems.
- Provide a range of pedestrian trail circuit lengths and accessibility/difficulty levels to serve a wide variety of visitors.
- Construct new circulation systems in as minimal a fashion as possible to access points of interest or to create loop systems for the benefit of visitors.
- Incorporate historic circulation routes whenever possible into pedestrian trail systems.
- Ensure proper drainage along trails. Establishment of trails that are too narrow, uneven, or poorly-drained can result in trampling of vegetation, soil compaction, erosion, and damage to the surrounding ecosystem, and serve as a hazard to visitors.

Rare, Threatened, and Endangered Plant and Animal Species

- Avoid altering the habitats of rare, threatened, or endangered species or species of special concern. Evaluate the potential impact to wildlife habitat prior to undertaking any construction or vegetation removal project.

Sustainability

- Institute cultural and natural resource treatment and maintenance methods that are environmentally and culturally sensitive and sustainable over the long term.
- Minimize areas of woodland disturbance, earth grading and compaction, and drainage pattern alteration.
- Promote biodiversity and native plant species.
- Use mitigating devices, such as retaining walls, closed drainage systems, and grading that involves cut and fill, sparingly. Implement the least-intrusive measures and those involving stabilization first, and subsequently proceed to the most invasive as necessary. Limit major new interventions to areas that have previously been disturbed.
- Emphasize landform-based solutions, such as grading, over hardscape solutions, such as retaining walls.

- Take into consideration life-cycle costing of materials to assess their long-term wearing capacity and maintenance costs. Consider materials that are non-toxic, durable, long-lived, and low-maintenance.

Topography

- Minimize soil disturbance and grading.

- Preserve existing landforms and natural drainage patterns to the greatest extent possible.

- Avoid attempts to reconstruct or restore historic grades unless supported by clear documentary evidence of their appearance or original design during a specific historic period.

Land Cover Management

- Encourage best management practices (BMPs), integrated pest management (IPM), and soil and erosion control measures in all maintenance and management practices in order to minimize water pollution and degradation of natural systems.

- Establish native vegetative cover for erosion control. Consider planting species that are appropriate to the soil and soil moisture conditions, and offer a fibrous root system that promotes soil retention.

New Design and Construction

- Site necessary new buildings and structures out of primary and character-defining viewsheds. Consider designing any unavoidable new facilities as low buildings, situated in such a way as to be screened from view from primary visitor use areas. The design of a cluster of smaller buildings is preferable to the establishment of a single large building. Groups of smaller buildings should be clustered tightly together with structures perpendicular to each other. As possible, situate new structures relatively close to existing road corridors to avoid the establishment of new roads. New buildings and structures should be compatible with regional traditions of design and constructed of locally-available and indigenous materials such as stone and wood. The design of new buildings and structures should also be sympathetic to local traditions in terms of scale, massing, roof form, and details. New buildings and structures should be situated to lie lightly on the land, minimizing soil disturbance, particularly cut and fill. Sustainability should be considered in the choice of materials and energy use. Consider incorporating passive solar energy conservation strategies into the design of new buildings and structures. Also consider the local climate in the siting and design of buildings including solar orientation, heat gain, shading, prevailing winds, and seasonal average temperatures to minimize energy costs. Limit the footprints of new buildings and structures by optimizing use and flexibility of both indoor and outdoor spaces.

- Avoid adding new features or altering existing features in ways that adversely affect the landscape's historic character. Introduce features to facilitate access and interpretation in ways that minimize any adverse impacts. New construction should be limited to those alterations and additions that are necessary for visitor access, interpretation, and management. This might include vehicular, pedestrian, and interpretive systems such as trails and paths, minimal automobile parking areas, and unobtrusive and minimal wayside, informational, identity, and regulatory sign systems. The new or altered features should be as unobtrusive as possible while allowing for accessibility and safety. Whenever possible, and taking into consideration the visitor experience without compromising visitor safety, utilize off-site facilities to accommodate contemporary uses.

- Protect natural resource values associated with stream and native woodland plant communities.

- Evaluate all proposed new uses in consultation with a historical landscape architect and other appropriate professionals.

- Undertake sufficient study and recordation of landscape features requiring modification, repair, or replacement before work is performed to protect research and interpretive values.

- Protect and preserve archeological resources in place. If such resources must be disturbed, undertake mitigation measures such as recovery, curation, and documentation.

- Limit the use of destructive techniques, such as archeological excavation, to application only as needed to provide information required to support research, interpretation, and management goals.

- Retain and maintain historic materials, features, finishes, construction techniques, spaces, and spatial relationships when changes to the cultural landscape are considered.

- Design and site new additions or alterations to the landscape in such a way that they do not destroy historic materials, features, and spatial relationships that characterize the cultural landscape. Design all new additions and alterations to be a product of their time, and compatible with the historic resources in materials, size, scale and proportion, and massing. Differentiate new work from existing historic resources.

- Design and site new additions and alterations to the landscape in such a way that, if removed in the future, the essential form and integrity of the cultural landscape would be unimpaired.

- Retain and maintain changes to the cultural landscape that have acquired historic significance in their own right.

- Repair, rather than replace, deteriorated historic features. Replacement of severely deteriorated features should be based on archeological, documentary, or physical evidence. Such new features should also be based on archeological, documentary, or physical evidence; the new feature should match the old in design, color, texture, and, where possible, materials.

- Avoid, when possible, landscape changes that create a false sense of historical development, including the addition of conjectural, typical, or representative features. Consider interpretation of typical features in cases where restoration is not possible but the provision of information is important to the visitor experience.

- Design new features, systems, and programs to be as accessible as possible to the widest audience.

- Establish new waysides in the least intrusive manner possible to fulfill proposed new interpretive goals.

- Avoid the use of chemical or physical treatments that cause damage to cultural resources and natural systems. Undertake the surface cleaning of structures using the gentlest means possible.

- Minimize disturbance associated with the installation of visitor access facilities.

Small-scale Features

- Keep the number of contemporary small-scale features to the minimum required for visitor and staff comfort and safety.

- Use site furnishings that are compatible with the character of the park and the developed area in concept and materials. Ensure that the style of site furnishings is uniform throughout the park and the developed area. Develop a plan for site furnishings that identifies the style and products appropriate for use within the developed area.

Interpretation

- Provide an alternative means for interpretation, such as a visitor center exhibit, for those features located in areas that cannot be made universally accessible or where new interpretive features would be a visual intrusion.

Access to Resources

- Limit, monitor, and control access to areas that are vulnerable to damage from human access or use.

- Develop an interpretive program that addresses cultural resources, natural systems, and their interrelationships, as well as layers of landscape history.

- Minimize the visual and physical impacts of interpretive and visitor access facilities on cultural resources and natural systems. Develop the least-intrusive interpretive and visitor access improvements possible.

- Erect the minimal number of signs possible for identity, directional, interpretive, and regulatory needs.

- Develop interpretive programs and media to be as accessible as possible for the widest range of visitors.

Role of Preservation Specialists

- Undertake all treatment projects under the direction of appropriate specialists, including historical landscape architects, historical architects, archeologists, natural resource management specialists, and qualified technicians and artisans.

Documentation

- Document, through drawings, photographs, and notes, all changes and treatments to the historic landscape. Consider the use of Global Positioning System (GPS) and Geographic Information System (GIS) technology in documentation efforts. Maintain records of treatments and preserve this documentation according to professional archival standards.

Treatment Concept

The section that follows is intended to convey the overarching vision or concept for landscape treatment for the Core Visitor Services Area of Mammoth Cave National Park intended to meet the issues, goals, and concerns identified by the National Park Service to be considered as part of this project. The treatment recommendations that follow this section specify how to achieve the vision.

In addition to its value as a historic landscape, Mammoth Cave National Park and the Core Visitor Services Area fall within a designated International Biosphere Reserve designed to conserve a rich diversity of biological resources and a sensitive watershed and aquifer recharge area, while studying means for accommodating human needs. Treatment of the Mammoth Cave Core Visitor Services Area addresses the needs of both historic cultural resources and notable natural resources. Treatment of the area and its resources is intended to occur within a framework that first and foremost is intended to do no harm to sensitive natural resources, and to recognize the need to promote biodiversity and protect against contamination of water resources and disruption of natural plant and animal communities through visitor activities and invasion by exotic species.

To meet these goals, the overarching treatment concept for the cultural landscape at the Core Visitor Services Area is to balance the protection and enhancement of the site's historic integrity with contemporary park visitor access and interpretation needs within a broader framework of sustainable land management practices that protect the sensitive natural resources of the Biosphere Reserve. Above all else, the CLR treatment plan recognizes a mandate to protect both evidence of cultural heritage within this World Heritage Site, while also meeting the conservation needs of natural resources in the park's role as an International Biosphere Reserve. To this end, all resources are to be maintained in good condition. To promote cultural and natural resource values, the CLR suggests means for enhancing visitor access and understanding of the site. Specifically, vegetation, ground water recharge, and other issues involving natural resource management, including enhancement of the viability and health of woodlands and native plant communities, interpretation, and consideration of the overall visitor experience are a particular focus of the CLR treatment plan. The recommended approach to cultural vegetation management supports a crucial interpretive goal at the park: enhancement of historic designed plantings while also taking into consideration protection of globally rare plant communities. Removal of non-contributing vegetation, control of invasive alien plants, and restoration of the character of plantings around surviving historic features, such as the cottages and cemetery, will support interpretation and resource protection goals.

Landscape treatment actions are recommended to improve functionality, appearance, and appreciation of the history on the site. Current pressures to better accommodate large numbers of visitors by constructing additional parking and addressing universal accessibility needs in conjunction with aging historic resources are of a particular challenge. The CLR treatment plan recommends taking a conservative approach where possible in order to ensure protection of both natural and cultural resource values, first making sure to do no harm. Evaluation of a full range of alternatives, taking into consideration creative new approaches, is warranted to address expansion of parking. Development of new parking facilities should be avoided in areas of sensitive natural and cultural resources. Park planning documents indicate the need to provide enhanced interpretation within the Core Visitor Services Area. The CLR treatment plan recommends that interpretive planners consider interpreting the way that the area has been used historically by visitors using a resource-driven approach using signage, waysides, virtual history apps, selective screening and clearing for views, and better connections between resources. In particular, existing interpretation along the "Heritage Trail Walk" focused on telling the story of the existing historic features and other elements that no longer survive on the site, might be

expanded and/or enhanced. This affords more opportunities to discuss the way in which visitors enjoyed the site during the nineteenth and early twentieth centuries, as well as the history of other uses of the cave. Existing interpretation on tours, bus rides to and from cave entrances, and Evening Campfire Programs might also be expanded or enhanced to broaden the story of the significant natural resources and the artistic response to the natural beauty of Mammoth Cave and the entire park. This would also afford more opportunity to convey the history of the land acquisition process for establishment of the park and the systematic demolition of approximately 1,800 former farm buildings and 300 miles of fences by the CCC for development of the new park. To this end, the CLR advocates reinstating some key historic conditions while establishing aids to interpreting missing landscape features. At the same time, most interpretive programs and other incompatible visitor and park uses are recommended to be directed away from sensitive natural resource areas as a protective measure.

Treatment within the Core Visitor Services Area also focuses on the identification of maintenance and repair practices that enhance the appearance and cohesion of the designed historic landscape. Over the past years, the popularity of the core area and use by most visitors to the park, has taken its toll on the condition of some landscape features. Minor adjustments, including adding soils to compacted trail and road margins, carefully rehabilitating or repairing the joint and seams between different materials, and rehabilitation of trail surfaces where erosion and washout have occurred are warranted to return the park to its initial and intended character. Protection, repair, and when necessary, replacement in kind of historic features, such as stone work, site furnishings, and plantings as originally designed are also recommended to ensure the cultural landscape survives to delight and educate future generations. Finally, the treatment plan indicates situations where altering and updating maintenance and management practices and adding new features to support sustainability goals will provide a positive impact without affecting the integrity of the historic landscape.

Treatment Recommendations

Area-wide Recommendations

- Ensure a tidy, well cared for, and maintained appearance within the Core Visitor Services Area. Carefully address junctions between different materials and land management conditions, maintain paved surfaces in smooth and repaired condition, and rehabilitate the margins of circulation routes to address erosion and compaction.

- Grade the ground plane to meet the elevation of walks, roads, swales, and stone features without gaps, dips, or drop-offs.

- Rehabilitate pavements in fair to poor condition. Ensure that rehabilitated pavements are consistent with historic conditions in material, finish, and location.

- Conduct the additional research, investigation, and documentation efforts required to adequately assess all potential National Register eligibility of historic resources located within the Core Visitor Services Area. These efforts are likely to include:

    - Expansion of the lodging resource Determination of Eligibility to include the Sunset Lodge buildings, which require evaluation for years that postdate the current period of significance.

    - Evaluation of the New Deal-era picnic area and other CCC resources that fall outside of current historic districts.

    - Evaluation of Mission 66-era landscape resources, such as the expanded picnic area, the campground, and several circulation features.

- Ensure compatibility of the approach taken for the Core Visitor Services Area with the cave's Historic Entrance and other areas of the park as they are considered for treatment.

- Continue to research the late nineteenth and early twentieth century history of the Core Visitor Services Area for which little information could be collected for this project. In particular, look for historic maps and photographs of the area and the first hotel. Use this information to support enhanced interpretation.

- Continue to maintain open lawn areas for outdoor recreation that are consistent with historically open areas. Manage other areas as native woodland communities.

- Avoid disturbing vegetation communities known to support populations of species of special concern. Identify the locations of any such communities using GPS data, and establish a monitoring program to regularly evaluate their health and viability.

- Control invasive alien plant species through a process of treatment, monitoring, and follow-up treatment that conforms to BMPs developed for the park; consider the protocols of locally or regionally successful programs in developing park BMPs.

- Enhance wildlife habitat and bird watching opportunities by providing additional nesting, feeding, and watering opportunities. Many bird species benefit from the provision of brush piles and artificial nest structures, and the presence of snags and trees with natural cavities. Consider retaining snags in areas where they will not pose a hazard to visitors or structures. Food sources that support bird populations include mast and soft mast producers (oak, hickory, beech, black gum, dogwood, serviceberry, black gum, hawthorn, and crabapple), grapevines, and native warm-season grasses such as big bluestem (*Andropagon virginiana*), Indian grass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*). The use of fescue (*Festuca* spp.) should be avoided as it provides little value for wildlife. Water sources are also of great importance to the viability of bird habitat. Protect springs and seeps, which are also important feeding areas. Encouraging the establishment of small depressions that serve as water holes after rain is also advantageous to birds. Enhancing groundwater recharge through green storm water management practices may contribute to spring and seep activity.

- Document, using GPS equipment, features that are not currently included on existing base mapping, and other important features that may be difficult to relocate again should conditions change. Examples of features that should be documented in this fashion by the park include fencing, road traces, small-scale features such as signs, important plant communities, and known archeological sites.

- Consider establishing park-wide standards for site furnishings that take into consideration historic styles and design characteristics, as well as contemporary functional concerns. Identify locations where historic styles and standards should be replaced in kind based on significance and integrity assessments. Consider replacing examples of non-historic site furnishings that detract from the significant character of the designed historic landscape.

Archeological Resources

- Conduct an archeological survey based on the existing work of Guy Prentice at Mammoth Cave National Park before any new construction takes place in the Core Visitor Services Area in order to identify possible site specific archeological resource sites and information potential.

- Use non-invasive techniques to locate potential subsurface resources in the area of any new project construction in the Core Visitor Services Area. These techniques might include ground penetrating radar (GPR), gradiometer survey, landscape archeology, and metal detector survey.

- Utilize the findings of non-invasive methods to identify areas of possible interest for conducting subsurface investigations. Prior to

conducting any subsurface investigations, develop research questions to be addressed by the endeavor.

- Ensure that all archeological investigations are fully documented, and that the findings as well as the artifacts are archived at the park. Utilize information gained through archeological investigations to guide interpretation of the historic landscape and the siting of proposed new park features.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Mammoth Cave Hotel

Bus loop

Mammoth Cave Railroad Bike and Hike Trail–Visitor Center Access Trail

Mammoth Cave Parkway

Avoid further parking expansion into the historic core associated with the hotel renovations; this is an archeological site as well and needs further investigation

Consider planting a vegetated screen to the north of the tennis courts to block views to vehicular parking and deflect some noise generated by vehicular traffic

Consider the rehabilitation of the tennis courts, shuffleboard courts, and scoreboards, for visitor use and recreation associated historically with the hotel

Retain, maintain, manage, and interpret the old entrance road trace as part of the story in the historic core landscape

Mammoth Cave Railroad Bike and Hike Trail

Regrade the margins of the pathway from the parking area to the Deluxe Cottages in order to meet adjacent grades smoothly; this promotes a tidy appearance, facilitates maintenance, and avoids visitor trip hazards

Retain, maintain, and manage the Engine No. 4 and Coach No. 2 train elements and the existing shelter

Boardwalk

750

Eastern red cedars

740

Site of former hotel (now overflow parking)

Engage an arborist to evaluate the health of the cedar trees and large specimen deciduous trees in the historic core. Refurbish historic plantings by replacing missing or dead trees in kind based on historic planting plans

Grave

access road

Hitching post

Lift station

Consider augmenting interpretion of the historic landscape elements known to have been present during the period of significance that are no longer extant, such as the Guide House, the first hotel, the 1925 hotel, Demunbrun store, the old water tower, and the old entrance road

Stands of large trees, including Eastern red cedars

Concrete walkway

Preserve the viewshed from the sidewalk into the historic core. Further interpret Demunbrum Store location and old entrance road

Foot bridge

710

720

Concrete path lined with low bollard lights

Concrete walkway

Possible road trace

Retain, maintain, and manage the historic Deluxe Cottages and the circulation paths associates with the structures as cultural resources

Retain and maintain in good condition the amphitheater stage, seating walls and walkways, and boardwalk

Utility box

680

670

0' 50' 100'

SCALE 1" = 100'

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Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 458.

Treatment Recommendations

Character Area 1: Historic Core

Recommendations by Character Area

Character Area 1: Historic Core Landscape

Refer to Figure 458, Treatment Recommendations for Character Area 1.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Open landscape and vegetation patterns
  - Deluxe Cottages
  - Deluxe Cottage walkways
  - Trees associated with the Deluxe Cottages landscape
  - Trace of old Mammoth Cave Hotel entrance road (Kentucky Route 70)
  - Remnant Eastern red cedar trees lining the old entrance road trace
  - Four Eastern red cedars, remnants of the line of cedars that shaded the walkway to the east of the 1925 hotel
  - Remaining deciduous shade trees and Eastern red cedars in open lawn between the 1925 hotel site and the old entrance road trace
  - Engine No. 4 and Coach No. 2
  - Tennis courts
  - Shuffleboard courts
  - Views to the 1925 hotel site across the open landscape
  - Views to the old entrance road trace associated with the arch entrance of the 1920s and 1930s.
  - Archeological resources: MACA-62.003 component of larger MACA-62 (Old Guide's Cemetery; 15Ed85)
- Repair features identified as being in fair to poor condition:
  - Careful pruning and other arboricultural care is required to address conditions issues associated with some Eastern red cedars and deciduous shade trees within the historic core.
  - The large stump in the vicinity of the Deluxe Cottages requires removal to enhance visual quality of the area.
  - Tennis courts and shuffleboard court and scoreboard require new surfacing, repairs, and removal of the basketball hoops to enhance functionality and the visual quality of the site.
  - Furnishings at the Deluxe Cottages have become rusted, and need some restoration or replacement in kind.
  - The asphalt walkway connecting hotel parking lot to the Deluxe Cottages requires repair for cracking, slumping on the edges and awkward transition to a different paving material, in order to ensure safety for visitor use and visual quality.
  - Litter and recycling receptacles are large, untidy, and visually intrusive due to location and the color and design of the receptacles.
- Engage an arborist to evaluate the health of the cedar trees and large specimen deciduous trees in the historic core character area. Ensure that they do not pose a hazard to visitors, structures, and vehicles. Identify the care and maintenance needs of each tree.
- Refurbish historic plantings by replacing missing or dead trees in kind based on historic planting plans. Base the replacements on

preparation of a developed area-wide planting plan. Use new plantings to establish and retain the historic character of the open landscape of the historic core composed of cedar groves and shade trees.

