TABLE OF CONTENTS

FHWA-INDIANA
Environmental Document

GENERAL PROJECT INFORMATION

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804660, 9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

RELEASE FOR PUBLIC INVOLVEMENT

After completing this form, I conclude that this project qualifies for the following type of Categorical Exclusion and hereby release it for NEPA public involvement (FHWA must review if Section 4(f) property is used): (Explanation)

Statewide CE (SCE): (Approval requires only INDOT signature)	
FHWA CE: (Approval requires both INDOT and FHWA signature)	
Environmental Assessment (EA)	X

Signature (FHWA must sign for FHWA EAs.) Date 2/15/2005

APPROVAL

INDOT Signature _____ Date _____

FHWA Signature _____ Date _____
(Required for FHWA CE only. EAs require a separate FONSI)

Note: Do not approve until after Section 106 public involvement and all other environmental requirements have been satisfied. (Explanation)

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

PURPOSE AND NEED

Existing Conditions:

Existing US 150/SR 56 and SR 37 are 2-lane, bituminous roadways.

US 150/SR 56 from Prospect easterly for 11.3 km (7 miles) to Indian Boundary Road (CR 225 West).

A. General Existing Parameters

1. Permanent Right-of-Way:

   Generally 9.1 m (30 ft) both sides of centerline. Short length areas, generally at bridges, have greater right-of-way widths.

2. Vertical Alignment:

   This segment contains 22 substandard curves. Intersection sight distance at some intersecting county roads is impeded by substandard vertical curves on US 150/SR 56.

3. Horizontal Alignment:

   This segment contains 11 substandard curves.

4. Land Use:

   This segment is located east of Prospect. Land use along the corridor is mostly wooded/natural, agricultural, residential with a few scattered commercial/industrial establishments.

5. Posted Speed:

   The posted speed is 72 km/h (45 mph) at the western limit of the segment. The posted speed immediately transitions to 88km/h (55 mph) for the remainder of the segment. Speed reduction warning signs varying from 48 km/h (30 mph) to 72 km/h (45 mph) exist to warn motorists of substandard horizontal and vertical alignments in certain areas of this segment.

B. Existing Roadway and Structure Design

1. Roadway Width:	7.2 m (24 ft)
2. Number of Lanes:	2 @ 3.6 m (12 ft)
3. Shoulders:	0.9 m-1.2 m (3-4 ft) usable 0.6-0.9 m (2-3 ft) paved
4. Medians:	None
5. Surface:	Bituminous
6. Sidewalks:	None
7. Grass Buffer:	None
8. Curbs and Gutters:	None

9. Functional Classification: Rural Principal Arterial

10. Bridge Structures:

Seven bridge structures exist along this segment and include the following:

- Bridge structure 150-59-0449A over the Lost River is a 3-span reinforced concrete arch, widened with prestressed concrete box beams. The clear roadway width across the bridge is 10.1 m (33 ft) and has a structure length of 69.8 m (229 ft). The bridge is currently in design for replacement under Designation Number 9611920 and will not be done as part of this project. The new bridge number will be 150-59-8097. There will be a 530 m (1739 ft) paving exception between prospect and Indian Boundary Road for construction of the bridge and approach roadways.

- Bridge structure 150-59-5937A over Lick Creek is a 2-span reinforced concrete arch that was widened with prestressed concrete box beams. The Clear roadway width across the bridge is 9.9 m (32.5 ft), and the structure is 48.2 m (158 ft) long.

- Bridge Structure 150-59-0559A over Mysterious Springs is a single span reinforced concrete arch that was widened with prestressed concrete box beams. The clear roadway width across the bridge is 10.1 m (33 ft), and the structure is 14.6 m (48 ft) long.

- Bridge structure 150-59-5938A over Lick Creek is a 2-span reinforced concrete arch that was widened with prestressed concrete box beams. The clear roadway width across the bridge is 9.9 m (32.5 ft), and the structure is 40.8 m (134 ft) long.

- Bridge structure 150-59-7760 over Lick Creek is a new structure replacing structure 150-59-0565A. The structure is a 3-span prestressed concrete I-beam bridge including two 3.6 m (12 ft) travel lanes and 2.7 m (9 ft) shoulders. The structure was replaced under Designation Number 8825495. There will be an approximate 400 m (1312 ft) paving exception between prospect and Indian Boundary Road for construction of the bridge and approach roadways.

- Bridge structure 150-59-7306 over Lick Creek is a new structure replacing structure 150-59-0566A. The structure is a 3-span prestressed concrete I-beam bridge including two 3.6 m (12 ft) travel lanes and 2.7 m (9 ft) shoulders. The structure was replaced under Designation Number 8459780. There will be an approximate 400 m (1312 ft) paving exception between prospect and Indian Boundary Road for construction of the bridge and approach roadways.

- Bridge structure 50-59-6925 for a Branch of Lick Creek is a set of twin corrugated steel pipe. The pipes have a diameter of 2.7 m (9 ft) each and are 50 m (164 ft) long. The clear roadway width across the structure is 10.1m (33 ft).

US 150/SR 56 intersection with Indian Boundary Road (CR 225 West) extending easterly along US 150/SR 56 for 3.2 km (2 miles) through the western portion of Paoli to the Paoli Town Square.

A. General Existing Parameters

1. Permanent Right-of-Way:

Generally 9.1 m (30 ft) both sides of centerline.

2. Vertical Alignment:

   Relatively flat throughout; however, two substandard vertical curves exist in the rural portion of this segment.

3. Horizontal Alignment:

   Relatively tangent throughout. No horizontal curves exist in this segment.

4. Land Use:

   Land use along this corridor varies. Within corporation limits of the Town of Paoli, the land is urban with residential and industrial/commercial land use. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural.

5. Temporary Runaround and Equipment Crossing:

   A temporary runaround will be investigated in areas of vertical realignment.

6. Design Speed:

   The posted speed limit transitions from 80 km/h (50 mph) in the rural section to 48 km/h (30 mph) Willow Creek Road to the Paoli Town Square.

B. Existing Roadway and Structure Design

1. Roadway Width:	Rural:	7.2 m (24 ft)
	Urban:	11.0 m (36 ft)
2. Number of Lanes:	Rural:	2 @ 3.6 m (12 ft)
	Urban:	2 @ 3.6 m (12 ft) 3.6 m (12 ft) parking lane
3. Shoulders:	Rural:	0.6 m (2 ft)
	Urban:	None
4. Medians:		None
5. Surface:		Bituminous
6. Sidewalks:	Paoli Town Square west to Elm St.- 1.2 m (4 ft)	
7. Grass Buffer:		None
8. Curbs and Gutters:	Rural:	None
	Urban:	Curb and Gutter from Willow Creek Road to the Paoli Town Square

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

9. Functional Classification: Rural Principal Arterial
Urban Arterial Road

10. Bridge Structures:

There is one bridge structure within this segment 150-59-6926 that was constructed in 1994. The structure is a 3-span reinforced concrete continuous slab bridge 26.2 m (86 ft) in length and 15 m (49 ft) wide. The horizontal clear roadway is 14 m (46 ft).

Beginning at the north approach of SR 37 to the Paoli Town Square and extending northerly along SR 37 through Paoli and ending 2.5 km (1.6 miles) north of the Paoli Town Square.

A. General Existing Parameters

1. Permanent Right-of-Way:

The existing right-of-way widths vary along the length of this segment. Typically, in the urban section, the right-of-way width is 18.2 to 21.3 m (60-70 feet) each side of the roadway centerline. In the rural section, the right-of-way widths from centerline range from 9.1m – 12.2 m (30 – 40 feet). Short lengths of roadway have right-of-way widths as wide as 29 m (95 feet).

2. Vertical Alignment:

Two substandard vertical curves exist within segment.

3. Horizontal Alignment:

Relatively tangent throughout. No substandard horizontal curves exist in this segment.

4. Land Use:

Land use along this corridor varies. Within corporation limits of the Town of Paoli, the land is urban and land use is residential and industrial/commercial. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural.

5. Temporary Runaround and Equipment Crossing:

In the rural section, any shoulders used as temporary runarounds will be built as full depth pavement.

6. Design Speed:

The posted speed limits range from 48 km/h (30 mph) at the Paoli Town Square to 72 km/h (45 mph) at the northern section of the segment.

B. Existing Roadway and Structure Design

1. Roadway Width: Rural: 7.2 m (24 ft)
Urban: 10.8 m (36 ft)

2. Number of Lanes:	Rural:	2 @ 3.6 m (12 ft)
	Urban:	2 @ 3.6 m (12 ft) 3.6 m (12 ft) left turn lanes at intersections (Paoli Town Square to Virginia Street). 2 @ 3.6 m (12 ft) travel lanes 1 @ 3.6 m (12 ft) left turn lane from Paul Street to Hospital Road.
3. Shoulders:	Rural:	0.9 m (3 ft)
	Urban:	None
4. Medians:		None
5. Surface:		Bituminous
6. Sidewalks:	Paoli Town Square to Virginia Street - 1.2 m (4 ft)	
7. Grass Buffer:		None
8. Curbs and Gutters:	Rural:	None
	Urban:	Curb and Gutter from Paoli Town Square to Hospital Road.
9. Functional Classification:		Rural Principal Arterial Urban Arterial Road

10.Bridge Structures:

One small structure may be replaced along this segment.

Beginning 2.5 km (1.6 miles) north of the Paoli Town Square and extending northerly along SR 37 for 16.1 km (10 miles) through the Town of Orleans and ending at Lawrence County Road 1000 South.

A. General Existing Parameters

1. Permanent Right-of-Way:

The existing right-of-way widths vary along the length of this segment. Typically, south of Orleans and through Orleans, the right-of-way is 9.1 m (30 feet) on both sides of the roadway centerline. North of Orleans to the end of the segment, the right-of-way is typically 15.2 m (50 feet) on both sides of the roadway centerline.

2. Vertical Alignment:

The vertical alignment for this section consists of 27 substandard vertical curves.

3. Horizontal Alignment:

   Relatively tangent throughout. Two substandard horizontal curves exist in this segment.

4. Land Use:

   Land use along this corridor varies. Within corporation limits of the Town of Orleans, the land is urban and land use is industrial/commercial. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural. The Lost River crosses this segment once.

5. Temporary Runaround and Equipment Crossing:

   A temporary runaround will be investigated in areas of vertical realignment.

6. Design Speed:

   The posted speed in rural sections is generally 88 km/h (55 mph). In Orleans, the posted speed limit ranges from 40 km/h (25 mph) to 64 km/h (40 mph).

B. Existing Roadway and Structure Design

1. Travel Lane Width:	Rural:	7.2 m (24 ft)
	Urban:	10.8 m (35.4 ft) south of SR 37/SR 337 intersection 12.2 m (40 ft) north of SR 37/SR 337 intersection
2. Number of Lanes:	Rural:	2 @ 3.6 m (12 ft)
	Urban:	2 @ 3.6 m (12 ft) 1 @ 4.2 m (13.8 ft) median/turn lane south of SR 37/SR 337 intersection to Harrison Street 2 @ 4.0 m (13.1 ft) and 1 @ 4.2 m (13.8 ft) median/left turn north of SR 37/SR337 intersection
3. Shoulders:	Rural:	0.9-1.2 m (3-4 ft) generally 0.6 m (2 ft) paved
	Urban:	None
4. Medians:		4.2 m (13.8 ft) south of SR 37/SR 337 intersection to Harrison Street 4.2 m (13.8 ft) north of SR 37/SR 337 intersection
5. Surface:		Bituminous

6. Sidewalks: Both sides of SR 37 from Haney Street to Middleton Drive in Orleans

7. Grass Buffer: 1.2 m (4 ft) Haney Street to Middleton Drive in Orleans

8. Curbs and Gutters:
   Rural: None
   Urban: Haney Street to Middleton Drive in Orleans

9. Functional Classification: Rural Principal Arterial
   Urban Arterial Road

10. Bridge Structures:

There are two bridge structures within this segment:

Bridge structure 37-59-4869B over the Lost River was a 3-span reinforced concrete arch. The bridge deck was replaced under Designation Number 9620310, not a part of this project. There will be an approximate 178 m (584 ft) paving exception between 2.5 km (1.6 miles) north of the Paoli Town Square and Lawrence County Road 1000 South for construction of the bridge and approach roadways.

Bridge structure 37-59-0778 over Sulphur Creek is a 2-span continuously reinforced concrete box. The bridge was rehabilitated under Designation Number 9620130, not a part of this project. There will be an approximate 178 m (584 ft) paving exception .5 km (1.6 miles) north of the Paoli Town Square and Lawrence County Road 1000 South for construction of the bridge and approach roadways.

Existing intersection traffic levels are provided on pages 1-58 of Appendix G.

Photographs are provided on pages 31-48 of Appendix A to further describe the existing conditions.

All areas of environmental concern are discussed in the Mitigation section of this document.

Need for Improvement:

The need for this project is due to the numerous substandard geometric features that exist along US 150/SR 56 and SR 37. The roadways have deficiencies such a substandard horizontal and vertical curves, lack of passing opportunities, inadequate shoulder widths for the accommodation of disabled or stopped vehicles (0.9-1.2 m (3-4 ft) throughout some areas), unforgiving roadside ditches and inadequate vehicular sight distances.

The purpose of this project is to improve the roadways on essentially the same horizontal and vertical alignment to provide a safer transportation facility for the motoring public. Improvements to this corridor are also a portion of the overall intent to provide a direct and efficient access from I-64 to the existing multilane section of SR 37 south of Mitchell.

See pages 1-58 of Appendix G for Traffic Volume Forecast for Intersections.

See Accident Analysis Forms on pages 59-79 of Appendix G.

The following are bridge projects along US 150/SR 56 from Prospect easterly for 11.3 km (7 miles) to Indian Boundary Road (CR 225 West). Existing structures contain inadequate clear roadway widths. Structures 150-59-5937A and 150-59-0559A are located within the proposed four lane section.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Bridge Structure 150-59-5937A shall be replaced with an approximate 48 m (157.4 ft) spill through type structure. The clear roadway width shall be 13.8 m (45.3 ft). The existing bridge has been given a 2002 sufficiency rating of 90.7.

Bridge structure 150-59-0559A shall be replaced with an approximate 15 m (49.2 ft) spill through type structure. The clear roadway width shall be 17.4 m (57 ft) (This structure is in the four lane passing section). The existing bridge has been given a 2002 sufficiency rating of 91.2.

Bridge structure 150-59-5938A shall be replaced with an approximate 41 m (134.5 ft) spill through type structure. The clear roadway shall be 13.8 m (45.3 ft). The existing bridge has been given a 2002 sufficiency rating of 91.2.

Bridge structure 150-59-6925 shall be replaced with an approximate 6.1 m (20 ft) by 3.0 m (10 ft) reinforced concrete box. The clear roadway width shall be 13.8 m (45.3 ft). The existing bridge has been given a 2002 sufficiency rating of 97.8.

ALTERNATIVES

Proposed Improvement:

Alternate 2 – (Preferred Alternate): Alternate 2 proposes to reconstruct US 150/SR 56/SR 37 as described in this report. This alternate would require the acquisition of approximately 54.54 ha (134.78 acres) of permanent right-of-way and would have minimal social, economic and environmental impacts. The cost to construct Alternate 2 would be $ 52,250,000.00 including $ 41,057,000 for construction, $ 9,033,000 for preliminary and construction engineering and $ 2,160,000 for right-of-way (2003 Estimate).

Alternate 2 improves the condition of the roadway and meets the needs of the Indiana Department of Transportation and the motoring public. Alternate 2 is the preferred alternate for this project.

US 150/SR 56 from Prospect easterly for 11.3 km (7 miles) to Indian Boundary Road (CR 225 West).

A. Proposed Parameters

1. Project Length:

   11.3 kilometers (7 miles)

2. Right-of-Way:

   Permanent:

   Approximately 30 to 55 m (98-180 ft) total width. Approximately 28.1 ha (69.5 acres) of additional right-of way will be needed for this segment including 3.7 ha (9.2 acres) of residential, 17 ha (42.1 acres) of agricultural and 7.4 ha (18.2 acres) of natural/wooded.

   Temporary:

   Approximately 1.3 ha (3.3 acres) of temporary right-of-way will likely be required for drive construction and equipment storage.

3. Vertical Alignment:

Substandard vertical curves will be reconstructed to provide minimum sight stopping distance and minimum intersection sight distance.

4. Horizontal Alignment:

In several areas, realignment of substandard horizontal curves will be investigated. US 150/SR 56 will be realigned from CR 550 West to approximately 1000 m (3,281 ft) east of CR 425 West. In areas of horizontal realignment, all existing public road approaches and private drives will be adjusted to tie into new alignment.

5. Land Use:

Other than land to be acquired for right-of-way for the new road construction, no land use changes are anticipated.

7. Temporary Runaround and Equipment Crossing:

All construction will be performed under traffic. The designer will be required to use temporary runarounds.

8. Design Speed: 90 km/h (55 mph)

B. Proposed Roadway and Structure Design

1. Roadway Width:	Varies from 7.2 m (24 ft) to 14.4 m (48 ft)
2. Number of Lanes:	Varies from 2 to 4 @ 3.6 m (12 ft)
3. Shoulders:	Varies from 1.5 m (5 ft) usable 1.2 m (4 ft) paved to 4.5 m (15 ft) usable 4.2 m (14 ft) paved
4. Medians:	None
5. Surface:	Bituminous
6. Sidewalks:	None
7. Grass Buffer:	None
8. Curbs and Gutters:	None
9. Functional Classification:	Rural Principal Arterial

US 150/SR 56 will be realigned from CR 550 W to approximately 1000 m (3,281 ft) east of CR 425 West.

A four lane passing section will be constructed on US 150/SR 56 from approximately 500 m (1,640 ft) west to approximately 1000 m (3280 ft) east of CR 550 W. This section will consist of four 3.6 m (12 ft) travel lanes with 1.5 m (5 ft) shoulders 1.2 m (4 ft paved). This will allow faster moving vehicles to pass slower vehicles in an area of minimal passing zones.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Bridge Structure 150-59-5937A carrying US 150/SR 56 over Lick Creek shall be replaced with an approximate 48 m (157.4 ft) spill through type structure (see aerial on page 12 of Appendix A for bridge location). The clear roadway width shall be 18 m (60 ft) including 4 lanes @ 3.6 m (12 ft) and 1.8 m (6 ft) shoulders. This structure is in the four lane passing section.

Bridge structure 150-59-0559A carrying US 150/SR 56 over Mysterious Springs shall be replaced with an approximate 15 m (49.2 ft) spill through type structure (see aerial on page 13 of Appendix A for bridge location). The clear roadway width shall be 18 m (60 ft) including 4 lanes @ 3.6 m (12 ft) and 1.8 m (6 ft) shoulders. This structure is in the four lane passing section.

Bridge structure 150-59-5938A carrying US 150/SR 56 over Lick Creek shall be replaced with an approximate 41 m (134.5 ft) spill through type structure (see aerial on page 13 of Appendix A for bridge location). The clear roadway shall be 16.2 m (54 ft) including 2 lanes @ 3.6 m (12 ft) eastbound bordered by a 1.8 m (6 ft) shoulder, and 1 lane @ 3.6 m (12 ft) westbound bordered by a 3.6 m (12 ft) shoulder.

Bridge structure 150-59-6925 shall be replaced with an approximate 6.1 m (20 ft) by 3.0 m (10 ft) reinforced concrete box (see aerial on page 15 of Appendix A for bridge location). The clear roadway width shall be 13.8 m (46 ft) including 2 lanes @ 3.6 m (12 ft) bordered by a 3.6 m (12 ft) shoulder on the south side of the roadway and a 3.0 m (10 ft) shoulder on the north side of the roadway.

All small drainage structures in good condition shall be lengthened to accommodate the wider shoulders, or replaced if they lack sufficient hydraulic and/or structural capacity.

The US 150/SR 56 intersection with Willow Creek Road will be reconstructed to improve Intersection Sight Distance.

US 150/SR 56 intersection with Indian Boundary Road (CR 225 West) extending easterly along US 150/SR 56 for 3.2 km (2 miles) through the western portion of Paoli to the Paoli Town Square.

A. Proposed Parameters

1. Project Length:

   3.2 km (2 miles)

2. Right-of-Way:

   Permanent:

   Approximately 30-55 m (98-180 ft) total width. This segment will require 4.1 ha (10.2 acres) of new permanent right-of-way including 0.4 ha (1.1 acres) of residential, 1.9 ha (4.8 acres) of commercial, 1.3 ha (3.1 acres) of natural and 0.5 ha (1.2 acres) of agricultural.

   Temporary:

   Approximately 0.8 ha (2 acres) of temporary right-of-way will be required for sidewalk reconstruction and drive construction.

3. Vertical Alignment:

   Substandard vertical curves will be reconstructed to provide minimum sight stopping distance and minimum intersection sight distance.

4. Horizontal Alignment:

   Same as existing. There are no substandard horizontal curves in this segment.

5. Land Use:

   Other than the land acquired for right-of-way, no land use changes are anticipated.

6. Temporary Runaround and Equipment Crossing:

   A temporary runaround will be investigated in areas of vertical realignment.

8. Design Speed:

   The design speed from Indian Boundary Road to Willow Creek Road will be 80 km/h (50 mph). The designer will attempt to provide a 90 km/h (55 mph) where the impacts are reasonable. From Willow Creek Road to the Paoli Town Square, the design speed will be 50 km/h (30 mph).

B. Proposed Roadway and Structure Design

1. Roadway Width:	Rural:	7.2 m (24 ft)
	Urban:	11.4 m (37.8 ft)
2. Number of Lanes:	Rural:	2 @ 3.6 m (12 ft)
	Urban:	2 @ 3.6 m (12 ft) 1 @ 4.2 m (14 ft) median/ left turn lane
3. Shoulders:	Rural:	3.3 m (11 ft) usable 3.0 m (10 ft) paved
	Urban:	None
4. Medians:		None
5. Surface:		Bituminous
6. Sidewalks:		Paoli Town Square west to Elm St.- Same as existing 1.2 m (4 ft) minimum
7. Grass Buffer:		None
8. Curbs and Gutters:	Rural:	None
	Urban:	New curb and gutter from Willow Creek Road to the Paoli Town Square

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Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

9. Functional Classification: Rural Principal Arterial
Urban Arterial Road

There is one bridge structure within this segment 150-59-6926 that was constructed in 1994. Only minor improvements including possible resurfacing of the existing pavement are anticipated.

Beginning at the north approach of SR 37 to the Paoli Town Square and extending northerly along SR 37 through Paoli and ending 2.5 km (1.6 miles) north of the Paoli Town Square.

A. Proposed Parameters

1. Project Length:

   2.5 km (1.6 miles)

2. Right-of-Way:

   Permanent:

   Approximately 0.88 ha (2.18 acres) of new permanent right-of-way is anticipated along this segment in the form of corner cuts. The extension of the urban section to the northern limits of the segment allows the majority of the roadway improvements to be done within existing right-of-way.

   Temporary:

   Approximately 0.18 ha (0.45 acres) of temporary right-of-way may be required for sidewalk reconstruction and equipment storage.

3. Vertical Alignment:

   Substandard vertical curves will be reconstructed to provide minimum sight stopping distance and minimum intersection sight distance.

4. Horizontal Alignment:

   Same as existing. There are no substandard horizontal curves in this segment.

5. Land Use:

   Other than land to be acquired for right-of-way in the form of corner cuts, no land use changes are anticipated.

7. Temporary Runaround and Equipment Crossing:

   In the rural section, any shoulders used as temporary runarounds will be built as full depth pavement.

8. Design Speed:

   The design speed from the Paoli Town Square to Hospital Road will be 50 km/h (30 mph). From Hospital Road to the end of the segment, the design speed will be 70 km/h (45 mph).

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B. Proposed Roadway and Structure Design

The urban cross section will be extended north from Hospital Road to 3.0 km (1.9 miles) north of the Paoli Town Square. The typical extended urban section will be a two lane roadway with curb.

1. Roadway Width:	Ext. Urban	7.2 m (24 ft)
	Urban:	10.8 m (36 ft)
2. Number of Lanes:	Ext. Urban:	2 @ 3.6 m (12 ft)
	Urban:	Same as existing: 2 @ 3.6 m (12 ft) travel lanes 1 @ 3.6 m (12 ft) left turn lane at intersections (Paoli Town Square to Virginia Street). Same as existing: 2 @ 3.6 m (12 ft) travel lanes 1 @ 3.6 m (12 ft) left turn lane from Paul Street to Hospital Road.
3. Shoulders:	Ext. Urban:	None
	Urban:	None
4. Medians:		1 @ 3.6 m (12 ft) left turn lane from Paul Street to Hospital Road.
5. Surface:		Bituminous
6. Sidewalks:		Same as existing 1.2 m (4 ft) minimum
7. Grass Buffer:		None
8. Curbs and Gutters:		Throughout segment
9. Functional Classification:		Rural Principal Arterial Urban Arterial Road

One small structure may be replaced along this segment.

The intersection of Hospital Road and SR 37 will be improved. A right turn lane and a left turn lane along Hospital Road will be provided for traffic entering SR37.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Beginning 2.5 km (1.6 miles) north of the Paoli Town Square and extending northerly along SR 37 for 16.1 km (10 miles) through the Town of Orleans and ending at Lawrence County Road 1000 South.

A. Proposed Parameters

1. Project Length:

   16.1 km (10 miles)

2. Right-of-Way:

   Permanent:

   Approximately 30-60 m (98-197 ft) total width. Approximately 21.4 ha (52.9 acres) of additional right-of-way will be required including 6.9 ha (17.1 acres) of residential, 3.4 ha (8.3 acres) commercial and 11.1 ha (27.5 acres) of agricultural.

   Temporary:

   Approximately 0.73 ha (1.81 acres) of temporary right-of-way may be required for sidewalk reconstruction.

3. Vertical Alignment:

   Substandard vertical curves will be reconstructed to provide minimum sight stopping distance and minimum intersection sight distance.

4. Horizontal Alignment:

   Substandard horizontal curves will be lengthened to provide minimum radii requirements causing the relocation of one barn.

5. Land Use:

   Other than the land acquired for right-of-way, no land use changes are anticipated.

6. Temporary Runaround and Equipment Crossing:

   A temporary runaround will be investigated in areas of vertical realignment.

7. Design Speed:

   The design speed will be 90 km/h (55 mph) in rural sections and 60 km/h (35 mph) in urban sections.

B. Proposed Roadway and Structure Design

1. Roadway Width:	Rural:	7.2 m (24 ft)
	Urban:	10.8 m (36 ft)
2. Number of Lanes:	Rural:	2 @ 3.6 m (12 ft)
	Urban:	2 @ 4.2 m (14 ft) 1 median/left turn lane

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
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3. Shoulders:	Rural:	3.3 m (11 ft) usable 3.0 m (10 ft) paved
	Urban:	None
4. Medians:		Haney Street to CR 810 will have a median/left turn lane (urban section in Orleans)
5. Surface:		Bituminous
6. Sidewalks:		1.2 m (4 ft) Extended north from Middleton drive to CR 810 N in Orleans.
7. Grass Buffer:		None
8. Curbs and Gutters:	Rural:	None
	Urban:	Extended north from Middleton Drive to CR 810 N in Orleans.
9. Functional Classification:		Rural Principal Arterial Urban Arterial Road

A four lane passing section will be constructed from just north of the Lost River Bridge, 6.34 km (3.9 miles) north of US 150, to approximately 1300 m (4265 ft) north of the Lost River bridge. The designer may choose to extend the length of the four lane passing section should the effects be reasonably accommodated. The typical section will consist of four 3.6 m (12 ft) travel lanes with 1.5 m (5 ft) shoulders, 1.2 m (4 ft) paved.

