


National Park Service
U.S. Department of the Interior

Natchez Trace Parkway
Mississippi



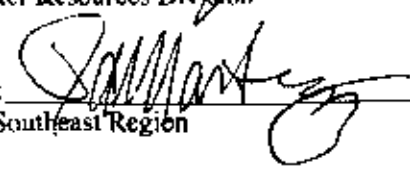
**STATEMENT OF FINDINGS
FOR
EXECUTIVE ORDER 11988 ("FLOODPLAIN MANAGEMENT")**
Natchez Trace Parkway Multi-Use Trail Construction
Old Canton Road to Ross Barnett Reservoir Overlook Parking Area
Approximately from Milepost 103.6 to Milepost 105.8
PROJECT NATR 3016, PMIS 055898
Natchez Trace Parkway
Madison County, Mississippi

Recommended: 
Superintendent, Natchez Trace Parkway

3/28/08
Date

Concurred: 
Chief, Water Resources Division

4/7/08
Date

Approved: 
Director, Southeast Region

4/15/08
Date

Executive Order 11988 (“Floodplain Management”) requires the National Park Service (NPS) and other agencies to evaluate the likely impacts of actions in floodplains. It is NPS policy to preserve floodplain values and minimize potentially hazardous conditions associated with flooding. If a proposed action is in an applicable regulatory floodplain, then flood conditions and associated hazards must be quantified, and a formal Statement of Findings (SOF) must be prepared. The NPS *Procedural Manual #77-2, Floodplain Management* provides direction for the preparation of a floodplain SOF. This SOF has been prepared to comply with EO 11988 and with Procedural Manual #77-2.

PROPOSED ACTION

The National Park Service, in cooperation with the Federal Highway Administration (FHWA) is proposing to construct approximately 2.2 miles of multi-use trail between Old Canton Road and the Ross Barnett Reservoir Overlook parking area, between approximately mileposts 103.6 and 105.8.

The NPS proposes to construct the 2.2 mile trail section along the south side of the Natchez Trace Parkway (NATR) motor road. The multi-use trail will follow the alignment identified in the September 1995 *Multi-Use Trail Study Environmental Assessment, Jackson, Mississippi, Natchez Trace Parkway*, subject to changes identified during design, and approved by the NPS. In a 1996 Finding of No Significant Impact (FONSI) the NPS approved the preferred alternative for building an approximately 21 mile long multi-use trail. The part of the trail route that crosses the Brashear Creek floodplain and the Culley Creek floodplain is shown on Plan and Profile sheets D1, D2, and D3 at the end of this report.

The multi-use trail profile will closely match the existing ground elevations. The typical section of the multi-use trail will have a 10-foot wide paved travel surface with 2-foot wide unpaved shoulders. The trail will be constructed on compacted fill, including an eight-inch depth of lime-treated sub-base, topped with a four-inch deep layer of Super Pave asphalt concrete pavement. A drawing of a typical section of the multi-use trail, labeled Sheet B1, is included as the first of the attachments in this document.

A trail bridge, 127 feet long, 14 feet wide, will be constructed across Brashear Creek. A 4-foot span, 4-foot rise concrete box culvert will be extended by approximately 8 to 10 feet for the trail across the Brashear Creek tributary. A triple 10-foot span, 6-foot rise concrete box culvert will be extended by approximately 20 feet for the trail across Culley Creek. A double 6-foot span, 5-foot rise concrete box culvert will be extended by approximately 20 feet across the Culley Creek tributary. The concrete box culvert extensions will be extensions of existing box culverts under the NATR motor road.

Floodplains

The 100-year floodplain along Brashear Creek extends across NATR property from Old Canton Road eastward, and is approximately 1,600 feet to 2,600 feet wide. The Culley Creek 100-year floodplain is approximately 550 feet to 1,370 feet wide, and extends across NATR property from Culley Creek eastward to the Brashear Stand parking area. Bank elevations of Brashear Creek at

the point crossed by the multi-use trail are approximately 295 feet. Bank elevations of Culley Creek at the point crossed by the multi-use trail are approximately 290 feet.