- Maintain the existing patterns of spatial organization associated with the historic core landscape that focus around an open mown grass lawn punctuated by groves of eastern red cedar trees (Figure 459).



FIGURE 459. Spatial organization within the landscape of the historic core.

- Avoid further development within the historic core, particularly associated with the proposed hotel and parking expansion. Consider expanding parking to the current overflow parking area west of the hotel, and to the area north of the concession dormitory rather than south into the historic core (refer to Figure 452).

- The current asphalt paving that provides pull-in parking directly adjacent to the historic core (refer to Figure 452) should remain. It reflects the historic condition in 1939 (Figure 458) and is documented in the 1941 period plan in Chapter 2 of this document. However, this parking configuration effectively blocks views from the historic landscape core and Deluxe Cottages to the hotel. The visual and physical relationship of the hotel to the core historic landscape is virtually cut off by parked vehicles. There should be no further roadway or parking expansion extending south from the current paving edge adjacent to the core historic landscape.

- The large existing parking lot north of the tennis courts has expanded paving into the historic landscape core within minimal distance of the tennis courts. Re-establishing open grass lawn and tree plantings in the delineated area would help restore historic views connecting the hotel at Mammoth Cave to the core historic landscape. This restored area could also be useful for additional interpretation of the historic spatial and visual relationships of the Mammoth Cave hotels and the historic landscape.

- Consider the rehabilitation of the tennis courts and the shuffleboard courts and scoreboard for visitor use and recreation associated historically with the hotel (Figure 460 and Figure 461). Also consider eliminating the basketball hoops and dedicating the courts for tennis use only. Also consider planting a vegetated screen to the north of the tennis courts to block views to vehicular parking and to absorb some noise generated by vehicular traffic.



FIGURE 460. Current condition of shuffleboard and scoreboard.



FIGURE 461. Tennis courts within the historic core.

- Re-grade the margins of paved paths, specifically the path from the parking area to the Deluxe Cottages, to meet adjacent grades smoothly. This promotes a tidy and well-kept appearance, facilitates maintenance, and avoids visitor trip hazards (Figure 462).

- Consider regular maintenance and management of the significant vegetation associated with the Deluxe Cottages and associated circulation system. Establish a replacement in kind policy for the historic tree plantings trees in order to preserve the historic character and spatial organization of the Deluxe Cottages area (refer to Figure 464).

- Retain and maintain the directional wooden signs with white lettering throughout this character area.

- Consider replacing the existing trash/recycling receptacle style around the Deluxe Cottages with a smaller and less visually intrusive model that is contemporary in design. Set the receptacles on contemporary cut stone bases to better integrate them with the character of the area. The recommended container would be similar to the trash receptacles and recycling receptacles already in use at the visitor center, but at a half size, more residential scale (Figure 463). They should be located discreetly near the cottages and not placed out in the landscape. This keeps the receptacles out of the historic viewsheds associated with this area and keeps a tidy look to the entire Deluxe Cottage complex. The park should consider the same design and character for the receptacles in the Woodland Cottage area and the Sunset Lodge. This would bring a uniformity of furnishings and a more discreet and solid receptacle.

- Consider relocating the existing receptacles along the asphalt walkways of the Deluxe Cottages to less visually intrusive sites where they can be screened with vegetation.

- Consider augmenting existing interpretation of the historic landscape elements known to have been present during the period of significance that are no longer extant, such as the Guide House, the first hotel, the 1925 hotel, Demunbrun store, the old water tower, and the old entrance road.



FIGURE 462. Asphalt walkway from the parking area of the hotel to the Deluxe Cottages.



FIGURE 463. Trash receptacles and recycling receptacles already in use at the visitor center.

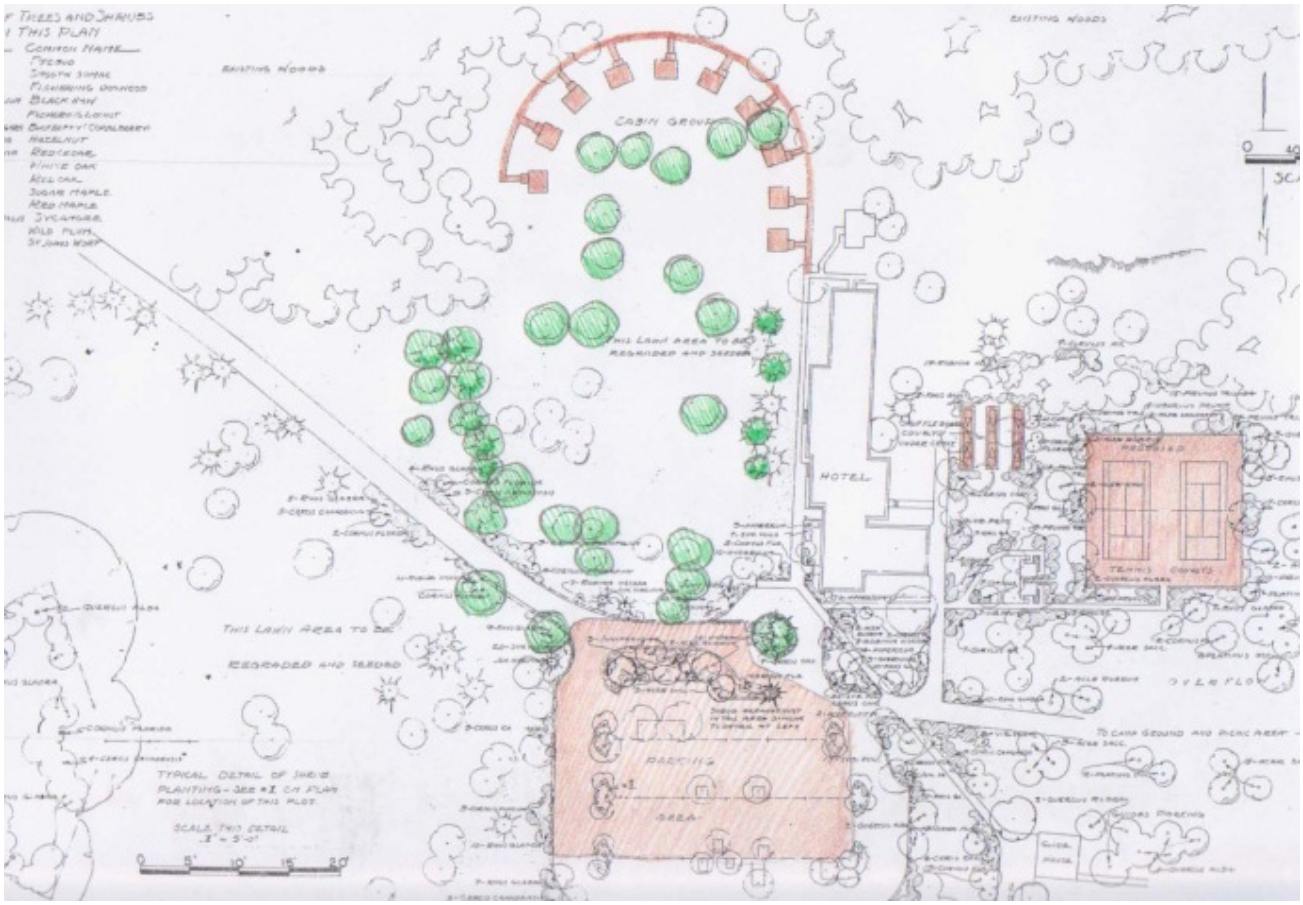


FIGURE 464. Extant features and tree vegetation at the Deluxe Cottages from 1939 plan. All features in this drawing are or were in the Historic Core Character Area. The resources colored in light red (Portions of parking lot, the tennis courts, and the shuffleboard courts, Deluxe Cottages, and pathway system) are extant. Potential surviving trees from this period are identified in green. Trees need to be field checked and matched to historic conditions.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Green River Bluffs Trail (gravel surface)

Retain, maintain, and manage the enclosed picnic shelter in good condition

Preserve, maintain, and manage the existing comfort station in good condition

Consider developing a comprehensive drainage plan for all the paths in the picnic area; this interface of path and road needs to be replaced and the pipe buried and path regraded for proper drainage

Wood bench and trail sign at trailhead

Preserve, maintain, and manage the Earth House in good condition as a cultural resource

Retain, maintain, and manage the picnic shelter as a cultural resource

Augment interpretation of historical settlement patterns in this part of the Core Visitor Services Area

Gravel pull-in

One-way asphalt road

Rehabilitate the margins of the interior asphalt paths to meet adjacent grades smoothly; swales should be pulled away from the edge of the asphalt allowing the trail to meet grade on either side and gradually slope to a grassed swale

Picnic tables and grills scattered among trees throughout picnic area

Trailhead leading to Dixon Cave Entrance, Historic Entrance, and River Styx Spring

Stormfilter unit for oil and grit separator filtration system

Asphalt parking

Concrete sidewalk

Pay phone

Light pole

Woodland cottage with wood steps (typ.)

Asphalt pathways

Retain and maintain the historic alignment of the north and south access roads as cultural resources and retain asphalt surfacing

Retain and maintain the historic parking areas on the south access road as a cultural resource

Parking with wheelstops

Asphalt path

Dumpster

Retain, maintain, and manage the historic woodland cottages, associated pedestrian circulation, and tree plantings

Mammoth Cave Visitor Center

Wood fence

Metal gate

If viable, consider restoring the stone drinking fountain as an example of original design of park features in the 1930s and early 1940s

Retain, maintain, and interpret the stone curb/wall, steps, and comfort station foundation as a cultural resource

Rehabilitate the asphalt pavement of the interior pedestrian paths that have become uneven due to layers of paving additions and slumping on the sloped soils

Consider using crushed stone surfacing with fines, so that material will harden and not migrate into the road; alternatively, use grass or gravel pavers

Retain, maintain, and manage the picnic shelter as a cultural resource

Retain, maintain, and manage the picnic tables and surrounding vegetation in good condition

Retain and maintain the historic parking areas on the south access road as cultural resources

Retain and maintain the historic alignment of the north and south access roads and retain asphalt surfacing as cultural resources

Retain, maintain, and manage the Dixon Cave trailhead and trail segment in good condition

0' 75' 150'

SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 465.

Treatment Recommendations

Character Area 2: Picnic Area & Woodland Cottages

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Character Area 2: Picnic Area and Woodland Cottages

Refer to Figure 465, Treatment Recommendations for Character Area 2.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Woodland Cottages
  - Paved paths in Woodland Cottages area
  - Trees associated with the Woodland Cottages
  - Picnic area entrance road and one-way loop drive
  - Picnic area drive in southern portion, and associated parking areas
  - Earth House
  - Small stone retaining wall and steps in parking lot of the picnic area
  - Stone comfort station foundation on grass site in picnic area
  - Native stone drinking fountain
- Manage as cultural resources Mission 66-era features, and complete research and assessment to determine National Register eligibility. These features include the two open-air picnic shelters.
- Repair features identified as being in fair to poor condition:
  - Stone drinking fountain does not function, and needs plumbing restoration for contemporary use and rehabilitation of the stones comprising the structure.
  - Stone retaining wall and steps in parking lot of picnic area are missing some stones and seem unstable in some areas.
  - Stone comfort station foundation is being overtaken by grass.
  - Asphalt trails in the interior woodland of the picnic area are cracked, slumping and the surfaces are uneven due to layers of surfacing and patches. Also, surfacing does not meet grade in some places and due to the swales immediately adjacent to the asphalt, the surface is 2 to 3 inches above grade, posing a safety hazard for visitors.
  - Drainage under the pathway needs repair, as the large pipe is visible and poses a trip hazard for visitors using the path.
  - Wheel stops need repair due to contact with vehicles that have left them damaged and out of place.
  - Gravel surfacing for parking in front of the picnic shelter needs to be stabilized.
- Protect water resources, including springs and seeps, in the area. Address storm water management and water quality protection by considering the use of sustainability practices such as filter strips and vegetated swales, where appropriate and not considered an impact to other natural or cultural resources.
- Manage woodland areas as native plant communities. Monitor the health and viability of the woodland areas. Control and remove non-native invasive plant species.
- Retain and maintain the alignments and current surfacing materials of the two roads in the picnic area.
- Conduct regular management and maintenance of vegetation within the interior of the picnic area, maintaining its existing vegetative character, using processes based on a vegetation management plan and development of BMPs for plant care. Tree debris from trimming or natural processes should be regularly removed from the sides of the paths and near the picnic tables. Trees

should be retained, maintained and managed to retain the character of, and visitor comfort within, the picnic area.

- Consider regular maintenance and management of the significant vegetation associated with the Woodland Cottages and associated circulation system. Establish a replacement in kind policy for the existing trees in order to preserve the historic character and spatial organization of the Woodland Cottages area (Figure 473).

- Retain and maintain the historic circulation alignments of the paths within the Woodland Cottages. Also retain the width and character of the pathways and use a surfacing material compatible with the character of the historic site (Figure 466).

- Preserve, maintain, and interpret the stone curb/wall and steps associated with the parking lot on the south road of the picnic area (Figure 467 and Figure 474).

- Preserve, maintain, and interpret the stone foundation of the prior comfort station that was located here when the area functioned as the campground. Consider interpretation of the foundation and the history of the CCC work in this area (Figure 468).



FIGURE 466. Stone curb/wall and steps associated with parking lot in the picnic area.



FIGURE 467. Stone foundation of the former comfort station.



FIGURE 468. Stone water fountain within the picnic area dates to 1940.

- If feasible, consider restoring and maintaining the old stone water fountain in the picnic area as an example of original design of park features in the 1930s and early 1940s (Figure 469 and Figure 475).

- Consider augmenting the existing interpretive program by describing what is known about historical settlement patterns and history at the north end of the loop road within the picnic area. Use knowledge gained through proposed research and investigation efforts in the development of new interpretive materials.

- Rehabilitate the asphalt pavement of the interior pedestrian paths through the picnic area that have become uneven due to additions of pavement over time and the slumping of the sloped soils. Reinstate the

original grade of the pavement and design for adequate drainage by use of an adequate surface cross slope and grassed swales (Figure 470). Consider using chip and seal which is a mixture of asphalt and gravel fines and gives a more rustic look of a gravel surface but the hardness of asphalt. This is also good surfacing for universal accessibility.

- Evaluate the trail system within the picnic area and identify trails to be designed for universal accessibility. Make sure visitors that must park in accessible spaces are able to get to the necessary and desired facilities on accessible walkways. Provide picnic tables that can accommodate wheel chairs.

- Rehabilitate the margins of the interior asphalt path to meet adjacent grades smoothly to promote a tidy and well-kept appearance, facilitate maintenance, and avoid visitor trip hazards. Swales should be pulled away from the edge of the asphalt allowing the path to meet grade on either side. The path should be crowned for drainage into the swales on either side (Figure 471).

- Consider re-leveling picnic sites where erosion and uneven grading of slopes are contributing to trip hazards.

- Replace any recycled plastic benches associated with the picnic tables with wood plank benches consistent with the original design for these features. Include this approach in a site furnishings guide that standardizes features within the picnic, campground and trail/overlook areas.



FIGURE 469. Stone water fountain pedal apparatus still present at the extant fountain.



FIGURE 470. Asphalt path is uneven and edges are slumping off.



FIGURE 471. Asphalt surfacing needs to meet grade and swales pulled away from the edge of the path to ensure safety, good drainage, and visual character.

- Clear and clean out drop inlets and other storm water management features associated with parking spaces, lots, and culverts to ensure proper functioning. Consider developing a comprehensive drainage plan for all the paths and roads in the picnic area to ensure all surfaces are draining and all storm water structures are in place and maintained (Figure 472).

- Employ crushed stone surfacing material that will compact with use over time in front of the picnic shelter along the south road of the picnic area in order to avoid migration of the material to surrounding areas. Alternatively, use gravel or grass pavers as a surfacing material.

- Retain and maintain the directional wooden signs with white lettering throughout this character area.



FIGURE 472. Pipe under the pathway is exposed and could pose a tripping hazard.



FIGURE 473. Extant paths and tree vegetation at the Woodland Cottages from 1938-1939 plan.

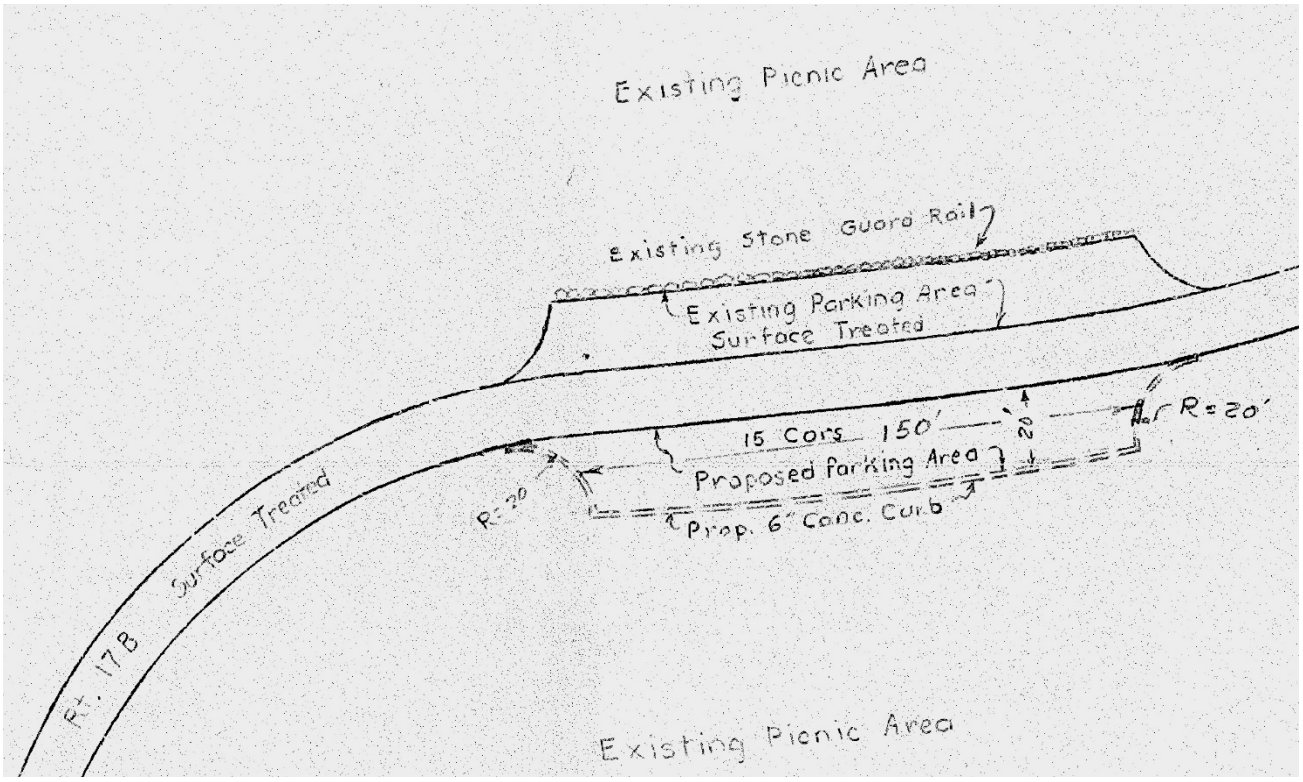


FIGURE 474. Site plan dated 1953 illustrates presence of the stone curb/wall and parking that exists today. Source: NPS Drawing No. 135-2116 (June 17, 1953). North is toward the lower right.