The CR 175 N/SR 37 and the CR 25 E/SR 37 intersections will be closed due to poor alignment and substandard Intersection Sight Distance. CR 200 N will be extended to provide an intersection with SR 37.

CR 490 N will remain on existing horizontal alignment. The grade of the intersection will be raised in order to provide adequate sight distance. CR 490 N and CR 500 N will require passing blisters along SR 37.

All small drainage structures will be lengthened or replaced to accommodate the wider shoulders.

Estimated ready for letting year is 2006.

Other alternatives considered – **Describe Section 4(f) and Section 404 avoidance alternatives and measures to minimize harm.**

Alternate 1 – (Do Nothing): Alternate 1 proposes that no improvements be made to the existing facility. This would eliminate any costs or environmental impacts due to construction. However, Alternate 1 would not improve the condition of the roadway. This alternate would not correct the existing substandard horizontal and vertical alignment along US 150/SR 56/SR 37, thus maintaining the existing poor vehicle sight distances. There would be no addition of passing lanes to provide the opportunity for faster moving vehicles to pass slower vehicles in an area of minimal passing zones. Inadequate shoulder widths and unforgiving roadside ditches would remain denying accommodation of disabled or stopped vehicles. The Do-Nothing alternate is not consistent with the overall intent to provide direct and efficient access from I-64 to the existing multilane section of SR 37 south of Mitchell. Alternate 1 does not meet the needs of the Indiana Department of Transportation, nor does it meets the needs of the motoring public. This alternate is, therefore, not the preferred alternate for this project.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Terminl:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Alternates studied within the portion of US 150/SR 56 beginning at the intersection with Indian Boundary Road (CR 225 West) and extending easterly along US 150/SR 56 for 3.2 km (2 miles) through the western portion of Paoli to the Paoli Town Square.

Three alternates have been developed for the segment of US 150/SR 56 from approximately 0.85 km (0.53 mile) west of CR 590 W to approximately 0.1 km (0.06 mile) west of CR 590 W (see page 25 of Appendix A for aerial map of this location). The following considerations were examined during evaluation of the three alternates:

1. "Just Off The Road Cave", a dry karst feature, is located just north of the existing US 150/SR 56 alignment. Rock cuts to achieve desirable shoulder width have the potential to disturb the cave.

2. The area of land south of the existing roadway and Lick Creek is flat and is being used as an agricultural field. The Flood Hazard Boundary Map (see page 27 of Appendix A) delineates the area as a flood hazard zone.

3. Lick Creek parallels the existing road on the south side.

Alternates for this portion of the roadway are as follows:

Alternate 2A: US 150/SR 56 would be realigned from CR 590 W to approximately 1000 m (3281 ft) (see page 25 of Appendix A for suggested alignment of this alternate). This new alignment would eliminate the existing horizontal curves and provide minimum sight distance for CR 590 W. However, two new bridge structures would be required to cross Lick Creek. This is located within the flood hazard zone mentioned above. Due to the increased cost for bridge construction and environmental impacts to the floodplain, as well as, to Lick Creek, this Alternate is not the preferred alternate.

Alternate 2B: US 150/SR 56 would be realigned at the existing substandard horizontal curves 2.103 and 2.104. The horizontal curves would be lengthened to provide at least a 305 m (1000 ft) radius. Lick Creek would require relocation, and an approximate 320 m (1050 ft) channel would be constructed just south of the proposed alignment (see page 25 of Appendix A for suggested alignment of both US 150/SR 56 and Lick Creek). Due to the excessive impacts associated with relocating Lick Creek within the floodplain hazard zone, this alternate is not preferred.

Alternate 2C (Preferred): US 150/SR 56 will remain on its present alignment through the aforementioned section of the roadway. Usable 3.3 m (11 ft) shoulders will be provided throughout the length, and the use of gabion walls or another acceptable type of retaining wall will be required along Lick Creek.

Alternates studied within the portion of SR 37 beginning 2.5 km (1.6 miles) north of the Paoli Town Square and extending northerly along SR 37 for 16.1 km (10 miles) through the Town of Orleans and ending at Lawrence County Road 1000 South.

Two alternates were examined for the intersection of CR 490 N and SR 37. Alternates for this portion of the roadway are as follows:

Alternate 5A: This alternate would realign CR 490 N approximately 150 m (492 ft) to the north to intersect with the intersection of SR 37 and CR 500 N (see page 26 of the Appendix A for suggested alignment of Alternate 5A). Two opposing passing blisters or left turn lanes would be required at the proposed intersection.

Alternate 5B (Preferred): CR 490 N will remain on its existing horizontal alignment. The grade of the intersection will be raised in order to provide adequate intersection sight distance. A grade raise of greater than 1.5 m (5 ft) is anticipated. CR 490 N and CR 500 N will require passing blisters along SR 37. Left

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

turn lanes were considered and discarded due to the distance between the intersections with SR 37 of these two roads.

Alternate 5B was chosen as the preferred Alternate due to the lack of CR 490 N/CR 500 N through traffic. The majority of traffic movements are southbound on SR 37.

STATEWIDE CATEGORICAL EXCLUSION DETERMINATION

Note: If all answers below are "no", then INDOT can approve SCE. For any answered "yes", explain in the Support Documentation section why significant impacts will not occur and seek FHWA approval of CE.

	No	Yes
Travel Patterns – Does this project include a bypass or convert a local street into a higher order roadway? Will this project have an impact on travel patterns?	X	
Relocations – Will the project require more than five (5) relocations (any combination of residential and/or commercial displacements that total more than five relocations)?	X	
Historic Resources – Has the Section 106 consultation resulted in an "adverse effect" finding on any historic property?	X	
Sections 4(f) – Does the project require the use of any Section 4(f) property?		X
Air Quality/Land Use – Is (1) the project is a non-attainment or maintenance area, (2) does the current design concept and scope add capacity, and (3) is this current design concept and scope NOT incorporated in a Conforming MPO 20 year Transportation Plan (TP)?	X	
Noise – Is a noise analysis required for this project?	X	
Wetlands – Is an individual Army Corps of Engineers permit required for this project?	X	
Sole Source Aquifers – Is a detailed groundwater impact assessment required for this project?	X	
Threatened and Endangered Species – Has consultation with the USFWS/IDNR resulted in an adverse effect determination on any federally listed or proposed threatened or endangered species or critical habitat?	X	

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

SUPPORT DOCUMENTATION

Early Coordination - List (1) Parties to whom the early coordination letter was sent, (2) indicate whether the party responded and if so the date of the response, and (3) attach correspondence.

Agency	Response
Department of Natural Resources	
Division of Water	11/19/2002
	11/10/2004
Division of Historic Preservation and Archaeology	10/30/2001
	10/28/2002
	10/29/2002
	11/12/2002
	12/13/2002
	02/20/2003
	09/24/2003
	12/11/2003
	02/09/2004
	09/28/2004
	11/09/2004
U.S. Fish and Wildlife Service	10/04/2002
National Park Service	No Response
Natural Resources Conservation Service	10/09/2002
D.O.T., Division of Aeronautics	08/19/2002
Indiana Geological Survey	08/19/2002
Department of the Army	10/18/2002
Indiana Department of Environmental Management	08/26/2002
Indiana State University Anthropology Laboratory	08/22/2002 (Revised 09/12/2003)
	01/16/2003
	09/22/2003
	01/14/2004
	06/21/2004
Ball State University (ARMS)	01/17/2003
	07/19/2004
Archaeological Consultants of the Midwest, Inc.	11/30/2002
Landmark Archaeological and Environmental Services, Inc.	11/22/2002
Wilma Davis, Orange County Historian	No Response
Bettye Kemple, Orange County Historical Society	No Response
Maxine Kruse, Lawrence County Historian	11/06/2004
Helen Burchard, Lawrence County Historical Society	No Response
Greg Sekula, Southern Regional Office, HLFI	No Response
John M. Harris, Indiana Historical Society	No Response

Right of Way/Land Use/Natural Areas/Nature Preserves – Provide permanent and temporary right-of-way amounts in acres. Break proposed right-of-way amount into land use classification and give typical and maximum right-of-way widths (existing and proposed). Describe any natural areas and nature preserves within the project area.

US 150/SR 56 from Prospect easterly for 11.3 km (7 miles) to Indian Boundary Road (CR 225 West).

Permanent Right-of-Way:

Existing:

Generally 9.1 m (30 ft) both sides of centerline. Short length areas at bridges have greater right-of-way widths.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Proposed:

Approximately 30-55 m (98-180 ft) total width. Approximately 28.1 ha (69.5 acres) of additional right-of way will be needed for this segment including 3.7 ha (9.2 acres) of residential, 17 ha (42.1 acres) of agricultural and 7.4 ha (18.2 acres) of natural/wooded.

Temporary Right-of-way:

Approximately 1.3 ha (3.3 acres) of temporary right-of-way will likely be required for drive construction and equipment storage.

Land Use:

This segment is located east of Prospect. Land use along the corridor is mostly wooded/natural, agricultural, residential with a few scattered commercial/industrial establishments. Other than land to be acquired for right-of-way for the new road construction, no land use changes are anticipated.

US 150/SR 56 intersection with Indian Boundary Road (CR 225 West) extending easterly along US 150/SR 56 for 3.2 km (2 miles) through the western portion of Paoli to the Paoli Town Square.

Permanent Right-of-Way:

Existing:

Generally 9.1 m (30 ft) both sides of centerline

Proposed:

Approximately 30-55 m (98-180 ft) total width. This segment will require 4.1 ha (10.2 acres) of new permanent right-of-way including 0.4 ha (1.1 acres) of residential, 1.9 ha (4.8 acres) of commercial, 1.3 ha (3.1 acres) of natural and 0.5 ha (1.2 acres) of agricultural.

Temporary Right-of-way:

Approximately 0.8 ha (2 acres) of temporary right-of-way may be required for sidewalk reconstruction and drive construction.

Land Use:

Land use along this corridor varies. Within corporation limits of the Town of Paoli, the land is urban with residential and industrial/commercial land use. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural. Other than land to be acquired for right-of-way for the new road construction, no land use changes are anticipated.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Beginning at the north approach of SR 37 to the Paoli Town Square and extending northerly along SR 37 through Paoli and ending 2.5 km (1.6 miles) north of the Paoli Town Square.

Permanent Right-of-way:

Existing:

The existing right-of-way widths vary along the length of this segment. Typically, in the urban section, the right-of-way width is 18.2 to 21.3 m (60-70 feet) each side of the roadway centerline. In the rural section, the right-of-way widths from centerline range from 9.1m – 12.2 m (30 – 40 feet). Short lengths of roadway have right-of-way widths as wide as 29 m (95 feet).

Proposed:

Approximately 0.88 ha (2.18 acres) of new permanent right-of-way is anticipated along this segment in the form of corner cuts. The extension of the urban section to the northern limits of the segment allows the majority of the roadway improvements to be done within existing right-of-way.

Temporary:

Approximately 0.18 ha (0.45 acres) of temporary right-of-way may be required for sidewalk reconstruction and equipment storage.

Land Use:

Land use along this corridor varies. Within corporation limits of the Town of Paoli, the land is urban and land use is residential and industrial/commercial. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural. Other than land to be acquired for right-of-way in the form of corner cuts, no land use changes are anticipated.

Beginning 2.5 km (1.6 miles) north of the Paoli Town Square and extending northerly along SR 37 for 16.1 km (10 miles) through the Town of Orleans and ending at Lawrence County Road 1000 South.

Permanent Right-of-Way:

Existing:

The existing right-of-way widths vary along the length of this segment. Typically, south of Orleans and through Orleans, the right-of-way is 9.1 m (30 feet) on both sides of the roadway centerline. North of Orleans to the end of the segment, the right-of-way is typically 15.2 m (50 feet)on both sides of the roadway centerline.

Proposed:

Approximately 30-60 m (98-197 ft), 15 m (49 feet) on both sides of the roadway centerline. Approximately 21.4 ha (52.9 acres) of additional right-of-way will be required including 6.9 ha (17.1 acres) of residential, 3.4 ha (8.3 acres) commercial and 11.1 ha (27.5 acres) of agricultural.

Temporary Right-of-Way:

Approximately 0.73 ha (1.81 acres) of temporary right-of-way may be required for sidewalk reconstruction.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Land Use:

Land use along this corridor varies. Within corporation limits of the Town of Orleans, the land is urban and land use is industrial/commercial. Outside the corporation limits the land is rural and land use consists of agricultural, residential, industrial/commercial and wooded/natural. The Lost River crosses this segment once. Other than the land acquired for right-of-way, no land use changes are anticipated.

Proposed Permanent Right-Of Way	Acres of Commercial	Acres of Residential	Acres of Agricultural	Acres of Natural	Relocations	Total Acres	Acres of Temporary
US 150/SR 56 from Prospect to Indian Boundary Road (CR 225 West)	0	3.7 ha (9.2 acres)	17 ha (42.1 acres)	7.4 ha (18.2 acres)	0	28.1 ha (69.5 acres)	1.3 ha (3.3 acres)
US 150/SR 56 intersection with Indian Boundary Road (CR 225 West) to the Paoli Town Square	1.9 ha (4.8 acres)	0.4 ha (1.1 acres)	0.5 ha (1.2 acres)	1.3 ha (3.1 acres)	0	4.1 ha (10.2 acres)	1.3 ha (3.3 acres)
North approach of SR 37 to the Paoli Town Square to 2.5 km (1.6 miles) north of the Paoli Town Square	0.44 ha (1.09 acres)	0.44 ha (1.09 acres)	0	0	1	0.88 ha (2.18 acres	0.18 ha (0.45 acres)
2.5 km (1.6 miles) north of the Paoli Town Square to Lawrence County Road 1000 South	3.4 ha (8.3 acres)	6.9 ha (17.1 acres)	11.1 ha (27.5 acres)	0	2	21.4 ha (52.9 acres)	0.73 ha 1.81 acres)

There are no natural areas or nature preserves present within the project area.

Flood Plain Encroachments/Stream Channel/Waterway/Groundwater/Water Table – Describe any effects the project might have on flood plain, stream channel, waterways, groundwater, and the water table. If there are homes within the floodplain, within 1000' up and downstream, make a note of it here.

US 150/SR 56 is located within floodplain and there are homes located within the floodplain adjacent to the roadway. The project will include bridge structure replacements over the Lost River, Lick Creek and Mysterious Springs, as well as, numerous small drainage structures throughout the project. The proposed roadway and structures will be reconstructed such that backwater surface elevations are not expected to significantly increase. As a result there will be no significant adverse impacts on natural and beneficial floodplain values; there will be no significant change in flood risks; and there will be no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant. A hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. A summary of this study will be included with the Field Check Plans and also in the Design Summary Report. An Indiana Department of Natural Resources Certificate of Approval of Construction in a Floodway permit will be required prior to construction within floodway boundaries. Floodplain maps are located on pages 27-30 of Appendix A. There will be no impacts to groundwater, or the water table.

Relocations – Describe relocations.

Three relocations are anticipated as a result of this project. The acquisition and relocation program will be conducted in accordance with 49 CFR 2. Relocation resources are available to all relocatees without discrimination. No other relocations are anticipated as a result of this project.

Relocations:
A: House – See photo on page 49 of Appendix A and structure location on page 16 of Appendix A.
B: House – See photo on page 49 of Appendix A and structure location on page 17 of Appendix A.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

C: House – See photo on page 50 of Appendix A and structure location on page 18 of Appendix A.
Removal:
D: Barn – See photo on page 18 of Appendix A and structure location on page 18 of Appendix A.
E: Utility – See photos on pages 51-52 of Appendix A and structure locations on page 22 of Appendix A.
F: Sign and Booth – See photos on pages 53-54 of Appendix A and structure locations on page 23 of Appendix A.

Historic Resources –**Summarize the Section 106 process including any historic and archaeology resources.**

Historic information was sent to the individuals listed below on August 26, 2002 inviting them to become consulting parties for this project. Maxine Kruse, Lawrence County Historian, and Greg Sekula, Southern Regional office of Historic Landmarks Foundation of Indiana, responded requesting to be a consulting party for this project. John M. Harris responded indicating he did not want to be a consulting party for this project. No other responses were received.

Wilma Davis, Orange County Historian	No Response
Bettye Kemple, Orange County Historical Society	No Response
Maxine Kruse, Lawrence County Historian	Yes
Helen Burchard, Lawrence County Historical Society	No Response
Greg Sekula, Southern Regional Office, HLFI	Yes
John M. Harris, Indiana Historical Society	No

The Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology (DHPA) was sent project information on September 12, 2001 requesting a determination of eligibility of properties near the proposed project. The DHPA responded in a letter dated October 30, 2001 (see pages 3-5 of Appendix B) requesting additional information. Potentially eligible structures within the Area of Potential Effect (within 100 m each side of the proposed roadway) were labeled on a site plan and included within a Draft 36 CFR 800.11(e) document with a recommended finding of "No Adverse Effect." A "No Adverse Effect" finding was appropriate based on the review of the Indiana National Register Information Service and the Lawrence County Interim Report. The National Register Information Service listed four structures and the Paoli Historic District in Orange County and within the APE for this project. The Lawrence County Interim Report indicated three sites along SR 37 within segment 5 of the proposed project that were given Contributing or Notable ratings. These identified sites were listed with an explanation of potential impacts as a result of the proposed project. This information was submitted to the DHPA on August 23, 2002 requesting a response on the evaluation of properties in the APE. The DHPA responded on October 29, 2002 (see pages 7-8 of Appendix B) with a letter requesting information for additional sites, the Orleans Historic District and 1 structure along US 150/SR 56 between prospect and Indian Boundary Road. Potential impacts to these sites were discussed in a meeting with the DHPA on November 1, 2002 and submitted in writing the same day. The DHPA responded in a letter dated November 12, 2002 (see page 9 of Appendix B) stating that they did not believe the integrity of the Orleans Historic District, nor the structure located along US 150/SR 56 would be diminished as a result of this project.

An Archaeological Records Review was completed by Indiana State University Anthropology Laboratory on August 22, 2002, and revised on September 12, 2002 (see pages 1-24 of Appendix C), recommending an archaeological reconnaissance for the entire proposed project corridor with the exception of those areas previously examined and found to hold no archaeological resources. The DHPA concurred with the recommendations of the revised records search in a letter dated October 28, 2002 (see page 6 of Appendix B). Archaeological consultants of the Midwest, Inc., completed an archaeological field reconnaissance of the proposed project area between Prospect and Paoli, on December 2, 2002 (see pages 73-197 of Appendix C), recommending archaeological subsurface investigations of the floodplain along the project corridor and site 12Or740 within the proposed project area. Landmark Archaeological and Environmental Services, Inc. completed an archaeological field reconnaissance of the proposed project area from the north side of the Paoli Town Square to Mitchell, on November 22, 2002 (see pages 25-72 of Appendix C) recommending subsurface investigations in areas containing alluvial soils.

The reports were submitted to the DHPA for concurrence and recommendations. The SHPO responded in a letter

dated December 13, 2002 (see pages 10-11 of Appendix B) concurring with the archaeological reconnaissance reports, and also requesting that an additional site, 12Or741 be investigated. The proposals for geoarchaeological investigation of the floodplain and alluvial soils (ISU) (see pages 198-203 of Appendix C) and the testing of sites 12Or740-741 (BSU) (see page 204-212 of Appendix C) were approved by the DHPA in a letter dated February 20, 2003 (see page 12 of Appendix B).

Indiana State University Anthropology Laboratory completed a geoarchaeological investigation of selected areas along US 150 on September 22, 2003 (see pages 213-235 of Appendix C). The report generated from this investigation indicated that results were not as definitive as expected and that the Giddings coring used should be viewed as a preliminary assessment of buried site potential. Based on the aforementioned report, it was recommended that additional investigation be performed at selected sites. The DHPA responded in a letter dated December 11, 2003 (see pages 14-15 of the Appendix B) stating that given the results of the geomorphological investigation, they concur with the conclusions and recommendations of the archaeological contractor. Moreover, minimal additional investigation else where in the alluvial portions of the proposed right-of-way is needed to confirm the results of the other probes. A revised proposal dated January 14, 2004 (see pages 236-239 of Appendix C) was submitted sent to INDOT and DHPA on January 19, 2004. The DHPA responded in letter dated February 9, 2004 (see pages 15-1t0 15-2 of Appendix B) stating that the subsurface trenching methodology would be acceptable with the listed conditions, and the that the proposed subsurface reconnaissance may proceed.

Indiana State University Anthropology Laboratory completed the Geoarchaeological Subsurface Investigation of Selected Areas Along US 150 on June 21, 2004 (see pages 240-270 of Appendix C). During this reconnaissance, one previously undiscovered archaeological site was discovered (Site 12Or757). While the exact extent of the site is unknown, it appears that the occupation(s) represented are ephemeral, serving as short-term campsites of limited significance. Site 12Or757 does not appear to meet the requirements for state or national registers with little potential to contribute significantly to our knowledge of local, state, regional, or national history. Little would likely be gained by further investigation of site 12Or757, as it is anticipated that no significant data would likely be added beyond that which has already been recovered. Therefore, no further archaeological assessments of the project area are recommended. Archaeological Resource Management Service (BSU) completed Archaeological Testing of Sites 12-Or-740 and 12-Or-741 on July 19, 2004 (see pages 271-282 of Appendix C). Based on the results of the testing, Sites 12-Or-740 and 741 are not significant. The soil at both sites was severely eroded and no subsurface archaeological deposits were found at either site. It was recommended that the project be allowed to proceed without additional archaeological assessment.

Both reports (ISU and BSU) were submitted to the DHPA on July 29, 2004 for review and comment. The DHPA responded in a letter dated September 28, 2004 (see pages 15-3 to 15-4 of Appendix B) stating that based on the documentation available to the staff of the Indiana SHPO, and the results of the archaeological testing and subsurface reconnaissance, they have not identified any historic buildings, structures, districts, objects, or archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects. The recommended Area of Potential Effect (APE) and determination of eligibility of, and effect on historic properties within the APE were submitted to the Federal Highway Administration (FHWA) on September 29, 2004. The FHWA approved the recommended APE and determination of eligibility and "no adverse effect" finding on October 13, 2004 (see page 1 of Appendix H). The FHWA finding was submitted to consulting parties on October 20, 2004 for thirty days to review and comment on the "no adverse effect" finding. The SHPO responded in a letter dated November 9, 2004 (see page 15-5 of Appendix B) in concurrence with the FHWA's October 13, 2004 finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be adversely affected by this project. Maxine Kruse, Lawrence County Historian, responded in a letter dated November 6, 2004 (see page 36-2 of Appendix B) indicating that there is nothing of sufficient reason to effect historic properties in Lawrence County. A legal ad was published in a local publication on October 21, 2004 (see page 36-1 of Appendix B) offering the public the opportunity to make final comments on the effect finding. One comment was received from Brenda Cornwell, resident of Paoli, dated October 29, 2004 (see page 36-3 of Appendix B) commenting on the sidewalk and tree plots located along US 150/SR56 west of the Town Square. It is anticipated that a waterline utility project proposed by the Town of Paoli will impact the existing sidewalks and trees in this area. The existing sidewalks will be

destroyed to gain access to the waterline. Damage to the tree roots resulting in their removal is likely. An additional response was received from Brenda Cornwell on November 23, 2004 (see page 36-4 of Appendix B), beyond the 30 day public comment period, with additional comments regarding the sidewalk and tree plots located along US 150/SR56 west of the Town Square. All of the requirements of the FHWA under Section 106 have been fulfilled.

Sections 4(f) – **If Section 4(f) property is being used, indicate which type of Section 4(f) evaluation applies. Also, in a few paragraphs describe below or attach (1) a list of 4(f) properties near the project, (2) a description and list of the 4(f) properties impacted, (3) the views of official with jurisdiction, and (4) any appropriate photos or plan sheets.**

Public Parks, Recreation Lands, and Wildlife and Waterfowl Refuges		Historic sites	X	Bikeways and Walkways	
		Historic bridges		FULL (DOI & legal review)	

A city park is located in the southeast quadrant of the intersection of US 150/SR 56 and Elm Street. No permanent right-of-way will be acquired from this location.

The proposed project will not use land from a publicly owned park, recreation area, or wildlife and waterfowl refuge.

There are nine historic structures and one historic district located within the APE for this project that have been listed or considered eligible for inclusion in the National Register of Historic Places. The FHWA issued a "no adverse effect" finding on October 13, 2004 (see page 1of Appendix H). The Indiana SHPO concurred with the FHWA's finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be adversely affected by this project in a letter dated November 9, 2004 (see page 15-5 of Appendix B).

The following is an evaluation of alternatives to determine if there is a feasible and prudent alternative to the use of adjacent eligible properties. Further discussion and photographs of each site can be found in the FHWA approved 800.11(e) documentation in Appendix H.

1) The Newberry Friends Meeting House - The preferred alternate as described in the report will improve the roadway adjacent to the Newberry Friends Meeting House. The proposed improvements will require approximately 0.01 hectare (0.03 acre) of new permanent right-of-way from this historic property.

(Do Nothing): The Do Nothing alternate proposes that no improvements be made to the existing facility. This would eliminate any costs or environmental impacts due to construction. However, this alternate would not improve the condition of the roadway. This alternate would not correct the existing substandard horizontal and vertical alignment along US 150/SR 56/SR 37, thus maintaining the existing poor sight distances. There would be no addition of passing lanes to provide the opportunity for faster moving vehicles to pass slower vehicles in an area of minimal passing zones. Inadequate shoulder widths and unforgiving roadside ditches would remain denying accommodation of disabled or stopped vehicles. The Do-Nothing alternate is not consistent with the overall intent to provide direct and efficient access from I-64 to the existing multilane section of SR 37 south of Mitchell.

Alternate 1 does not meet the needs of the Indiana Department of Transportation, nor does it meets the needs of the motoring public. This alternate is, therefore, not the preferred alternate for this project.

(Improve the Highway without using the adjacent historic site): To avoid the acquisition of 4(f) land, US 150/SR 56 would have to be shifted to the north approximately 6.4 m (21 ft) towards the intersection with Indian Boundary Road. The roadway shift would increase the curve located to the east of the intersection and reduce ISD. The relocation of two mobile homes and two residences would likely be required to transition back into the existing alignment before the bridge over the branch of Lick Creek located west of the intersection. If adequate distance is not available to complete the transition, the bridge would have to be shifted to the north resulting in additional impacts to the waterway.