Vegetation in the Brashear Creek and the Culley Creek floodplains is a combination of trees, shrubs, and an herbaceous layer. Trees are predominantly sweet gum, black cherry, loblolly pine, water oak, and sassafras. Shrubs include Chinese privet and blackberry. The herbaceous layer is dominated by field garlic, strawberry, goldenrod, poison ivy, and Japanese honeysuckle. On the NATR roadway fill where the roadway crosses the floodplains the vegetation is perennial grasses, flowers, and other species associated with landscaping.

Justification for Use of the Floodplains

The 1987 *Comprehensive Trail Plan, Natchez Trace National Scenic Trail / Alabama-Mississippi-Tennessee* identified Jackson, Mississippi as one of three high use areas in which the NPS will build multi-use trails on NATR lands, but off of the NATR motor road. By the 1990s it had become apparent that the NATR motor road through the Jackson, Mississippi metropolitan area would be heavily traveled and would present serious safety concerns for bicyclists traveling on the NATR motor road.

To address that concern, a 1995 environmental assessment (EA) identified a multi-use trail route through those communities on NATR lands paralleling the motor road. The route included a segment of the trail south of the motor road between Old Canton Road and the Reservoir Overlook parking area, adjacent to the Ross Barnett Reservoir (approximately mileposts 103.6 to 105.8).

In 1999 a Congressional Directive to the NPS directed NATR to construct a multi-use trail in conjunction with the construction of the NATR motor road. A Congressionally mandated feasibility study prepared in 2002 by the Eastern Federal Lands Highway Division of the Federal Highway Administration (EFLHD/FHWA) in conjunction with the NPS, identified the Jackson, Mississippi metropolitan area as one of three NATR areas where the multi-use trail should be built, based on average daily traffic.

Any trail route along NATR between mileposts 103.6 and 105.8 must cross the floodplains of Brashear Creek and Culley Creek and their tributaries, because they span the entire width of the NATR property boundary.

The impact of the project on 100-year floodplains will be minimal. There will be very little change in the ability of a floodplain to convey floodwaters, or its values and functions. EFLHD/FHWA provided information about flows and flood characteristics of the creeks. The information was derived from U.S. Army Corps of Engineers Hydrologic Engineering Center – 2 (HEC-2) models for the creeks, with modeling data provided by the Federal Emergency Management Agency (FEMA). The HEC-2 models indicated that there will be some negligible localized changes in the ability of the floodplain to convey and store floodwaters, but the trail, the bridge, and the box culvert extensions spanning the creeks and tributaries will not contribute to flooding.

Measures will be taken to minimize harm to life, property, and natural values. The bridge across Brashear Creek and the box culvert extensions across its tributary and across Culley Creek and its tributary will be alongside and parallel to the NATR roadway. They will be built and installed as much as is feasible on the existing fill that was placed during roadway construction.

Federal Highway Administration and National Park Service staff advise that in the Brashear Creek 100-year floodplain a wall will be constructed to prevent filling of the floodplain beneath the bridge and in the immediate area adjacent to the abutment. The fill slope of the Brashear Creek bridge and the trail bed will cover 45,800 square feet (1.05 acre) of 100-year floodplain. In the Culley Creek 100-year floodplain it is estimated that the toe of the fill slope of the box culvert extensions and the trail bed will be extended by approximately 15 feet, and approximately 15,200 square feet (0.35 acre) of the 100-year floodplain of Culley Creek and its tributary will be covered with fill.

Staff from EFLHD advise that temporary disturbance from construction activities would impact an area approximately 10 percent greater than the area of permanent impact. In the Brashear Creek 100-year floodplain the area of temporary impact would be approximately 4,500 square feet. The area of temporary disturbance in the Culley Creek 100-year floodplain would be approximately 1,500 square feet. Best management practices will be followed during and after construction, and areas of temporary disturbance will be returned to original condition as much as is practicable after construction.

Investigation of Alternative Sites

Investigation of the project area has led to the determination that there are no alternative sites for a multi-use trail along NATR that could avoid crossing the floodplains of the creeks and their tributaries. The trail cannot be constructed entirely upon the existing roadway shoulder to cross the creeks and their tributaries, because the shoulders are only six feet wide. That would not provide enough room for trail users or enough separation between trail users and vehicles for safety. Building the trail that close to the NATR motor road would require a 54-inch high barrier between the trail and the roadway, and would not provide a pleasant or aesthetically pleasing experience for motorists or trail users.