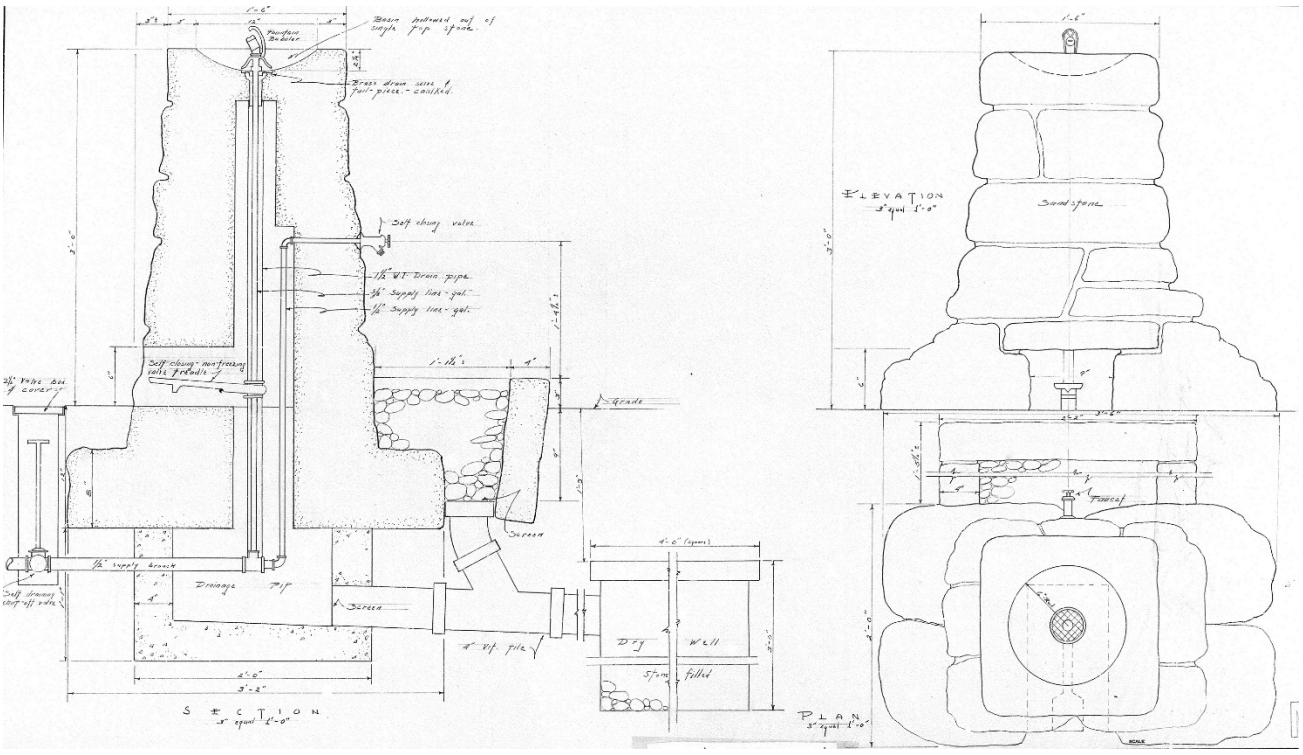


FIGURE 475. Construction drawings for the drinking fountain. Source: NPS Drawing No. 135-2181 (April 15, 1940, marked "Job Completed, December 6, 1940").

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Retain, maintain, and manage the River Styx Spring Trail

Dixon Cave Trail

Rehabilitate the trailhead to Dixon Cave Trail at the Historic Entrance; consider new trail alignment, more compact surfacing, and trail design that promotes drainage away from the trail surface

Protect and maintain stone headwalls associated with storm water management systems along the Historic Entrance Road and at the Historic Entrance

Retain, maintain, and manage the Old Guide's Trail in good condition

Retain, maintain, and manage the Historic Entrance Road in good condition

Retain, maintain, and manage the Historic Entrance in good condition as a cultural resource

Trail connection to Echo River Spring Trail

Clear vegetation that obscures intended views from Sunset Point and any intended view from the Heritage Trail

Steps into cave with metal handrails

Boardwalk with recycled plastic plank surface and wood siderails

Maintain view into the Old Guide's Cemetery

Mammoth Cave Visitor Center

View to Historic Entrance

Split rail fence

Elevated deck with handrail

Concrete sidewalk

Three-sided kiosk

Elevated deck and boardwalk with handrail

Wood benches along trail (typ.)

Elevated deck and boardwalk with handrails

Protect, preserve, and maintain the grave markers associated with the Old Guide's Cemetery

Sunset Lodge

Mammoth Cave Hotel

Heritage Trail exposed aggregate concrete with concrete edging

Mammoth Dome Sink Trail

0' 75' 150'

SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 476.

Treatment Recommendations

Character Area 3: Historic Entrance & Old Guide's Cemetery

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Character Area 3: Historic Entrance and Old Guide's Cemetery

Refer to Figure 476, Treatment Recommendations for Character Area 3.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Heritage Trail (some of this trail has been re-located.)
  - Historic Entrance Road
  - Old Guide's Trail (1926 trail trace or remnants and any CCC stone construction remnants)
  - Small bridge at intersection of Old Guide's Trail and Historic Entrance Road
  - River Styx Spring Trail trailhead (Refer to Character Area 7 for the trail)
  - Mammoth Dome Sink Trail trailhead (Refer to Character Area 7 for the trail)
  - Echo River Spring Trail trailhead (Refer to Character Area 7 for the trail)
  - Historic Entrance to Mammoth Cave
  - Old Guide's Cemetery
  - Stone retaining wall at Sunset Point, associated with the overlook and Heritage Trail (some of this stone is fairly recent).
  - Headstones in the Old Guide's Cemetery
  - Stephen Bishop Grave Marker
  - Drainage features related to the Historic Entrance Road
  - Archeological resources: MACA-62,003 component of large MACA-62 (Old Guide's Cemetery; 15Ed85)
- Manage as cultural resources any Mission 66-era features, and complete research and assessment to determine National Register eligibility. These features include the concrete entrance steps and stone retaining walls associated with the Historic Entrance.
- Repair features identified as being in fair to poor condition:
  - Washed out sections of the Old Guide's Trail.
  - Steep trail slopes in various places from the Historic Entrance to the Dixon Cave Trailhead are causing migration of the gravel and subsequent wash out.
- Protect water resources, including springs and seeps in the area. Address storm water management and water quality protection by taking into consideration sustainability principles, such as filter strips along the Old Guide's Trail.
- Manage woodland areas as native plant communities. Remove and control invasive alien species. Monitor the health and viability of the woodland areas.
- Protect and maintain stone headwalls associated with storm water management systems along the Historic Entrance Road.
- Clear vegetation that obscures established intended views from Sunset Point and from the Heritage Trail and views into the Old Guide's Cemetery from the Heritage Trail.
- Consider regular management and maintenance of vegetation in the area of the Historic Entrance and Historic Entrance Road. Tree debris from trimming or natural processes should be regularly removed to avoid safety hazards for visitors. Trees should be retained, maintained, and managed to ensure the Historic Entrance area remains open, visible and free of limb debris.

- Protect and maintain stone headwalls associated with storm water management systems along the Historic Entrance Road and at the Historic Entrance (Figure 477).

- Clear and clean out drop inlets and other storm water management features associated with Historic Entrance Road and the Historic Entrance to ensure proper functioning (Figure 478).

- Retain and maintain the view to the Historic Entrance from the Historic Entrance Road.

- Protect, preserve, and maintain the grave markers associated with the Old Guide's Cemetery.

- Retain and maintain the directional wooden signs with white lettering throughout this character area.



FIGURE 477. Stone headwall along the Historic Entrance Road.



FIGURE 478. Limb debris in drainage system at the Historic Entrance.

Maintain the viewshed from the parking lot sidewalk into the historic core landscape; use the viewshed for further interpretation of the historic landscape and extant features

Camp Store and Service Station

Retain, maintain, and manage the entrance road and parking in good condition

Retain, maintain, and manage the comfort station structures in good condition

Retain, maintain, and manage the Mammoth Cave Parkway as a cultural resource

Retain and maintain the Mammoth Cave Railroad Bike and Hike Trail in good condition

Flagpole

Telephone exchange building

Stormfilter unit for oil and grit separation filtration system

Flagpole

Campground kiosk

Parking

Mammoth Cave Parkway

Replace the wood bench along the trail and provide a level and stabilized base

Concrete pads

Wood bridge with rails

Loop A campsites 1-10

Lift station

White Cave Trail

Gate

Loop D campsites 91-111

Comfort Station (No. 49)

Dumpster and recycling bins

Comfort Station (No. 51)

Loop B campsites 11-53

Clear out scrub vegetation in and around the Campfire Circle and seating; maintain a gravel surface free of vegetation to ensure a tidy visual appearance; consider removal of the feature if not needed or utilized

Comfort Station (No. 48)

Grass grid pavers

Loop C campsites 54-90

Consider reconstructing the trail system to the Campfire Circle, the small bridge, and the trail to the amphitheater; drainage issues have caused wash-out in the center of the trails and migration of gravel toward the stream bed

Comfort Station (No. 50)

Retain, maintain, and manage the historic alignments of the loop drives, pull-offs, and parking as cultural resources

Retain, maintain, and manage the historic alignments of the loop drives, pull-offs, and parking as cultural resources

Green Pond

Comfort Station (No. 317)

Retain, maintain, and manage the comfort station structures in good condition

Picnic tables in Loop C are concrete over a concrete slab

Retain, maintain, and manage the pedestrian path alignments to the comfort stations as cultural resources; use a consistent paving material and width for each path

Retain, maintain, and manage the Green River Ferry Road as a cultural resource

Retain, maintain, and manage the comfort station structures in good condition

Culverts

0' 100' 200'

SCALE 1" = 200'

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Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 479.

Treatment Recommendations

Character Area 4: Campground

Character Area 4: Campground

Refer to Figure 479, Treatment Recommendations for Character Area 4.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Green River Ferry Road
  - White Cave Trail
  - Views of the old entrance road trace through the campground
  - Native stone culvert headwalls
- Manage as cultural resources Mission 66-era features, and complete research and assessment to determine National Register eligibility. These features include:
  - Loop roads of the campground
  - Entrance road to the campground
  - Pedestrian paths to the comfort stations
  - Mammoth Cave Parkway
  - Parking spurs along the loop roads of the campground
- Repair features identified as being in fair to poor condition:
  - Gravel trail to campfire circle and amphitheater has large washout gullies in the center of the alignment and tree roots are also protruding on the trail surface.
  - The small bridge and gravel trail interface has wash out of gravel and a retaining structure preventing it from spilling into a small waterway.
  - Wood directional signs have some minor damage or mold around the lettering.
  - Bicycle rack needs to be maintained in good condition and located on a solid concrete base.
  - Wood slat bench on the trail from the campfire circle toward the amphitheater has warping seat elements and base needs to be re-established on a level platform graded appropriately from the edge of the trail.
  - Trash receptacles are large and visually intrusive.
  - Some of the low bollard lights need upgrades and maintenance to keep them in an upright position.
- Protect water resources, including springs and seeps in the area. Address storm water management and water quality protection by taking into consideration sustainability principles such as filter strips and vegetated swales if they can be used without impacting other natural or cultural resources.
- Manage woodland areas as native plant communities. Remove and control invasive alien species. Monitor the health and viability of the woodland areas.
- Clear and clean out drop inlets and other storm water management features associated with campground roads, camp site parking, and culverts to ensure proper functioning.
- Rehabilitate the paths leading to the comfort stations by establishing a regular width of 2-1/2 feet and surfacing them comprehensively with a single material, the exposed aggregate concrete already in use or the asphalt already in use (Figure 480).
- Retain and maintain the directional wooden signs with white lettering throughout this character area.
- Consider adding another rail to the small bridge along the trails near the campfire circle.

Repair and maintain the wooden bridge structure.

- Protect and maintain stone headwalls associated with storm water management systems within the campground (Figure 481).

- Consider green and sustainable building practices when adding new features to the campground, including permeable pavers similar to what exists near the dumpster and recycling area.

- Clear out the scrub vegetation growing up within the campfire circle seating. Maintain a gravel surface, free of vegetation to ensure a tidy visual appearance for the area. Since this feature is a modern addition, consider removal if not needed or utilized.

- Clear the vegetation from in and around the bike rack and provide a concrete base for the rack in order to keep it at its designated location and avoid the growth of weeds and undergrowth that presently obscure it from view.

- Consider re-constructing the trail system to the campfire circle, the small bridge and the trail to the amphitheater. Drainage issues have caused washout in the center of the trails and migration of gravel downhill toward the streambed. The current retaining structure keeps the gravel out of the streambed, but new trail alignments with proper grading and layout are necessary in this area. Consider use of filter strips and vegetated swales along any new alignments to help with comprehensive drainage. Also consider other surface material for the trails in this area. The loose gravel currently on the site is washing away; consider more hard packed gravel and fines that bind to a harder surface or even consider paving this part of the trail with proper cross slopes for drainage (Figure 482 through Figure 484).

- Repair the wooden bench along the trail from the campfire circle to the amphitheater. Wood slats need to be replaced and the bench needs to be located on a concrete base with proper footings (Figure 485). The area of the trail and bench base needs to be re-graded and the base made level with proper drainage before it is stabilized with any paving material. This provides easier access and use for visitors walking on the trail.

- Maintain the viewshed from the sidewalk at the parking lot of the campground service/store building into the historic core landscape. Use the viewshed for further interpretation of the historic landscape features, both extant and those that are missing.



FIGURE 480. Repair is needed on sections of the pedestrian paths to the comfort stations. Maintain consistent width and smooth exposed aggregate concrete paving.



FIGURE 481. Wooden fence protects the stone headwall in the campground from vehicular or pedestrian traffic.



FIGURE 482. Gravel washout at the interface of the bridge and trails.



FIGURE 485. Wood bench has warping seat elements and needs a stable base and easier access for visitors.



FIGURE 483. Gullies have formed in the middle of the gravel trail.



FIGURE 484. Erosion and tree roots are trip hazards for visitors.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Mammoth Cave Visitor Center

Heritage Trail

Parking

Former location of dog kennel

Consider expanding parking to the current overflow parking area west of the hotel; an archeological investigation should be conducted in the area before implementation of any parking expansion plans in this area

Old Guide's Trail

Stormfilter unit for oil and grit separation filtration system

Pedestrian bridge

Stormfilter unit

Retain and maintain gravel/grass paver roadway to the lift station

Retain and maintain in good condition the dry-laid stone wall at the small parking area

Metal light pole with box fixture (typ.)

Exposed aggregate sidewalk

Heritage Trail Rooms

Mammoth Cave Hotel and Restaurant

Overflow parking on grass

Lift station

Protect and maintain stone headwalls associated with storm water management within the Sunset Lodge area

Gray bollard lights

Dumpster with wood screen fencing

Exposed aggregate covered patio

Asphalt parking lot

Split-rail fencing

Asphalt parking lot

Retain and maintain in good condition the Sunset Lodge structures, pedestrian walkways, roads, parking, furnishings, and vegetation

Exposed aggregate covered patio

Hose house

Hard-packed earth trail

Consider screening the area north of the tennis courts between the courts and hotel parking; use native small trees and shrubs to screen vehicular traffic and to absorb noise

Consider additional parking east of the Sunset Lodge and north of the Employee Dormitory; an archeological investigation should be conducted in the area before implementation of any parking expansion plans

Employee Dormitory

Gravel access road

Kennel

Mammoth Dome Sink Trail

0' 50' 100'

SCALE 1" = 100'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 486.

Treatment Recommendations

Character Area 5: Mammoth Cave Hotel & Lodging

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Character Area 5: Mammoth Cave Hotel and Lodging

Refer to Figure 486, Treatment Recommendations for Character Area 5.

- Retain and maintain historic resources that dated from the period of significance, including:
  - Sunset Lodge drive and parking areas
  - Sunset Lodge buildings
- The park has determined that the pedestrian bridge connecting the visitor center and the Mammoth Cave Hotel is non-contributing and it is scheduled for replacement. Until this is undertaken, the bridge should be regularly inspected and stabilization and safety measures implemented as needed. Prior to replacement, consider documenting the bridge to Historic American Engineering Record standards.
- Although the hotel has been determined to be non-contributing due to loss of integrity, portions of the building including the Heritage Trail Rooms wing, which remains relatively intact, are of interest as representative of Mission 66-era architecture in the park. Consider documenting the Heritage Trail wing for record purposes prior to modification of this portion of the hotel.
- Repair features identified as being in fair to poor condition.
- Trash receptacles are large and visually intrusive in their current location.
- Clear and clean out drop inlets and other storm water management features associated with roads and parking associated with the Mammoth Cave Hotel and the Sunset Lodges (Figure 487).
- Retain and maintain in good condition the Sunset Lodge structures, pedestrian walkways, parking, roads, furnishings, and vegetation. Manage these features as cultural resources.
- Protect and maintain stone headwalls associated with storm water management systems within the lodging areas (Figure 488).
- Consider relocating the existing trash and recycling receptacles along the pedestrian paths at the Sunset Lodges, to less visually intrusive sites where they can be screened with vegetation.
- Consider expanding parking to the current overflow parking area west of the hotel, and to the area north of the concession dormitory rather than south into the historic core. An archeological survey and investigation should be conducted in the area before implementation of any parking expansion plans in either of these areas (Figure 489).
- Consider screening the area between the gravel drive and the tennis courts. Use native trees and shrubs to screen vehicular traffic and any future parking.



FIGURE 487. Grass needs to be removed to clear the culvert and ensure proper drainage.



FIGURE 488. Stone headwall on the access road to the Sunset Lodges.



FIGURE 489. Area west of the hotel and parking should be considered for further parking expansion.



FIGURE 490. Area of asphalt parking that should not be expanded further into the core area historic landscape.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Retain and maintain existing trees incorporated into Phase I and Phase II of the new visitor center plan

Engage an arborist to evaluate the health of the trees in the grass islands of the visitor center parking lot. Identify care and maintenance needs of each tree; replace in kind if trees have to be removed due to ill health or safety reasons

Retain and maintain existing trees incorporated into Phase I and Phase II of the new visitor center plan

Retain, maintain, and interpret segment of the Historic Entrance Road within this character area

Retain and maintain in good condition all the new structures, parking, roads, pedestrian paths and plazas, signs and markers, and gates and fences at the new visitor center facility

Repair and rehabilitate the pedestrian bridge for continued use. Manage as a cultural resource pending further research to determine individual eligibility. (If determined by the NPS to be replaced, document for the Historic American Engineering Record)

Maintain the view from the visitor center across the pedestrian bridge to the Mammoth Cave Hotel

Flint Ridge Road
Paved swale
Camp Store and Service Station
Mammoth Cave Parkway
Engine No. 4 and Coach No. 2 shelter
Woodland Cottages
Bus loop
Hotel entrance road
Tour shelter
Lantern tour storage
Tour shelter
Paved swale
Gated utility enclosure
Stephen Mather marker
Metal fence
Mammoth Cave Hotel
Mammoth Cave Visitor Center
Picnic area entrance road
Flagpole
Accessible parking
Dumpster enclosure
Stairs
Wild Cave Tour shelter
Historic Entrance Road
Concrete pad
Heritage Trail Rooms
Concrete path
Stormfilter unit for oil and grit separation/ filtration system

0' 75' 150'
SCALE 1" = 150'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland
- Sign
- Drain grate
- Overhead light
- Fire hydrant
- Utility pole
- Manhole cover
- Misc. feature (incl. picnic tables, fire pits, bollards, etc.)

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

"Topographic Sheets Mammoth Cave National Park" Drawing No. 135-41039, 1993.

Note: see CLR text for full list of recommendations

Figure 491.

Treatment Recommendations

Character Area 6: Visitor Center Complex

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Character Area 6: Visitor Center Complex

Refer to Figure 491, Treatment Recommendations for Character Area 6.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Portion of the Historic Entrance Road
  - Flint Ridge Road (intersects with Mammoth Cave Parkway)
  - Though it is not clear that they survive from the period of significance, large trees do survive around the visitor center and associated parking from previous planning periods and should be retained and maintained.
- Manage as cultural resources the following features that postdate the period of significance, and complete research and assessment to determine National Register eligibility. These features include:
  - Mammoth Cave Parkway from the camp store and service center to the visitor center parking lot.
- Retain and maintain the trees incorporated into the new visitor center plan, in both Phase I and Phase II of the project. These include trees at the north entrance to the visitor center between the building and parking lot, and north and east of the hotel near the south staging area and tour shelter (Figure 492 and Figure 493).
- Retain and maintain new plantings associated with the new visitor center and bus loop and tour shelters.
- Engage an arborist to evaluate the health of the trees in the visitor center parking lot. Ensure that they do not pose a hazard to visitors, structures, and vehicles. Identify the care and maintenance needs of each tree. Replace in kind if trees have to be removed due to ill health or safety reasons (Figure 494 and Figure 495). Some trees in the visitor center parking lot are in poor condition and in need of maintenance and evaluation.
- Retain and maintain in good condition all the new structures, parking, roads, pedestrian paths and plazas, signs and markers, and gates and fences at the new visitor center facility.
- Maintain the view from the visitor center across the pedestrian bridge to the Mammoth Cave Hotel.