Loss of residential structures, additional environmental impacts and increased safety concern for the motoring public would be extraordinary in magnitude when compare to the acquisition of the small piece of 4(f) property. It is feasible, but not prudent to avoid the section 4(f) property by roadway design or transportation system management techniques. Therefore, this alternate was discarded.

(Build an improved facility on new location without using the historic site): This alternate suggests avoiding section 4(f) lands by realigning 1.2 km (.76 mile) of roadway starting 0.8 km (0.5 mile) west of Indian Boundary Road. US 150/SR 56 would be realigned 50 m (164 feet) to the north of the existing alignment at the existing intersection of US 150/SR56 and Indian Boundary Road. This alternate would result in substantial adverse social, economic, and environmental impacts to the surrounding area. The new alignment would require approximately 4.9 ha (12.1 acres) of new permanent right-of-way causing three residential and one commercial relocation. Two mobile homes will also be relocated. The new alignment would also require 3.5 ha (8.6 acres) of productive farmland, 1 ha (2.5 acres) of tree clearing and additional channel work for the relocation of the bridge over the Branch of Lick Creek. A new alignment would increase costs substantially with the purchase of the new right-of-way and increased construction costs. The numerous relocations of both residential and commercial establishments and the impacts to wooded and farm areas are extraordinary in magnitude when compared with the proposed use of undeveloped Section 4(f) lands. This alternate may be feasible, but it is not prudent. Therefore, this is not the preferred alternate.

2) **Photograph 7-22 Victorian House** - The preferred alternate as described in the report will construct a four lane passing area off the north approach of the Lost River Bridge and extend beyond this historic structure. It is anticipated that the proposed improvements will require approximately 0.15 hectare (0.37 acre) of new permanent right-of-way from this historic property.

(Do Nothing): The Do Nothing alternate proposes that no improvements be made to the existing facility. This would eliminate any costs or environmental impacts due to construction. However, this alternate would not improve the condition of the roadway. This alternate would not construct passing lanes to provide the opportunity for faster moving vehicles to pass slower vehicles in an area of minimal passing zones. Inadequate shoulder widths and unforgiving roadside ditches would remain denying accommodation of disabled or stopped vehicles. The Do-Nothing alternate is not consistent with the overall intent to provide direct and efficient access from I-64 to the existing multilane section of SR 37 south of Mitchell.

The Do-nothing alternate does not meet the needs of the Indiana Department of Transportation, nor does it meets the needs of the motoring public. This alternate is, therefore, not the preferred alternate for this project.

(Improve the Highway without using the adjacent historic site): The SR 37 roadway can be improved within existing right-of-way adjacent to this structure. However, roadside ditch construction and the addition of a small pipe structure underneath the driveway at this location requires permanent right-of-way acquisition. Improving the roadway with 2 @ 3.6 m (12 ft) travel lanes bordered by 3.3 m (11 ft) shoulders, 3.0 m (10 ft) paved, within existing right-of-way, would not eliminate the land acquisition for drainage work. This would also not allow the opportunity for faster moving vehicles to pass slower vehicles in an area of minimal passing zones. The majority of SR 37 contains vertical and horizontal curves that do not safely allow for passing opportunities.

It is not possible to improve the roadway adjacent to this structure without the acquisition of new permanent right-of-way. Roadside ditch construction and the installation of a small pipe structure will have to constructed and maintained within INDOT right-of-way. It is feasible, but it is not prudent to avoid the acquisition of 4(f) property at this location.

(Build an improved facility on new location without using the historic site): To avoid the acquisition of 4(f) land, US 150/SR 56 would have to be shifted to the west approximately 15.8 m (52 ft) away from the historic structure. The roadway shift would add a curve to an existing straight alignment. The bridge over the

Lost River, approximately 140 m (460 ft) south of the historic property, would also have to be reconstructed and shifted to the west to allow for adequate transition into the newly relocated roadway resulting in additional environmental impacts to this sensitive karst system.

Additional environmental impacts and increased safety concern for the motoring public from the addition of a curve to the roadway would be extraordinary in magnitude when compared to the acquisition of the small piece of 4(f) property. It is feasible, but not prudent to avoid the section 4(f) property by roadway design or transportation system management techniques. Therefore, this alternate has been eliminated.

There are no feasible and prudent alternatives to the use of right-of-way from the aforementioned historic sites. This project qualifies under the programmatic 4(f) evaluation for Federal-Aid projects with minor involvements with historic sites.

Air Quality – **If this is an added capacity project, include MPO 20-year Transportation Plan (TP) reference that affirms that this project's design concept and scope was modeled, if the project adds capacity and is in an air quality non-attainment or maintenance area.**

This project is in an area where the SIP does not contain any transportation control measures. Therefore, the conformity procedures of 40 CFR 93 do not apply to this project.

Noise – **Summarize or attach noise analysis, including where noise abatement may be reasonable and feasible.**

The project as currently proposed does not qualify as a Type I project. This project does not physically alter the existing highway significantly changing either the vertical or horizontal alignment (move 50% closer to receivers). There is one area of new roadway alignment, however, there are no receivers that will be negatively impacted. This project does not increase the number of through traffic lanes. There are sections of the project that will increase the pavement width from two to four lanes to accommodate passing lanes, but these are not intended as travel lanes and will not increase capacity.

In accordance with the current 23 CFR 772 and the IDOH letter of September 10, 1982, with FHWA concurrence on September 16, 1982, this action requires no formal noise analysis. For the same reasons, this project is exempt from construction noise requirements.

Wetlands – **Describe or attach (1) wetland size and impacts, (2) functions & values, (3) possible mitigation, and (4) any applicable plan sheets.**

Impacts to wetlands as a result of this project will total 0.02 ha (0.05 acre). One site, a palustrine, emergent, semi-permanently flooded wetland (PEMF) will be impacted due to the widening of the roadway and the right-of-way adjacent to the wetland (see Wetland Delineation Report on pages 1-31 of Appendix D). Impacts to this wetland will total less than 0.04 ha (0.1 acre). Due to the minor amount of impact, mitigation will likely not be required. Two sinkholes along SR 37 were also delineated and determined not to be jurisdictional wetlands. These sinkholes will be protected in accordance with the October 13, 1993 Memorandum of Understanding (MOU) between the Indiana Department of Transportation (INDOT), The Indiana Department of Natural Resources (IDNR), The Indiana Department of Environmental Management (IDEM) and the US Fish and Wildlife Service (USFWS) for the purpose of delineating guidelines for construction of transportation projects in the karst regions of Indiana (see pages 1-5 of the Appendix E for copy of MOU). No other wetlands will be impacted by the proposed project. Wetland impacts are based on proposed construction information available at the time. If during design, the construction limits exceed that described in this report, additional wetland impacts will occur.

Sole Source Aquifers - **Describe or attach (1) plans showing extent of SSA, (2) communities depending on SSA, and (3) coordination conducted to date with the USEPA.**

There are no Sole Source Aquifers located near the project.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Threatened and Endangered Species/Flora and Fauna – Include summary of coordination with USFWS/IDNR.

The US Fish and Wildlife Service indicated in their letter dated October 4, 2002 (see pages 16-23 of the Appendix B) that the proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened bald eagle (*Haliaeetus leucocephalus*). There are no bald eagle nests or significant habitat within the project corridor. There is suitable summer habitat for the Indiana bat interspersed throughout the project corridor. The project will not eliminate enough habitat to adversely affect this species. In area where all work will be close to the existing heavily traveled highway, it is unlikely that a nursery roost will be present. However, in areas where the highway alignment will be shifted and where tree clearing will be required, the possibility of the presence of a roost tree is much higher. At present this situation would only occur at the aforementioned route alternatives 2A and 2B, which will now maintain existing alignment. In that area, tree clearing should be avoided during the period of April 15 – September 15. If this condition is adhered to, the proposed project is not likely to adversely affect these 2 listed species.

The Indiana Department of Natural Resources indicated in their letter dated November 19, 2002 (see pages 1-2 of Appendix B) that to date, no plant or animal species listed as state or federally threatened, endangered or rare have been reported to occur in the project vicinity.

The Karst study report prepared by Earth Tech for the Indiana Department of Transportation in January 1998 and revised on January 12, 2001 (see pages 1-83 of Appendix E) indicates the presence of Indiana bat (*Myotis sodalis*) and the northern cavefish (*Amblyopsis spelaea*) within karst features located near the proposed project. No impacts are anticipated to these species as a result of the project as currently proposed.

Agriculture – Describe or attach (1) amount of prime and non-prime farmland impacted, (2) discuss farmland conversion impacts, and (3) Farmland Conversion Impact Rating Sheet (Form AD-1006).

As is required by the Farmland Protection Policy Act, the Natural Resources Conservation Service has been coordinated with and the Form AD-1006 has been completed (see pages 24-27 of the Appendix B for NRCS response and AD-1006 forms). A form was completed for the portion of the project in Orange County and a form was completed for the portion of the project located in Lawrence County. Since both portions of the proposed project received a total point value of less than 160 points, these sites will receive no further consideration for farmland protection. No other alternatives other than those already discussed in this document will be considered without a re-evaluation of the project's potential impacts on farmland.

The Natural Resource Conservation Service has estimated that approximately 25% (about 12 acres) of the agricultural land along this route is prime farmland. One barn outbuilding is likely to be removed as a result of this project.

Socioeconomic – Describe or attach temporary and permanent economic and social effects of the proposed project.

Motorists will experience the inconvenience of temporary runarounds, lanes closures and lane constrictions during construction. This will only be a temporary effect. There will be no permanent adverse effect to the established community. Beneficial effects will be an improved and safer transportation facility.

Title VI of the Civil Rights Act of 1964 and the subsequent legislation require Federal agencies to ensure that none of their programs discriminates on the basis of race, color, national origin, age, gender, handicap/disability and religion. The President's Executive Order 12898 on February 11, 1994, and the President's Memorandum on Environmental Justice of the same date underscores these provisions with respect to Environmental Justice in Minority Populations and Low Income Populations. The intent is to ensure that the Federal departments and agencies identify and address any disproportionately high and adverse human health or environmental effects resulting from their policies, programs and activities on minority populations and low income populations. The proposed project will not have any disproportionately high or adverse human health or environmental effects upon any minority or low-income populations.

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
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Detours/Traffic Maintenance – **Describe any detours used during construction.**

All construction shall be performed under traffic. The designer will be required to use temporary runarounds, daytime lane closures and lane constrictions. Ingress and egress will be maintained to all properties during construction. In rural areas, if traffic is diverted on the new 3.0 m (11 ft) shoulders, the shoulders shall be designed to carry the temporary traffic loads. In areas of vertical realignment, the designer should investigate various methods of construction under traffic, including temporary runarounds and sheet pile walls.

Section 6(f) – **Describe any property that may be impacted that was purchased or improved through the Land and Water Conservation Fund Program. Any property taken must be replaced.**

There are no properties near the proposed project that were purchased or improved with the Land and Water Conservation Fund Program.

Other construction projects – **Describe other roadway design or construction projects in the area.**

There are no other projects currently scheduled within the area that would require coordination with this project.

Permits/Mitigation – **Are there any permits that must be applied for in final design? If so, list them. What are the current mitigation requirements for this project? Differentiate between "Firm" and "Optional" commitments.**

An Indiana Department of Environmental Management Section 401 Water Quality Certification will be required prior to any construction activities. The U.S. Army Corps of Engineers Section 404 Permit will also be required for this project. An Indiana Department of Environmental Management Rule 5 permit will be required for this project. A Department of Natural Resources Certificate of Approval of Construction in a Floodway permit will not be required for this project. A U.S. Coast Guard permit will also not be required for this project. If karst features are modified to prevent drainage from entering the karst system, a permit for Class V injection wells will need to be obtained.

Mitigation of Adverse Effects:

The Department of Natural Resources indicated that fish, wildlife, and botanical resource losses as a result of this project can be minimized through implementation of the following measures:

1. Impacts to the riparian corridors in between Prospect and Indian Boundary Road should be avoided to the greatest extent possible. Unavoidable impacts should be mitigated by minimizing those impacts, and by creating replacement habitat in area that are lacking habitat. This can be done by revegetating with native trees and shrubs in area along Lick Creek that have been impacted by development or agriculture.

2. Impacts to any karst features (e.g. sinkholes, the Lost River, or other underground drainage) should be avoided to the greatest extent possible.

3. Inchannel disturbance and the clearing of trees and brush should be minimized and contained within the project limits.

4. Trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) should not be cut from April 15 through September 15.

5. There should be no work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.

6. "Low maintenance" areas should be revegetated with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species.

7. Native hardwood trees should be planted along the top of the bank and right-of-way to replace the vegetation destroyed during construction.

8. Low endophyte tall fescue may be used in "high maintenance" areas only.

9. Riprap used should be minimum average 6 inch graded stone and extended below normal water level to provide habitat for aquatic organisms in the voids.

10. Do not excavate or place fill in any riparian wetland.

11. Noise and vibration disturbance from the use of heavy equipment or blasting should be minimized or avoided near any cave entrances from September 15 to April 15 to avoid potential disturbance to hibernating bats.

12. Minimize and contain within project limits all tree and brush clearing and provide the opportunity to utilize cleared trees of firewood and timber size.

The US Fish and Wildlife Service recommended the following mitigation in their letter dated October 4, 2002:

1. Select Alternate 2A for the road relocation. Two new bridges, if constructed with adequate design, would be highly preferable to relocation and shortening of approximately ¼ mile of stream channel as proposed in Alternate 2B, which would also require more riparian tree loss. If Alternate 2A is selected, the existing roadbed should be removed and planted with native hardwoods in a zone of at least 50 ft wide to stabilize the stream bank and improve aquatic habitat quality. If the area between the new highway alignment and the stream channel becomes an uneconomical remnant, it should be purchased and planted to forest also.

2. In other areas where the highway is very close to the stream, new right-of-way should be taken from the north side of the road to avoid further impingement upon the stream channel. Structural stream bank protection should be avoided except in areas where the channel is threatening to undermine the road (e.g. outside bends of channel meanders). Guardrails or retaining walls may be appropriate in these areas to protect the existing riparian vegetation.

3. In areas where the highway is further from Lick Creek and the intervening area is forested, design the project to minimize tree clearing.

4. Plant native hardwoods wherever feasible along the corridor to compensate for tree loss. Prioritize areas where the forested riparian zone along Lick Creek is inadequate.

5. East of Ames Chapel, the highway runs near a meander of Lick Creek at a tributary confluence. The stream channel is threatening to undermine the road at the apex of the curve. A road shift to the south of the existing highway (away from the stream channel) is proposed, relocating the existing bridge across the tributary. The USFWS supports this proposal, as it would avoid substantial impacts to the stream channel and riparian forest, however, the USFWS recommended a shift even further south to allow for stabilization of the stream bank with forest plantings rather than or in addition to structural measures.

6. East of Structure #150-59-5938 and south of the large quarry, the highway runs near another Lick Creek meander. In this area, the existing road is mostly separated from the stream by a grassy area 20-30 ft wide and the stream bank has a single row of trees. The north side of the road borders a steep, forested slope. The USFWS recommends the new right-of-way for the highway reconstruction at this location be limited to the grassy area between the road and the stream, leaving at least a 25-foot wide vegetated buffer on the stream bank. Guardrails and retaining walls should be used here to protect the riparian area, with plantings of native hardwoods adjacent to the stream bank wherever there is room. The USFWS would prefer a cut in the slope on the north side of the highway to eliminate further impingement on the stream, and would object to a stream channel relocation.

7. West of CR 275 West, opposite Turleys, there is another road section adjacent to a Lick Creek meander. Here the stream is protected by a steep, rocky, forested slope with a diverse mixture of native hardwoods with many large trees. On top of the slope is a 40 ft wide zone of lower quality woods, which is separated from the road by a 20-30 ft wide grassy area. Lick Creek contains a high quality rocky riffle at this location. The USFWS suggests that it should be possible to reconstruct the curve at this location without disturbing the riparian forest, which they strongly recommend.

8. At the Newberry Church and Indiana Boundary Road, a meander of Lick Creek is about 300 ft south of the road. The intervening area is mostly a forested slope with an open area of grass and old roadbed between the forest and the highway. The USFWS suggests that all additional right-of-way should be attainable from the open strip, without impinging upon the forest, however special erosion control measures may be necessary due to the steep slopes.

9. Just south of the Lost River Crossing, SR 37 runs adjacent to a meander of the Lost River for about 1000 ft. The highway is currently 30-60 ft from the stream and the intervening area is moderate quality forest. The USFWS recommends the use of guardrails or other special methods at this location to avoid loss of riparian forest.

Additional standard USFWS mitigation measures for bridge replacements:

1. Post DO NOT DISTURB signs at the construction zone boundaries and do not clear trees or understory vegetation outside the boundaries.

2. Restrict below low-water work to placement of piers, pilings, and/or footings, shaping of the spill slopes around the bridge abutments and placement of riprap. For culvert replacements, restrict low-water work to the minimum necessary to construct the crossing.

3. Restrict channel work and vegetation clearing to within the width of the normal approach road right-of-way.

4. Minimize the extent of artificial bank stabilization.

5. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.

6. Implement temporary erosion and siltation control devices such as placement of riprap check dams in drainage ways and ditches, covering exposed areas with erosion control materials, and grading slopes to retain runoff in basins.

7. Revegetate all disturbed soil areas immediately upon project completion.

8. Avoid channel work in perennial streams and significant intermittent streams during the fish spawning season. (April 1 through June 30)

To mitigate potential environmental impacts, the following mitigation measures will be included in the project:

1. Karst features will be evaluated and protected in accordance with the October 13, 1993 Memorandum of Understanding (MOU) between the Indiana Department of Transportation (INDOT), The Indiana Department of Natural Resources (IDNR), The Indiana Department of Environmental Management (IDEM) and the US Fish and Wildlife Service (USFWS) for the purpose of delineating guidelines for construction of transportation projects in the karst regions of Indiana. (Firm)

2. Impacts to wooded riparian corridor within between Prospect and Indian Boundary Road will be avoided to the greatest extent possible. (Firm) Unavoidable impacts will be minimized and mitigated by revegetating with native trees and shrubs in areas along Lick Creek that have been impacted by development or agriculture. (Optional)

3. Inchannel disturbance and the clearing of trees and brush will be minimized and contained within the project limits. (Firm)

4. Trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) will not be cut from April 15 through September 15. (Firm)

5. There will be no work in the waterways from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife. (Firm)

6. "Low maintenance" areas will be revegetated with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species. (Firm)

7. Native hardwood trees will be planted along the top of the bank and right-of-way along the project corridor to replace the trees and vegetation destroyed during construction, prioritizing areas where the forested riparian zone along Lick Creek is inadequate. (Optional)

8. Low endophyte tall fescue will be used in "high maintenance" areas only. (Firm)

9. Riprap used will be minimum average 6 inch graded stone and extended below normal water level to provide habitat for aquatic organisms in the voids. (Firm)

10. There will be no excavation or filling of any riparian wetland. (Firm)

11. Noise and vibration disturbance from the use of heavy equipment or blasting will be avoided near any cave entrances from September 15 to April 15 to avoid potential disturbance to hibernating bats. (Firm)

12. All tree and brush clearing will be minimized and contained within project limits opportunity to utilize cleared trees of firewood and timber size will be provided. (Firm)

13. Alternate 2A will not be selected for this project. (Firm)

14. In areas where the highway is very close to the stream, new right-of-way will be taken from the north side of the road to avoid further impingement upon the stream channel. (Optional) Structural stream bank protection will be avoided except in areas where the channel is threatening to undermine the road. (Optional) Guardrails or retaining walls may be used in these areas to protect the existing riparian vegetation. (Optional)

15. The project will be designed to minimize tree clearing in areas where the highway is further from Lick Creek and the intervening area is forested. (Optional)

16. The roadway alignment east of Ames Chapel has been shifted to the south to avoid the stream bank, where possible. Erosion control measures will be incorporated into the project to prevent the channel bank from encroaching into the roadway. (Optional)

17. New right-of-way for the highway construction east of Structure #105-59-5938 and south of the large quarry will be limited to the grassy area between the road and the stream, leaving a 25 ft wide vegetated buffer on the stream bank where possible. (Optional) Guardrails and retaining walls may be used here to protect the riparian area. (Optional) Native hardwoods may be planted adjacent to the stream where possible. (Optional) A cut in the slope on the north side of the highway may be used to eliminate further impingement on the

stream. (Optional) The Lick Creek channel will not be relocated. (Firm)

18. The reconstruction of the curve located west of CR 275 West, opposite Turleys, will be done without disturbing the riparian forest. (Optional)

19. At the Newberry Church and Indian Boundary Road, as much of the additional right-of-way as possible will be attained from the grass and old road bed at this location to eliminate impacts to the forested slope adjacent to Lick Creek. (Optional) Special erosion control measures will be used at this location as necessary. (Firm)

20. Guardrails or other special methods may be used just south of the lost river crossing where SR 37 runs adjacent to a meander of the Lost river, to avoid loss of riparian forest. (Optional)

Additional standard USFWS mitigation measures for bridge replacements:

1. DO NOT DISTURB signs will not be posted at the construction zone boundaries. (Firm) Trees and understory vegetation will not be cleared outside the construction boundaries. (Firm)

2. Below low-water work will be restricted to placement of piers, pilings, and/or footings, shaping of the spill slopes around the bridge abutments and placement of riprap. For culvert replacements, low-water work will be restricted to the minimum necessary to construct the crossing. (Firm)

3. Channel work and vegetation clearing will be restricted to within the width of the normal approach road right-of-way. (Firm)

4. The extent of artificial bank stabilization will be minimized. (Firm)

5. Riprap utilized for bank stabilization will be extended below low-water elevation to provide aquatic habitat where possible. (Firm)

6. Temporary erosion and siltation control devices such as placement of riprap check dams in drainage ways and ditches, covering exposed areas with erosion control materials, and grading slopes to retain runoff in basins will be implemented. (Firm)

7. All disturbed soil areas will be revegetated immediately upon project completion. (Firm)

8. Channel work in perennial streams and significant intermittent streams will be avoided during the fish spawning season (April 1 through June 30). (Firm)

Karst/Topography/Geology – **Does the Karst MOA apply? If so, please explain.**

The project lies in a significant karst area of Indiana. Several caves and other major karst features are located in the general area of the project. These features will be evaluated and protected in accordance with the October 13, 1993 Memorandum of Understanding (MOU) between the Indiana Department of Transportation (INDOT), The Indiana Department of Natural Resources (IDNR), The Indiana Department of Environmental Management (IDEM) and the US Fish and Wildlife Service (USFWS) for the purpose of delineating guidelines for construction of transportation projects in the karst regions of Indiana (see pages 1-5 of Appendix E for copy of MOU).

Earth Tech has prepared a karst study report for the Indiana Department of Transportation. The report was prepared in January 1998 and revised on January 12, 2001 (see pages 1-83 of Appendix E). The report includes a description and delineation of karst features in the vicinity of US 150/SR 56 between West Baden Springs and Paoli in Orange County, Indiana, and SR 37 between Paoli and Mitchell in Orange and Lawrence Counties, Indiana. The report discusses individual features and offers recommendations for their protection. Earth Tech has also been contacted for consultation during the design phase to assist in the location, identification and protection of karst features located throughout the project. Also included in the Appendix is the Review and

Road No./County:	**US 150/SR 56/SR 37 in Orange and Lawrence Counties**
Designation Numbers:	**9804680, 9804690, 9804790, and 9804650**
Project Description/Termini:	**Reconstruction and Widening of US 150/SR 56/SR 37 From Prospect to Mitchell**

Comment on Karst Protection prepared from the DLZ Preliminary Field Check Plans (see pages 84-103 of Appendix E) prepared by Earth Tech in May 2004.

By request of the US Fish and Wildlife Service in their letter dated October 4, 2002 (see pages 16-23 of Appendix B), the revised pages of the Earth Tech report were submitted for their review. Also by request within the same letter, Keith Dunlap of the Indiana Karst Conservancy was contacted and asked to comment on the sufficiency of the Earth Tech report and to further comment regarding potential impacts to, and mitigation for, karst resources within the vicinity of the project. The Indiana Karst Conservancy, Inc. responded with a letter dated November 28, 2002 (see pages 6-7 of Appendix E). Included in the letter are some corrections for the Earth Tech report and some comments on measures to be taken to ensure the protection of the karst features within the project area.

The Indiana Geological Survey indicated in their letter dated August 19, 2002 (see page 29 of Appendix B) that geological and geophysical features exist within the project limits. The project is located in an area of karst terrain where the potential for sinkholes exist. The Indiana Geological Survey also indicated that no existing or potential mineral resources, or active/abandoned mineral resource extraction sites are located nearby. However, there is a stone quarry located north of proposed project at US 150/SR 56 and CR 425 W. No impacts to this extraction site are anticipated.

All procedures set forth in the MOU have been followed and will be included the mitigation measures for this project.

Hazardous Waste – **Is there any additional evaluations or remediation work that has to be done regarding hazardous or contaminated material? If so, please explain.**

A preliminary site investigation (PSI) has been completed for this project for this project, which included forty seven (47) parcels. According to the analytical results reported from the field investigation, environmental concerns were found in the soil and /or groundwater in twelve (12) parcels. The Executive Summary of the report generated from this investigation is located on pages 1-9 of Appendix F. The complete report is located in the project file. Due to changes in design, it has been determined that new permanent right of way may be required from the Indiana Handle Co. located along West Main Street in Paoli, Indiana. The 1927 INDOT roadway plans indicated gas tanks in the location labeled Indiana Oil Company. Changes in the project design have required right of way acquisition from this location. This parcel was not investigated in the PSI completed by Sieco, Inc. on July 19, 2002 and revised on August 13, 2002. Based on the possibility of potential undetected leaks from USTs at this facility, the PSI was recommended by the INDOT Environment, Planning & Engineering Division, Environmental Services Section. The investigation was completed on July 24, 2003 and submitted to INDOT on August 15, 2003. The Executive Summary of this report is located in the Hazardous Waste Site Assessment forms on pages 10-12 of Appendix F. The complete PSI report is located in the project file.