In the 1995 EA an alternative of providing four foot-wide paved lanes on the road shoulders on each side of the NATR motor road was considered but rejected. The alternative for paved shoulders was rejected for a number of reasons, primarily for safety.

Locating the trail on NATR property to either side of the roadway will require crossing the Brashear Creek and the Culley Creek floodplains, because they flow across the entire width of the NATR property boundary.

Hydrologic Risk

The 100-year floodplains will be impacted during and after construction by placement of fill associated with grading and drainage work, and through a minimal increase in surface run-off from the bridges and box culvert extensions, and the paved trail. The unvegetated surfaces of the

bridges, box culvert extensions, and the paved trail will not retain precipitation as well as the vegetated or unpaved areas they will cover. Bridges and box culvert extensions, combined with the paved trail, would add approximately 2.7 acres of impervious surface within approximately 110 acres of NATR property between Old Canton Road and the Ross Barnett Reservoir Overlook parking area. Drainage patterns would be maintained and conveyed through the trail embankment.

Conditions associated with flooding in the proposed project location are not considered particularly hazardous. Review of the U.S. Geological Survey 7.5 minute topographic map, *Madison Quadrangle, Mississippi*, indicated that the elevation levels decrease by 10 feet over a distance of a mile along Brashear Creek and along Culley Creek in the vicinity of the project. The nature of flooding in this area is low velocity sheet flooding, which allows for adequate evacuation time and easy access to evacuation routes and areas outside of the 100-year floodplain.

The EFLHD/FHWA HEC-2 modeling provided information about flows and flood characteristics of the creeks. The data for the HEC-2 modeling are from locations near the bridge across Brashear Creek, and at the downstream face of the box culvert at Culley Creek. The data represent the stream characteristics in the vicinity of the locations where the multi-year trail will cross the creeks.

Brashear Creek has a channel that ranges from 34 to 71 feet wide. During a 100-year flood, the channel flow is 16.2 to 16.4 feet deep, with channel flow velocities of 11.2 to 13.8 feet per second. During a 100-year flood, the Brashear Creek floodplain is typically 1,600 to 2,600 feet wide, with floodplain flow depths of 3.5 to 4.5 feet and floodplain flow velocities of 2 to 2.5 feet per second.

Culley Creek has a channel that ranges from 30 to 43 feet wide. During a 100-year flood, the channel flow is 7.5 to 9.5 feet deep, with channel flow velocities of 6.5 to 8.5 feet per second. During a 100-year flood, the Culley Creek floodplain is about 550 to 1,370 feet wide, with floodplain flow depths of 3 to 5 feet and floodplain flow velocities of 2.4 to 3.3 feet per second.

Old Canton Road, the NATR motor road, and Post Road are near the multi-use trail route and are all situated at least 5 feet above 100-year floodplain elevations. At Brashear Creek the NATR motor road is approximately 6 feet above the 100-year floodplain. At Culley Creek the NATR motor road is approximately 7 feet above the 100-year floodplain. Because they are at least 5 feet above the 100-year floodplain, the NATR motor road or the other nearby roads would provide practicable and readily available evacuation routes during a flood event.

MITIGATIVE ACTIONS

Mitigation will be provided by incorporating methods for protecting life and minimizing damage through appropriate procedures. Mitigation during and after construction will include sustainable design principles, appropriate elevations for the finished trail, bridge, and box culvert extensions, and Best Management Practices such as those presented in FHWA publications such as the *Work*

Zone Best Practices Guidebook, and Best Management Practices for Erosion and Sediment Control.

The multi-use trail will be designed to minimize as much as feasible the adverse environmental impacts on natural floodplain values and to minimize potential risk to lives and property. The floodplain environment will be maintained as close to its natural state as is possible using all practicable means.

The bridge, box culvert extensions, and trail will be designed to minimize scouring, deposition, or other damage to floodplains. Placement of fill on floodplains will be minimized. Free natural drainage and natural contours will be preserved to the extent practicable during design and construction.

Topsoil will be protected during construction and reused, except where it is heavily contaminated with exotic/invasive species. Topsoil contaminated with such species will be disposed of outside NATR boundaries, to preclude spreading further in disturbed areas of the project. The project area will be revegetated when construction is complete. Grading activities will be minimized and compaction in revegetated areas will be as much as is feasible. Construction activities will be curtailed beyond the project limits to ensure that soil is not unduly compacted in floodplain areas.