FIGURE 492. Existing trees at the north entrance to the visitor center.



FIGURE 493. Existing trees incorporated into the new plans for the visitor center.



FIGURE 494. Deciduous tree in poor condition in the parking lot.



FIGURE 495. Tree evaluation necessary for the larger trees when limb damage or disease becomes visible.

Cultural Landscape Report

for

Mammoth Cave National Park Core Visitor Services Area

Green River Bluffs Trail

Scenic overlook

Clear vegetation that obscures intended views from trails and overlooks

Manage woodland areas as native plant communities, remove and control invasive species, and monitor the health and viability of the woodland areas

Dixon Cave Entrance

Dixon Cave Trail

River Styx Spring Trail

Cave Island

Green River

River Styx Spring

Retain, maintain, and interpret the remnants of the Old Ferry Crossing as a cultural resource; this includes the remains of an old ferry or barge in the riverbed at the mouth of the River Styx

River Styx

Protect water resources, including springs, seeps, wetlands, and the Green River

Echo River Spring Trail

Preserve, maintain, and interpret the historic chlorinator house as part of the former sewage treatment plant as a cultural resource

Retain, maintain, and manage the trails in good condition as a cultural resource

Mammoth Dome Sink Trail

Retain and maintain in good condition the retaining walls at the Green River Ferry crossing; manage the walls as a cultural resource

YMCA Cave Entrance

Echo River

Joppa Ridge Road (unpaved)

Consider new design for trails where gravel has been washed out in the middle of the trail surface; trail design should ensure proper crowning or cross slope on the trail surface and adequate drainage on trail edges

Retain, maintain, and manage the trail system in good condition as a cultural resource; correct drainage problems by grading and resetting storm water management structures and rely on natural materials such as logs and stone

Flint Ridge Road

Picnic Area & Woodland Cottages
see Character Area 2 map

Historic Entrance
see Character Area 3 map

Mammoth Cave Visitor Center
see Character Area 6 map

Mammoth Cave Hotel
see Character Area 5 map

Detailed information not available outside this line

Mammoth Dome Sink

White Cave Entrance

White Cave Trail (Campground Trail)

Campground
see Character Area 4 map

Maintenance Road

Retain and maintain in good condition the historic Green River Ferry Road as a cultural resource

Retain and maintain existing benches along the trail; consider the design of benches as part of a site furnishings guide that standardizes features within the character area and the entire Core Visitor Services Area; standardize features as replacement of existing benches is required

Protect and conserve all natural resources within this character area, including plants, wetlands, cave entrances, woodland forest, springs, and the Green River

Echo River Spring

Mammoth Cave Parkway

0' 450' 700'

SCALE 1" = 700'

Legend

- Character area
- Topography
- Stream/drainageway
- Paved road
- Unpaved road
- Sidewalk/paved trail
- Unpaved trail
- Building/structure
- Fence
- Paved swale
- Woodland

Sources:

Mammoth Cave GIS files.

Mammoth Cave aerial mapping CAD files, 2004.

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Note: see CLR text for full list of recommendations

Figure 496.

Treatment Recommendations

Character Area 7: Trails, Traces, Roads, Ferry Crossings, & Cave Entrances

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Character Area 7: Trails, Traces, Roads, Ferry Crossings, and Cave Entrances

Refer to Figure 496, Treatment Recommendations for Character Area 7.

- Retain and maintain historic resources that survive from the period of significance, including:
  - Green River Ferry Road
  - Green River Ferry Crossing and retaining walls
  - Old Ferry Crossing
  - River Styx Spring Trail
  - Mammoth Dome Sink Trail
  - White Cave Trail
  - Echo River Spring Trail
  - Dixon Cave Trail
  - Green River Bluffs Trail
  - Chlorinator Building (026)
  - Views to river valley from Green River Bluffs Trail
  - Green River
  - Green River Bluffs
  - Echo River Spring
  - Echo River
  - River Styx Spring
  - River Styx
  - Mammoth Dome Sink
  - Underground cave system
  - Karst topography
  - Second growth forest
- Repair features identified as being in fair to poor condition:
  - Waterbars and ditches along trails to redirect storm water need replacement or integration into a more comprehensive drainage design for the trails.
  - Wooden post and rail safety barrier fencing for the Green River Bluff Trail overlook needs support repair and cleaning.
- Protect water resources, including springs and seeps in the area. Address storm water management and water quality protection by taking into consideration sustainability principles such as filter strips and vegetated swales where impacts to existing natural resources would not be affected.
- Manage woodland areas as native plant communities. Remove and control invasive species. Monitor the health and viability of the woodland areas.
- Ensure that views essential for developing or enhancing interpretation from trails and overlooks free of obstructing vegetation.
- Provide additional benches along the trails for visitors. Consider the design of benches as part of a site furnishings guide that standardizes features within the character area and the entire Core Visitor Services Area.
- Correct drainage problems by grading and resetting storm water management structures where positive drainage is not in evidence or where erosion is occurring.
- When updating sections of the trails, rely on natural materials in use during the period of significance, such as logs and stone. Consider trail realignment when erosion has led to significant soil loss.

- Consider new alignments and design for trails where gravel has been washed out in the middle of the trail, forming gullies. If implementation of new trail alignments impacts more resources than anticipated, consider trail design within existing alignments, but with proper crowning or cross slope on the trail surface and adequate drainage on trail edges (Figure 497). If the park has had success with waterbars or other water management techniques, consider their use on trails that experience wash out.

- Retain and maintain the directional wooden signs with white lettering throughout this character area (Figure 498).

- Some benches along the trails are in fair to poor condition due to rotting of the wood slats or from mold and other growth accumulated on the seats and backs. Replace wooden slats in poor condition or consider replacement in kind of benches in very poor condition. Other benches along the trails should be retained and maintained to keep them in their current good condition (Figure 499 and Figure 500).

- Repair, reinforce, and maintain the wood supports for the structure at Green River Buffs overlook (Figure 501).



FIGURE 497. Washout in the middle of the trail surface on the Green River Bluff trail.



FIGURE 498. Wood directional signs are located throughout this character area and in others. They need constant repair and maintenance for visitor information.



FIGURE 499. Benches in fair to poor condition at the Green River Bluffs overlook.



FIGURE 500. Bench in good condition along the trail.



FIGURE 501. Reinforce the wood supports for the existing structure at the Green River Bluffs overlook.

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Maps and Drawings

Drawing No. 135-1009. Map Showing Property Status between Chaumont & Mammoth Cave. February 1, 1935.

Drawing No. 135-1061A. Comfort Station [Tennis Court]. April 25, 1936.

Drawing No. 135-1063. Parking Area, Mammoth Cave Hotel. April 1937.

Drawing No. 135-1064. Preliminary Plan, Proposed Planting Project for the Existing Mammoth Cave Hotel. May 1936.

Drawing No. 135-1071F. General Development and Road and Trail System Plan. January 1945.

Drawing No. 135-1073E. Development Plan Control Area. June 4, 1945.

Drawing No. 135-1078. Planting Plan Hotel Cabins. January 1937.

Drawing No. 135-1082B. Forest Protection, Vegetative Cover Type. 1941.

Drawing No. 135-2012B. Chlorinator House. December 30, 1938.

Drawing No. 135-2018. Telephone Exchange. July 18, 1939. See also Drawing No. 135-2166A.

Drawing No. 135-2025D. Bath House Addition to Comfort Station. June 1942. [*This building is now known as the Earth House.*]

Drawing No. 135-2036. Trail System. August 1, 1950.

Drawing No. 135-2089. Location Plan for Tennis and Shuffleboard Courts, Mammoth Cave National Park. May 1937.

Drawing No. 135-2094. Planting Plan for Old Entrance Hotel Area. August 1937. Marked "Job Completed, June 30, 1939."

Drawing No. 135-2105A. Multi-Cabin Unit, Headquarters Area. March 9, 1953. [*This building is now known as the Sunset Lodge.*]

Drawing No. 135-2105B. Multi-Cabin Unit, Headquarters Area. August 25, 1953. [*This building is now known as the Sunset Lodge.*]

Drawing No. 135-2108. Topographic Map, Headquarters Area. March 5, 1953.

Drawing No. 135-2153. Amphitheater. September 14, 1938. Marked "Job Completed, April 26, 1940."

Drawing No. 135-2155, Cabin Development, Unit #1. September 1938. Marked "Job Completed, April 22, 1941." [*These buildings are now known as the Woodland Cottages.*]

Drawing No. 135-2156. Flagstone Walk, Hotel & Cabins. August 1938. Marked "Job Completed, October 27, 1938."

Drawing No. 135-2163. Picnic and Camping Areas. May 1939. Marked "Job Completed, June 19, 1941." [*This is the present-day Picnic Area.*]

Drawing No. 135-2164A. Topographic Map. 1930.

Drawing No. 135-2166A. Telephone Exchange [Plot Plan]. July 31, 1939. See also Drawing No. 135-2018.

Drawing No. 135-2183. Comfort Station, Picnic Area. May 1940. Marked "Job Completed, June 19, 1941." [*This building is now known as the Earth House.*]

Drawing No. 135-2186. Planting Plan, Picnic & Camping Area. January 1941. Marked "Job Completed, April 4, 1941." [*This is the present-day Picnic Area.*]

Drawing No. 135-2193. Lay-out Plan for Additions Cabins, Cabin Area, Unit No. 1. December 1941. Marked "Superseded by [drawing no. 135-]2027."

Drawing No. 135-3002C. Visitor Center, Mammoth Cave National Park. Bellante & Clauss Architects. May 19, 1958.

Drawing No. 135-3013B. Park Approaches, Entrances, and Road Circulation Plan. April 5, 1957.

Drawing No. 135-3015A. Topography, Proposed Development Area, Hotel Vicinity. July 30, 1957.

Drawing No. 135-3016. Sewer System for Multi-Cabin Unit No. 2, Headquarters Area. September 1957.

Drawing No. 135-3017. Water System for Multi-Cabin Unit No. 2, Headquarters Area. September 1957.

Drawing No. 135-3028D. Grading Plan, Visitor Center & Parking, Headquarters Area. December 24, 1959.

Drawing No. 135-3039A. Approach Walk, Steps and Parking, Historic Entrance. July 25, 1960.

Drawing No. 135-3054. Tree Location, Visitor Center Area. March 1960.

Drawing No. 135-3109A. Extension Water & Sewer Lines to Concessioners Facilities. October 1961.

Drawing No. 135-3110C. Campground Roads. As Constructed Drawing, November 1963. [*This is the present-day Campground.*]

Drawing No. 135-3113. Landscape Planting, Visitor Center Parking Area. December 28, 1963.

Drawing No. 135-3114C. Utilities: Water, Sewer and Electric, Concessioners Lodge, Headquarters Area. August 1964.

Drawing No. 135-3115. Water and Sewer Lines [Campground]. November 1962.

Drawing No. 135-3118. Contact Station [Campground]. April 1963.

Drawing No. 135-3119. Comfort Station [Campground]. April 1963.

Drawing No. 135-3123A. Amphitheater. August 20, 1964.

Drawing No. 135-3129. Planting, Camp Store and Service Station. December 12, 1963.

Drawing No. 135-3141B. Road Adjustments, New Lodge. May 1965.

Drawing No. 135-3146C. Rear Screen Projection Unit, Amphitheater. August 1, 1967.

Drawing No. 135-3219. Employee Parking Expansion, Headquarters. February 1967.

Drawing No. 135-3222A. Shelter for Bus Loading, Visitor Center. May 1967.

Drawing No. 135-3225A. Shelter for "Hercules." April 1967.

Drawing No. 135-5350. Surfacing of Road to Hotel Parking Area. July 1938. Marked "Job Completed, August 12, 1938."

Drawing No. 135-6015B. Sewage Disposal, Hotel and Administration Area. 1936. Marked "Job Completed, May 1938."

Drawing No. 135-8085B. Camp Store & Service Station. Joseph P. Wilk, Architect. September 28, 1962.

Drawing No. 135-8086C. Lodge Building, Mammoth Cave, Kentucky, for National Parks Concessions, Inc. Braun & Ryan, Architects & Engineers. August 1962.

Drawing No. 135-9004. Cabins for Mammoth Cave National Park. Nevin, Morgan & Kolbrook, Architects and Engineers. April 1938. [*These drawings depict the one-room, two-room, three-room, and four-room designs for the Woodland Cottages.*]

Drawing No. 135-41001A. Visitor Center Alteration. December 19, 1968.

Drawing No. 135-41013A. Revised Air Conditioning, Visitors Center. May 24, 1976. As constructed drawings, July 1978.

Drawing No. 135-41059. Headquarters Campground, Loop A. May 13, 2003.

Drawing No. 135-41903. New Employee Dormitory. E O Associates. July 30, 1984.

Drawing No. 135-80092A. Visitor Center Complex Rehabilitation. Parsons Brinckerhoff. May 1, 2007.

Drawing No. 135-100490. Visitor Center Complex Rehabilitation Phase 2. Parsons Brinckerhoff. January 15, 2010.

Appendix A: Landscape Resource Inventory

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 1: Historic Core									
Natural Features and Systems									
Underground Cave System	*				By p.o.s.		good		
Gently rolling ridge	*				By p.o.s.				
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Siting of structures on gently rolling ridge	*				19th and 20th centuries			Ridge was originally open and developed as part of settlement patterns and agriculture	
Use of native rock to form culverts and other stormwater management features	*				19th and 20th centuries	Some replaced			
Use of bridges to cross stream corridors and wet areas	*				19th and 20th centuries	Replacements from original construction			
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Patterns of Spatial Organization									
Amphitheater	*				1938–1939		good		
Deluxe Cottages	*				1938–1939		good		
Open landscape and vegetation patterns in the historic landscape core	*				1828–present		good		
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					
Topographic Modifications									
Grading for the amphitheater	*				1938–1939				
Grading to accommodate Deluxe Cottages and associated circulation	*				1936–1937				
Grading to accommodate tennis and shuffleboard courts	*				1938				
Grading for the Railroad line	*				1886				

Feature Name ***Missing Topographic Modifications***	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Grading associated with agricultural uses or settlement									
Land Uses and Activities									
Interpretive/Museum/Education	*				1932–1939		good	Railroad exhibit and Amphitheater	
Lodging	*				1936–1937		good	Deluxe Cottages	
Recreational	*				1925			Activities associated with hotel and amphitheater	
Transportation	*				1828			roads, railroad	
Utility	*				1871–2007			Water for old hotel; to present day expansions and improvements	
Visitor Services	*				1828			Original hotel and subsequent lodging for visitors	
Missing Land Uses and Activities									
none identified									
Circulation									
Trace of old Mammoth Cave Hotel entrance road (State Route No. 70)	*				Mid-1800s				
Gravel service drives		*						portions follow alignments of drives associated with the old hotel	
Deluxe Cottages walkways	*				1936–1937		good	flagstone surface repaved in asphalt at unknown date	
Mammoth Cave Railroad Bike & Hike Trail		*			2007		good		
Walkway to the amphitheater from the Deluxe Cottages	*				1960s		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further research and evaluation	
Missing Circulation Features									
Old Mammoth Cave Hotel entrance road (State Route No. 70)				*					
Mammoth Cave Railroad				*	1886	dismantled 1931			
Farm roads				*					
Earth road to the Old Guide's Cemetery				*					
Walkways associated with the 1925 hotel and Guide House				*					

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Cultural Vegetation									
Remnant Eastern red cedars lining the old entrance road trace	*				1920s and 1930s		fair		
Four Eastern red cedars, remnant of the line of cedars that shaded the walkway to the east of the 1925 hotel	*				1920s–1930s		fair		
Remaining deciduous shade trees in open lawn between the 1925 hotel site and the old entrance road trace	*				1920s–1930s		fair to good		
Missing Cultural Vegetation									
Most trees and shrubs planted by the CCC in the 1930s				*					
Eastern red cedar that were part of the cedar grove that lined the old entrance road				*				a few remnant specimens	
Eastern red cedar and other trees that shaded the walkway to the east of the 1925 hotel				*				a few remnant specimens	
Buildings and Structures									
Buildings									
Deluxe Cottages	*				1936–1937		good	Bldgs 008-017 Considered eligible for listing in the National Register under Criterion A.	
Hotel cottages lift station		*			1990s			Bldg 415	
Structures									
Engine No. 4 and Coach No. 2 train cars	*				1886–1931		good	Train is significant in area of engineering and transportation. Important role in bringing visitors to the caves	
Engine No. 4 and Coach No. 2 shelter		*			1967		good	Bldg 101	
Amphitheater		*			1938–1939	Features replaced in 1964; 2010 modifcations	good	Bldg 018; non-contributing due to loss of integrity	
Tennis courts	*				1938		fair		
Shuffleboard courts	*				1938		fair		
Trail boardwalks		*			1960s		good		
Retaining walls at the amphitheater		*				1964	good		

Feature Name *Missing Buildings and Structures*	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Second hotel				*	1925	demolished 1979			
Demunbrun store				*	1926	demolished 1939			
Old water tower and garage				*		demolished 1941–1960		Associated with 1925 hotel	
Old garage and associated driveway				*		demolished 1941–1960		Associated with 1925 hotel	
Old comfort station				*		Demolished after 1966		Associated with 1925 hotel and recreation features	
Hotel Manager's cottage				*		Demolished after 1966		Associated with 1925 hotel	
Office, pavillion						Demolished 1941–1960			
Store house, annex, ranger office, and other buildings associated with the 1925 hotel						Demolished 1941–1960		Associated with 1925 hotel	
Buildings associated with settlement before the park				*		Demolition started in the mid-1930s		demolished by NPS	
Dallas Huts and employee dormitories and residences and cottages				*				Associated with the 1925 hotel	
Views and Vistas									
Views to the old hotel site across the open landscape	*						good		
Views to the old entrance road trace associated with the arch entrance of the 1920s and 1930s	*						good		
Small-scale Features									
Low-profile wayside interpretive signs		*					good		
Upright wayside signs		*					good		
Wood trail directional signs with white letters		*					good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Wood slat benches		*					fair to good		
Benches in the amphitheater		*			1964			Original wood benches replaced with recycled plastic	
Metal chairs and bench at Deluxe Cottages		*					fair to good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Metal bicycle rack		*					fair to good		
Basketball hoops in the tennis courts		*					good		
Shuffleboard scoreboards (probably date to when the courts were constructed)	*						poor		
Wood split rail fencing		*					fair to good		
Hitching post with iron rings near shuffleboard court		*							
Small brown bollard lights		*					good		
HVAC and electric utility boxes		*					good		
Fire hydrants in large open lawn area and near the Deluxe Cottages		*					good		

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Missing Small-scale Features									
Map cases				*					
Original trail signs				*					
Log benches in amphitheater				*	1938–1939	repaired 1947; replaced 1964			
Old gas lanterns at old hotel				*	early 1900s				
Hanging yard lights				*	c.1916				
Gas pumps near Demunbrun store				*					
Undetermined Small-scale Features									
"Natural Entrance" sign					U				
Archeological Resources									
MACA-62.003 component of larger MACA-62 (Old Guide's Cemetery; 15Ed85)	*								