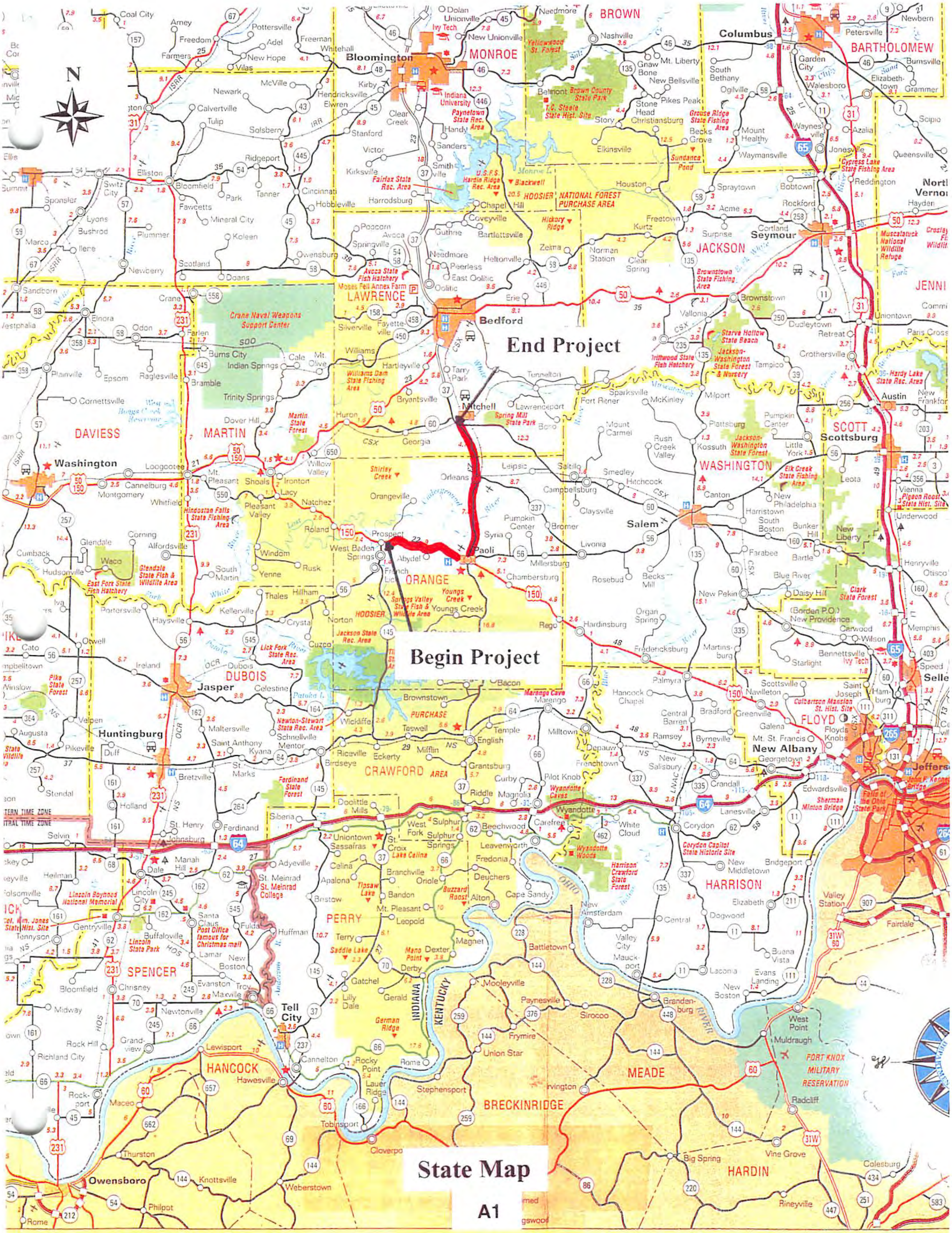
Secondary Impacts/Cumulative Impacts/Others – **Discuss any reasonably foreseeable secondary and cumulative impacts from the project. Other environmental impacts not covered under previous topics should be included here.**

No other secondary or cumulative impacts are anticipated as a result of this project.

Public Involvement – **Will the opportunity for a public hearing be offered?**

A legal notice was published in a local newspaper on October 21, 2004 offering the public the opportunity to make final comments on the affect finding. In accordance with current INDOT Public Involvement Procedures approved by the FHWA, a public hearing will be offered.

End of Categorical Exclusion ---------- End of Categorical Exclusion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End Project
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State Map
MONROE
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BARTHOLOMEW
LAWRENCE
JACKSON
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ORANGE
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CRAWFORD
FLOYD
HARRISON
PERRY
SPENCER
HANCOCK
BRECKINRIDGE
MEADE
HARDIN
Bloomington
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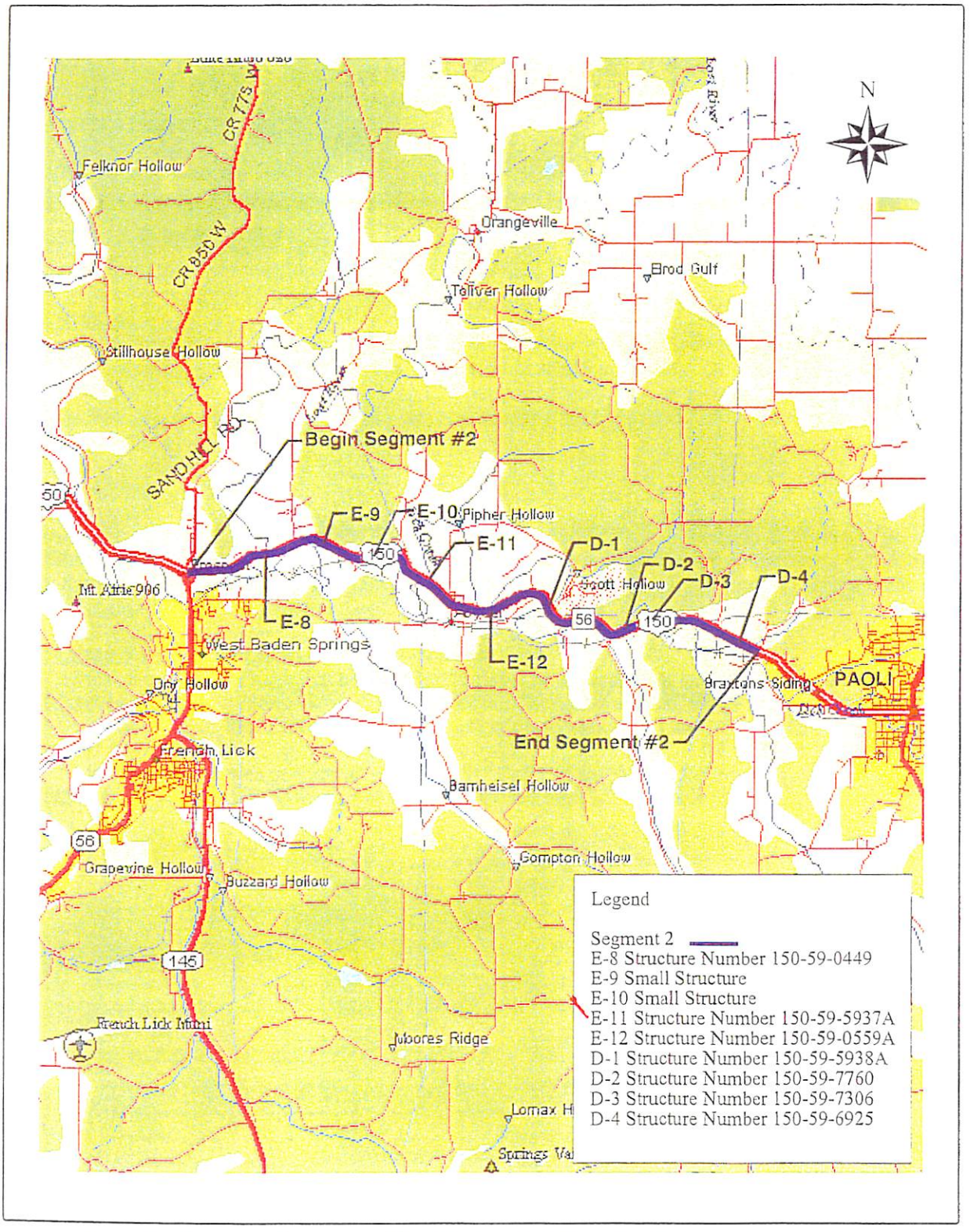
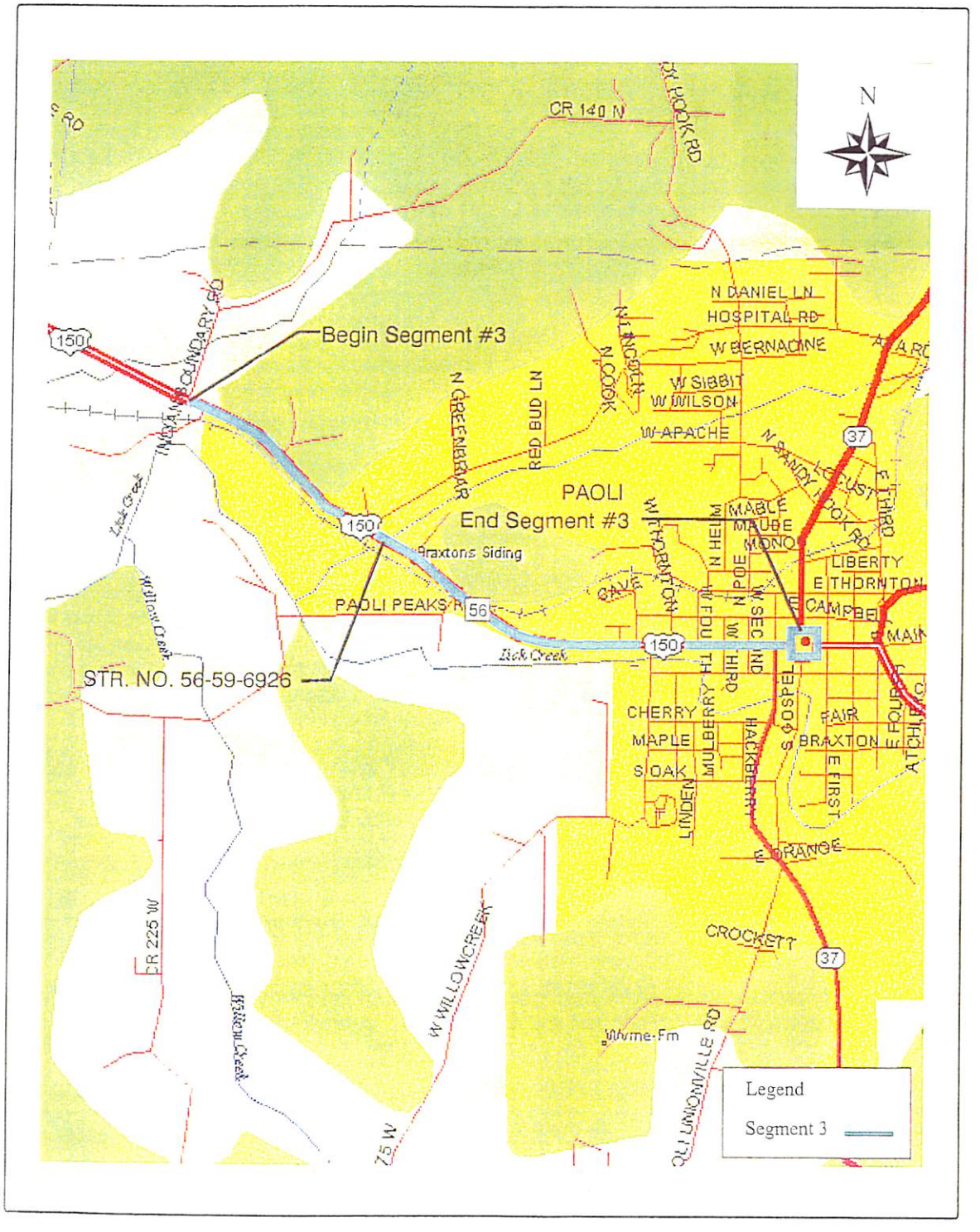
Paoli
Seymour
Salem
Jasper
Washington
Huntingburg
New Albany
Tell City
Owensboro

Figure 9.1



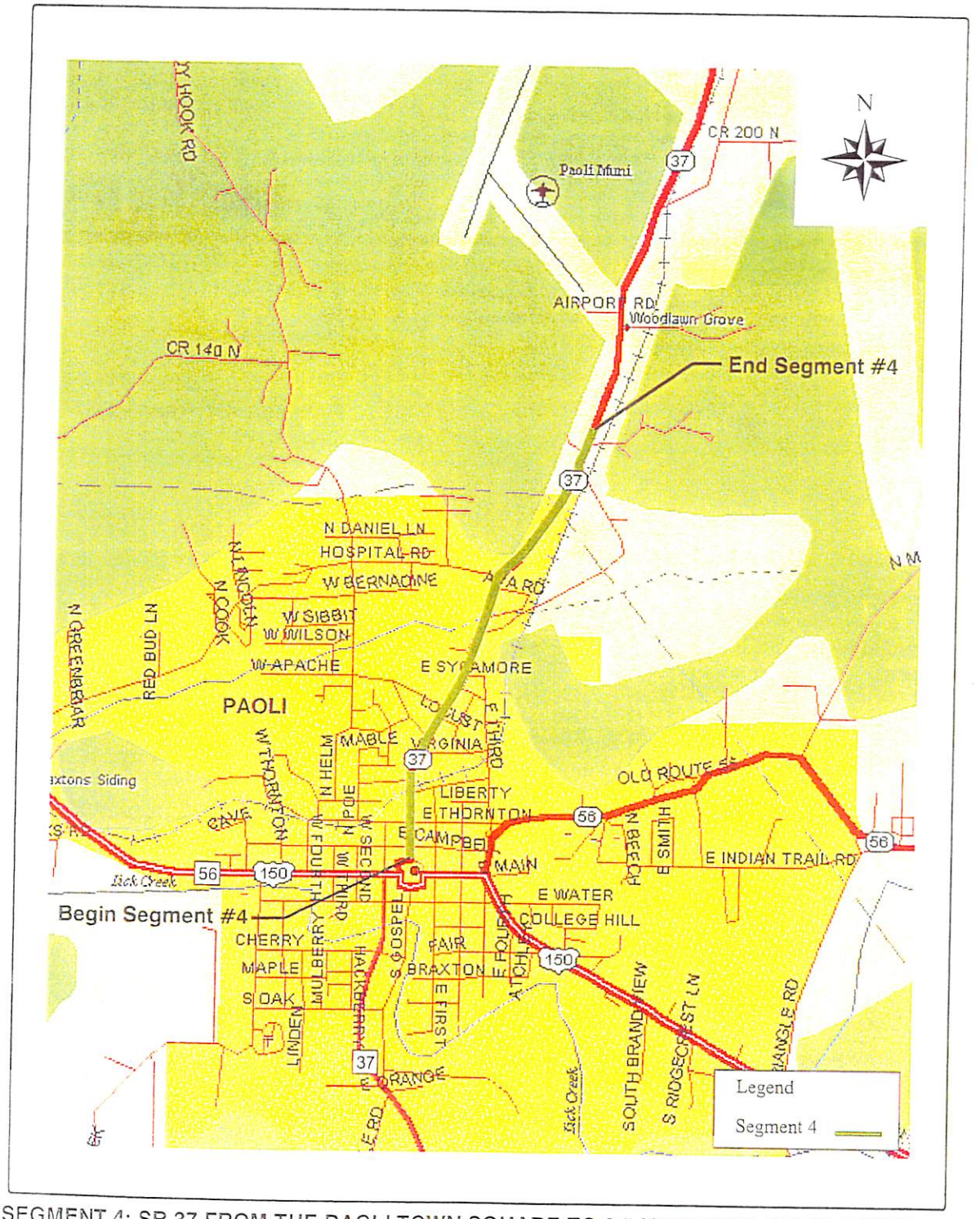
SEGMENT 2: US 150/SR 56 (EAST JUNCTION) TO INDIAN BOUNDARY ROAD (CR225W)
Des. No. 9804680
Project No. STP-024-4( )

Figure 10.1



SEGMENT 3: US 150/SR 56 FROM INDIAN BOUNDARY ROAD (CR 225W) TO THE PAOLI TOWN SQUARE
Des. No. 9804690
Project No. STP-02404( )

Figure 11.1

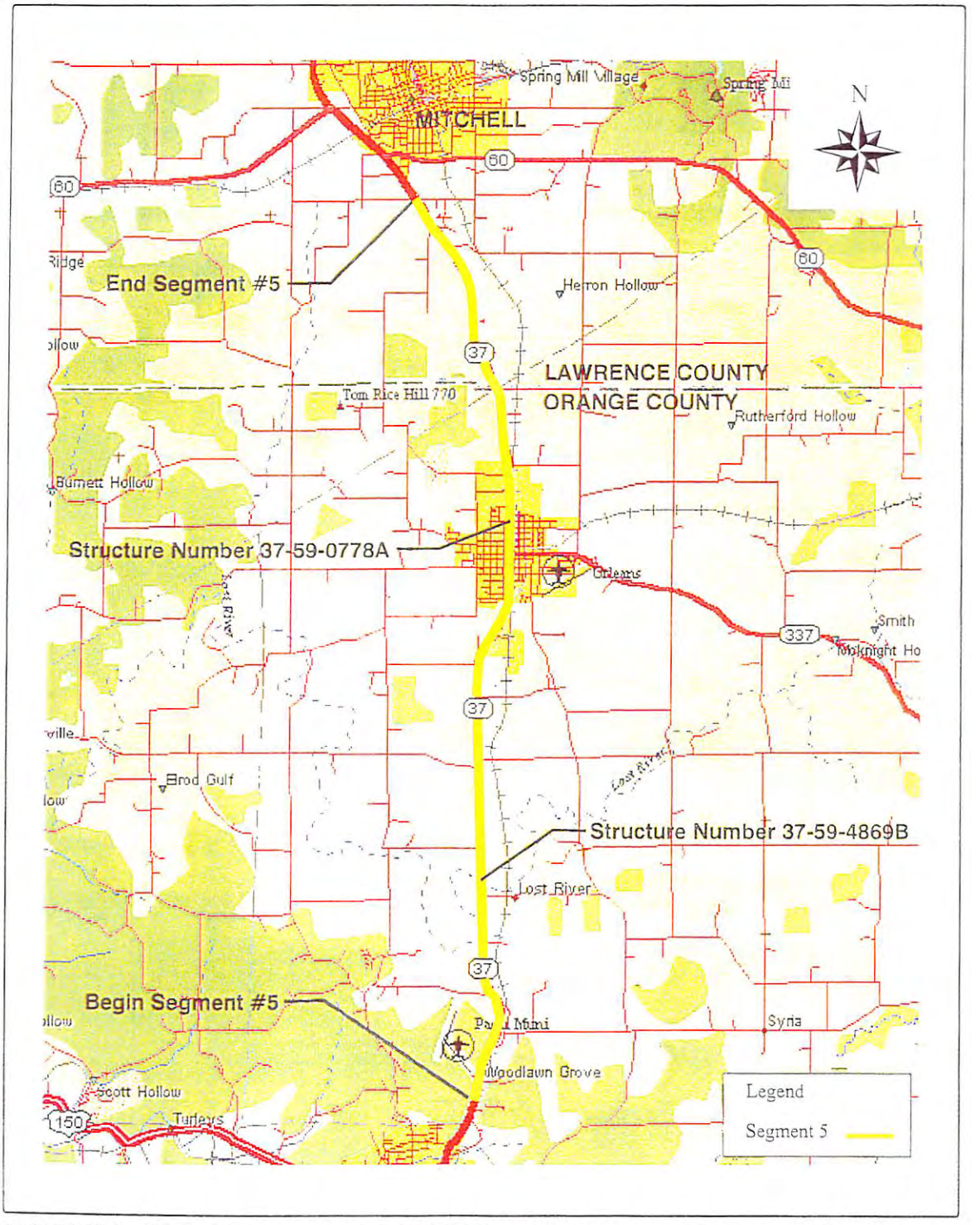


SEGMENT 4: SR 37 FROM THE PAOLI TOWN SQUARE TO 2.5 KM NORTH OF THE TOWN SQUARE

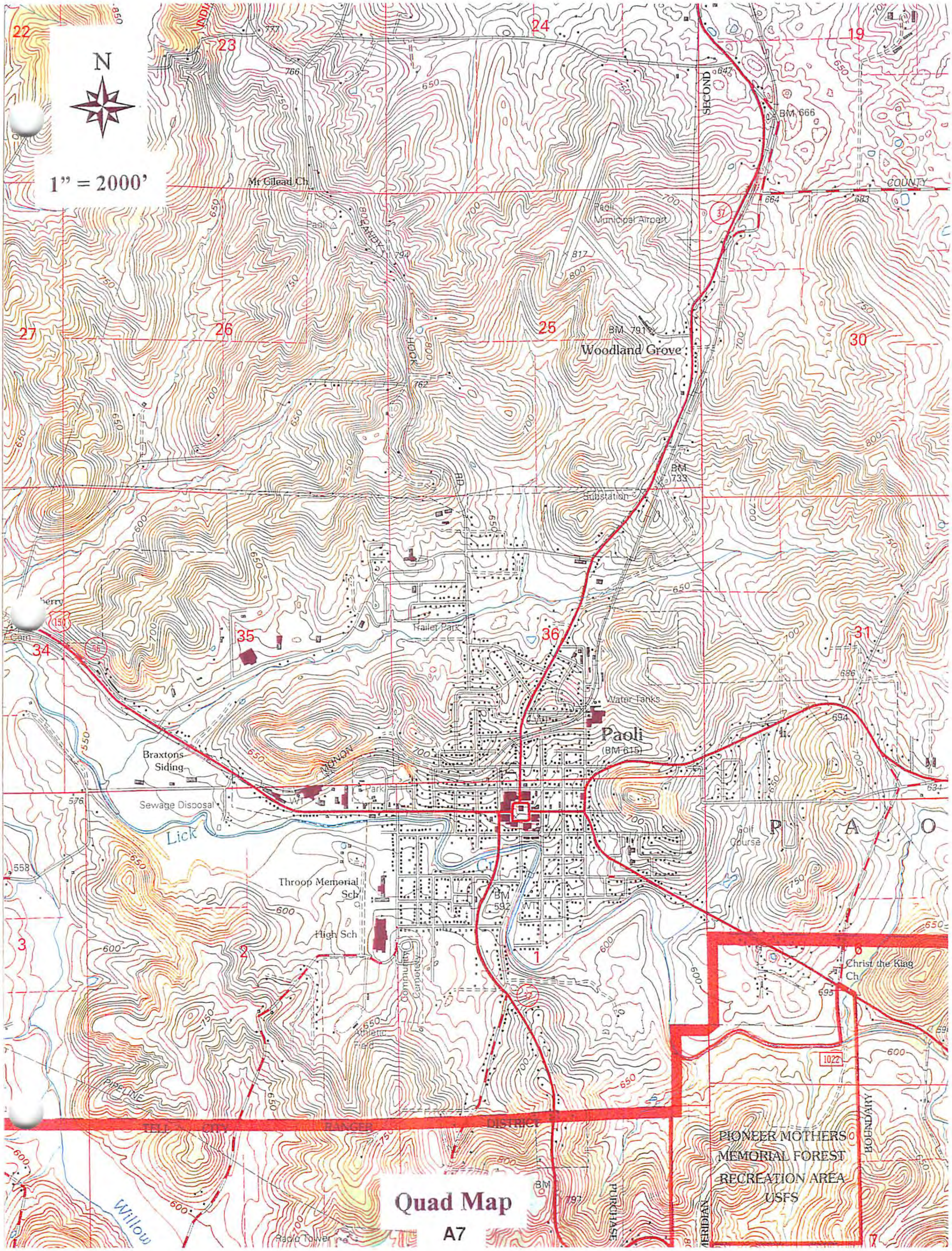
Des. No. 9804790

Project No. STP-095-3( )

Figure 12.1



SEGMENT 5: SR 37 FROM 2.4 KM NORTH OF THE PAOLI TOWN SQUARE TO CR 1000S
Des. No. 9804650
Project No. STP-095-3( )


N
1" = 2000'
Mt Gilead Ch
Paoli Municipal Airport
Woodland Grove
Substation
Hallet Park
Water Tanks
Paoli
(BM 615)
Braxtons Siding
Sewage Disposal
Lick
Throop Memorial Sch
High Sch
Community Cemetery
Athletic Field
Golf Course
Christ the King Ch
PIPELINE
TELL CITY RANGER DISTRICT
PIONEER MOTHERS MEMORIAL FOREST RECREATION AREA USFS
BOUNDARY
COUNTY
SECOND
MERIDIAN
PURCHASE
Radio Tower
Willow
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P A O