These mitigation measures will be in accordance with the NPS floodplain guidelines and with Executive Order 11988 (“Floodplain Management”). The facilities in the proposed project will be designed to be consistent with the intent of the standards and criteria of the National Flood Insurance Program (44 CFR Part 60), to protect life and property from the effects of flooding.

COMPLIANCE

A bridge and box culvert extensions for the NATR multi-use trail will be constructed and installed on or adjacent to the 100-year floodplains of Brashear Creek, Culley Creek, and their tributaries. The 100-year floodplains, the creeks, and the tributaries will be impacted through fill operations associated with grading and drainage work required for construction. There will be some minimal, negligible localized changes in the ability of the floodplain to convey and store floodwaters, but the trail, the bridge, and the box culvert extensions spanning the creeks and tributaries will not contribute to flooding.

Section 401 of the Clean Water Act is a certification by the state that the project impacts to water quality will not exceed the state’s water quality standards. Section 404 of the Clean Water Act requires a permit for any activity that may result in the discharge of dredged or fill material into navigable waters. Therefore, Section 401 and Section 404, and National Pollution Discharge Elimination System (NPDES) permits will be required for this project.

Section 401, Section 404, and NPDES permits will complete the requirements for federal and state permitting for this section of the multi-use trail. The 1995 environmental assessment and its finding of no significant impact (FONSI), and this SOF for Executive Order 11988 and *Procedural Manual #77-2*, combined with a wetland SOF for Executive Order 11990

("Protection of Wetlands") and *Procedural Manual #77-1, Wetland Protection*, will complete the requirements for the National Environmental Policy Act.

CONCLUSION

The protection of people and property is a high priority to NATR. The proposed multi-use trail will be constructed on NATR lands, and Brashear Creek, Culley Creek, and their tributaries flow across the entire width of the NATR property boundary. The National Park Service concludes that there is no other practicable alternative for the development proposed. With the trail and its bridges and box culvert extensions designed to prevent or reduce flood damage, the risk to life and property will be minimized.

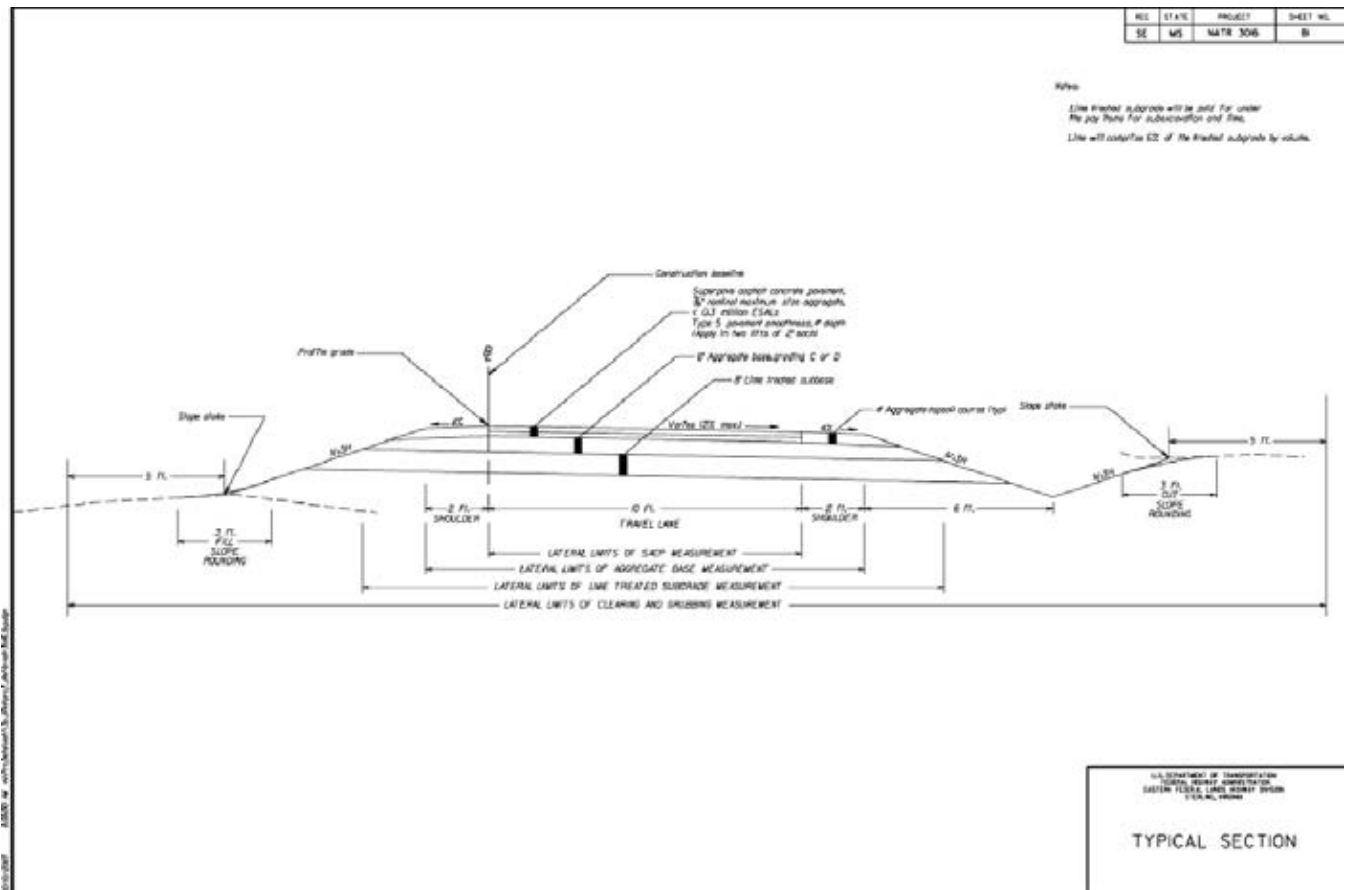
There will be no significant effect on natural or beneficial floodplain values.