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 2: Picnic Area & Woodland Cottages									
Natural Features and Systems									
Underground Cave System	*				By p.o.s.				
Ridge above Green River Bluffs	*				By p.o.s.				
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Second growth forest	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, loblolly pine, eastern red cedar	
Green River Bluffs	*				by p.o.s.		good		
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Siting of development on the ridge	*				20th century	land use changes in the 20th century		Ridge was originally open and developed as part of settlement patterns and agriculture	
Use of native rock to culverts and other stormwater management features	*				20th century	some replaced	fair to good		
Establishment of trails and other features to provide access to key features of the natural environment	*				19th – 20th centuries		fair to good		
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Patterns of Spatial Organization									
Picnic area (former campground)	*				1941		good	CCC	
Trail corridors and overlooks	*				1933–1941		good	CCC	
Woodland Cottages	*				1938–1939		good	CCC	
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Topographic Modifications									
Grading associated with the picnic area, roads, structures, parking lots, and pathways	*				1941				
Grading associated with trailheads and the trail system (various)	*				1933–1941				
Grading to accommodate the Woodland Cottages and associated interior circulation	*				1938–1939				
Grading for original campground	*				1940–1941			Some grading remains expecially at the south parking lot of the picnic area.	
Grading associated with the Dixon trail trailhead at the picnic area and the segment of Dixon trail from the cave to the picnic area	*				1960s			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further research and evaluation	
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement									
Land Uses and Activities									
Lodging	*				1938–1939		good	Woodland cottages	
Interpretive/Museum/Educational	*				1941		good	Earth House	
Recreational	*				1941			Picnicing and Hiking	
Utility	*				1941			Comfort Station	
Visitor Services	*				1938			Picnic, Comfort Station Lodging	
Missing Land Uses and Activities									
Agricultural				*	1929	ended 1939		Will's Farm	
Circulation									
Picnic area entrance road and one-way loop drive	*				1940–1941		good		
Picnic area drive leading to Dixon Cave trailhead, and associated parking areas	*				1940–1941		good		
Parking areas on picnic area entrance road and loop drive		*					fair to good		
Gravel pull-in parking at picnic shelters		*					fair to good		
Asphalt paths through picnic area		*					poor to fair		
Exposed aggregate concrete paths associated with picnic area structures		*					good		
Packed-earth social trails in picnic area		*					fair		
Green River Bluffs Trail trailhead	*				1941		fair to good		
Dixon Cave Trail trailhead and trail segment from the cave to the picnic area	*				1960s		fair to good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further research and evaluation	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Woodland Cottages entrance road and parking area		*			1941	modified later	good		
Paved paths in Woodland Cottages area	*				1939–1941; 1949		good		
Missing Circulation Features									
Interior drives in old campground/picnic area				*	1930s	removed c.1960s			
Farm roads				*					
Crushed stone walk that led to the 1925 hotel				*					
Picnic area paths shown on 1953 plan				*		removed c.1953		Dwg. No. 135-2035B	
Stone service road associated with utility buildings east of Woodland Cottages				*					
Cultural Vegetation									
Native hardwood forest	*						good		
Mowed grass lawn	*				1938–1939		good	CCC	
Remaining deciduous shade trees and flowering trees around the Woodland Cottages	*				1938–1939		good	CCC	
Missing Cultural Vegetation									
Most trees and shrubs planted by the CCC in the 1930s				*					
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
Woodland Cottages	*				1938–1941; 1949		good	Formerly "Cabin Unit #1" Bldgs 067-087	
Comfort station		*			1960s	altered, 1990s	good	Bldg 305	
Enclosed picnic shelter		*			before 1972	enclosed, 1990s	good	Bldg 316	
Earth House	*				1940–1941	additions, 1949	good	Bldg 001	
Structures									
Picnic shelters (2)	*				before 1972		good	Bldgs 303 & 304	
Small stone retaining wall in parking lot of the picnic area	*				1940–1941		fair to good		
Stone comfort station foundation on grass site in picnic area	*				1940–1941		fair to good	Site of the comfort station for the 1940-1941 picnic area	
Missing Buildings and Structures									
Hot water utility building & linen storage building east of Woodland Cottages				*					
Buildings associated with settlement before the park				*				demolished by NPS	
Views and Vistas									
View to visitor center parking lot from Woodland Cottages		*							
Limited views due to vegetation		*							

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Small-scale Features									
Native stone drinking fountain	*				1940		fair	CCC	
Green River Bluffs Trail map sign		*					good		
Wood trail directional signs with white letters		*					fair to good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Wood and metal picnic tables		*					good		
Upright grills		*					good		
Ground-level box grills		*					good		
Wood slat benches		*					fair to good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Pay phone in Woodland Cottages area		*							
Dumpsters		*					good		
Wheel stops		*							
Metal gate on picnic area access road		*							
Wood split rail fencing		*					fair to good		
Screen fencing around dumpsters		*					good		
Small brown bollard lights		*					good		
Residential-scale lighting in Woodland Cottages area		*					good		
Overhead lighting in Woodland Cottages parking area		*					good		
Native stone culvert headwalls		*							
Stormfilter unit for oil & grit separator filtration system		*			2003				
HVAC and electric utility boxes		*					good		
Fire hydrants		*					good		

Feature Name ***Missing Small-scale Features***	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Map cases				*					
Original trail signs				*					
Cedar picnic tables in picnic area				*	1940				
Original fireplaces in picnic area				*	1940				
Rustic type lamp in Woodland Cottages area				*	1940				
Stone drinking fountains				*	1940			were at least 9 at one time, only one remaining	
Undetermined Small-scale Features									
"Natural Entrance" sign			*		U				
Round timber fence on Green River Bluff Trail			*		U				

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 3: Historic Entrance & Old Guide's Cemetery									
Natural Features and Systems									
Underground Cave System	*				By p.o.s.				
Ridge and adjacent slopes	*				By p.o.s.				
Historic Entrance	*				By p.o.s.; discovered 1797	Structures for cave access and visitor accommodation at the entrance; bio-security mats and apparatus installed 2007	good	Only natural entrance where cave tours begin (tours began in 1816) Historic Entrance retains integrity of setting, feeling , and association	
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Second growth forest	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, loblolly pine, eastern red cedar; in river corridors there are sugar and red maples, sycamore, black gum, beech, birch, and willow	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Nature writing, artistic depiction and personal inspiration	*				19th century				
Siting of the Old Guide's Cemetery on the ridge	*				c. 1842			Only above-ground resource at Mammoth Cave National Park that dates to the early 19th century period of Discovery and Initial Use of Mammoth Cave.	
Use of native rock to form culverts and other stormwater management features	*				19th–20th centuries	Some replacements from original construction			
Use of bridges to cross stream corridors and wet areas	*				19th–20th centuries	Replacements from original construction			
Establishment of trails and other features to provide access to key features of the natural environment	*				19th–20th centuries		fair to good		
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Patterns of Spatial Organization									
Historic Entrance	*				By p.o.s.		good		
Old Guide's Cemetery	*				c. 1842		good		
Patterns of steep topography	*						good	Steep slopes define the area	
Trail corridors and overlooks	*						good		
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					
Topographic Modifications									
Grading associated with trailheads and the trail system including the Old Guide's Trail	*								
Grading associated with the Historic Entrance Road	*								
Grading associated with retaining walls, landscape steps and terraces, concrete stairs and metal rails associated with the Historic Entrance	*				1960's	1963 improvements to Cave Entrance including walkway and steps		Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Grading associated with ADA accessibility on the Heritage Trail		*				2004			
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement				*					
Land Uses and Activities									
Cemetery	*				c. 1842				
Commemoration	*								
Interpretive/Museum/Educational	*								
Recreational	*								
Utility	*								
Artistic endeavors	*								
Missing Land Uses and Activities									
Health Services				*	1842			Tuberculosis hospital in cave	
Industrial				*	c. 1806			Saltpetre industry	
Residential				*				African American landholdings and communities	
Circulation									
Heritage Trail	*				1941		good		
Historic Entrance Road	*				before 1926	paved at unknown date	good	Follows route of Old Mammoth Cave Ferry Road	
Old Guide's Trail 1926 partial alignment	*				1926			Remaing historic features?	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Old Guide's Trail current alignment	*					washout was repaired 2012	good	Considered a contributing feature to be managed as a cultural resource.	
Terrace and stairway into Historic Entrance	*				1963		good	Considered contributing feature to the Historic Entrance	
River Styx Spring Trail trailhead	*				before 1926			Continuance of the Historic Entrance Road west of the entrance; follows route of Old Mammoth Cave Ferry Road	
Mammoth Dome Sink Trail trailhead	*				1941				
Echo River Spring Trail trailhead	*				1941				
Dixon Cave Trail trailhead (at the Historic Entrance)	*				1941		fair	Trailhead at the Historic Entrance	
Missing Circulation Features									
Farm roads				*					
Dirt road to the Old Guide's Cemetery				*					
Walkways associated with the 1925 hotel and Guide's House				*					
Sandstone steps into historic cave entrance				*				replace by current terraces and concrete steps	
Cultural Vegetation									
Native hardwood forest	*						good		
Mosses and ferns associated with Historic Entrance	*						good		
Missing Cultural Vegetation									
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
none in this character area									

Feature Name ***Structures***	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Historic Entrance structures	*				1964			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Retaining stone wall at Sunset Point, associated with the overlook and Heritage Trail	*				ca 1960s		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Trail boardwalks and elevated decks on the Heritage Trail		*					good		
Small bridge at intersection of Old Guide's Trail and Historic Entrance Road	*							replaced an earlier, larger structure; Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Missing Buildings and Structures									
Saltpeter furnace, Miller House and other structures									
Views and Vistas									
Views from Sunset Point Overlook on the Heritage Trail	*						good		
View to Historic Entrance from an elevated deck on the Heritage Trail	*						good		
View from Heritage Trail to Old Guide's Cemetery	*						good		
View to Historic Entrance from the entrance road	*						good		
Small-scale Features									
Headstones in the Old Guide's Cemetery	*				1842–1843		fair		
Stephen Bishop Grave Marker	*				1881		fair	incorrect date of death	
William Bransford commemorative headstone		*			1998		good	Located on Flint Ridge, not in the boundary of the CLR study	
Low-profile wayside interpretive signs		*					good		
Three-sided kiosk		*					good		
Wood trail directional signs with white letters		*					fair to good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Backed wood benches along the trail to Historic Entrance		*							
Wood slat benches along Heritage Trail		*					good		
Metal fence around the Old Guide's Cemetery		*					good		

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Wood split rail fencing		*					good		
Wood hand rails associated with Heritage Trail boardwalks and elevated decks		*							
Metal handrails at the Historic Entrance		*					good		
Small brown bollard lights		*					good		
Native stone culvert headwalls	*				1960's		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Stone culvert and spillway at Historic Entrance	*				1960's		fair to good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Drainage features related to Historic Entrance Road	*				1960's		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
HVAC and electric utility boxes		*					good		
Missing Small-scale Features									
Map cases				*					
Original trail signs				*					
Wood bleachers at Historic Entrance				*	early 1900s	removed c.1960s			
Backed wood benches along trail to Historic Entrance				*					
Original metal handrails at the Historic Entrance				*					
Wire fence with concrete posts at Historic Entrance				*					
Undetermined Small-scale Features									
"Natural Entrance" sign					U				
Archeological Resources									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 4: Campground									
Natural Features and Systems									
Underground Cave System	*				By p.o.s.				
Gently sloping ridge	*				By p.o.s.				
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Second growth forest	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, loblolly pine, eastern red cedar; in river corridors there are sugar and red maples, sycamore, black gum, beech, birch, and willow	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Curvilinear alignment of campground roads to complement the natural topography	*								
Use of native rock to form culverts and other stormwater management features	*								
Use of bridges to cross stream corridors and wet areas	*				19th – 20th centuries	Replacements from original construction			
Establishment of trails and other features to provide access to key features of the natural environment	*				19th – 20th centuries		fair to good		
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Patterns of Spatial Organization									
Mammoth Cave Parkway entrance road corridor	*				1960		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Woodland along the road margins	*				1940–1960		good		
Campground	*				1964		good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Trail corridors	*						good		
Missing Patterns of Spatial Organization									

Feature Name Settlement and agricultural open space	Contributing	Non-Contributing	Undetermined	Missing *	Date of Origin	Modifications	Condition	Notes	LCS #
Topographic Modifications									
Grading associated with the Mammoth Cave Parkway	*				1960			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Grading associated with Green River Ferry Road	*				1939				
Grading associated with the campground	*				1964			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Grading associated with campground trailheads and the trail system	*				1964			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Grading associated with the Service Center	*				1963			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Grading to accommodate the campground kiosk, small parking lot, exposed aggregate concrete area for dumpsters and recycling, and the pervious paved parking areas within the campground		*							
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement				*					
Land Uses and Activities									
Commercial	*				1963			New service station and camp store bulding	
Recreational	*				1964			Camping	
Transportation	*				1964			Entrance road and loops	
Utility	*				1964				
Visitor Services	*				1964				
Missing Land Uses and Activities									
Agricultural				*	1929	ended 1939		Will's Farm	
Circulation									
Mammoth Cave Parkway	*				1960			Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Green River Ferry Road	*				1939		good		
Mammoth Cave Railroad Bike & Hike Trail		*			2007		good		

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Campground access drive		*			c.1965	modified in 2004	good	Not contributing due to loss of integrity with modification in 2004	
Campground loop roads	*				1964	Loop A modified in 2004	good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Parking bays along campground loop roads	*				1964	paved at unknown date		Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Service Center drive and parking lot		*			1964	modified in 2005	good		
Parking area by campground kiosk		*					good		
Grass-paver pull-ins by trash area		*					good		
Walkway to the amphitheater	*						fair to good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
Walkway to the campfire circle		*							
Pedestrian paths to the comfort stations	*						fair to good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	
White Cave Trail	*				1941		fair to good	portions follow an old road trace	
Gravel service drive to lift station		*							
Missing Circulation Features									
Old Mammoth Cave hotel entrance road (State Route No. 70)				*					
Mammoth Cave Railroad				*	1886	dismantled 1931			
Farm roads				*					
Cultural Vegetation									
Native hardwood forest	*						good		
Plantings associated with the construction of the new campground		*							
Missing Cultural Vegetation									
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
Service Station/Camp Store		*			1963	substational alterations	good	Bldg 208; non-contributing due to loss of integrity	
Campground kiosk		*			2004		good	Bldg 437	
Comfort stations (4)		*			1964	modifications 2004	good	Bldgs 048-051; non-contributing due to loss of integrity	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Comfort station in south part of Loop B		*			between 1964 and 2000	modifications 2004	good	Bldg 317; non-contributing due to loss of integrity	
Lift station		*			1990s		fair to good	Bldg 414	
Structures									
Bridges on trail from campground to the amphitheater		*					good		
Retaining walls at the campfire circle		*			1980s–1990s		good		
Missing Buildings and Structures									
Old gas station				*					
Former campground kiosk				*				replaced by current structure in 2004	
Buildings associated with settlement before the park				*				demolished by NPS	
Views and Vistas									
Views of the old entrance road trace through the campground	*						good		
Small-scale Features									
Two-sided wooden kiosk		*					good		
Wood directional signs with white letters		*					fair to good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Campsite markers		*							
Flagpoles (2) adjacent to campground kiosk and Service Center		*					good		
Metal bicycle racks		*					fair to good		
Wood and metal picnic tables		*					good		
Concrete picnic tables		*					good		
Low round grills/fire pits		*					good		
Backless wood benches in campfire circle		*					fair to good		
Wood slat benches		*					fair to good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Dumpsters		*					good		
Blue postal box at Service Center		*							
Ice box at Service Center		*							
Hooked lantern posts		*							
Wheel stops		*							
Metal gates on loop drives		*					good		
Wood split rail fencing		*					fair to good		
Small brown bollard lights		*					fair to good		
Overhead lighting in the parking lots		*					good		
Sanitary dump station		*							
Native stone culvert headwalls	*							Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further study	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Stormfilter unit for oil & grit separator filtration system		*			2003		good		
Manholes and drop inlets									
HVAC and electric utility boxes		*					good		
Water pumps		*			U		good		
Fire hydrants		*					good		
Missing Small-scale Features									
Map cases				*					
Original trail signs				*					

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 5: Mammoth Cave Hotel & Lodging									
Natural Features and Systems									
Underground Cave System	*				By p.o.s.				
Gently sloping ridge	*				By p.o.s.				
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Second growth forest	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, eastern red cedar; in river corridors there are sugar and red maples, sycamore, black gum, beech, silver and box elder maple	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Siting of development on the ridge	*				20th century			Ridge was originally open and developed as part of settlement patterns and agriculture	
Use of native rock to form culverts and other stormwater management features	*								
Use of bridges to cross stream corridors and wet areas	*				19th – 20th centuries	Replacements from original construction			
Establishment of trails and other features to provide access to key features of the natural environment	*				19th – 20th centuries		fair to good		
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Patterns of Spatial Organization									
Mammoth Cave Hotel and Heritage Trail Wing		*			1965		good		
Sunset Lodge and associated circulation	*				1954; 1958		good	Considered a contributing feature to be managed as a cultural resource for post-WWII improvements and the Mission 66 Era	
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					
Topographic Modifications									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Grading associated with trailheads and the trail system		*			1965				
Grading to accommodate Sunset Lodge, and associated parking and circulation	*				1954; 1958			Considered a contributing feature to be managed as a cultural resource for post-WWII improvements and the Mission 66 Era	
Grading to accommodate Hotel and Heritage Trail Rooms wing,		*			1965				
Grading to accommodate concessionaire dormitory and kennel		*			1985				
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement				*					
Grading associated with the Guide House and outbuildings				*					
Land Uses and Activities									
Commercial	*								
Interpretive/Museum/Educational	*								
Lodging	*								
Utility	*								
Visitor Services	*								
Missing Land Uses and Activities									
Agricultural				*	1929	ended 1939		Will's Farm	
Residential				*				African American landholdings and communities	
Circulation									
Hotel parking lot		*			1930s	reconfigured and expanded 1965	good	Not contributing due to loss of integrity	
Sunset Lodge drive and parking areas	*				1954; 1958		good	Considered a contributing feature to be managed as a cultural resource for post-WWII improvements and the Mission 66 Era	
Pedestrian bridge between visitor center and hotel		*			1961	Stone-clad piers added at north end 2011	good	Future repairs and modifications should be guided by the Secretary of the Interior Standards.	
Gravel and pervious paver access road north of Sunset Lodge		*							
Gravel service road providing access to concession dormitory and kennel		*							
Concrete sidewalks associated with hotel		*							
Exposed aggregate sidewalks and patios at Sunset Lodge	*				1954; 1958	paving surface modifications; repairs	good	Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further research and evaluation	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Mammoth Dome Sink Trail trailhead	*								
Mammoth Cave Railroad Bike & Hike Trail trailhead		*							
Heritage Trail trailhead		*							
Missing Circulation Features									
Farm roads				*					
Earth and stone road to the Old Guide's Cemetery				*					
Walkways associated with the 1925 hotel and Guide House				*					
Cultural Vegetation									
Ornamental plantings of trees, shrubs,and groundcovers related to the hotel		*					good		
Mowed grass lawn		*					good		
Missing Cultural Vegetation									
Most trees and shrubs planted by the CCC in the 1930s				*					
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
Mammoth Cave Hotel and Restaurant and Heritage Trail Wing		*			1965	Additions and alterations, 1992	good	Bldg 207 Third hotel at Mammoth Cave: nineteenth century first hotel burned in 1916; second hotel built in 1925, demolished 1979; Current hotel is non-contributing due to loss of integrity from 1992 additions and alterations	
Sunset Lodge first building	*				1954		good	Bldgs 202 Significant as an example of the continuing improvement of park facilities after WWII and beginning of Mission 66 Era	
Sunset Lodge second building	*				1958	Interior alterations 1980s	good	Bldg 206 Significant as an example of the continuing improvement of park facilities after WWII and beginning of Mission 66 Era	
Sunset Lodge lift station		*			1990s		good	Bldg 412	
Hose house		*					good	Bldg 006	
Concessions Dormitory & Laundry		*			1985		good	Bldg 327	
Kennel		*			1997		good	Bldgs 425 & 431	
Structures									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Pedestrian bridge between hotel and visitor center		*			1961	stone-clad piers added at north end 2011	good	Considered a non-contributing feature due to loss of integrity. Future repairs or modifications should be guided by the Secretary of the Interior Standards.	
Missing Buildings and Structures									
Guide House				*					
Lantern houses				*					
Gas house				*					
Telephone exchange				*					
Photo shop				*					
Service house				*					
Tool house, laundry, reservoirs, and other utility buildings				*					
Buildings associated with the possible tent site				*					
Former location of dog kennel				*				unclear if a missing historic feature or a demolished modern feature	
Buildings associated with settlement before the park				*				demolished by NPS	
Views and Vistas									
Views to the historic core	*								
Small-scale Features									
Low-profile wayside interpretive signs		*					good		
Wood directional signs with white letters		*					good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Informational signs at hotel entrance		*							
Metal bicycle racks		*					good		
Metal chairs and tables at Sunset Lodge		*					good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Dumpsters		*					good		
Pay phone between Sunset Lodge units		*							
Wood split rail fencing		*					good		
Screen fencing around dumpsters		*					good		
Overhead lighting in the parking lots		*					good		
Gray bollard lights at the hotel		*					good		
HVAC and electric utility boxes		*					good		
Fire hydrants		*					good		
Trench drain in the hotel parking lot		*							
Stone culvert headwalls		*							
Manholes and drop inlets		*							
Stormfilter units for oil & grit separator filtration system		*			2003		good		
Missing Small-scale Features									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Map cases				*					
Original trail signs				*					
Hanging yard lights				*					
Rustic type lamp adjacent to guide house				*					
Log benches in front of guide house				*					
Post and wire fencing associated with overflow parking area				*					
Undetermined Small-scale Features									
"Natural Entrance" sign					U				
Archeological Resources									
MACA-62.003 component of larger MACA-62 (Old Guide's Cemetery; 15Ed85)									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 6: Visitor Center Complex									
Natural Features and Systems									
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Ridge and adjacent slopes	*				By p.o.s.				
Second growth forest framing character area	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, loblolly pine, eastern red cedar	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Siting of the Mammoth Cave Parkway and development on the ridge	*				1960	Changes to visitor center complex 2011		Ridge was originally open and developed as part of settlement patterns and agriculture	
Use of bridges to cross ravines	*								
Establishment of trails and other features to provide access to key features of the natural environment	*				19th – 20th centuries		good	Access to Historic Entrance Road from the Visitor Center	
Use of culverts, drop inlets, and channelized swales to convey stormwater beneath paths and roads	*						good		
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Farm ponds sited on relatively level areas				*					
Patterns of Spatial Organization									
Mammoth Cave Parkway entrance road corridor	*				1960		good		
Woodland along the road margins	*				1940–1960		good		
Mammoth Cave Visitor Center and parking lot		*			1963	modifications 2011	good		
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					
Ponds									