Quad Map
A7

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LOGICAL SURVEY

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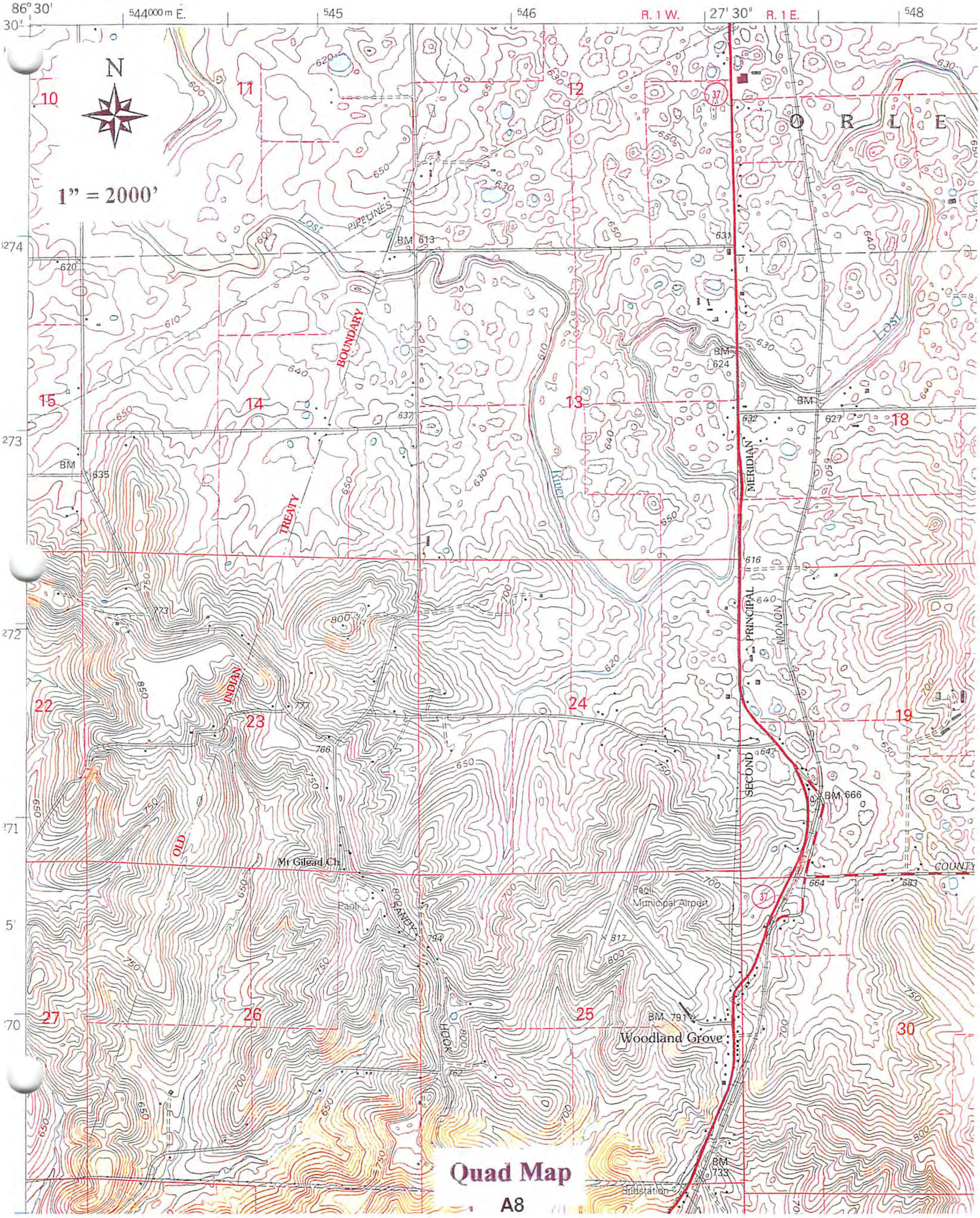
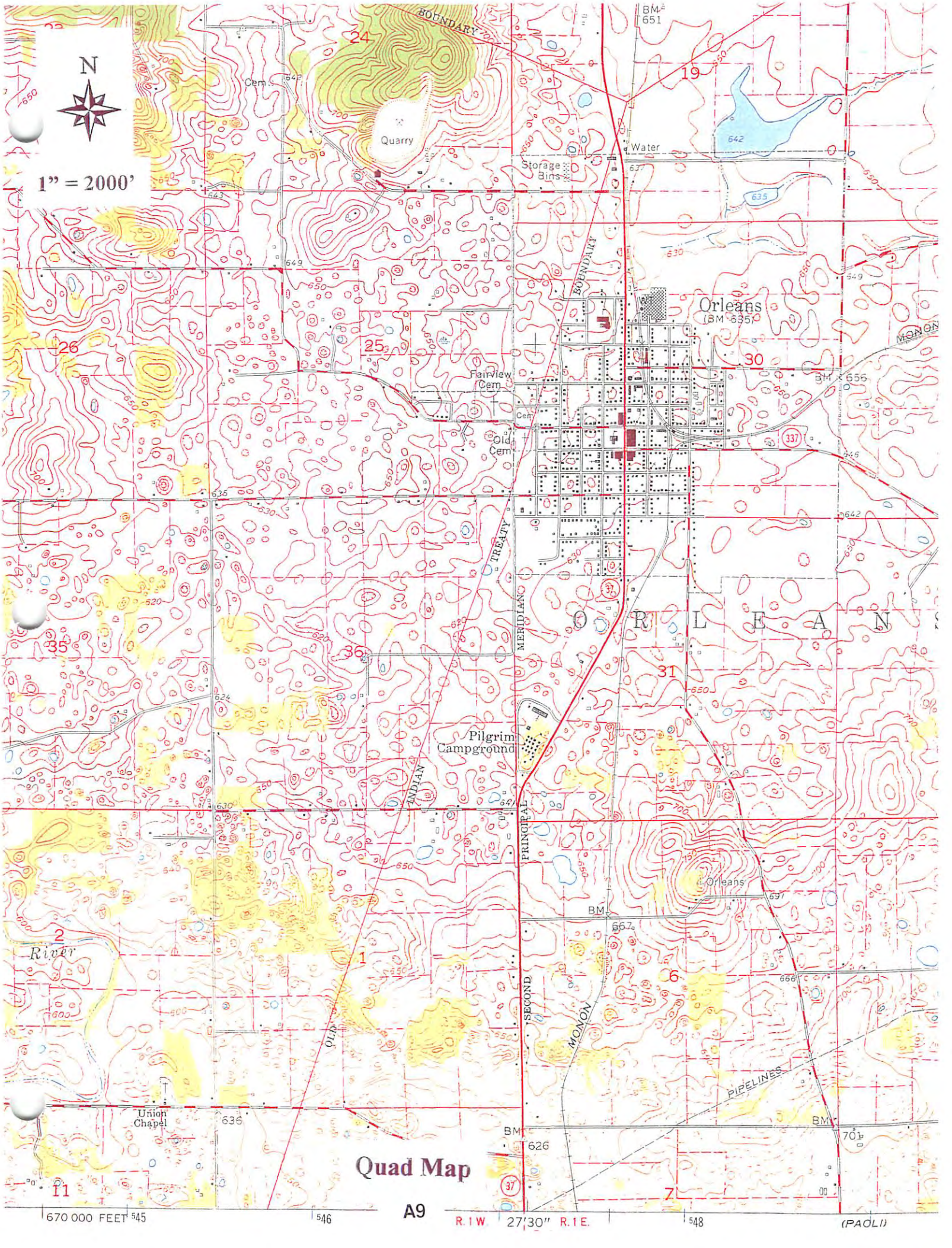


Quad Map

A8


N
1" = 2000'
Quarry
Water
Storage Bins
Orleans
Fairview Cem
Old Cem
Pilgrim Campground
Union Chapel
River
BOUNDARY
TREATY
MERIDIAN
PRINCIPAL
INDIAN
SECOND
MONON
PIPELINES
OLD
ORLEANS
Quad Map
A9
670 000 FEET
R.1W.
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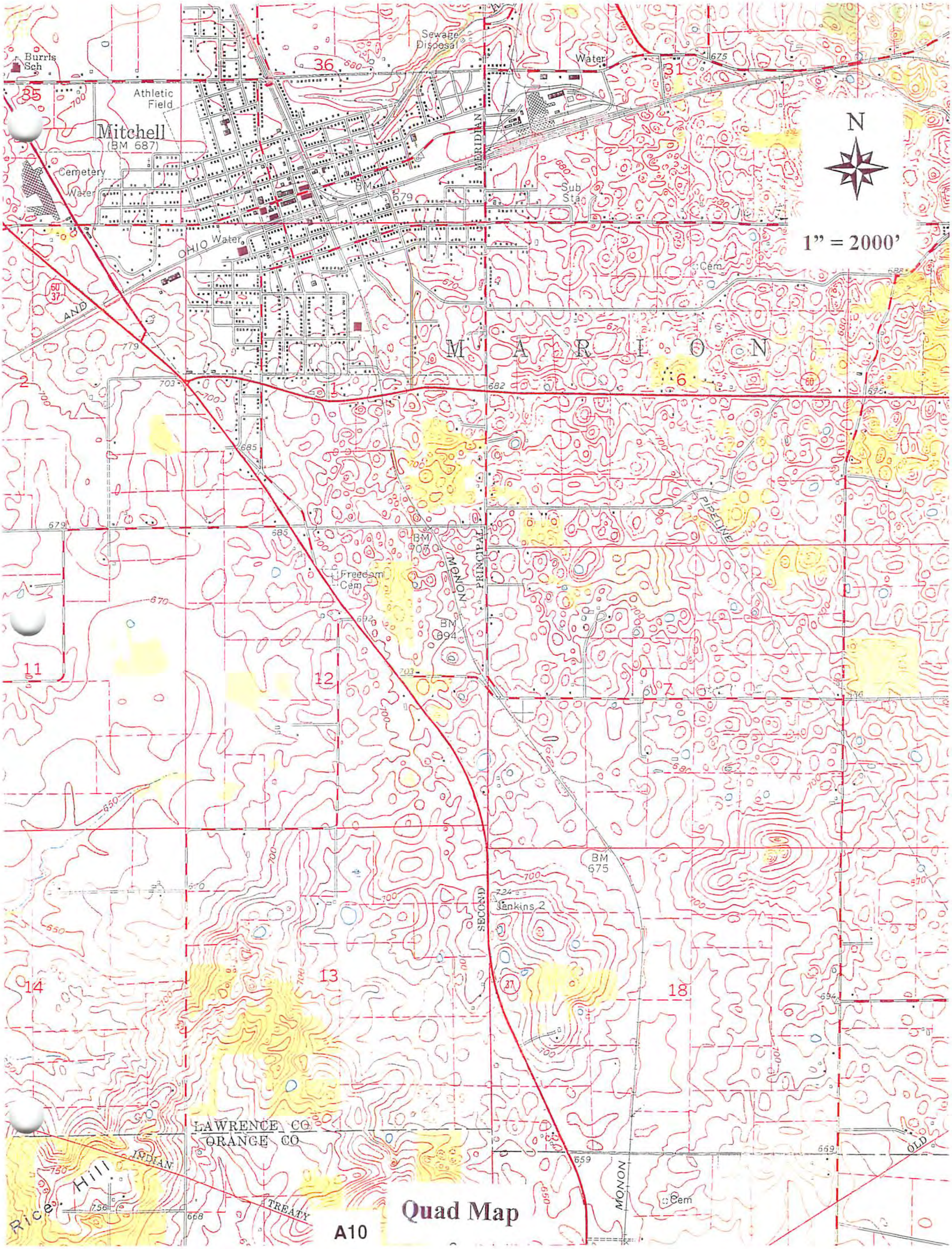
(PAOLI)


N
1" = 2000'
Quad Map
A10
Mitchell
(BM 687)
Burris Sch
Athletic Field
Cemetery
Water
Sewage Disposal
Sub Sta
OHIO
AND
M A R I O N
MERIDIAN
SECOND PRINCIPAL
MONON
PIPELINE
Freedom Cem
Cem
Jenkins 2
LAWRENCE CO
ORANGE CO
INDIAN TREATY
Rice Hill
OLD
35
36
31
2
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11
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7
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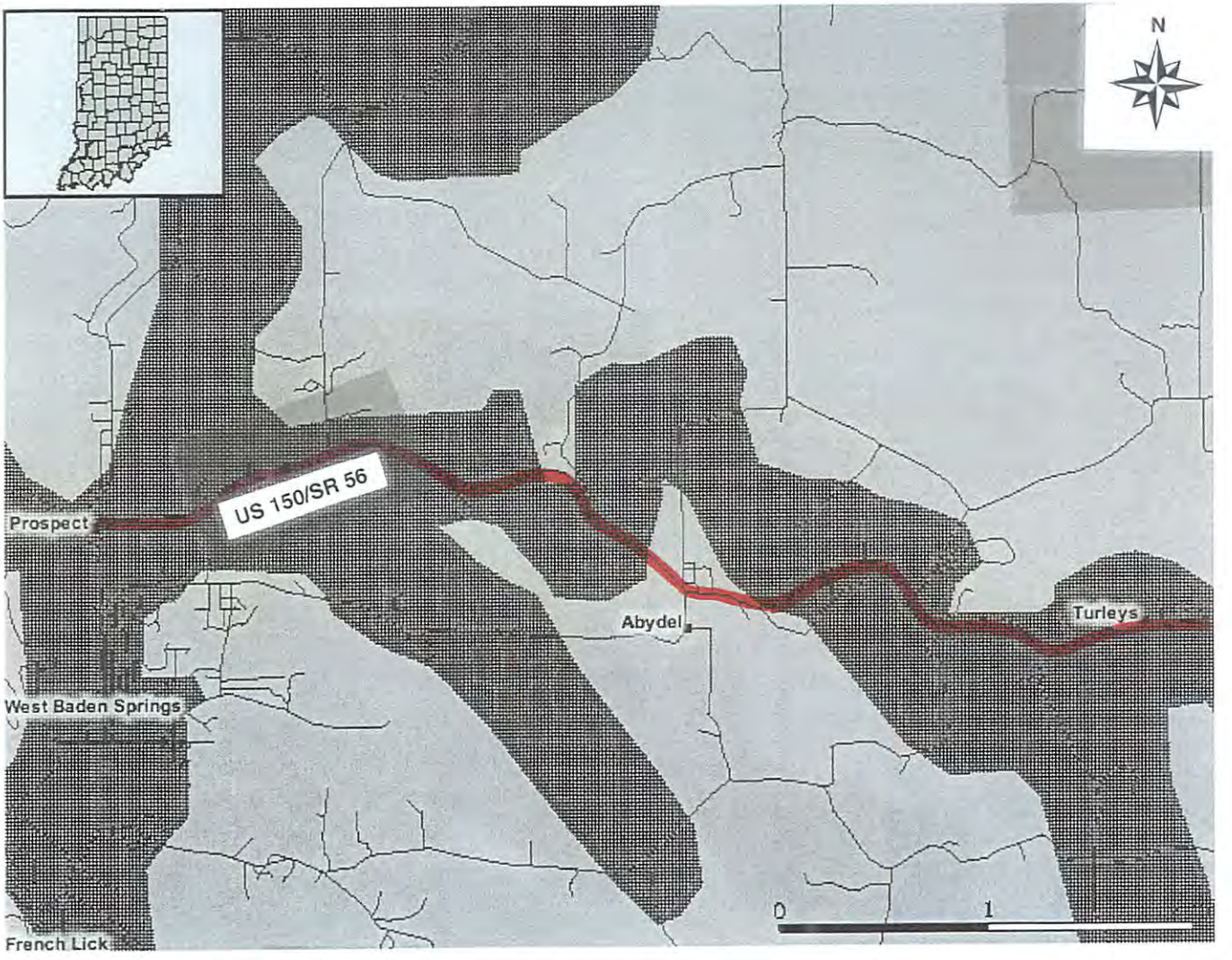
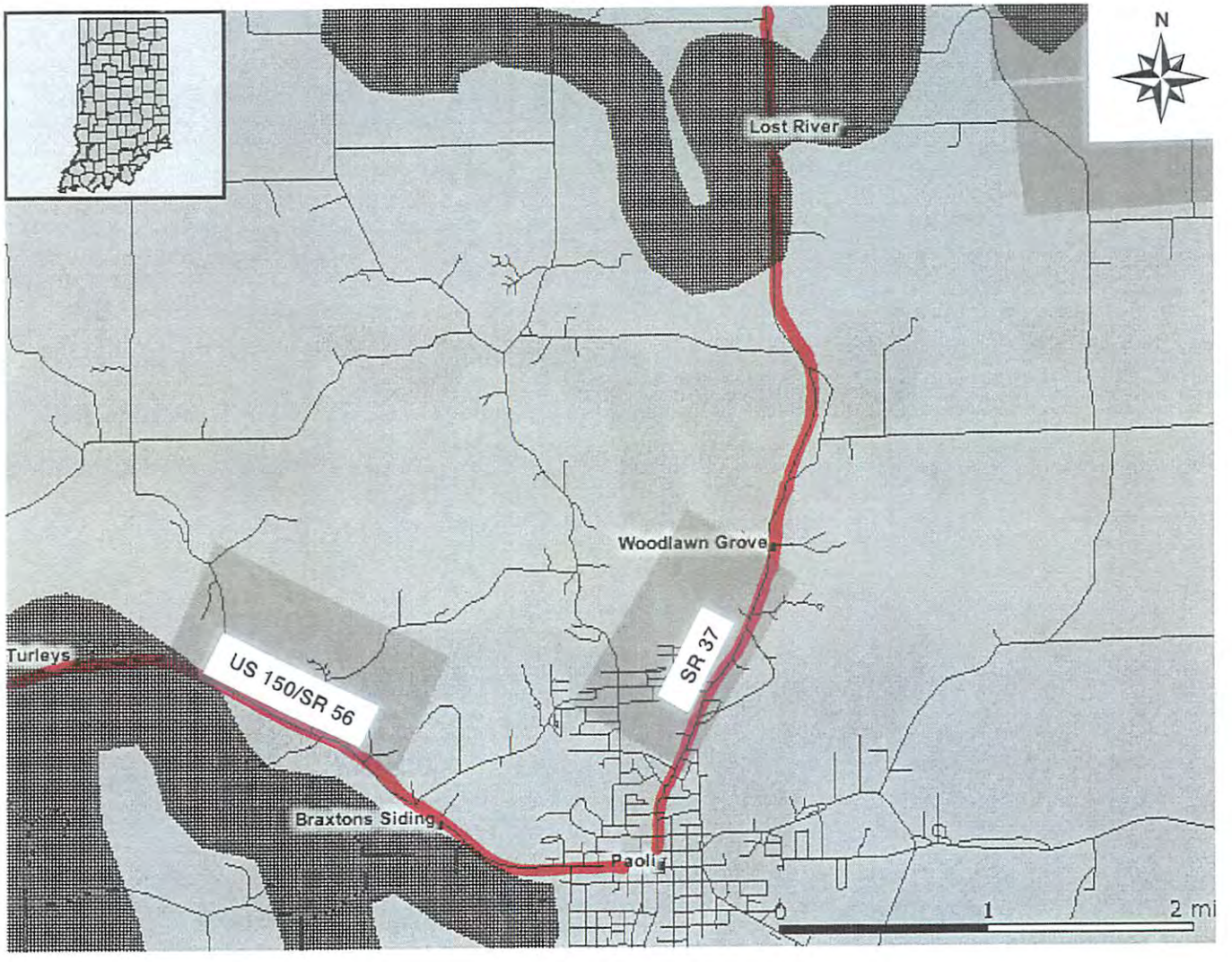
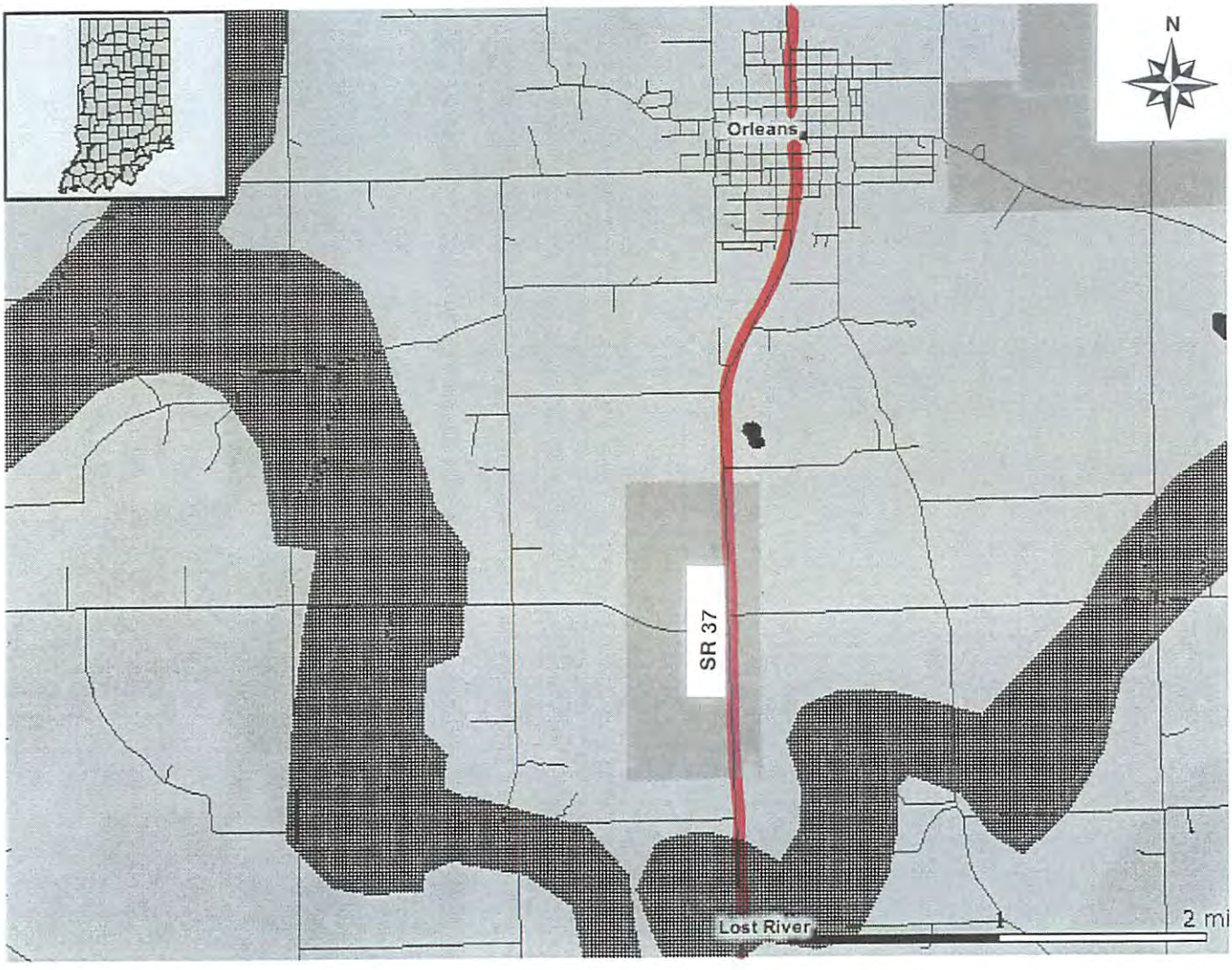
18



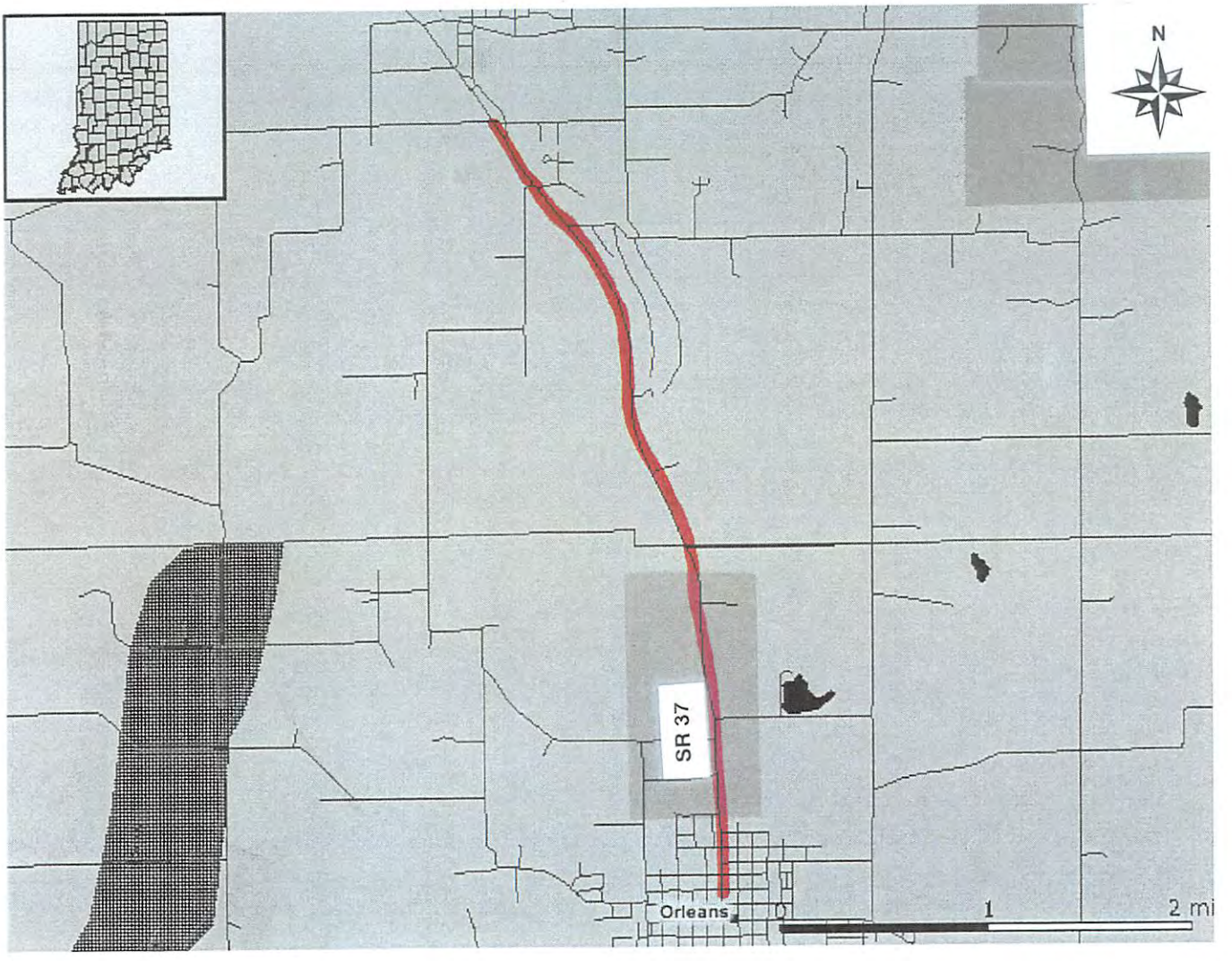
FLOODPLAIN MAP-1



FLOODPLAIN MAP-2



FLOODPLAIN MAP-3



FLOODPLAIN MAP-4

Looking east along US 150/SR 56 at location of new alignment

Looking east at location of new alignment

Looking west at location of where proposed alignment meets existing US 150/SR 56

Looking west along US 150/SR 56

Looking east along US 150/SR 56

Looking east along US 150/SR 56 into Paoli

Looking east along US 150/SR 56 through Paoli

Looking east along US 150/SR 56 through Paoli

Looking west along US 150/SR 56 from Paoli Town Square

Looking north along SR 37 from Paoli Town Square

Looking south along SR 37 at Paoli Town Square

Looking south along SR 37 through Paoli

Looking north along SR 37 into Orleans

Looking south along SR 37

Looking north along SR 37 through Orleans

Looking south along SR 37 through Orleans

Looking north along SR 37 between Orleans and Mitchell

Looking south along SR 37 between Orleans and Mitchell

Looking south along SR 37 at end of project from Lawrence CR 1000 S

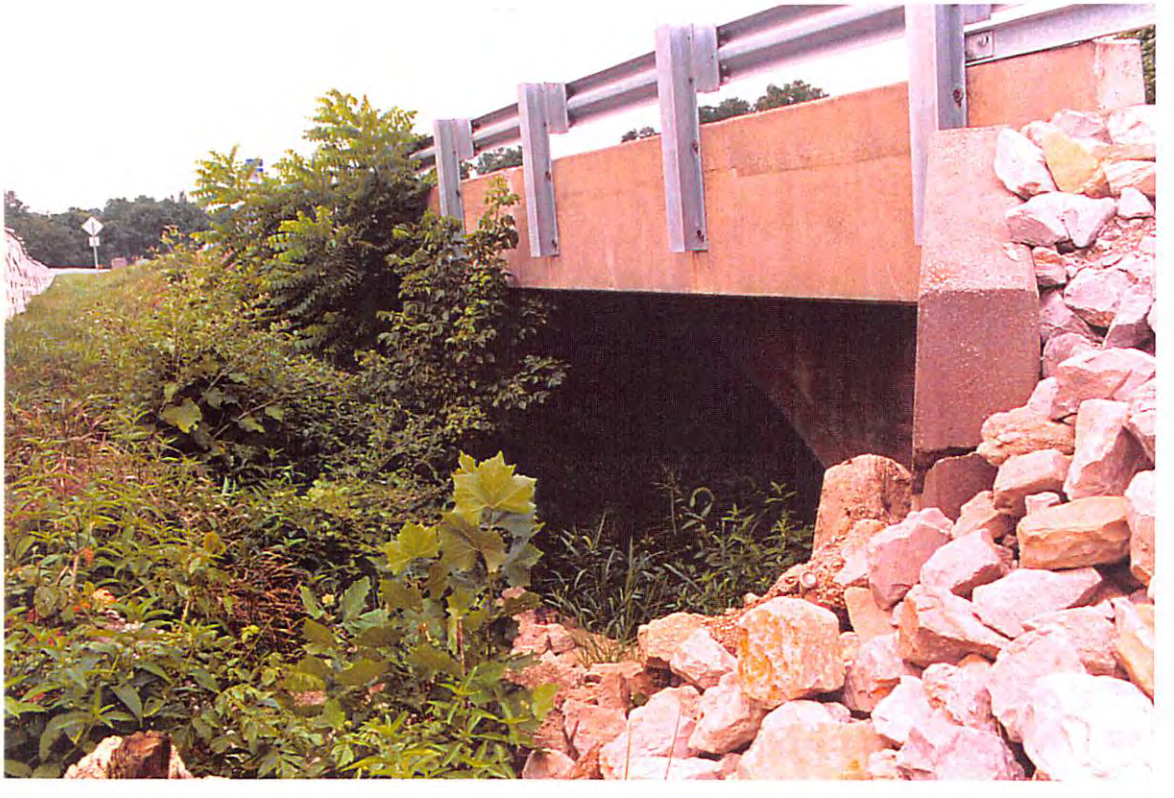
Looking northeast at Bridge Structure 150-59-5937A