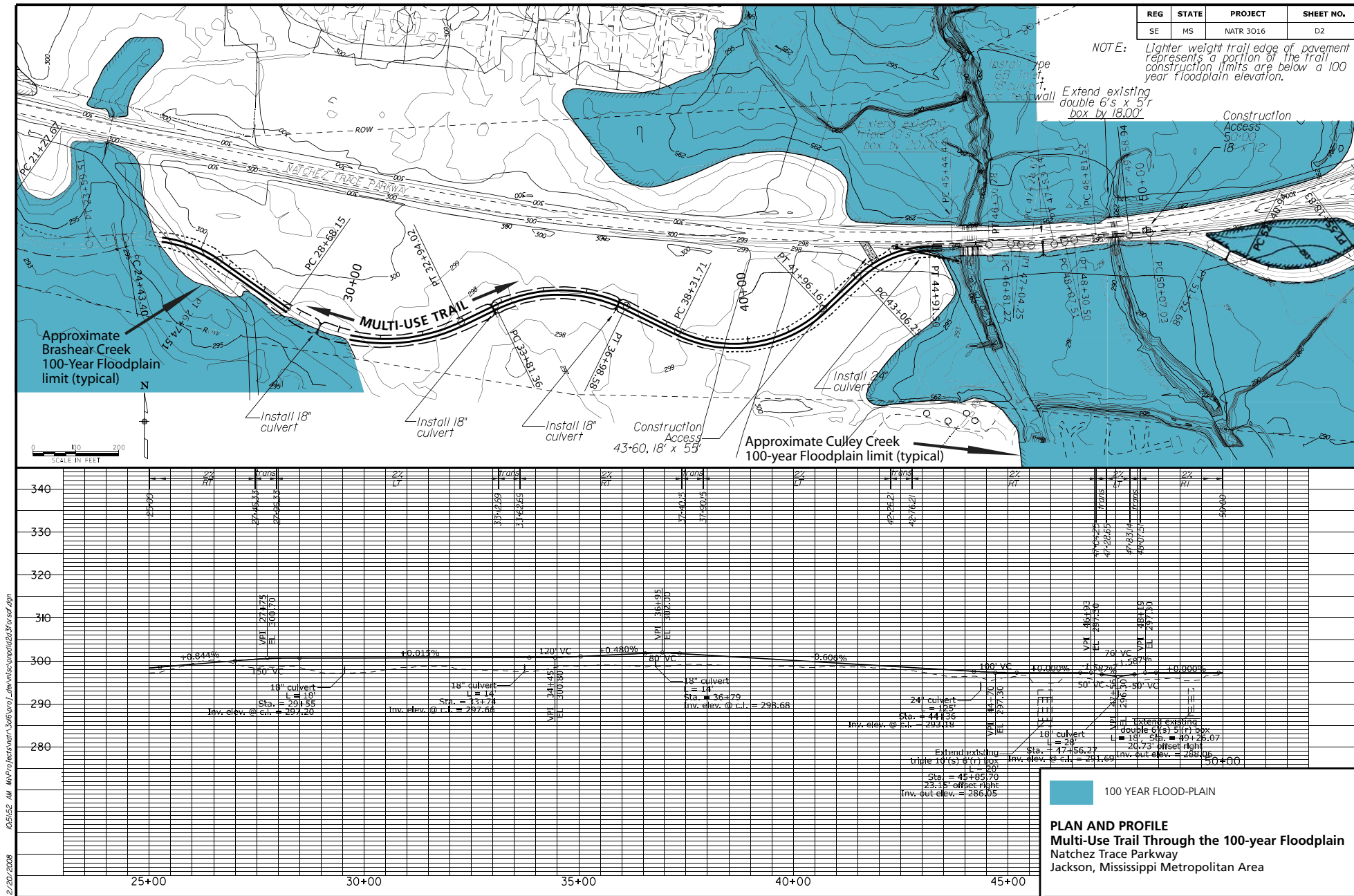
Mitigation will include good design through sustainable design principles, appropriate siting, and Best Management Practices during and after construction. The National Park Service finds the proposal to be consistent with Executive Order 11988. Maps showing the 100-year floodplains in the project area are attached.