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Topographic Modifications									
Grading associated with the Mammoth Cave Parkway	*				1960			Considered a contributing feature to be managed as a cultural resource for the Mission 66 era; needs further research and evaluation	
Grading to accommodate larger footprint of the visitor center, tour shelters and associated circulation paths and terraces		*			2007, 2011				
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement				*					
Land Uses and Activities									
Commemoration	*								
Commercial	*								
Interpretive/Museum/Educational	*								
Recreational	*								
Transportation	*								
Utility	*								
Visitor Services	*								
Missing Land Uses and Activities									
Agricultural				*	1929	ended 1939		Will's Farm	
Residential				*				African American landholdings and communities	
Circulation									
Mammoth Cave Parkway	*				1960	changes to medians 2007?	good	Formerly called South Entrance Road; Considered a contributing feature to be managed as a cultural resource for Mission 66 Era; needs further research and evaluation	
Flint Ridge Road	*				Time of Dr. Croghan 1839		good	Park staff said Dr. Croghan built Flint Ridge Road	
Hotel entrance road		*			1960s	realigned 2007?	good		
Bus loop and unloading area		*			2005		good		
Visitor center parking lot		*			1960	2011	good	Considered a non-contributing feature due to loss of integrity.	
Historic Entrance Road	*				before 1926	paved at unknown date		Follows a portion of the route of Old Mammoth Cave Ferry Road	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Pedestrian bridge between visitor center and hotel		*			1965	stone-clad piers added at north end 2011	good	Considered a non-contributing feature due to loss of integrity. Modifications should be guided by the Secretary of the Interior Standards.	
System of sidewalks, plazas, and stairs associated with the visitor center and tour shelters		*			2011		good		
Missing Circulation Features									
Farm roads				*					
Old Mammoth Cave Ferry Road				*				Historic Entrance Road follows a portion of the route	
Walks associated with the Pavilion and E.L.W. Office (Technician's office & old Park Headquarters)				*					
Macadam road between 1925 hotel and picnic area				*					
Macadam loop road and parking area				*					
Stone-surfaced parking area with stone curbs				*					
Crushed stone walk between the 1925 hotel and picnic area				*					
Cultural Vegetation									
Ornamental plantings of trees, shrubs,and groundcovers related to the visitor center		*					good		
Trees planted in parking lot medians		*					poor to good		
Missing Cultural Vegetation									
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
Mammoth Cave Visitor Center		*			1963	reconstructed in two phases, 2007–2012		Bldg 005; non-contributing due to loss of integrity	
Structures									
Tour shelters (4)		*			2007–2012				
Cave tour information kiosk		*			2007–2012			Bldg 112	
Pedestrian bridge between visitor center and hotel		*			1961		good	Considered a non-contributing feature due to loss of integrity. Future repairs or modifications should be guided by the Secretary of the Interior Standards.	
Utility enclosure		*			2011				
Wind Cave tour shelter		*			2011				
Lantern tour storage		*			2011				

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Flagpole at visitor center		*					good		
Missing Buildings and Structures									
Pavilion (Technician's Office)				*					
E.L.W. Office (Park Headquarters)				*					
Chlorinating house				*					
Post Office				*					
Buildings associated with settlement before the park				*				demolished by NPS	
Views and Vistas									
Views across the parking lot from the visitor center		*							
Views across the pedestrian bridge		*			1961				
Small-scale Features									
Stephen Mather commemorative marker		*					good		
World Heritage Site plaque		*					good		
Stone monument sign		*					good		
Wood signs along hotel entrance road		*					good		
Low-profile wayside interpretive signs		*					good		
Regulatory signs		*					good		
Informational signs and video screens within the cave tour information kosk		*					good		
Litter, ash, and trash/recycling receptacles		*					fair to good		
Dumpsters		*					good		
Metal bicycle racks		*					good		
Metal gates on bus loop		*							
Metal fencing along rear visitor center plaza and behind tour shelters		*			2011				
Wooden gate on Historic Entrance Road		*			2011				
Screen fencing around dumpsters		*					good		
Metal and concrete bollards		*							
Small brown bollard lights		*					good		
Overhead lighting in the parking lot		*					good		
HVAC and electric utility boxes		*					good		
Stormfilter units for oil & grit separator filtration system		*					good		
Fire hydrants		*					good		
Paved swales		*							
Missing Small-scale Features									
Map cases				*					
Original trail signs				*					
Undetermined Small-scale Features									
"Natural Entrance" sign					U				

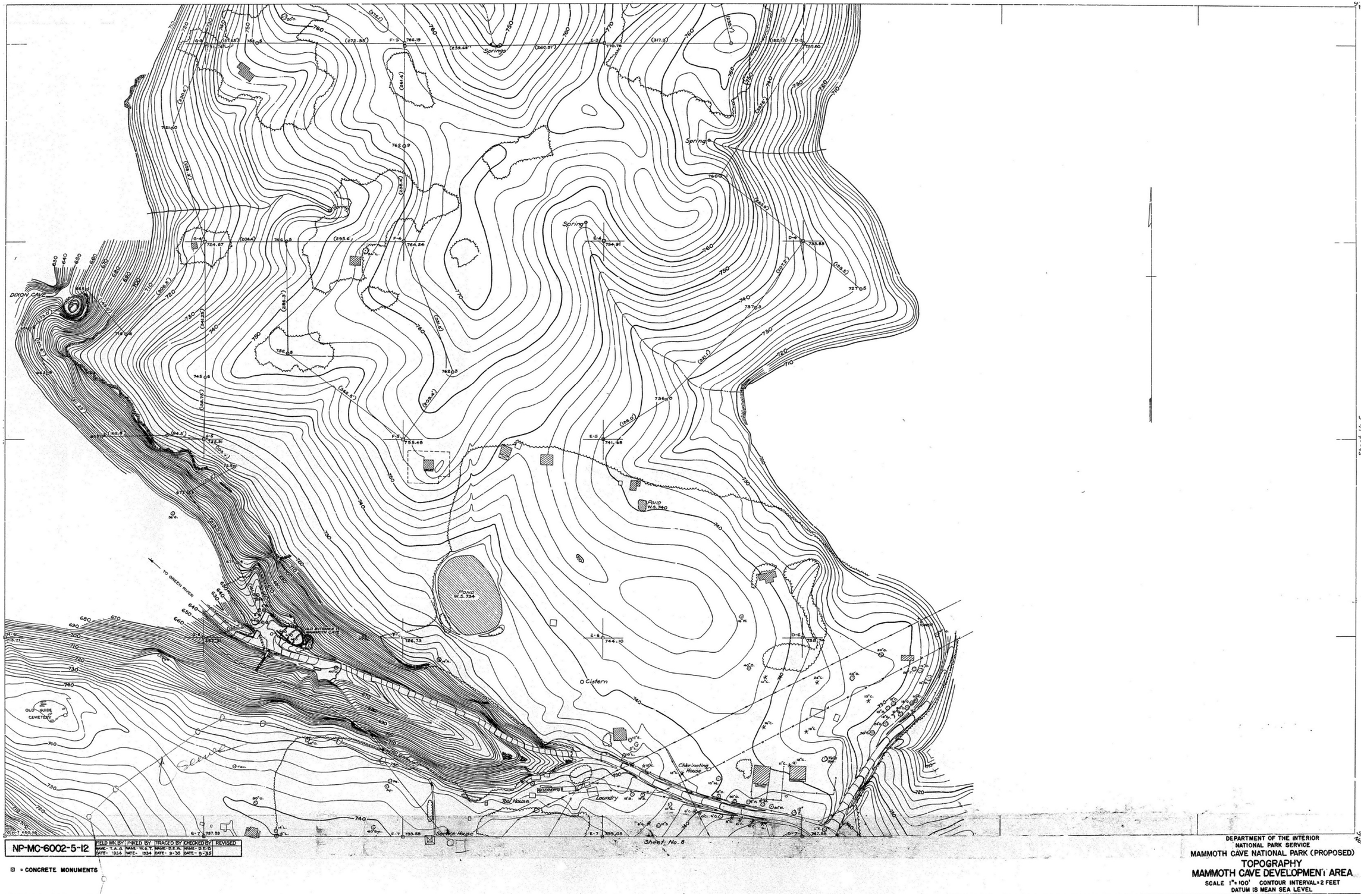
Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Character Area 7: Trails, Traces, Roads, Ferry Crossings, & Cave Entrances									
Natural Features and Systems									
Green River (tributary of the Ohio River)	*				By p.o.s.			variety of fish, catfish, bass, bluegill, trout and freshwater mussels	
Green River Bluffs	*				By p.o.s.				
Echo River Spring	*				By p.o.s.				
Echo River	*				By p.o.s.				
River Styx Spring	*				By p.o.s.				
River Styx	*				By p.o.s.				
Mammoth Dome Sink	*				By p.o.s.				
Underground Cave System	*				By p.o.s.				
Dixon Cave Entrance	*				By p.o.s.	Wooden platform structures and stairs to create overlook to the entrance. No access for the public	good	Further context research related to mining of saltpetre would be needed to establish the historic significnce of this specific cave	
White Cave Entrance	*				By p.o.s.		good	Has not been surveyed for historical resources. Further research is required.	
YMCA Cave Entrance	*				By p.o.s.			Has not been surveyed for historical resources. Further research is required.	
Karst topography	*				By p.o.s.		good	Requires stormwater structures/keep runoff from groundwater and caves	
Second growth forest	*				c.1930s		good	Contains, oak, shagbark, hickory, persimmon, sassafras, yellow poplar, loblolly pine, eastern red cedar; in river corridors there are sugar and red maples, sycamore, black gum, beech, birch, and willow	
Missing Natural Features and Systems									
None have been identified									
Responses to Natural Resources									
Nature writing, artistic depiction and personal inspiration	*				19th–20th century				
Use of native rock to culverts and other stormwater management features	*								
Use of bridges to cross stream corridors and wet areas	*				19th–20th centuries	Replacements from original construction			

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Establishment of trails and other features to provide access to key features of the natural environment	*				1941		fair to good		
Waterbars and ditches along trails to redirect stormwater		*			After 1941		poor to fair		
Replaced bridges		*			After 1965				
Missing Responses to Natural Resources									
Residential/community development				*					
Farming and agricultural lands				*					
Patterns of Spatial Organization									
Woodland along the road margins	*				1940–1960		good		
Trail corridors and Overlooks	*				1941		good		
Missing Patterns of Spatial Organization									
Settlement and agricultural open space				*					
Topographic Modifications									
Grading associated with the Green River Ferry Road	*				1939			CCC	
Grading associated with the Green River Ferry crossing	*				1939			CCC	
Grading associated with trailheads and the trail system (various)	*				1933–1941			CCC	
Missing Topographic Modifications									
Grading associated with agricultural uses or settlement				*					
Land Uses and Activities									
Interpretive/Museum/Educational	*								
Recreational	*								
Transportation	*								
Utility	*								
Artistic endeavors	*								
Transportation	*							Old Ferry Crossing at Green River and new Ferry Crossing	
Missing Land Uses and Activities									
Agricultural				*	1929	ended 1939		Will's Farm	
Industrial				*	c. 1806			Saltpetre industry	
Residential				*				African American landholdings and communities	

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Circulation									
Flint Ridge Road	*				to 1926		good		
Green River Ferry Road	*				1939		good		
Old Ferry Crossing	*				1906			Should be considered a NR eligible site given connection to historic tourism of Mammoth Cave	
Green River Ferry Crossing	*				1939		good	Auto ferry that connects the north entrance road in the park with Green River Ferry Road.	
Joppa Ridge Road	*				to 1926		good		
River Styx Spring Trail	*				to 1926			approximately follows route of old Mammoth Cave Ferry Road	
Mammoth Dome Sink Trail	*						fair to good		
White Cave Trail	*						fair to good		
Echo River Spring Trail	*						fair to good		
Dixon Cave Trail	*								
Dixon Cave Trail trailhead at the picnic area and segment from the cave to the picnic area	*				1960s		fair to good	Considered a contributing feature to be managed as a cultural fesource for Mission 66Era; needs further research and evaluation	
Green River Bluffs Trail	*								
Gravel road to former sewage treatment plant		*						portions obliterated	
Parking lot at Green River Ferry		*							
Missing Circulation Features									
Old Mammoth Cave Ferry				*	early 1900s			interpreted with signage	
Farm roads				*					
Spur trail to Valley View Overlook				*					
Cultural Vegetation									
Native hardwood forest	*						good		
Missing Cultural Vegetation									
Pasture and farm garden vegetation before parkland acquisitions				*					
Buildings and Structures									
Buildings									
Chlorinator House	*				1939		fair to good	Bldg 026 Contributing but integrity reduced by removal of other features associated with original sewage treatment plant	
Structures									
Bridge along Green River Bluffs Trail		*							

Feature Name	Contributing	Non-Contributing	Undetermined	Missing	Date of Origin	Modifications	Condition	Notes	LCS #
Boardwalk to River Styx Spring at the old ferry landing at the end of River Styx Spring Trail		*					good		
Wooden stairs and platforms at Dixon Cave Entrance and associated trailhead		*					fair to good		
Retaining walls at the Green River Ferry Landing	*				ca. 1941		good	Retaining walls were constructed by the CCC and completed in association with the Green River Ferry Road	
Missing Buildings and Structures									
Valley View Overlook				*					
Buildings associated with settlement before the park				*				demolished by NPS	
Views and Vistas									
Views to river valley from Green River Bluffs Trail	*						good		
Views along trails to natural features	*								
Views along trail corridors	*								
View to Green River and ferry from Green River Ferry Road	*								
View at Old Ferry and boat dock landings	*								
Small-scale Features									
Native stone culvert headwalls	*								
Low-profile wayside interpretive signs		*					good		
Two-sided kiosk sign		*					good		
Wood trail directional signs with white letters		*					good	individual signs do not contribute, but the presence of wood signs along trails is a historic condition	
Regulatory signs		*					good		
Wood slat benches		*					good		
Litter, ash, and trash/recycling receptacles		*					good		
Wood split rail fencing		*					fair to good		
Post and rail safety barrier fencing for the overlook on the Green River Bluff Trail composed of round wood members and two rails		*					fair to good		
Swing gate at Green River Ferry crossing		*							
Overhead lights in Green River Ferry crossing parking lot		*							
Utility poles and overhead lines		*					good		
Utility box housing air quality camera		*							
Fire hydrants		*					good		
Drainage features related to River Styx Spring Trail engineering	*						good		
Missing Small-scale Features									
Map cases				*					
Original trail signs				*					

Appendix B: Reference Drawings



□ = CONCRETE MONUMENTS

FIGURE B-1. Topographic plan, 1935. NPS drawing 135-6002.

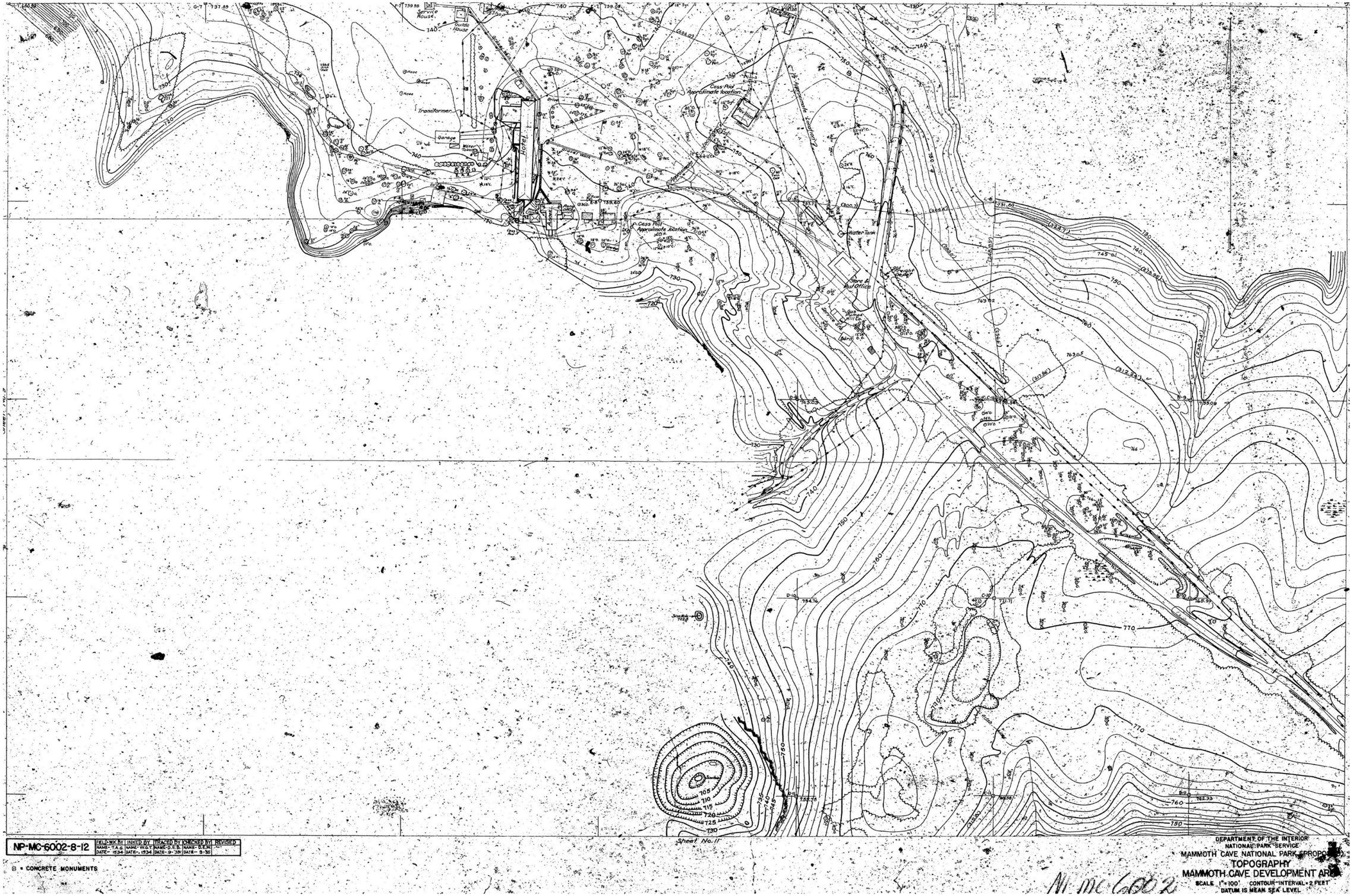


FIGURE B-2. Topographic plan, 1935. NPS drawing 135-6002.