Looking upstream of Lick Creek

Looking downstream of Lick Creek

Looking east across Bridge Structure 150-59-0449 over Lick Creek

Looking west across Bridge Structure 150-59-0449 over Lick Creek



Looking northwest at Bridge Structure 150-59-0559 branch of Lick Creek

Looking upstream at branch of Lick Creek from Bridge Structure 150-59-0559

Looking downstream at branch of Lick Creek from Bridge Structure 150-59-0559

Looking east across Bridge Structure 150-59-0559

Looking west across Bridge Structure 150-59-0559

Looking southeast at Bridge Structure 150-59-5938A

Looking upstream of Lick Creek from Bridge Structure 150-59-5938A

Looking downstream of Lick Creek from Bridge Structure 150-59-5938A

Looking east across Bridge Structure 150-59-5938A

Looking west across Bridge Structure 150-59-5938A

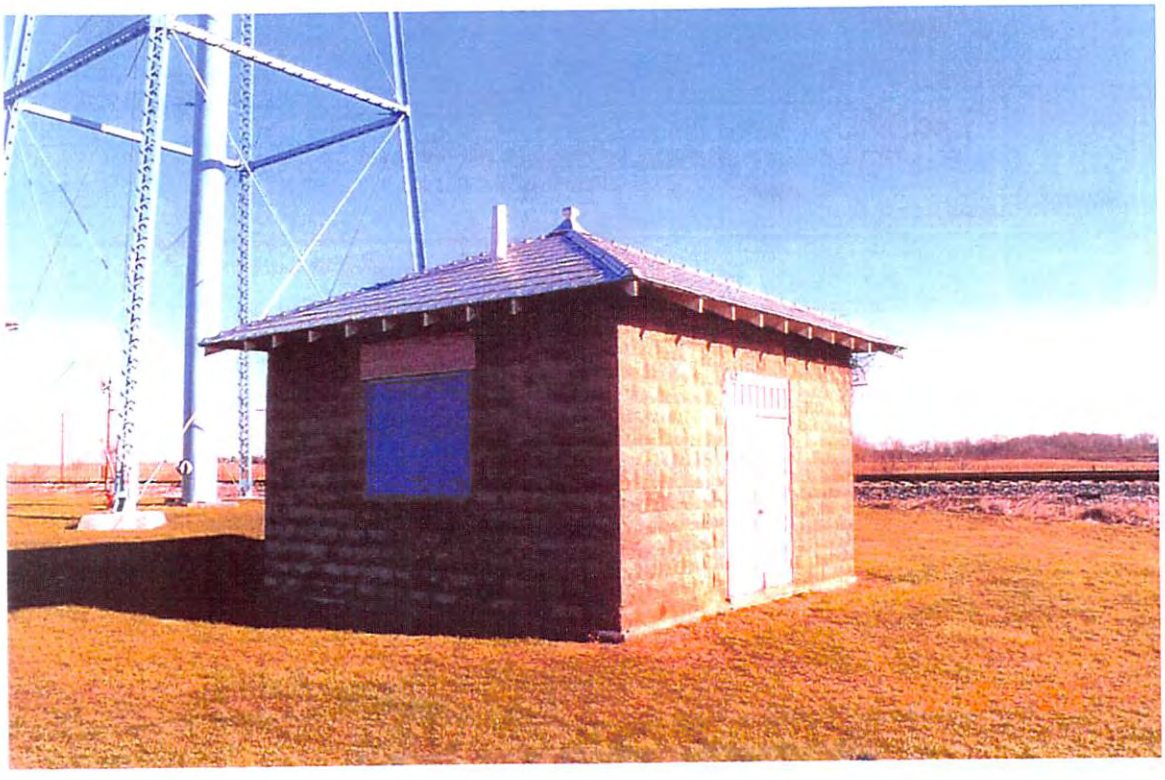
Looking south at Bridge Structure 150-59-6925

Relocation A

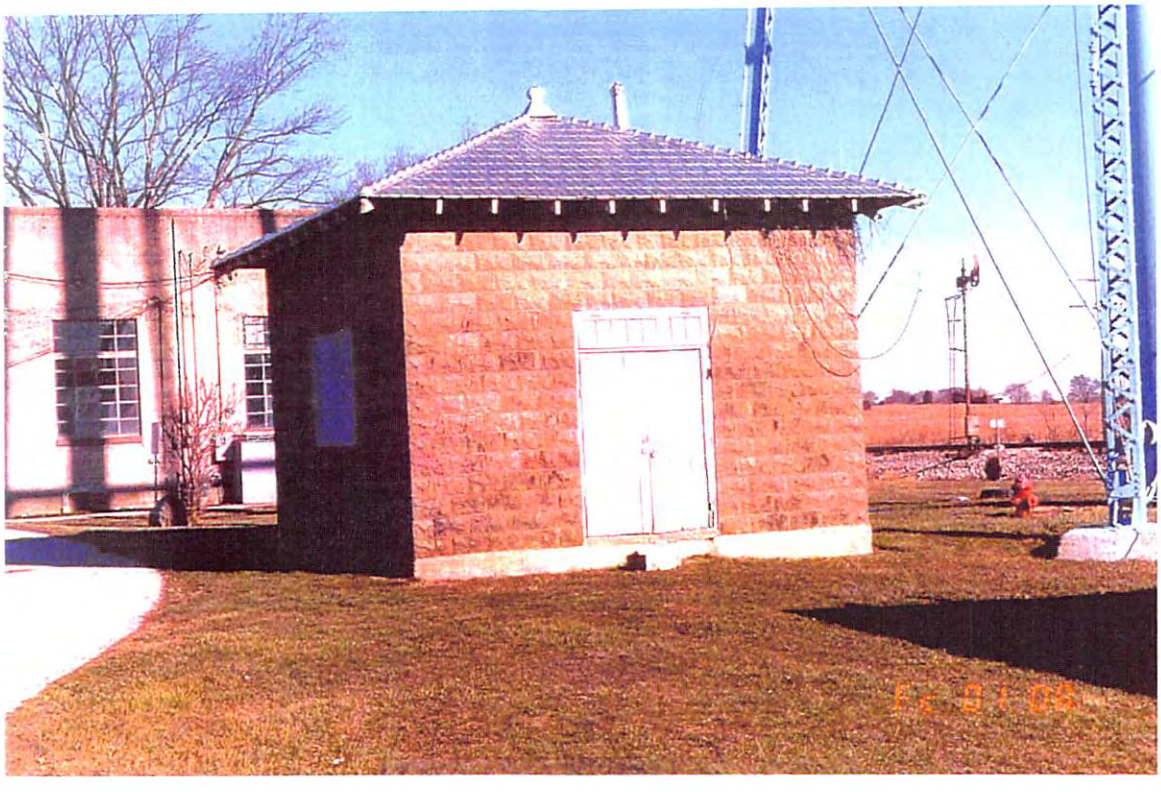
Relocation B

Relocation C

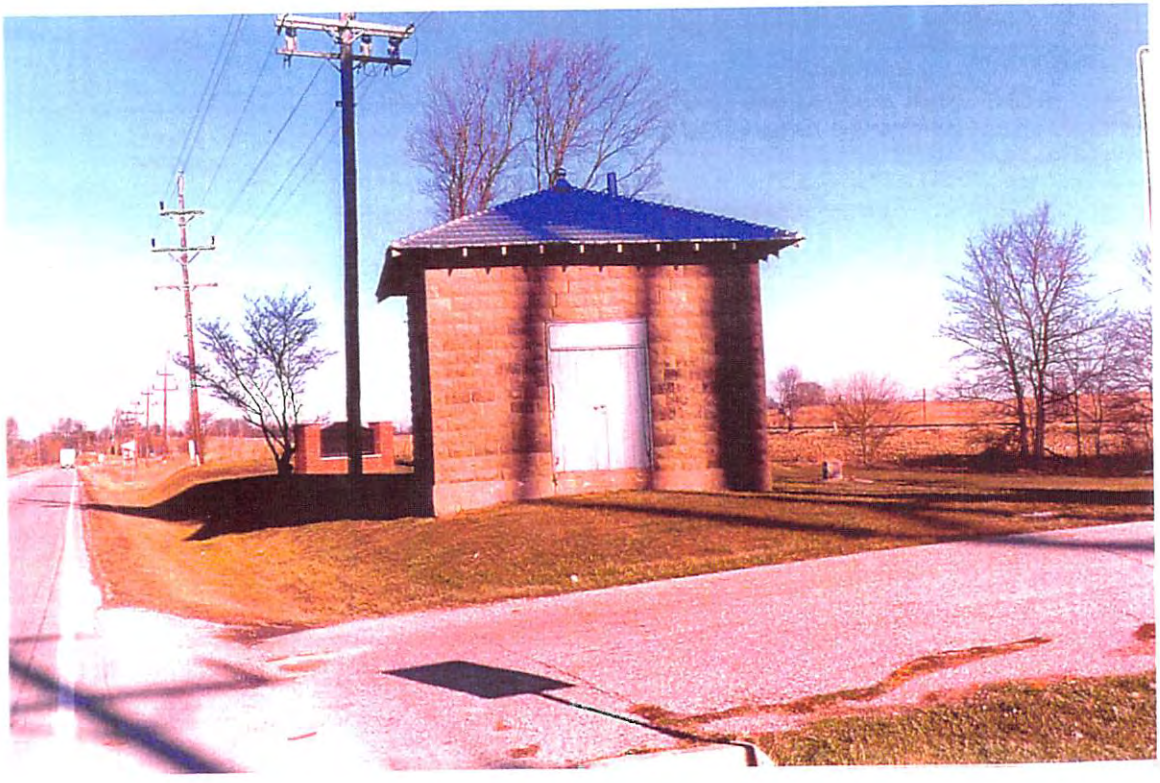
Removal D



Removal E (1)

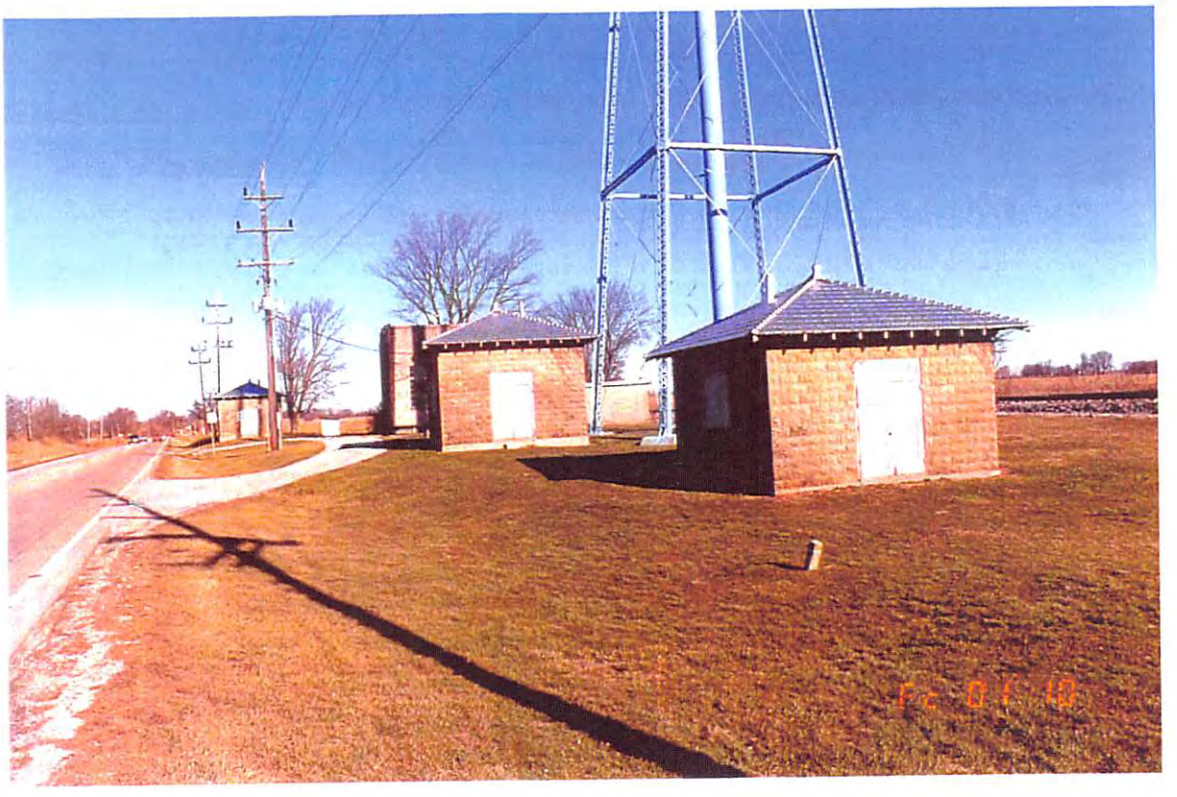


Removal E (2)



Removal E (3)

Possible Relocation G



Possible Relocation G and Removal E

Removal F

Removal F

DNR Indiana Department of Natural Resources

Frank O'Bannon, Governor
John Goss, Director

Environmental Unit
Division of Water
402 W. Washington Street, Rm. W-264
Indianapolis, IN 46204-2641

19 November 2002

Mr. David M Bourff
Butler, Fairman and Seufert, Inc
8450 Westfield Boulevard, Suite 300
Indianapolis, IN 46240-8302

Re: DNR #9807 - US 150/SR 56 and SR 37 road rehabilitation (from Prospect to Mitchell), Project# STP-024-4( ), Des# 9804680, 9804690, 9804790, 9804650; Multi County (Orange and Lawrence Counties)

Dear Mr. Bourff:

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

This proposal will require the formal approval of our agency for construction in a floodway, pursuant to the Flood Control Act (IC 14-28-1). Please submit a copy of this letter with the permit application.

The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity.

This site was field inspected on October 29, 2002. The majority of the potential impacts of this project are along segment #2 from Prospect to Indian Boundary Road near Paoli. This segment of the roadway currently runs adjacent to Lick Creek and crosses it four times. Any significant widening or realignment of this segment of roadway could result in significant impacts to the existing riparian vegetation and to the banks of Lick Creek in some areas.

Most of the riparian areas along Lick Creek in this reach are relatively narrow wooded corridors bordered by cropland, pasture, or roadway. The wooded riparian corridor provides important feeding, cover, and escape habitat for birds, reptiles, amphibians, and mammals. It is also a travel corridor between other habitat areas for large mammals. It provides important benefits to the stream such as shade, buffering runoff, removal of nutrients, sediment, and pollutants from the surrounding landscape, inputs of large woody debris and other in-channel habitat, and helps stabilize the streambanks. Significant disturbance to these existing riparian corridors will reduce the quantity and quality of fish and wildlife habitat in and along Lick Creek. Impacts to this segment should be avoided to the greatest extent possible. Unavoidable impacts should be mitigated by minimizing those impacts, and by creating replacement habitat in areas that are lacking habitat. This can be done by revegetating with native trees and shrubs in areas along Lick Creek that have been impacted by development or agriculture.

The other main area of concern is in segment #5 from the north side of Paoli to Lawrence County Road 1000 South. This segment traverses an area of abundant karst features including numerous sinkholes and a segment of the Lost River immediately adjacent to the existing right-of-way. Impacts to any karst features (e.g. sinkholes, the Lost River, or other underground drainage) should be avoided to the greatest extent possible.

Fish, wildlife, and botanical resource losses can be expected to occur as a result of this project. Those losses can be minimized through implementation of the following measures, in addition to the above recommendations. Inchannel disturbance and the clearing of trees and brush should be minimized and contained within the project limits. Trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) should not be cut from April 15 through September 15. There should be no work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife. "Low maintenance" areas should be revegetated with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species. Native hardwood trees should be planted along the top of the bank and right-of-way to replace the vegetation destroyed during construction. Low endophyte tall fescue may be used in "high maintenance" areas only. Riprap used should be minimum average 6 inch graded stone and extended below normal water level to provide habitat for aquatic organisms in the voids. Do not excavate or place fill in any riparian wetland.

Our agency appreciates this opportunity to be of service and apologizes for not being able to respond sooner in this matter. Please do not hesitate to contact Christie Kiefer, Environmental Coordinator at (317) 232-4160 or at 1-877-928-3755 if we can be of further assistance.

Sincerely,

Michael W. Neyer, PE
Director
Division Of Water

Note: Please include the above DNR # on any future correspondence regarding this project.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Water

Early Coordination/Environmental Assessment

DNR #: ER-9807-1 **Request Received:** June 15, 2004

Requestor: *Indiana Department of Transportation
Thomas L Duncan
100 North Senate Avenue, Room N755
Indianapolis, IN 46204

Project: US 150/SR 56 Roadway Improvements from Prospect to Paoli; Project# STP-024-4( ); Des#s 9804660, 9804680, 9804690, 0012540, 0012290, 012530, 0012280, and 0012550

County/Site Info: Orange

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

Natural Heritage Database: The Natural Heritage Program's data have been checked. To date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity. To the extent possible, avoid disturbing Feature 15007 (Resurgence of Lick Creek Underground Cut-Off). This is a significant natural feature and should be preserved.

Fish & Wildlife Comments: Fish, wildlife, and botanical resource losses can be expected to occur as a result of this project. These losses can be minimized through implementation of the following measures.

Where possible, any road widening should impact the side opposite the one bordering the creek more heavily in order to avoid impacting the already minimal riparian buffer of Lick Creek.

Care should be taken to avoid construction impacts to the "mysterious spring" Lick Creek cut-off rise located directly under the road at station 10+240.

Remove all construction debris from the current bridge and past bridge which has been left on site again, taking care not to damage or impact the natural feature.

Follow the karst-related recommendations in the report dated May 2004 by Earth-Tech.

Noise and vibration disturbance from the use of heavy equipment or blasting should be minimized or avoided near any cave entrances from Sept. 15 to April 15 to avoid potential disturbance to hibernating bats.

Revegetate all bare and disturbed areas with a mixture of grasses (excluding all varieties of tall fescue), legumes, and native shrub and hardwood tree species as soon as possible upon completion.

Minimize and contain within the project limits all tree and brush clearing and provide the opportunity to utilize cleared trees of firewood and timber size.

Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.

Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.

Do not cut any trees suitable for Indiana bat roosting (greater than 14 inches in diameter, living or dead, with loose hanging bark) from April 15 through September 15.

Do not excavate in the low flow area except for the placement of piers, foundations, and riprap, or removal of the old structure.

Operate equipment used to replace the bridge from the existing roadway.

Use minimum average 6 inch graded riprap stone extended below the normal water level to provide habitat for aquatic organisms in the voids.

Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.

Post "Do Not Mow or Spray" signs along the right-of-way.

THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Water

Early Coordination/Environmental Assessment

Do not excavate or place fill in any riparian wetland.

Contact Staff: Christie L. Kiefer, Environ. Coordinator, Environmental Unit

Our agency appreciates this opportunity to be of service. Please do not hesitate to contact the above staff member at (317) 232-4160 or 1-877-928-3755 (toll free) if we can be of further assistance.

Date: November 10, 2004

Jon W. Eggen
Environmental Supervisor
Division of Fish and Wildlife

DNR Indiana Department of Natural Resources

Frank O'Bannon, Governor
Larry D. Macklin, Director

Division of Historic Preservation
and Archaeology
402 W. Washington Street, W274
Indianapolis, IN 46204-2739
PH: 317/232-1646
FAX: 317/232-0693
dhpa@dnr.state.in.us

October 30, 2001

Curtis H. Tomak
Environmental Assessment Section
Division of Pre-Engineering and Environment
Indiana Department of Transportation
100 North Senate Avenue, Room N848
Indianapolis, Indiana 46204-2249

Federal Agency: Federal Highway Administration ("FHWA")

Re: Request for determination of eligibility for properties within the area of potential effects for the improvement of US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project [Project #STP-024-4() / STP-095-3-(), Designation #9804680, #9804690, #9804790, & #9804650]

Dear Mr. Tomak:

The Indiana State Historic Preservation Office ("Indiana SHPO") has conducted an analysis of the materials dated September 12, 2001, and received by the Indiana SHPO on September 13, 2001, for the above indicated project in Orange and Lawrence counties, Indiana.

We are providing our comments to assist the FHWA and the Indiana Department of Transportation with their identification and evaluation efforts. In addition to the Newberry Friends Meeting house, the Paoli downtown district and the Lindley house, which have been listed in the National Register of Historic Places, we believe that the following properties meet the criteria to be considered eligible for inclusion in the National Register due to their historical and architectural significance:

The house in photograph 19c is a good example of an I-House.

Castle Knoll Farm in photographs 10c - 15c is an outstanding example of an intact early 20th century farmstead and is associated with agriculture in the township.

The house in photograph 13a is an outstanding example of early 19th century Victorian residential design with Gothic and Italianate stylistic features.

The Downtown Orleans Historic District in photographs 19 & 21 is significant for its role in the commercial development of Orleans. A map identifying the district boundaries is enclosed.

From the documentation provided in photographs 1a, 2a, 3a, 22, 23, and 24, we believe that there may be several historic districts within the project area. Because Orange County has not been surveyed, we do not have sufficient documentation to evaluate the areas. Please provide additional streetscape photographs that are representative of the areas, keyed to a site plan, as well as, historical documentation.

Please key *all* photographs to a site plan, including the photographs submitted with your September 12, 2001, letter to demonstrate their proximity to the project area.

Furthermore, please provide the indicated information to facilitate the identification and analysis of historic properties in the project area once it becomes available:

1) Provide an overall description of the project and its location.

   - Include address, city, township, and county.
   - Detail any construction, demolition, and earthmoving activities.

2) Define the area of potential effects[1] and provide a map or a good quality photocopy of a map containing the following:

   - The boundaries of the area of potential effects and the precise location of the project area within those boundaries clearly outlined in dark ink on a copy of the relevant portion of a town, city, county, or U.S. Geological Survey quadrangle map.
   - The names of nearby landmarks clearly labeled (e.g., major streets, roads, highways, railroads, rivers, lakes).

3) Give the precise location of any buildings, structures, and objects *within the area of potential effects* (e.g., addresses and a site map with properties keyed to it).

4) Give the known or approximate date of construction for buildings, structures, objects, and districts *within the area of potential effects*.

5) Submit historical documentation for buildings, structures, objects, and districts *within the area of potential effects*.

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[1]. Area of potential effects means the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking (see 36 C.F.R § 800. 16[d]).

6) List all sources checked for your historical research of the *area of potential effects*.

7) Describe the current and past land uses within the project area; in particular, state whether or not the ground is known to have been disturbed by construction, excavation, grading, or filling, and, if so, indicate the part or parts of the project area that have been disturbed and the nature of the disturbance; agricultural tilling generally does not have a serious enough impact on archaeological sites to constitute a disturbance of the ground for this purpose.

Once the indicated information is received, the Indiana SHPO will resume identification and evaluation procedures for this project. If you have questions about our comments, please call Karie Brudis of our office at (317) 232-1646.

Very truly yours,

Larry D. Macklin
State Historic Preservation Officer

LDM:KAB:MDF:kab

Enclosure

cc: John Baxter, Division Administrator, Federal Highway Administration
Jane Cassady, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources
Division of Historic Preservation & Archaeology•402 W. Washington Street, W274• Indianapolis, IN 46204-2739
Phone 317-232-1646•Fax 317-232-0693•dhpa@dnr.state.in.us

Frank O'Bannon, Governor
John Goss, Director

HISTORIC PRESERVATION AND ARCHAEOLOGY

October 28, 2002

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Revised archaeological records review (Schwegman, 09/12/2002) and archaeological records review (Schwegman, 08/22/2002) concerning improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4[ ]/STP-095-3[ ]; Designation #9804680, #9804690, #9804790, & #9804650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C.§ 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated September 6, 2002, and September 26, 2002, and received by the Indiana SHPO on September 9, 2002, and September 26, 2002, for the above indicated project in Orange and Lawrence counties, Indiana.

In terms of potential impact on archaeological resources, we concur with the conclusions and recommendations of the **revised** archaeological records search. Accordingly, an archaeological reconnaissance will be required for all portions of the project area that have not been previously cleared by our office. Additionally, a systematic resurvey of site 12-Or-552 will be required to reevaluate its potential significance. The survey must be done in accordance with the Secretary of the Interior's "Standards and Guidelines for Archaeology and Historic Preservation" (48 F.R. 44716). A description of the survey methods and results must be submitted to the Division of Historic Preservation and Archaeology for review before we can comment further.

Comments regarding buildings and structures will be provided under separate cover.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call Jim Mohow of our office at (317) 232-1646.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:kab

cc: John Baxter, Division Administrator, Federal Highway Administration
Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources
Division of Historic Preservation & Archaeology • 402 W. Washington Street, W274 • Indianapolis, IN 46204-2739
Phone 317-232-1646 • Fax 317-232-0693 • dhpa@dnr.state.in.us

Frank O'Bannon, Governor
John Goss, Director

October 29, 2002

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Draft 800.11(e) documentation for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4[ ]/ STP-095-3-[ ]; Designation #9804680, #9804690, #9804790, & #9804650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated August 23, 2002, and received by the Indiana SHPO on August 26, 2002, for the above indicated project in Orange and Lawrence counties, Indiana.

Thank you for provided our office with a copy of the draft 800.11(e) documentation. Although it may be the appropriate finding, at this time we do not believe we have enough information to enable the Indiana SHPO to provide its views on the effects as stated in 36 C.F.R. § 800.4(d)(2).

In addition to the Newberry Friends Meeting house, the Paoli downtown district, the Orange County Courthouse, the Thomas Newby Braxtan House, and the Thomas Elwood Lindley house, which have been listed in the National Register of Historic Places, we have identified the following properties within the probable area of potential effects and believe that they meet the criteria to be considered eligible for inclusion in the National Register due to their historical and architectural significance:

The house in photograph 2-5 is a good example of an I-House.

Castle Knoll Farm in photographs 2-11, 2-13, and 2-15 is an outstanding example of an intact early 20th century farmstead and is associated with agriculture in the township.

The house in photograph 7-22 is an outstanding example of early 19th century Victorian residential design with Gothic and Italianate stylistic features.

The Downtown Orleans Historic District in photographs 9-10 through 10-12 is significant for its role in the commercial development of Orleans.

Based on the information provided to our office, we believe that there may be effects on the above identified historic properties qualifying it for inclusion in or eligibility for the National Register (*see* 36 C.F.R. § 800.16[i]). Please provide the following information once it becomes available:

1) We have noted that a four-lane passing section will begin in front of the house in photograph 2-5. However, we are unable to determine what changes will occur to the existing conditions. Please provide a detailed site plan, drawn to scale, showing the footprint or face of the property in relation to the existing and proposed conditions (e.g., roadway, driveways, etc.).