REFERENCES CITED

- 1987 “Comprehensive Trail Plan, Natchez Trace National Scenic Trail, Alabama, Mississippi, Tennessee.” Report developed in conjunction with the NATR GMP. On file at NATR Headquarters.
- 1995 “Multi-use Trail Study, Environmental Assessment, Natchez Trace Parkway, Jackson MS; with 1996 FONSI.” On file at NATR Headquarters.
- 1999 National Park Service – Construction. Natchez Trace Parkway Construction.
- 2002 “Procedural Manual #77-2, National Park Service, Floodplain Management.”
- 2002 “Trail Feasibility Study.” By Eastern Federal Highway Division, Federal Highway Administration, in conjunction with the National Park Service. On file at NATR Headquarters.
- 2007 Memo to Files “Adequacy of National Environmental Policy Act Documentation, Multi-Use Trail, Hinds and Madison Counties, Mississippi.” On file at NATR Headquarters.

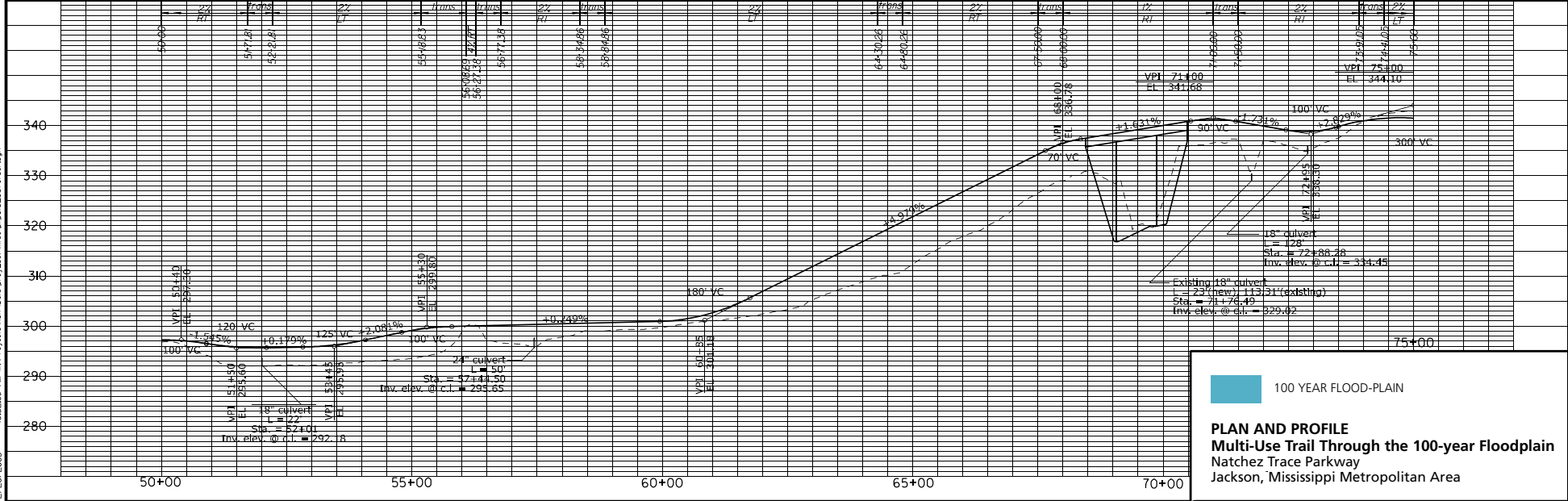
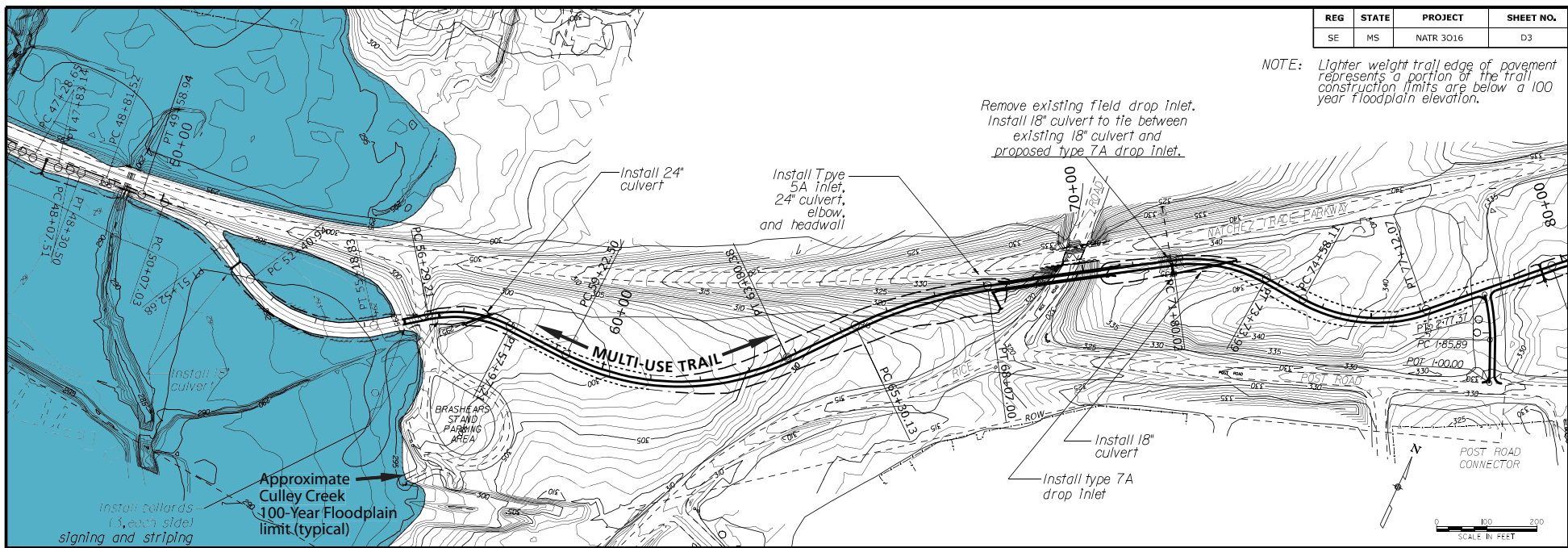
Multi-Use Trail Typical Section





REG	STATE	PROJECT	SHEET NO.
SE	MS	NATR 3016	D3

NOTE: Lighter weight trail edge of pavement represents a portion of the trail construction limits are below a 100 year floodplain elevation.



PLAN AND PROFILE
Multi-Use Trail Through the 100-year Floodplain
 Natchez Trace Parkway
 Jackson, Mississippi Metropolitan Area

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