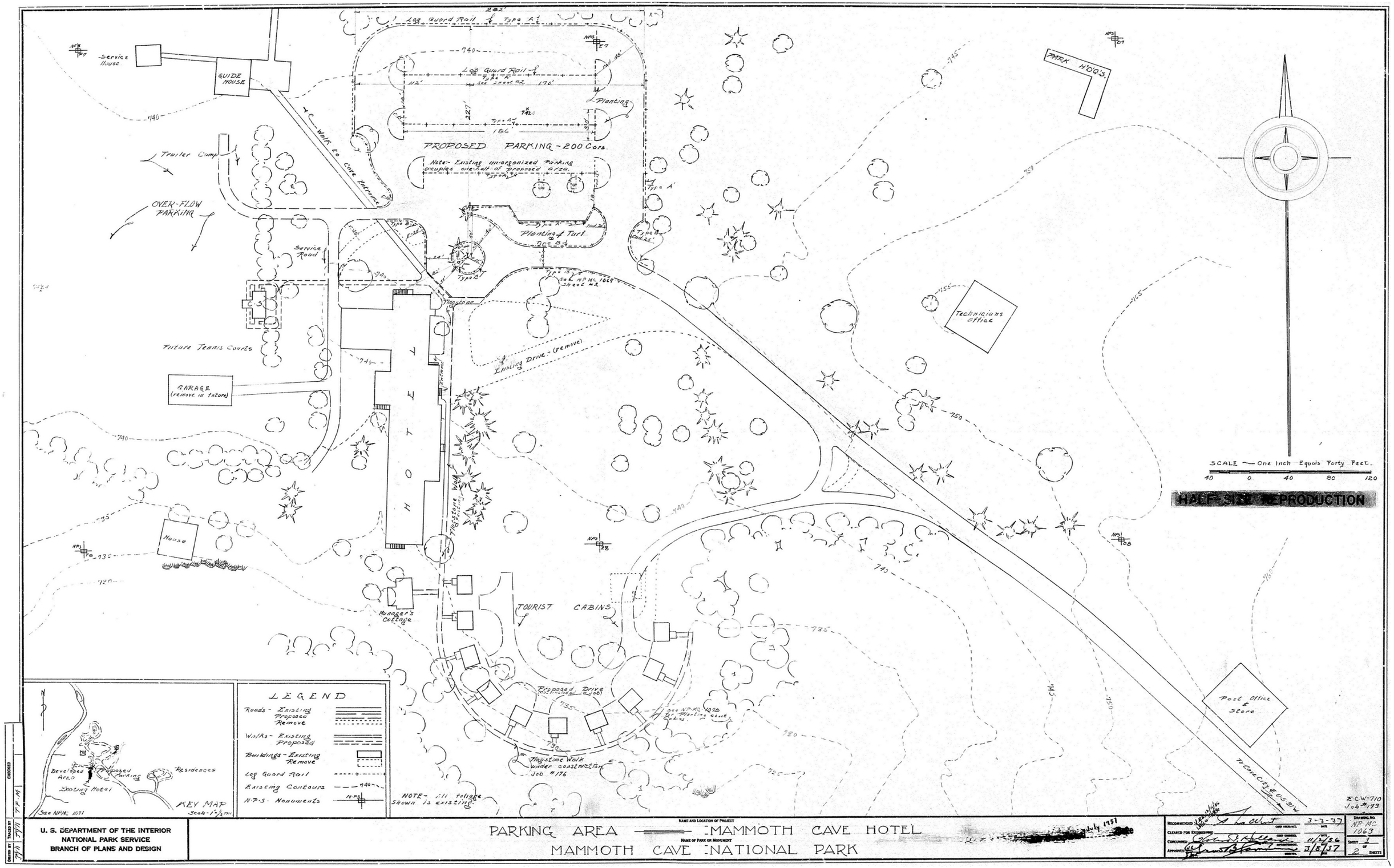
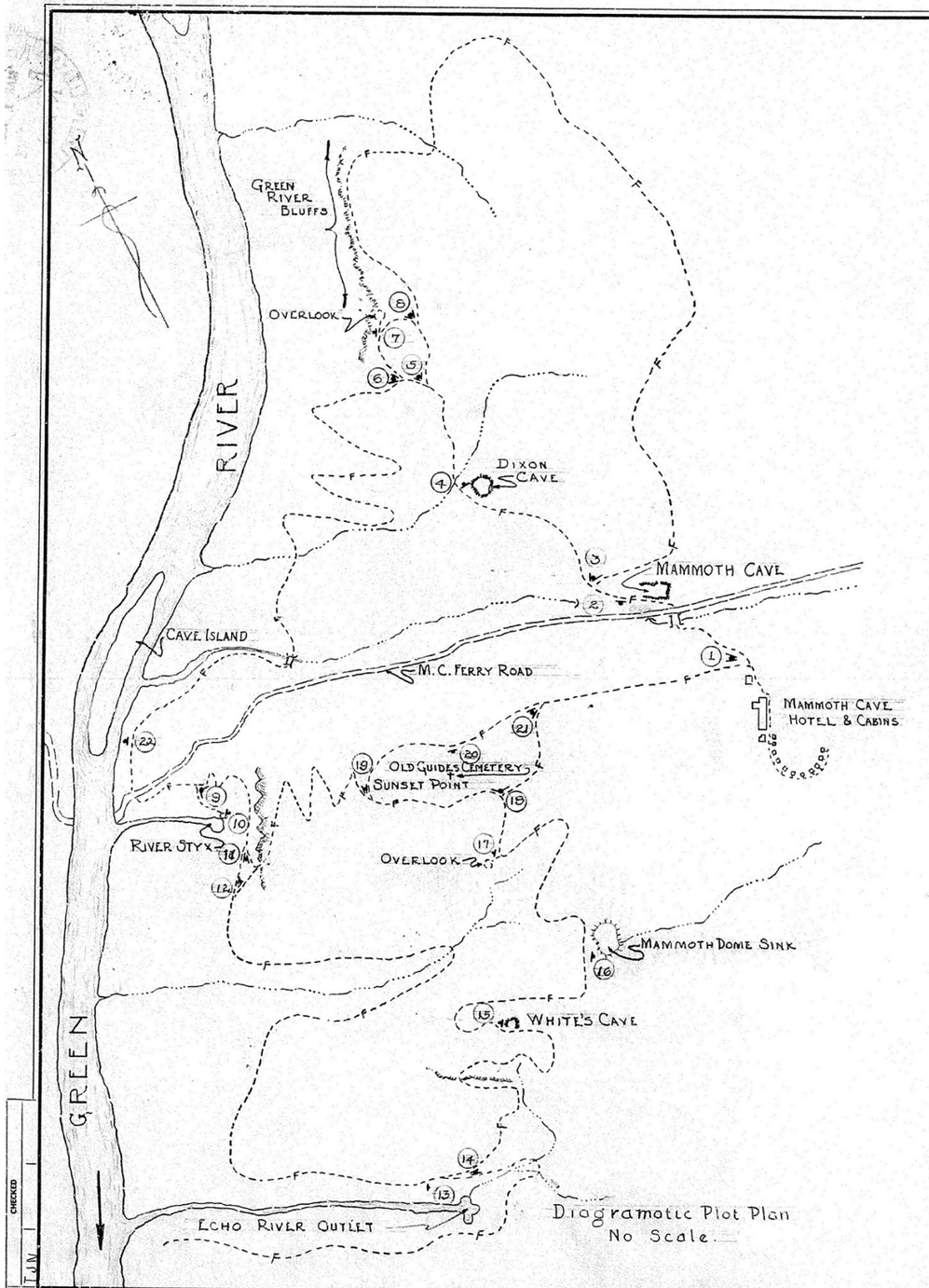


FIGURE B-3. Site plan of the second Mammoth Cave Hotel and cottages. NPS drawing 135-1063, dated March 1937.



Sign No.	Plaque Type A	Plaque Type B.	Post Setup
1	Mammoth Cave → Green River Bluffs →	Sunset Point ← Green River Ferry ←	
2	Hotel ← Green River Bluffs →		
3	Green River Bluffs →	Dixon Cave ← Green River Bluffs ←	
4	Dixon Cave		
5	Green River Bluffs → Mammoth Cave →	Green River Ferry ← Mammoth Cave →	
6	Overlook → Mammoth Cave ←	Green River Ferry ← Mammoth Cave →	
7	Overlook →		
8	Green River Bluffs → Mammoth Cave →	Overlook ←	
9	Echo River ← Mammoth Cave Hotel →	River Styx →	
10	River Styx		
11	Echo River → Green River Ferry ←	River Styx ← Hotel →	
12	Echo River → Hotel ←	Echo River → River Styx ←	
13	Echo River		
14	River Styx → Hotel ←	Green River Flats →	
15	White's Cave		
16	Mammoth Dome Sink		
17	Overlook ←		
18	Hotel → Echo River ←	Sunset Point ← Green River Ferry ←	
19	Hotel ↔	Green River Ferry ← River Styx ←	
20	Old Guides Cemetery		
21	Echo River ← White's Cave ←	Sunset Point → Green River Ferry →	
22	Green River Bluffs → Mammoth Cave →		

LEGEND:

Foot Trail
M.C. Ferry Road
Sign Location
Sign Number
Intermittent Stream

Job Completed 8.23.38 Date

U. S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
BRANCH OF PLANS AND DESIGN

Name and Location of Project
TRAIL MARKER PLOT PLAN
Name of Park or Monument
MAMMOTH CAVE NATIONAL PARK

Recommended [illegible] Chief Architect. 2-2-37 Date
Cleared for Engineering [illegible] Chief Engineer. 1/11/37 Date
Concurred [illegible] Superintendent. Date
Approved [illegible] Director. Date

Drawing No. NP-MC 1079
Sheet 2 of 2 Sheets

Checked TFM Traced by TFM Checked [illegible]

FIGURE B-4. Plan of trails and trail markers. NPS drawing 135-1079, dated 1937.

CLEARED

REVIEWED

DESIGNED BY MARTIN HENSLEY
DATE MARCH 5, 1953

PLANS AND DESIGN
ENGINEERING
FORESTRY
HISTORY
RESEARCH AND EDUCATION
SANITATION
PLANNING AND STATE COOPERATION
RECREATION
REGIONAL DIRECTOR

OLD GUIDE CEMETERY
PARKING AREA
PRESENT PARKING AREA
EARTH AND STONE ROAD
TENNIS COURT (ASPHALT)
HOTELS (GROUNDS)
To NATIONAL PARK SERVICE HEADQUARTERS D.C. N.P.
Road Completed
Approx. location of cesspool
Drilled Hole to Great Relief Hall
SCALE — ONE INCH = ONE HUNDRED FEET

HALF-SIZE REPRODUCTION

BASIC DATA
Topographic Survey - JAN. 1953
G.C. Martin Note Book No.

RECOMMENDED _____ DATE _____
CONCURRED _____ DATE _____
APPROVED _____ DATE _____

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
PREPARED BY MAMMOTH CAVE NATIONAL PARK OFFICE
TOPOGRAPHIC MAP
NAME OF JOB
HEADQUARTERS AREA
LOCATION
MAMMOTH CAVE NATIONAL PARK

REGION 1
SHEET 1 OF 4
DRAWING NO. NP-MC 2108

FIGURE B-5. Topographic plan of the Core Area, 1953. NPS drawing 135-2108.

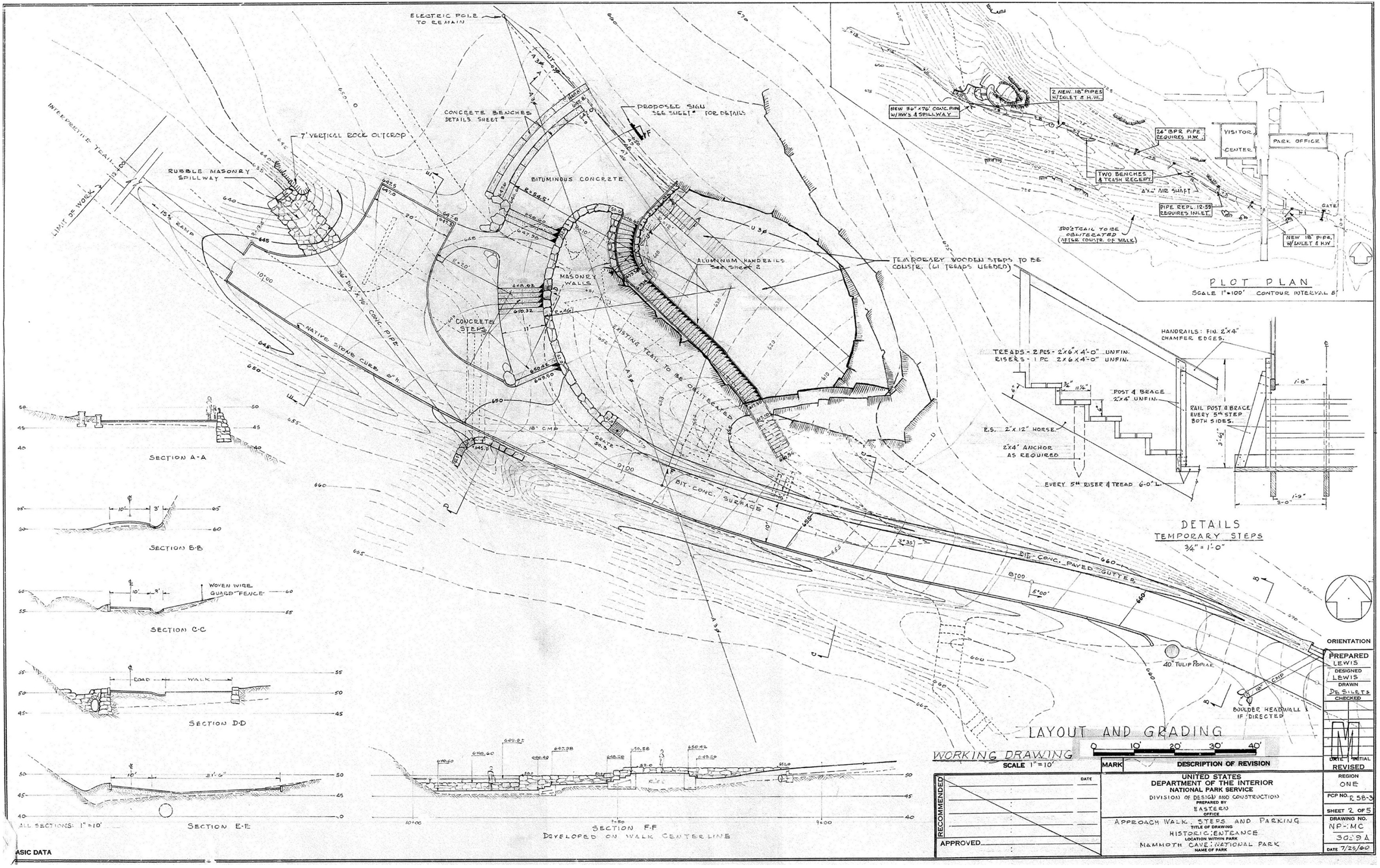


FIGURE B-6. Construction of the new stairs to the Historic Entrance of Mammoth Cave, 1961. NPS drawing 135-3039A.

PLAN
SAFETY NOSING
TYPE #1 STEPS

DETAIL
SAFETY NOSING

PATTERN OF FINISHED ABRASIVE SURFACE SHALL BE "CROSS-HATCH"

CAST ALUMINUM

No 3 REINF BAR

PROVIDE ANCHORS 4" FROM EACH END OF NOSING, AND THEN ON NOT MORE THAN 14" CENTERS.

POST AND RAIL EXTRUDED ALUMINUM FOR EXTERIOR USE. BRUSHED-SATIN ANODIZED FINISH. "ECONO RAIL" OR APPROVED EQUAL

NB-4 RAIL 2" O.D

R 17 POST 1½ O.D.

SS-17

5' MAX.

3/4"ø DOWELS ON 12" C-C SET 4" INTO SOLID ROCK, GROUT

POROUS FILL

6"x6" - 4x4 WWM

TYPE #1 STEPS AND ALUM. HANDRAIL DETAILS
SCALE: 1"=1-0"

CONC. STEPS	NO. OF STEPS	4" W. NOSING * PCS/STEP	LENGTH	TOTAL PCS. REQ.
TYPE 1	63	1	36"	63
2	3	3	48"	9
3	7	2	60"	14

* ABRASIVE SURFACE NOSING FOR STEPS STYLE #1 "TCULUM" BY WHITE FNDRY CO. INC ROANOKE, VA OR APPROVED EQUAL.

℄ PROFILE - STEPS INTO HISTORIC ENTRANCE
SCALE 1"=5'

12'-0" 13 RISERS @ 6¾" 5'-6" LANDING
30'-0" 39 RISERS @ 6¾"
5'-6" LANDING 10'-6" 11 RISERS @ 6⅞"
646.62
639.34
639.14
640.26
635.32
635.24
612.28
617.30
617.10
610.94
650
645
640
635
630
625
620
615
HORIZ LEDGE ROCK & SOUTH CAVE WALL
9'-4"± CLEAR
20' ±
LIMIT OF WORK

PLAN - TYPE #2 STEPS
½"=1'-0"

NOSING CASTINGS ROUND FINISH BUTT JOINTS
4'-0" 4 @ 10" 4'-0" 4 @ 10" 4'-0"
4¼" 10" 10" 10" 10" 4" 6"
13'-0"

PLAN - TYPE #3 STEPS
½"=1'-0"

5'-0" 4 @ 13" 5'-0"
4¼" 1'-1" 1'-1" 1'-1" 1'-1" 4" 6"
11'-0"

No 4 @ 6" C-C

POST MOUNTING SIDE STRINGER SS-17

3/4"ø DOWELS ON 12" C-C SET 4" INTO SOLID ROCK, GROUT.