2) Discuss the proposed roadway improvements for Segment 5 through Orleans. Will it be simply milled and resurfaced? Will the existing curb to curb roadway width and lane configuration remain the same? Please provide a detailed site plan, drawn to scale, showing the footprint or face of the property in relation to the existing and proposed conditions (e.g., roadway, driveways, etc.).

Furthermore, we observed that your summary of historic properties included Sites #093-416-40041, 093-416-40051, and 093-416-40052, referencing to criterion C and N. It appears to us that perhaps you referred to the ratings provided in the published survey entitled Lawrence County Interim Report, Indiana Survey of Historic Sites and Structures, 1992. The ratings in the survey do not correlate with any Federal criteria or any other criteria to our knowledge. In general terms, the Interim Reports are designed to be reference tools documenting a broad range of buildings, structures, objects or districts that are potentially eligible for listing in the National Register as explained at the beginning of each publication. Additionally, the advisory ratings in the surveys are intended to serve as a tool for considering the level of significance of properties, based on information that is readily available to the surveyor without detailed research and analyses. For your information, the National Park Service's criteria of significance are the only criteria used for evaluating historic properties that are not already listed in the National Register pursuant to 36 C.F.R. Part 800. There are only four criteria used to identify the type of historic significance, criteria A, B, C, and D. We recommend that you refer to the National Park Service's web page that is available on-line, www.cr.nps.gov/nr/listing.html, for an explanation of these criteria and for information on how to apply the criteria for evaluation.

For comments regarding archaeological issues, please refer to our letter dated October 28, 2002.

If you have questions about our comments, please call Karie A. Brudis of our office at (317) 232-1646.

Very truly yours,

for Karie A Brudis

Jon C. Smith
Deputy State Historic Preservation Officer

JCS:KAB:kab

cc: John Baxter, Division Administrator, Federal Highway Administration
Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana
Christie Kiefer, Division of Water, Indiana Department of Natural Resources

DNR Indiana Department of Natural Resources
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Frank O'Bannon, Governor
John Goss, Director

HISTORIC PRESERVATION AND ARCHAEOLOGY

November 12, 2002

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Additional information to aid in the assessment of effects concerning improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4[ ]/STP-095-3[ ]; Designation #9804680, #9804690, #9804790, & #9804650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C.§ 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated November 1, 2002, and received by the Indiana SHPO on the same day, for the above indicated project in Orange and Lawrence counties, Indiana.

Thank you for providing the additional information requested in our letter dated October 29, 2002. Based upon the information provided, we do not believe that the integrity of the Orleans Historic District and the house in photograph 2-5 will be diminished as a result of this project.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call Karie A. Brudis of our office at (317) 232-1646.

Very truly yours,

Jon C. Smith
Deputy State Historic Preservation Officer

JCS:KAB:kab

cc: John Baxter, Division Administrator, Federal Highway Administration
Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources

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Frank O'Bannon, Governor
John Goss, Director

HISTORIC PRESERVATION AND ARCHAEOLOGY

December 13, 2002

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Phase 1a archaeological reconnaissance survey for the proposed rehabilitation of US 150 / SR 56 in French Lick and Paoli townships (Jackson, 11/30/02) and phase 1a archaeological field reconnaissance report for the proposed improvements to SR 37 from 2.4 km north of the town square in Paoli to CR 1000 South (Carmany & Adderley, 11/22/02), STP-024-4( )/STP-095-3( ); DESIGNATION #9804680, #9804690, #9804790, and #9804650

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated 12/02/02, and received by the Indiana SHPO on 12/03/02, for the above indicated project in Orange and Lawrence Counties, Indiana.

In regards to the US 150/SR 56 improvements, we concur with most, but not all, of the archaeological conclusions and recommendations. Our comments regarding this aspect of the review are as follow:

1) Site 12-Or-740 may contain significant information relating to the prehistoric habitation of southern Indiana. The site is therefore potentially eligible for inclusion in the National Register of Historic Places. Given its potential significance, the site must either be avoided by all construction, or subjected to archaeological testing to clearly determine its significance.

2) We also agree that the portion of site 12-Or-748 that lies within the proposed project area does not appear worthy of additional archaeological investigation. However, the portion of the farm complex that lies outside of the proposed right-of-way would require additional archaeological survey if it is to be impacted by the proposed project.

3) An additional site, 12-Or-741, may contain significant archaeological information. The site yielded a variety of artifacts to shovel probing, and the depth of the "A" horizon could not be clearly defined. These factors suggest the potential for discrete, intact archaeological deposits to exist on the site. The site is therefore potentially eligible for inclusion in the National Register, and must either be avoided by all construction or subjected to test excavation.

4) The alluvial portions of the project area have a good potential to contain deeply buried archaeological deposits. As such, systematic subsurface reconnaissance will be required of those areas to determine the presence or absence of buried sites.

5) Prior to subsurface reconnaissance or testing, plans outlining the proposed subsurface methodology

must be submitted to our office for review and comment.

6) Please advise our office as to how you intend to proceed regarding the avoidance or further investigation of sites 12-Or-740, 741, and the unevaluated portion of 748.

In regards to the report relating to the proposed improvements to SR 37, we concur with thee conclusions and recommendations of the archaeological report. Our comments regarding that aspect of the review are as follow:

7) That portion of 12-Or-552 that lies within the proposed right-of-way does not appear to be of significance, and no further investigation of that area will be required. However, as significant archaeological deposits may exist on other portions of the site, all construction must be limited to within the stated right-of-way, or additional archaeological investigation will be required.

8) The identified alluvial areas with potential for buried sites must be subjected to subsurface reconnaissance. We agree that the areas in question have a high potential for deeply buried sites and require additional evaluation.

9) Prior to additional investigation, plans outlining the proposed subsurface methodology must be submitted to our office for review and comment.

10) Please advise our office as to your intentions to avoid, or further investigate, the unevaluated portion of site 12-Or-552.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call our office at (317) 232-1646. Questions about archaeological issues should be directed to Jim Mohow. Questions about historic buildings or structures pertaining to this project should be directed to Karie Brudis.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:jam

cc: John Baxter, Division Administrator, Federal Highway Administration

emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana gsekula@historiclandmarks.org

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Frank O'Bannon, Governor
John Goss, Director

February 20, 2003

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Geoarchaeological investigations (Cantin, 1/16/02) and archaeological testing proposal (Zoll, 1/17/03) for the proposed rehabilitation of US 150 / SR 56 in French Lick and Paoli townships and SR 37 improvements from 2.4 km north of the town square in Paoli to CR 1000 South (Project #STP-024-4[ ]/STP-095-3[ ]; Designation #9804680, 9804690, 9804790, & 9804650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C.§ 470f) and 36 C.F.R. Part 800, the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated January 23, 2003, and received by the Indiana SHPO on the same day, for the above indicated project in Orange and Lawrence counties, Indiana.

The proposal for the geoarchaeological investigation will be acceptable as proposed, with the understanding that, contingent upon the results of the probing, additional subsurface reconnaissance may be required.

The proposal for the testing of sites 12-Or-740 and 741 will be acceptable, with the following conditions:

1) The hand excavation of discrete features must be recorded in both plan and profile view.

2) If human remains are encountered, they must be treated in accordance with IC 14-21-1 and 312 IAC 22.

With these provisions, the geoarchaeological investigation and test excavations may proceed. This letter, or a copy of this letter, should be carried by the archaeologist in the field, so as to minimize confusion if they are challenged by law enforcement officers.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call Jim Mohow of our office at (317) 232-1646.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:KAB:kab

cc: John Baxter, Division Administrator, Federal Highway Administration
emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources

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Frank O'Bannon, Governor
John Goss, Director

September 24, 2003

David M. Bourff
Butler, Fairman & Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration

Re: Approved area of potential effects and recommended determinations of eligibility for properties within the area of potential effects for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4[ ]; Designation #9804680; 9804690, 9804790 and 984650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated August 28, 2003, and received on August 29, 2003, for the above indicated project in Orange and Lawrence counties, Indiana.

Given the information formerly submitted, we have no concerns regarding the Federal Highway Administration's definition of the area of potential effects and determinations of eligibility. Formerly, we indicated that we believed additional information was needed with respect to archaeological issues. Once the indicated information is received, the Indiana SHPO will resume identification and evaluation procedures for this project.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call Karie A. Brudis of our office at (317) 232-1646.

Very truly yours,

Jon C. Smith
Deputy State Historic Preservation Officer

JCS:KAB:kab

cc: Kate Quinn, Acting Administrator, Federal Highway Administration
emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources

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Frank O'Bannon, Governor
John Goss, Director

December 11, 2003

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Geoarchaeological investigations for areas along SR 37 (Cantin 10/22/03) and geoarchaeological investigation along US 150 (Cantin 9/22/03) for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4[ ] / STP-095-3-[ ]; Designation #9804680, #9804690, #9804790, & #9804650; DNR #9807)

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated November 12, 2003, and received on November 13, 2003, for the above indicated project in Orange and Lawrence Counties, Indiana.

Given the results of the geomorphological investigation, we concur with the conclusions and recommendations of the archaeological contractor. There is clearly a potential for buried archaeological deposits in the portion of the project area that was defined by core #8 (see Figure 3 of the report). Moreover, minimal additional investigation else where in the alluvial portions of the proposed right-of-way is needed to confirm the results of the other probes.

Given the aforementioned factors, an archaeological subsurface reconnaissance will be required to determine the presence or absence of buried archaeological resources in the area designated in Figure 3. Additionally, a single trench should be excavated in the area of the other Giddings probes, to support or refute their results. The proposed subsurface reconnaissance plan will be acceptable, with the following conditions:

1) If discrete cultural features or midden is encountered, they must be sampled by hand excavation to attempt to determine their nature and chronology.

2) If available, organic samples for radiocarbon dating should be recovered.

3) If human remains are encountered, they must be treated in accordance with IC 14-21-1 and 312 IAC 22.

4) All excavation must be directly supervised by an archaeologist meeting the supervisory criteria of

312 IAC 21.

5) A report detailing the methods and results of the archaeological investigation must be submitted to our office, for review and comment, within six months of the completion of fieldwork.

With these conditions, the proposed subsurface reconnaissance may proceed. This letter, or a copy of this letter, should be carried by the archaeologist in the field, so as to avoid confusion if they are challenged by law enforcement officers. If you have questions about our comments, please call Jim Mohow of our office at (317) 232-1646.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:kab

cc: Kate Quinn, Acting Division Administrator, Federal Highway Administration
emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

DNR Indiana Department of Natural Resources

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Frank O'Bannon, Governor
John Goss, Director

HISTORIC PRESERVATION AND ARCHAEOLOGY

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February 9, 2004

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Subsurface reconnaissance proposal along US 150 in Lick Creek (Cantin 1/14/04) for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project, STP-024-4() / STP-095-3-(), DESIGNATION #9804680, #9804690, #9804790, & #9804650, DNR #9807

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated January 19, 2004, and received on January 20, 2004, for the above indicated project in Orange and Lawrence Counties, Indiana.

The submitted proposal would be more correctly referred to as a Phase Ic subsurface reconnaissance, rather than a geoarchaeological study. The subsurface trenching methodology will be acceptable, with the following conditions:

1) All excavation must be directly supervised by an archaeologist meeting the supervisory criteria of IC 14-21-1 and 312 IAC 21.

2) Any *in situ* archaeological deposits that are encountered must be excavated by hand. One hundred percent of discrete cultural features must be recovered, and a sample of at least 25% of any exposed cultural midden.

3) A detailed report of the methods and results of the investigation must be submitted to our office, for review and comment, within one year of the completion of fieldwork.

4) If human remains are encountered, they must be treated in accordance with IC 14-21-1 and 312 IAC 22.

5) Any proposed revision to this methodology must be submitted to our office, in writing, for review and comment, in advance of implementation in the field.

With these conditions, the proposed subsurface reconnaissance may proceed. This letter, or a copy of this

letter, should be carried by the archaeologist in the field, so as to avoid confusion if they are challenged by law enforcement officers.

A copy of the revised 36 C.F.R. Part 800 that went into effect on January 11, 2001, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call our office at (317) 232-1646. Questions about archaeological issues should be directed to Jim Mohow.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:jam

cc: Robert F. Tally, Jr., P.E, Division Administrator, Federal Highway Administration

emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

Joseph E. Kernan, Governor
John R. Goss, Director

DNR Indiana Department of Natural Resources

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September 28, 2004

David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Federal Agency: Federal Highway Administration ("FHWA")

Re: Archaeological testing (Zoll 7/19/04) and Geoarchaeological subsurface investigations (Holycross & Cantin 6/21/04) along US 150 in Lick Creek for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project, STP-024-4() / STP-095-3-(), DESIGNATION #9804680, #9804690, #9804790, & #9804650

Dear Mr. Bourff:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated July 29, 2004, and received on July 30, 2004, for the above indicated project in Orange and Lawrence Counties, Indiana.

Based upon the documentation available to the staff of the Indiana SHPO, and the results of the archaeological testing and subsurface reconnaissance, we have not identified any historic buildings, structures, districts, objects, or archaeological resources listed in or eligible for inclusion in the National Register of Historic Places within the probable area of potential effects.

Upon completion of all identification and evaluation efforts, seeking all necessary views on the effects, and gathering supporting documentation, then it will be appropriate for the FHWA to analyze the information that has been provided by the applicant or its consultant and consider the views of the Indiana SHPO, the general public, and any other consulting parties to make the necessary determinations and findings. Refer to the following comments for guidance:

1) If the FHWA believes that a finding of "no adverse affect" accurately reflects its assessment, then it shall provide documentation of its finding as set forth in 36 C.F.R. § 800.11(e) to the Indiana SHPO, notify all consulting parties, and make the documentation available for public inspection (36 C.F.R. §§ 800.5[b-c] and 800.2[d][2]). *Be advised that the omission of the supporting documentation may result in unnecessary delays resulting from objections, disagreements or questions while the appropriate information is gathered to enable any reviewing party to understand the basis for your finding. Therefore, we urge the FHWA and its consultant to carefully ensure that each of the components specified in the documentation standards are addressed and that sufficient documentation is provided to clearly demonstrate the particular documentation standards have been met.*

2) If, on the other hand, the FHWA believes that a finding of "adverse affect" accurately reflects its assessment, then it shall provide notification to the Advisory Council on Historic Preservation by providing the documentation in 36 C.F.R. § 800.11(e) as stated in 36 C.F.R. § 800.6(a)(1). Additionally, the FHWA may proceed to provide documentation of its finding as set forth in 36 C.F.R. § 800.11(e) to the Indiana SHPO, all consulting parties, and make the documentation available for public inspection and proceed to seek ways to avoid, reduce and mitigate effects as stated in 36 C.F.R. § 800.6 (a)(2-5).

We look forward to receiving notice of the FHWA's findings.

Also, be advised that if any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In the event that artifacts or features are discovered during the implementation of the Federally assisted project, activity, or program and a plan has not been developed, it is the Federal agency's responsibility to make reasonable efforts to avoid, minimize or mitigate adverse effects in accordance with 36 C.F.R. § 800.13.

A copy of the revised 36 C.F.R. Part 800 that went into effect on August 5, 2004, may be found on the Internet at www.achp.gov for your reference. If you have questions about our comments, please call our office at (317) 232-1646. Questions about archaeological issues should be directed to Jim Mohow.

Very truly yours,

James A. Mohow

for Jon C. Smith
Deputy State Historic Preservation Officer

JCS:JAM:jam

cc: Robert F. Tally, Jr., P.E, Division Administrator, Federal Highway Administration

emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

Joseph E. Kernan, Governor
John R. Goss, Director

DNR Indiana Department of Natural Resources

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November 9, 2004

Robert Tally, PE
Division Administrator
U.S. Department of Transportation
Federal Highway Administration, Indiana Division
575 North Pennsylvania Street, Room 254
Indianapolis, Indiana 46204

Federal Agency: Federal Highway Administration ("FHWA")

Re: FHWA's finding of "no adverse effect" for the improvements to US 150 / SR 56 from Prospect to the west side of the town square in Paoli and SR 37 from the north side of the square in Paoli to Orleans to Mitchell project (Project #STP-024-4 [ ] / STP-095-3 [ ], Designation #9804680, #9804690, #9804790, & #9804650; DNR #9807)

Dear Mr. Tally:

Pursuant to Section 106 of the National Historic Preservation Act (16 U.S.C. § 470f) and 36 C.F.R. Part 800, the staff of the Indiana State Historic Preservation Officer ("Indiana SHPO") has conducted an analysis of the materials dated October 20, 2004, and received on October 22, 2004 from Butler, Fairman & Seufert, Inc., for the above indicated project in Orange and Lawrence counties, Indiana.

We concur with the FHWA's October 13, 2004, finding that there are no historic buildings, structures, districts, objects, or archaeological resources within the area of potential effects that will be adversely affected by the above indicated project.

If any archaeological artifacts or human remains are uncovered during construction, demolition, or earthmoving activities, state law (Indiana Code 14-21-1-27 and 29) requires that the discovery must be reported to the Department of Natural Resources within two (2) business days. In the event that artifacts or features are discovered during the implementation of the Federally assisted project, activity, or program and a plan has not been developed, it is the Federal agency's responsibility to make reasonable efforts to avoid, minimize or mitigate adverse effects in accordance with 36 C.F.R. § 800.13.

If you have any questions, please call Karie A. Brudis of our office at (317) 232-1646.

Very truly yours,

Jon C. Smith
Deputy State Historic Preservation Officer

JCS:KAB:kab

cc: David M. Bourff, Butler, Fairman, & Seufert, Inc.
emc: Greg Sekula, Director, Southern Regional Office, Historic Landmarks Foundation of Indiana

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Butler, Fairman & Seufert Inc

United States Department of the Interior

FISH AND WILDLIFE SERVICE

BLOOMINGTON FIELD OFFICE (ES)
620 South Walker Street
Bloomington, IN 47403-2121
(812) 334-4261 FAX (812) 334-4273

October 4, 2002

Mr. David Bourff
Butler Fairman & Seufert
8450 Westfield Boulevard, Suite 300
Indianapolis, Indiana 46240-8302

Project No.: STP-024-4 Des. 9804650, 9804680, 9804690, 9804790
Structure: Multiple Crossings
Road(s): US 150/SR 56, SR 37
Waterway: Lost River, Lick Creek, several unnamed tributaries
Work Type: Road reconstruction
County(ies): Lawrence, Orange

Dear Mr. Bourff:

This responds to your letter dated August 13, 2002, requesting U.S. Fish and Wildlife Service (FWS) comments on the aforementioned project.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et. seq.) and are consistent with the intent of the National Environmental Policy Act of 1969, the Endangered Species Act of 1973, and the U. S. Fish and Wildlife Service's Mitigation Policy.

The proposed project consists of reconstruction of US 150/SR56 between Prospect and Paoli (approximately 9 miles), and reconstruction of SR 37 between Paoli and Mitchell (approximately 11.5 miles). Right-of-way will increase throughout most of the project, including about 55 acres in segment 2 (from Prospect to the western edge of Paoli), 4 acres in Segment 3 (end of Segment 2 to Paoli town square) and 31.3 acres in Segment 5 (end of Segment 4 to south edge of Mitchell). In addition to meeting current cross section design standards, additional right-of-way will be required to meet design standards for horizontal and vertical curves. Proposed bridge replacements include two bridges over Lick Creek and two bridges over tributaries, along with multiple small structures. Other bridges along the route are to be replaced under separate projects. A major road curve realignment is proposed west of the intersection of Orange County Road 550 West.

The project area has many environmental constraints, including streams, floodplains and riparian areas, karst resources, and wetlands. In several areas streams and karst features have steep slopes. We will address each resource category separately.

Karst Resources

The project lies in one of the most significant karst areas in Indiana. Several caves and other major karst features are located in the general area. These features should be evaluated and protected in accordance with our Memorandum of Under standing with INDOT. The FWS has a copy of the 1998 karst survey report referenced in your letter, however we do not have a copy of the revised 2001 version. We request a copy of the 2001 report prior to finalizing our conclusions about karst resources. If the karst feature descriptions and appendices are the same as in the 1998 report we would only need a copy of the revised text and supporting tables.

Tables 6-9 in the 1998 Earth Tech report provide a list of potential physical and hydrologic impacts to caves, swallowholes and numerous sinkholes and other smaller karst features. The environmental document for this project should include an analysis and mitigation proposal based on the Earth Tech report. We also recommend that you consult with Mr. Keith Dunlap of the Indiana Karst Conservancy regarding potential impacts to and mitigation for karst resources.

Streams, Riparian Areas and Floodplains

A biologist from our Bloomington Field Office inspected the project corridor on October 1, 2002. The focus of our inspection was on potential impacts to streams and riparian areas. The stream that will be most affected by the project is Lick Creek, a major tributary of the Lost River. Lick Creek throughout the project corridor has a natural channel configuration with meanders, pools and riffles. In some areas it has been adversely affected by non-point pollution and by proximity to the highway and other developments. Woody riparian vegetation is dominated by silver maple and boxelder with sycamore and black walnut also common.

The project corridor contains 2 crossings of the Lost River and 4 crossings of Lick Creek. Only two of these bridges will be replaced under the current project; we noted one special concern beyond standard mitigation recommendations for bridge replacements. At Structure #150-59-5938 Lick Creek has fairly steep wooded slopes with a county road in close proximity. Special structural and erosion control measures may be necessary at this site to protect riparian forest and stream bank stability. It may be advantageous to relocate the county road intersection further east for this purpose.

US 150/SR56 follows Lick Creek and is located in the floodplain for the entire route segment between Paoli and its mouth at the Lost River near Prospect. In some areas the existing road is extremely close to the stream and the reconstruction project has a high potential for adverse impacts to the stream at those locations. We will discuss each such location in the following text.

I. County Road 725 West to County Road 550 West (590 West). The highway closely parallels Lick Creek for this entire reach of about 1.5 miles. Distance to the top of bank varies from about 10 - 180 feet but is mostly less than 50 feet, and in several areas the road slope is directly adjacent to the top-of-bank or is separated from it by only a few feet. The worst situation is at the curve west of CR 550W (CR 590W), where an outside bend of the stream channel is impinging upon the road slope. Most likely the stream was much further away when the road was built, but

meandering of the outside bend has caused the channel to migrate toward the road. The stream has been adversely affected in this location by erosion, surface runoff from the road and collapse of woody riparian vegetation into the channel (Photo 1). The north side of the road contains a steep, forested slope.

Photo 1 Lick Creek at apex of highway curve west of CR 550W

A road realignment is proposed at this location, with two alternatives. As we understand the coordination information you provided, Alternative 2A would relocate the highway about 530 feet to the south, requiring two new bridges over Lick Creek. Alternative 2B would relocate the highway about 140 feet to the south and would relocate the stream channel about 60 feet south of the new road (about 200 feet south of the existing channel). Presumably the curve at this location is too sharp and too close to the stream to meet AASHTO design standards on the existing alignment.

In areas where the highway is further from the stream the intervening area is mostly forested. These areas constitute the only good forest buffers along Lick Creek in this reach since the other side of the stream is occupied by fields with only a narrow forest buffer. Substantial removal of this forest buffer will result in an adverse impact on stream quality and on riparian habitat.

Our mitigation recommendations for this part of Segment 2 are as follows:

1. Select Alternate 2A for the road relocation. Two new bridges, if constructed with adequate environmental design, would be highly preferable to relocation and shortening of approximately 1/4 mile of stream channel as proposed in Alternate 2B, which would also require more riparian tree loss. If Alternate 2A is selected, the existing road bed should be removed and planted with native hardwoods in a zone at least 50 feet wide to stabilize the stream bank and improve aquatic habitat quality. If the area between the new highway alignment and the stream channel becomes an uneconomical remnant, it should be purchased and planted to forest also.

2. In other areas where the highway is very close to the stream, new right-of-way should be taken from the north side of the road to avoid further impingement upon the stream channel. Structural stream bank protection should be avoided except in areas where the channel is threatening to undermine the road (e.g. outside bends of channel meanders). Guardrails or retaining walls may be appropriate in these areas to protect the existing riparian vegetation.

3. In areas where the highway is further from Lick Creek and the intervening area is forested, design the project to minimize tree-clearing.

4. Plant native hardwoods wherever feasible along the corridor to compensate for tree loss. Prioritize areas where the forested riparian zone along Lick Creek is inadequate.

II. East of Ames Chapel the highway runs near a meander of Lick Creek at a tributary confluence. Your information package identifies this as a substandard horizontal curve. The stream channel is threatening to undermine the road at the apex of the curve (Photo 2). A road shift to the south of the existing highway (away from the stream channel) is proposed, relocating the existing bridge across the tributary. We support this proposal, as it would avoid substantial impacts to the stream channel and riparian forest, however we recommend a shift even further south to allow for stabilization of the stream bank with forest plantings rather than or in addition to structural measures.

III. East of Structure 150-59-5938 and south of the large quarry the highway runs near another Lick Creek meander. In this area the existing road is mostly separated from the stream by a grassy area 20-30 feet wide, and the stream bank has a single row trees. The north side of the road borders a steep, forested slope. The information package identifies this road section as a substandard horizontal curve but does not indicate a realignment route. We recommend that new right-of-way for the highway reconstruction at this location be limited to the grassy area between the road and the stream, leaving at least a 25-foot wide vegetated buffer on the stream bank. Guardrails and retaining walls should be used here to protect the riparian area, with plantings of native hardwoods adjacent to the stream bank wherever there is room. We would prefer a cut in the slope on the north side of the highway to further impingement on the stream, and would object to a stream channel relocation.

IV. West of County Road 325 West (275 West), opposite Turleys, there is yet another road section adjacent to a Lick Creek meander. Here the stream is protected by a steep, rocky forested slope with a diverse mixture of native hardwoods with many large trees. On top of the slope is a

40-foot wide zone of lower quality woods which is separated from the road by a 20-30 foot wide grassy area. Lick Creek contains a high-quality rocky riffle at this location (Photo 3). The information package identifies this road segment as a substandard vertical curve, indicating that cut and/or fill will be needed. It should be possible to reconstruct this curve without disturbing the riparian forest, which we strongly recommend.

V. At Newberry Church and Indian Boundary Road a meander of Lick Creek is about 300 feet south of the road. The intervening area is mostly a forested slope, with an open area of grass and old road bed between the forest and the highway. This is also listed as a substandard vertical curve. All additional right-of-way should be attainable from the open strip without impinging upon the forest, however special erosion control measures may be necessary due to the steep slopes.

In Segment 5, just south of the Lost River crossing, SR 37 runs adjacent to a meander of the Lost River for about 1000 feet. The highway is currently 30-60 feet from the stream and the intervening area is moderate quality forest. Guardrails or other special methods should be used here to avoid loss of riparian forest.