STONE STEPS
TYPE 2 STEPS 3 REQUIRED
TYPE 1 STEPS 6 REQUIRED
TYPE 3 STEPS 3 REQUIRED
TYPE 3 STEPS 2 REQUIRED
646.60
647.98
648.02
650.32
650.42
649.50
CHANGES IN DIRECTION TO FIT FIELD CONDITIONS

LOCATION PLAN
CONCRETE STEPS
1"=10'

1'-6"
1'-5"
1'-5"
5⅝"
6" COMPACTED STONE BASE
200# BIT. CONC.
POROUS FILL
COMPACTED FILL
3/4"ø DOWELS 12" C-C SET 4" INTO ROCK, GROUTED
SOLID ROCK

SECTION A-A' - TYPE #2 STEPS
USE SAME DIMENSIONS TYPE #3 STEPS
1"=1'-0"

652.0
BATTER 1:12
650.42
649.50
200# BIT. CONC.
6" COMPACTED STONE BASE
SOLID ROCK

SECTION B-B'
1"=1'-0"

650.0
649.8±
BATTER 1½:12 MIN.
BATTER 2:12 MIN.
BATTER 2:12 MIN.
SOLID ROCK

SECTION C-C'
½"=1'-0"

BASIC DATA

WORKING DRAWING — STEPS AND WALLS

SCALE AS NOTED

MARK	DESCRIPTION OF REVISION	DATE

RECOMMENDED
APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN & CONSTRUCTION
PREPARED BY EASTERN OFFICE

TITLE OF DRAWING: APPROACH WALL STEPS AND PARKING
LOCATION WITHIN PARK: HISTORIC ENTRANCE
NAME OF PARK: MAMMOTH CAVE NATIONAL PARK

ORIENTATION

PREPARED EODC
DESIGNED LEWIS
DRAWN LEWIS-LUKENS
CHECKED

DATE | INITIAL
REVISED

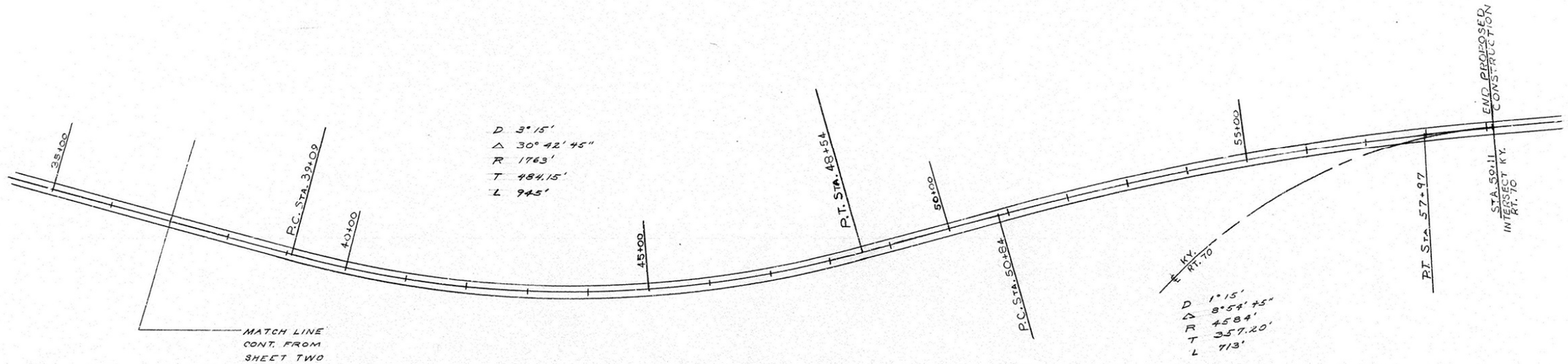
REGION ONE
PCP NO. 0.58
SHEET 3 OF 5
DRAWING NO. NP-MC 3039-A
DATE FEB. 1961

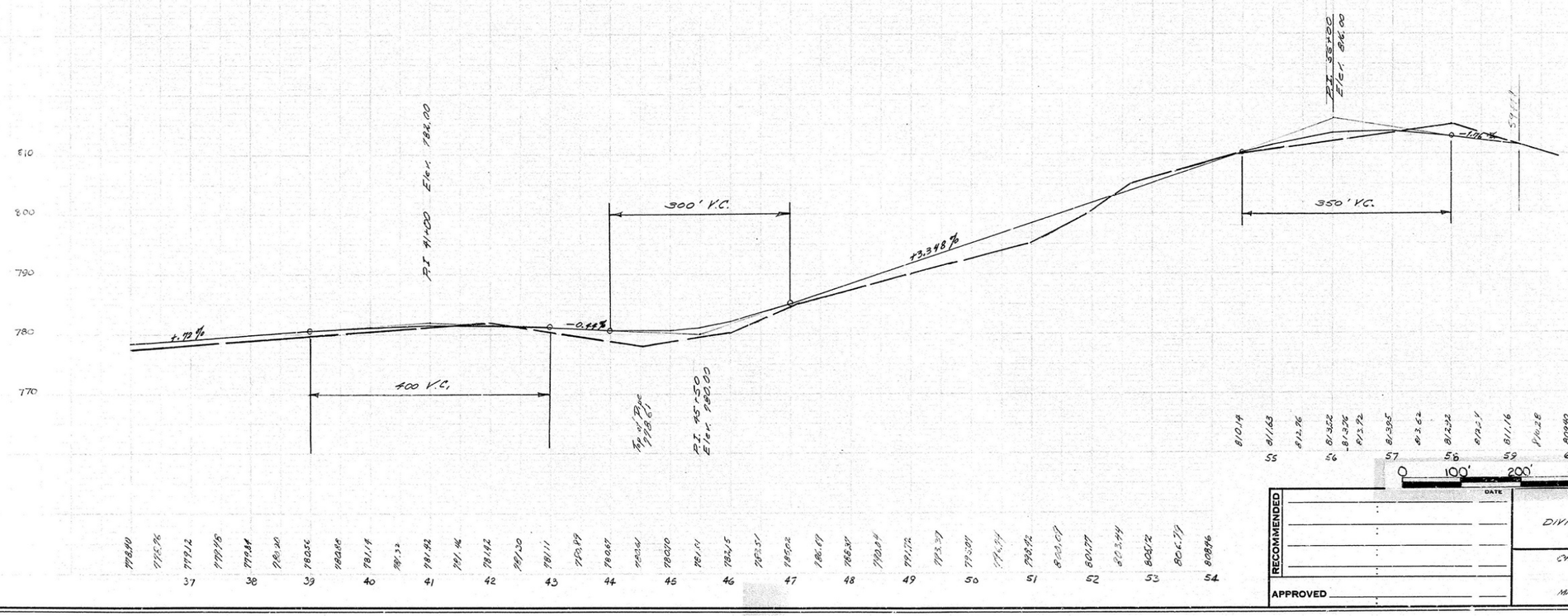
FIGURE B-7. Construction of the new stairs to the Historic Entrance of Mammoth Cave, 1961. NPS drawing 135-3039A.

SANITARY SEWER MANHOLE ELEVATIONS

MH	EL. RIM	INVERT EL.	MH	EL. RIM	INVERT EL.	MH	EL. RIM	INVERT EL.	MH	EL. RIM	INVERT EL.	MH	EL. RIM	INVERT EL.
M-1	352.51	347.07	M-18D	641.18	638.16	M-37	662.20	657.95	M-56	564.02	560.90	M-72	642.84	634.62
M-2	362.83	355.72	M-19	645.48	634.91	M-38	664.36	658.48	M-57	573.42	569.79	M-73	646.70	635.58
M-3	362.26	358.78	M-20	645.07	636.57	M-39	673.28	666.36	M-58	578.52	575.96	M-74	642.88	636.58
M-4	369.44	362.04	M-21	643.48	638.60	M-40	676.22	670.16	M-59	596.56	592.88	M-75	641.18	637.22
M-5	396.23	392.29	M-22	649.51	643.44	M-41	681.28	675.16	M-60	605.98	602.50	M-76	639.90	637.43
M-6	418.18	414.22	M-23	652.83	648.74	M-42	680.41	677.03	M-61	622.41	619.27	M-77	640.50	638.12
M-7	429.77	425.89	M-24	661.37	654.16	M-43	685.18	679.59	M-61A	635.38	631.39	M-78	646.11	639.29
M-8	454.06	449.67	M-25	660.72	655.01	M-44	687.87	681.51	M-61B	639.70	634.19	M-79	647.15	640.32
M-9	472.40	468.87	M-25A	664.77	660.93	M-45	688.53	683.49	M-61C	638.37	632.75	M-80	650.95	646.11
M-10	502.30	498.88	M-25B	676.34	671.92	M-45A	691.32	685.49	M-61D	638.69	633.09	M-81	651.72	647.97
M-11	528.93	525.65	M-26	674.45	667.77	M-46	687.39	684.64	M-61E	637.66	634.15	M-82	654.72	649.83
M-12	536.24	532.50	M-27	675.18	669.38	M-47	689.74	686.12	M-62	631.50	627.11	M-83	656.16	652.46
M-13	543.32	540.09	M-28	677.55	670.62	M-47A	691.51	687.02	M-63	637.15	627.67	M-84	665.48	660.72
M-14	566.22	561.59	M-29	673.68	671.64	M-48	698.90	693.46	M-64	637.09	628.89	M-85	675.62	668.34
M-15	576.82	572.11	M-30	674.62	672.25	M-49	697.74	694.81	M-65	632.75	629.09	M-86	677.74	671.80
M-16	597.07	592.03	M-31	677.00	674.06	M-50	699.34	695.46	M-66	632.81	629.72	M-87	677.59	674.59
M-17	618.87	613.00	M-32	679.35	675.10	M-51	700.00	696.00	M-67	634.03	630.61			
M-18	637.67	630.87	M-33	659.05	654.41	M-52	506.97	502.38	M-68	635.85	631.19			
M-18A	638.92	635.28	M-34	663.07	655.99	M-53	517.37	513.93	M-69	636.43	632.51			
M-18B	639.18	635.96	M-35	663.39	657.15	M-54	539.89	536.98	M-70	636.84	633.22			
M-18C	640.03	636.65	M-36	661.69	656.97	M-55	553.34	550.50	M-71	636.34	633.84			

FIGURE B-8. Plan of the sewer system in the Core Area. NPS drawing 135-41034, dated September 1991.





RECOMMENDED

DATE

APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION of DESIGN & CONSTRUCTION
PREPARED BY EASTERN OFFICE

TITLE OF DRAWING: CHANNELIZED APPROACH ROAD
LOCATION WITHIN AREA: HEADQUARTERS AREA
NAME OF AREA: MAMMOTH CAVE NATIONAL PARK

ORIENTATION REVIEWED

OPERATIONS REGION
WASHINGTON
INTERP. REGION
WASHINGTON
COOP. ACTV. REGION
WASHINGTON
DES. & CONST. EASTERN
A.
E.
L.A.
WASHINGTON
A.
E.
L.A.
OTHER

PREPARED
DESIGNED Lucko
DRAWN Moran
CHECKED

REVISED
DATE | INITIAL

REGION 1
PCP R-124
SHEET 3 OF 3
DRAWING NO. NP-MC 3030
DATE 6-24-58

FIGURE B-9. Grading plan for Mammoth Cave Parkway, 1958. NPS Drawing No. 135-3030, June 24, 1958.

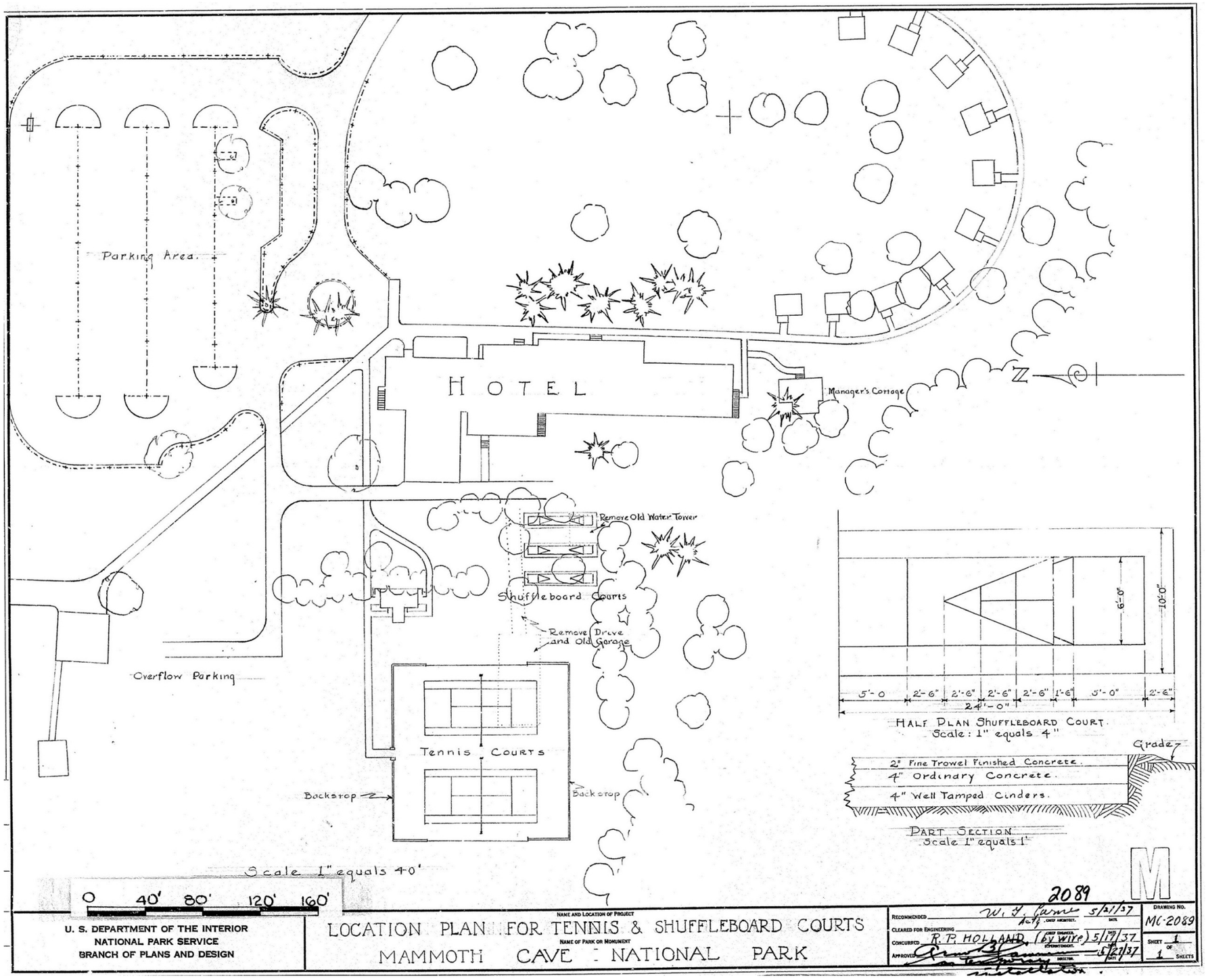


FIGURE B-10. Location Plan for Tennis and Shuffleboard Courts. NPS Drawing No. 135-2089, May 1937.

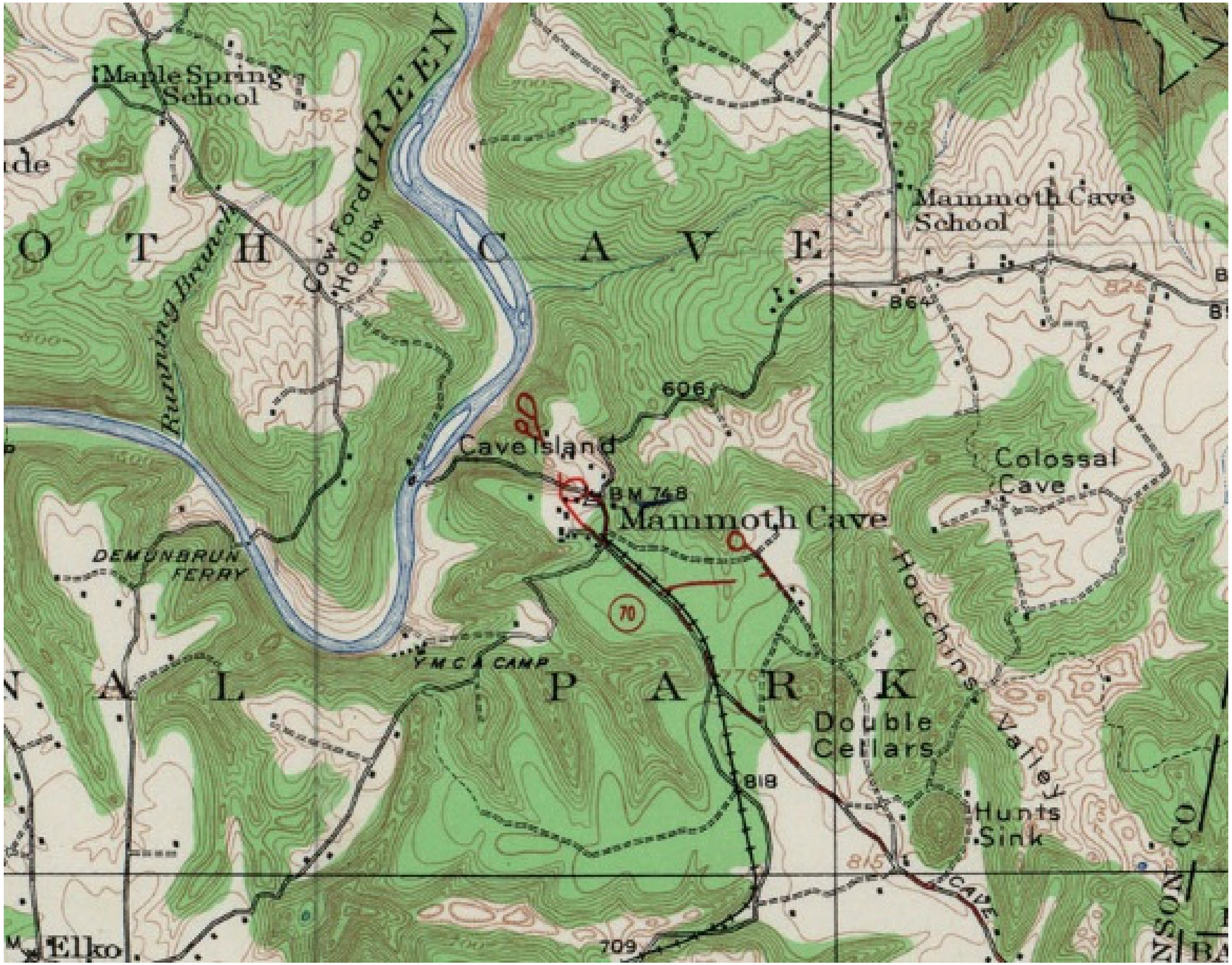


FIGURE B-11. USGS topographic map, Mammoth Cave, Kentucky, 15 minute quadrangle, 1922.

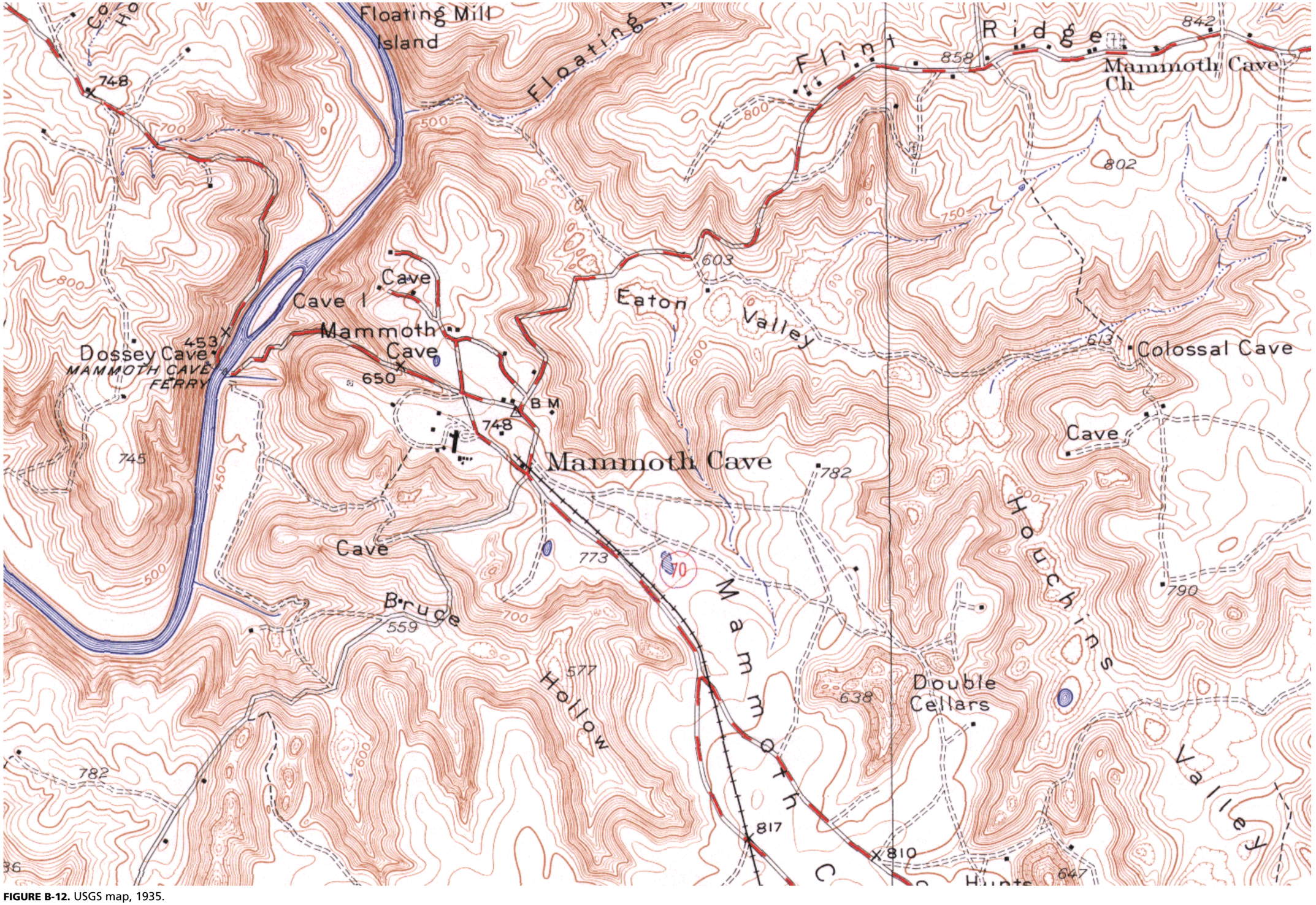


FIGURE B-12. USGS map, 1935.