Photo 2. Highway curve near Lick Creek east of Ames Chapel

Photo 3 Lick Creek west of CR 325 West (275 West)

Standard mitigation measures for bridge replacements:

1. Post DO NOT DISTURB signs at the construction zone boundaries and do not clear trees or understory vegetation outside the boundaries.

2. Restrict below low-water work to placement of piers, pilings and/or footings, shaping of the spill slopes around the bridge abutments, and placement of riprap. For culvert replacements, restrict low-water work to the minimum necessary to construct the crossing.

3. Restrict channel work and vegetation clearing to within the width of the normal approach road right-of-way.

4. Minimize the extent of artificial bank stabilization.

5. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat.

6. Implement temporary erosion and siltation control devices such as placement of riprap check dams in drainage ways and ditches, covering exposed areas with erosion control materials, and grading slopes to retain runoff in basins.

7. Revegetate all disturbed soil areas immediately upon project completion.

8. Avoid channel work in perennial streams and significant intermittent streams during the fish spawning season (April 1 through June 30).

Wetlands

According to the National Wetland Inventory maps there are forested wetlands along Lick Creek in two locations and several sinkhole wetlands along SR 37. The forested wetlands will have to be delineated to determine whether they are jurisdictional. Most of the sinkhole wetlands appear to be jurisdictional, however it is not apparent whether they will be directly affected by the project. They should be subject to hydrologic analysis and mitigation under the karst features agreement.

ENDANGERED SPECIES

The proposed project is within the range of the Federally endangered Indiana bat (*Myotis sodalis*) and federally threatened bald eagle (*Haliaeetus leucocephalus*). There are no bald eagle nests or significant habitat within the project corridor. There is suitable summer habitat for the Indiana bat interspersed throughout the project corridor. The project will not eliminate enough habitat to adversely affect this species. In areas where all work will be close to the existing heavily traveled highway it is highly unlikely that a nursery roost would be present, however in areas where the highway alignment will be shifted and where tree clearing will be required, the possibility of the presence of a roost tree is much higher. At present this situation would occur only at the aforementioned route alternatives 2A and 2B. In that area, tree clearing should be avoided during the period of April 15 - September 15. If this condition is adhered to, the proposed project is not likely to adversely affect these 2 listed species.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, should new information arise pertaining to project plans or a revised species list be published, it will be necessary for the Federal agency to reinitiate consultation.

A permit under Section 404 of the Clean Water Act may be needed for the proposed project. Our recommendations to the U.S. Army Corps of engineers for permit conditions would be consistent with our comments here. The issues of greatest concern would be stream channel modifications.

We appreciate the opportunity to comment at this early stage of project planning. If project plans change such that fish and wildlife habitat may be affected, please recoordinate with our office as soon as possible. If you have any questions about our recommendations, please call Mike Litwin at (812) 334-4261 (Ext. 205).

Sincerely yours,

Scott E. Pruitt
Field Supervisor

cc: Federal Highway Administration, Indianapolis,
Andrew Pelloso, IDEM, Water Quality Standards Section, Indianapolis, IN
Christie Kiefer, Indiana Division of Fish and Wildlife, Indianapolis, IN
Manager, Environmental Assessment, INDOT, Rm 1107, Indianapolis, IN
Keith Dunlap, Indiana Karst Conservancy, Indianapolis, IN

United States Department of Agriculture

NRCS
Natural Resources Conservation Service
P.O. Box 2890
Washington, D.C. 20013

October 9, 2002

David M. Bourff
Butler, Fairman and Seufert
8450 Westfield Blvd., Suite 300
Indianapolis, Indiana 46240-8302

RE: Project No. STP-024-4 ( )
Des. Nos. 9804680, 9804690, 9804790 and 9804650
Rehabilitation of US 150/SR 56 and SR 37
Lawrence and Orange Counties, Indiana

Dear Mr. Bourff:

Enclosed are the completed questionnaire and/or the 1006 Farmland Conversion Rating Form from the Natural Resources Conservation Service for the above named project(s). It has been found that the above-proposed project will cause a conversion of prime farmland.

The attached packet of information is for your use in completing Parts VI and VII of the AD-1006. After completion, the federal funding agency needs to forward one copy to NRCS for our records.

If you need further information, please call Phil Bousman at 317-290-3200, extension 385.

Sincerely, ACTING FOR

JANE E. HARDISTY
State Conservationist

Enclosures

BUTLER, FAIRMAN and SEUFERT, INC.

Questionnaire for the Natural Resources Conservation Service

Project: STP-024-4( )
Road: US 150/SR 56/SR 37
County: Orange and Lawrence

1) Are the drainage courses within the project area subject to (✓) siltation, (✓) erosion, or (✓) pollution?
Describe: Stream bank erosion ; trash + Septic lines
2) Are the soils within the project area susceptible to (✓) erosion, ( ) landslides, or ( ) settlement? Describe the degree of each: sheet + rill erosion from cropfields - gully erosion
3) Is detailed soil survey information available? ✓ If so, where is this information available?
573 SE Main St. Suite 1 Paoli, IN. 47454
4) Does the project area contain unusual species of ( ) trees, ( ) shrubs, or (X) other vegetation? (Sec I)
Describe and give location: three endangered species of plants identified in Indiana FOTG.
5) Does an unusual ( ) quantity or (X) quality of plant life exist in the project area? Describe and locate:
Roundleaf Water Hyssop ; Appalachian Quillwort; Eastern Feather bells
6) Do unusual kinds or amounts of wildlife exist in the area? yes Identify and describe: due to Karst-topography and underground cave system some endangered species present (see below)
7) Is there any project in existence or in the planning stage where a conflict of purpose would be created? ___
Where is the problem area? ___ ( ) watershed project, ( ) group drainage system, ( ) other. At what stage is the project? No Known projects
What should be done to make the project compatible or complementary? NA
8) Are major land use changes taking place in the project area? No
Describe: ___
9) Is the general agricultural economy of the area (✓) stable, ( ) declining , or ( ) increasing?
Comments: ___
10) Please list known positive aspects of the proposed project: improved travel - safety
11) Is this prime farmland? (X) yes ( ) no. If so, estimate the number of acres that will be affected: See below.
12) Is this farmland of statewide importance? (X) yes ( ) no. If so, estimate the number of acres that will be affected: prime farmland is of statewide importance

This information was furnished by:

Name: Mike Cheatham Title: District Conservationist Date: 9/30/02

(6 continued) Northern Cavefish ; Springtail ; Cave Beetle ; Several species of Birds ; Indiana Bat. (Ref.) Indiana Field Office Tech Guide Sec. I.

(11) Some areas along this route are prime farmland, I would estimate approximately 25% of the agricultural land along this route is prime farmland. (about 12 acres)

Note - Page 83 you are looking North and South between Orleans and Paoli. - not Mitchell

U.S. DEPARTMENT OF AGRICULTURE

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)	Date of Land Evaluation Request **August 13, 2002**
ıme of Project 024-4( )	Federal Agency Involved **FHWA**
Proposed Land Use **Roadway**	County and State **Orange ~~and Lawrence~~ Counties** Orange Co portion
PART II (To be completed by NRCS)	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? (Yes) No (If no, the FPPA does not apply - do not complete additional parts of this form).

Acres Irrigated	Average Farm Size
—	181

Major Crop(s) CORN	Farmable Land in Govt. Jurisdiction Acres: 176 182 % 68	Amount of Farmland As Defined in FPPA Acres: 62 100 % 29
Name of Land Evaluation System Used LESA	Name of Local Site Assessment System	Date Land Evaluation Returned by NRCS 9/24/02

PART III (To be completed by Federal Agency)	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres to Be Converted Directly nrcs	86 ~~90 acres~~			
B. Total Acres to Be Converted Indirectly	0 acres			
C. Total Acres in Site	0 acres			
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	41.0			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage of Farmland in County Or Local Govt. Unit to Be Converted	<.001			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	81.0			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	70.0			

PART VI (To be completed by Federal Agency ·sessment Criteria (These criteria are explained in 7 58.5 (b))	Maximum Points				
1. Area In Nonurban Use	15	9			
2. Perimeter In Nonurban Use	10	7			
3. Percent Of Site Being Farmed	20	14			
4. Protection Provided By State And Local Government	20	20			
5. Distance From Urban Builtup Area	0	0			
6. Distance To Urban Support Services	0	0			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	25	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	7			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	72			
PART VII (To be completed by Federal Agency)					
Relative Value of Farmland (From Part V)	100	70			
Total Site Assessment (From Part VI above or a local site assessment)	160	72			
TOTAL POINTS (Total of above 2 lines)	260	142			

Site Selected: A	Date of Selection	Was A Local Site Assessment Used? Yes (No)

·ın for Selec·

This portion of the project will maintain existing alignment, thus, reducing impacts to adjacent farmland.

U.S. DEPARTMENT OF AGRICULTURE

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)	Date of Land Evaluation Request August 13, 2002
ame of Project -024-4( )	Federal Agency Involved FHWA
Proposed Land Use Roadway	County and State ~~Orange~~ and Lawrence Counties (Lawrence Co portion)
PART II (To be completed by NRCS)	Date Request Received By NRCS

Does the site contain prime, unique, statewide or local important farmland? (Yes) No (If no, the FPPA does not apply - do not complete additional parts of this form).	Acres Irrigated —	Average Farm Size 184
Major Crop(s) CORN	Farmable Land in Govt. Jurisdiction Acres: 134170 % 46	Amount of Farmland As Defined in FPPA Acres: 70570 % 24
Name of Land Evaluation System Used LESA	Name of Local Site Assessment System	Date Land Evaluation Returned by NRCS 9/24/02

PART III (To be completed by Federal Agency)	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres to Be Converted Directly	NRCS 34 ~~90~~ acres			
B. Total Acres to Be Converted Indirectly	0 acres			
C. Total Acres in Site	0 acres			
PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	2.6			
B. Total Acres Statewide And Local Important Farmland	0			
C. Percentage of Farmland in County Or Local Govt. Unit to Be Converted	<.001			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	59.0			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	81.0			

PART VI (To be completed by Federal Agency sessment Criteria (These criteria are explained in 7 58.5 (b)	Maximum Points				
1. Area In Nonurban Use	15	5			
2. Perimeter In Nonurban Use	10	1			
3. Percent Of Site Being Farmed	20	8			
4. Protection Provided By State And Local Government	20	20			
5. Distance From Urban Builtup Area	0	0			
6. Distance To Urban Support Services	0	0			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	25	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	13			
11. Effects Of Conversion On Farm Support Services	25	0			
12. Compatibility With Existing Agricultural Use	10	0			
TOTAL SITE ASSESSMENT POINTS	160	68			
PART VII (To be completed by Federal Agency)					
Relative Value of Farmland (From Part V)	100	81			
Total Site Assessment (From Part VI above or a local site assessment)	160	68			
TOTAL POINTS (Total of above 2 lines)	260	149			

Site Selected: A	Date of Selection	Was A Local Site Assessment Used? Yes (No)

Reason for Selection:

The majority of this portion of the project will maintain existing alignment, thus, reducing impacts to adjacent farmland.

Questionnaire for the Indiana Department of Transportation, Aeronautics Section

Project No: STP-024-4( ) **Des/Bridge No:** 9804680

Project Description:

Rehabilitation of US 150/SR 56 and SR 37 from Prospect in Orange County to Mitchell in Lawrence County, IN

Requested By:

Butler, Fairman and Seufert

Are there any existing or proposed airports within or near the project limits? YES

If yes, describe any potential conflicts with air traffic during or after the construction of the project.

The Paoli Municipal Airport is located 2,500 feet West of SR 37 in Paoli. The Orleans Airport is located 1,790 feet East of SR 37 in Orleans. FAA Form 7460-1 (Notice of Proposed Construction or Alteration) should be filed. Coordinate this effort with Nicholas McClain, INDOT Aeronautics, (317) 232-1487. It is suggested that the contractor make contact with management at both of these airports prior to construction.

This information was furnished by:

Name: Martin J. Blake
Title: Project Manager, INDOT-Aeronautics
Date: 08-19-02

RECEIVED
AUG 23 2002
Butler, Fairman & Seufert, Inc.

BUTLER, FAIRMAN and SEUFERT, INC

QUESTIONNAIRE FOR THE INDIANA GEOLOGICAL SURVEY

Project No. STP- 024-4( )
Road US 150/SR 56/SR 37
County Orange and Lawrence

1) Do unusual and/or problem ( ) geographic, (x) geological, (x) geophysical, or ( ) topographic features exist within the project limits? Describe:
Karstic Terrain – potential for sinkholes

Seismic Zone 2A

2) Have existing or potential mineral resources been identified in this area? Describe:
No

3) Are there any active or abandoned mineral resources extraction sites located nearby? Describe: No

This information was furnished by:

Name: Marni Lynne Dickson Title: Geologist

Date: August 19, 2002

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE, KENTUCKY 40201-0059
FAX: (502) 315-6677
http://www.lrl.usace.army.mil

October 18, 2002

Operations Division
Regulatory Branch (North)
ID no. 200201109-bkc

This is in response to your request for comments concerning:

Project No: STP-024-4

Designation No: 9804680, 9804690, 9804790, & 980450

Description: ROAD REHABILITATION ON US 150/SR 56 & SR 37 FROM PROSPECT TO MITCHELL IN ORANGE AND LAWRENCE COUNTIES INDIANA

Name of Organization requesting early coordination:

BUTLER FAIRMAN & SEUFERT

We do not have any comments on the general environmental impacts of the proposed project(s). This agency is not funded or authorized to provide general environmental assessments for all federally related development proposals. Our lack of comments on specific potential environmental impacts should not be construed as concurrence that no significant environmental damage would result from the project.

1. The proposed improvement may impact the following waterway(s) under our jurisdiction: LOST RIVER & LICK CREEK

2. Current and/or future plans to develop the waterway(s) include: NONE

3. The following Corps of Engineer's projects and/or studies are located within the area: NONE

4. The depth or elevation of Ordinary High Water (OHW) is:

____ Feet mean sea level.

__X__ The OHW elevation is the line on the bank established by the changing water surface and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; and other indications as determined upon inspection of the area. If additional information is needed for the OHW you may contact our Hydrology &

Hydraulics Branch by calling (502) 315-6456.

5. The project site is within flood elevations:

____ Flood plain information is available by writing this office directly and requesting a floodplain delineation for a specific area. However, we are required by law to collect a fee for this service. The fee varies with the scope and complexity of the request. If you are interested in receiving this service please re-submit this request to the above address, ATTN: CELRL-PMP or call (502) 315-6892 and we will provide information on the fee schedule. Otherwise you may be able to obtain this information from local agency sources such as planning commissions.

6. Wetlands:

____ Are located on the site as indicated on the attached sheet.

____ To our knowledge, no wetland mapping of your proposed project site has been done, nor does the Corps of Engineers have any future plans to delineate and map jurisdictional wetlands for public or private use. If you suspect wetlands would be impacted by the discharge of dredged or fill material, a wetland delineation report conforming to the "Corps of Engineers Wetland Delineation Manual, Technical Report Y-87-1," would have to be submitted. Members of our regulatory staff having expertise in this area, would evaluate and verify the wetland delineation report as part of our review process. If you need assistance in preparing a wetland delineation, there are several environmental consultants in your geographic area having this expertise.

7. If based on your coordination with the State Historic Preservation Officer, it is determined that the project may affect historic properties listed in, or eligible for listing in, the National Register of Historic Places, the Department of the Army permit application must include information stating which historic property may be affected by the proposed work and/or a vicinity map indicating the location of the historic property.

8. If your project would impact any "waters of the United States," including jurisdictional wetlands, then you should submit a Department of the Army (DA) permit application for review by this office. Copies of DA permit application forms can be obtained by writing to the above address ATTN: CELRL-OP-FN or by calling (502) 315-6733.

Brenda Carter

Brenda Carter
Regulatory Specialist
Regulatory Branch

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.state.in.us/idem

August 26, 2002

Mr. David M. Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Blvd., Suite 300
Indianapolis, Indiana 46240-8302

Dear Mr. Bourff:

RE: Des. Nos. 9804680, 9804690, 9804790, and 9804650, Proposed Road Rehabilitation US 150/State Road 56 & State Road 37 Orange and Lawrence Counties, Indiana

The Indiana Department of Environmental Management (IDEM) has reviewed the above-noted project with consideration to potential effects on the environment at or about the project location. The following topics were considered during our review process:

WATER AND BIOTIC QUALITY

Recommended water pollution control measures:

1. Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers for dredging and filling in wetlands and other waters of the state of Indiana. We recommend that you contact the U.S. Army Corps of Engineers regarding the need for a Section 404 permit for this project if your project involves these activities. Contacts for the Detroit and Louisville Districts can be located at the following website:

   http://www.in.gov/idem/water/planbr/401/reglinks.html

   In the event a Section 404 permit is required, you must obtain a Section 401 Water Quality Certification from the Office of Water Quality. If the Corps of Engineers determines that the activity or area is not under their jurisdiction, you may still need to obtain authorization for the project from this office. Contact the Office of Water Quality at 317-233-8488 for additional information.

2. For undisturbed areas, the Office of Water Quality recommends that the project sponsor or an authorized agent conduct a survey of the proposed site to determine if jurisdictional wetlands are present. For your reference, the U.S. Fish and Wildlife Service National Wetland Inventory maps do not depict jurisdictional wetlands that are regulated under the Clean Water Act by the Corps of Engineers and IDEM. Under no circumstances should these maps be used to make a determination of the presence or lack of jurisdictional wetlands. Field determinations using the Corps of Engineers 1987 Wetland Delineation Manual should be conducted to verify the presence of wetlands; National Wetland Inventory maps can be used to identify potential areas of concern. Contact the U.S. Army Corps of Engineers for further information on field identification of wetland resources. Impacts to wetlands and other resources should be avoided by all construction activities to the maximum extent possible.

3. The physical disturbance of the stream and riparian vegetation, especially large trees overhanging any affected waterbodies should be limited to only that which is absolutely necessary to complete the project. The shade provided by the large overhanging trees helps maintain proper stream temperatures and dissolved oxygen for aquatic life.

4. During the construction phase and after completion of the project, appropriate structures and techniques should be utilized to minimize soil erosion. The use of straw bale barriers, silt fencing, earthen berms or other appropriate techniques around disturbed areas are recommended to prevent soil from leaving the construction site. Information and assistance regarding control of construction-related soil erosion are available from the Soil and Water Conservation District (SWCD) offices, co-located with the local field office of the USDA Natural Resource Conservation Service (NRCS) in each county.

5. For projects involving work within floodways of waterbodies, contact the Department of Natural Resources - Division of Water (317-232-4160) regarding the need for permits.

6. For projects involving impacts to fish and botanical resources, contact the Department of Natural Resources - Division of Fish and Wildlife (317/232-4080) for addition project input.

7. For projects involving water main construction, water main extensions, and new public water supplies, contact the Office of Water Quality - Drinking Water Branch (317-308-3299) regarding the need for permits.

8. For projects involving effluent discharges to waters of the State of Indiana, contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for a National Pollution Discharge Elimination System (NPDES) permit.

9. For projects involving construction activity (which includes clearing, grading, excavation and other land disturbing activities) that result in the disturbance of five (5) acres or more of total land area, contact the Office of Water Quality - Permits Branch (317-233-0468) regarding the need for of a Rule 5 Storm Water Permit. If the land disturbing activity results in the disturbance of less than five (5) acres of total land area, but is part of a *larger common plan of development or sale* (such as the development of a subdivision or industrial park), it is still subject to storm water permitting.

10. For projects involving the construction of wastewater facilities and sewer lines, contact the Office of Water Quality - Permits Branch (317-232-8675) regarding the need for permits.

AIR QUALITY

The above project should be designed to minimize any impact on ambient air quality in or about the project area. The project must comply with all federal and state air pollution regulations. Consideration should be given to the following:

1. What disposal method is being used for organic debris from land clearing and other waste materials? Open burning is allowed for certain types of maintenance purposes with specific conditions. If burning is allowed by the rule and is being considered, evaluate the economic and technical feasibility of non-combustion disposal options, for example removal, mulching and burial. Open burning approvals may be granted for certain projects by the Office of Air Quality (OAQ). Open Burning Rule 326 IAC 4-1 should be taken into consideration.

2. Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. Example precautions are wetting the area with water, constructing wind barriers, or treating the area with chemical stabilizers (such as calcium chloride or several other commercial products). Dirt tracked out from unpaved areas should be minimized. Please refer to Fugitive Dust Rule 326 IAC 6-4 for details. If construction or demolition is conducted in a wooded area where large blackbirds have roosted or abandoned buildings or building sections in which pigeons or bats have roosted for 3-5 years precautionary measures should be taken to avoid an outbreak of histoplasmosis. This disease is caused by the fungus Histoplasma capsulatum, which stems from bird or bat droppings that have accumulated in one area for 3-5 years. The spores from this fungus become airborne when the area is disturbed and can cause infections over an entire community downwind of the site. The area should be wetted down prior to cleanup or demolition of the project site. For more detailed information on histoplasmosis prevention and control, please contact the Acute Disease Control Division of the Indiana State Department of Health at (317) 233-7272.

3. Ensure that asphalt paving plants are permitted and operate properly. The use of cutback asphalt, or asphalt emulsion containing more than seven percent (7%) oil distillate, is prohibited during the months April through October. Please refer to 326 IAC 8-5 Asphalt Paving Rule for details.

4. If demolition or renovation of a structure will take place, asbestos and lead-based paint rules may apply. An inspection should be performed by an accredited asbestos inspector to determine if asbestos containing materials are present. If asbestos is present, rules governing project licensing will apply. Projects that involve lead-based paint activities should take the proper safety precautions to ensure the health of the buildings occupants and the safety of the environment. In projects that involve asbestos, notification rules and set schedules apply to renovation operations above a certain size and all demolition projects.

   The following rules may apply to either projects involving asbestos or lead-based paint:

   40 CFR 745 Lead: Requirements for Lead-Based Paint Activities in Target Housing and Child Occupied Facilities.
   326 IAC 14-2 Emissions Standard for Asbestos;
   326 IAC 14-10 Emissions Standard for Asbestos; Demolition and Renovation Operations, and
   326 IAC 18-1 and 18-3 Asbestos Personnel Accreditation Rules.

5. If this project is the construction of a new source of air emissions or the modification of an existing source of air emissions, it will need to be reviewed for an air emissions permit or registration according to 326 IAC 2-1 Permit Review Rules. Applications for permit review can be obtained by calling 317-232-8369. New sources that use or emit hazardous air pollutants may be subject to Section 112 of the Clean Air Act and corresponding state air regulations governing hazardous air pollutants.

OFFICE OF LAND QUALITY

1. The Office of Land Quality (OLQ) does not believe the site is or represents an environmental problem, based on the information provided. However, OLQ reserves the right to reassess the site if new or additional information becomes available.

2. If the site is found to contain any areas used to dispose of solid or hazardous waste, you shall contact the OLQ at 317-308-3103.

3. If any contaminated soils are discovered during this project, they may be subject to disposal as either special or hazardous waste. Please contact the OLQ at 317-308-3103 to obtain information on proper disposal procedures.

4. There may be PCB issues related to this site. Please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any PCB wastes from this site.

5. There may be asbestos issues related to this site. Please contact the Industrial Waste Section of OLQ at 317-308-3103 for information regarding management of any asbestos wastes from this site.

The Office of Land Quality is making file information pertaining to the Environmental Impact Statement Early Coordination program available to the public. These files are open to the public during regular business hours. The file room is located in Room N1201, Indiana Government Center North, 100 North Senate Avenue, Indianapolis.

FINAL REMARKS

We reserve the right for further review if the scope of the project, or any of its aspects, should change significantly from that which has been proposed, or we are made aware of factors which could have detrimental environmental effects.

Please note that this letter does not constitute a permit, license, endorsement or any other form of approval on the part of either the Indiana Department of Environmental Management or any other Indiana state agency.

Should you have any questions relating to our review, please contact Gary Starks, Review Coordinator, at 317-232-8795.

Sincerely,

Bruno Pigott, Acting Chief
Compliance Branch
Office of Water Quality

Project No. 4243

Form Prescribed by State Board of Accounts — General Form No. 99P (Revised 1995)

Butler, Fairman and Seufert, Inc.

Orange County, Indiana

To: The Paoli News Dr.
131 N.W. Court St., Paoli, IN 47454
1-35-2001964 (59001)

PUBLISHER'S CLAIM

LINE COUNT

Display Matter (Must not exceed two actual lines, neither of which shall total more than four solid lines of type in which the body of the advertisement is set) -- number of equivalent lines . . . . .

Head -- number of lines . . . . .

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Tail -- number of lines . . . . .

Total number of lines in notice 91

COMPUTATION OF CHARGES

91 lines, one column wide equals 91 equivalent lines at .493 cents per line . . . . . $ 44.86

Additional charge for notices containing rule or tabular work (50 percent of above amount) . . . . .

Charge for extra proofs of publication ($1.00 for each proof in excess of two) . . . . .

TOTAL AMOUNT OF CLAIM . . . . . $ 44.86

DATA FOR COMPUTING COST

Width of column 12 ems

Number of insertions 1

Size of type 6 point

Pursuant to the provisions and penalties of Chapter 155, Acts 1953,

I hereby certify that the foregoing account is just and correct, that the amount claimed is legally due, after allowing all just credits, and that no part of the same has been paid.

Arthur W. Hampton

Date: October 21, 2004 Title: Publisher

PUBLISHER'S AFFIDAVIT

Legal Notice

Project No. STP-024-4( ); Des. No. 9804680, 9804790, 9804790 and 9804650: Proposed Road Reconstruction on US 150/SR 56 and SR 37 from Prospect to Mitchell in Orange and Lawrence Counties, Indiana

The Indiana Department of Transportation (INDOT) proposes to reconstruct US 150/SR 56 and SR 37 from Prospect to Mitchell. The project begins in the Town of Prospect and extends east on US 150/SR 56 for 14.5 km (9 miles) to the Paoli Town Square. From this point the project extends north on SR 37, excluding the Paoli Town Square, for 18.5 km (11.5 miles) to the end of the project at the SR 37 intersection with CR 1000 at the southern end of the Town of Mitchell. More specifically, the project is located as follows: Sections 25, 26, and 27, Township 2 North, Range 2 West, and Sections 29, 30,32, 33, and 34, Township 2 North, Range 1 West, on the U.S.G.S. French Lick, Indiana Quadrangle, all in French Lick and Paoli Townships, Orange County, Indiana.

Sections 12, 13, 24, 25, 35, and 36, Township 2 North, Range 1 West, Sections 1 and 2, Township 1 North, Range 1 West, and Sections 7, 18, 19, and 30, Township 2 North, Range 1 East, on the U.S.G.S. Paoli, Indiana Quadrangle, all in Paoli and Orleans Townships, Orange County, Indiana.

Sections 1 and 12, Township 2 North, Range 1 West, Sections 6 and 7, Township 2 North, Range 1 East, and Sections 19, 30, and 31, Township 3 North, Range 1 East, on the U.S.G.S. Mitchell, Indiana Quadrangle, all in Orleans Township, Orange County, Indiana.

Section 18, Township 3 North, Range 1 East, on the U.S.G.S. Mitchell, Indiana Quadrangle, all in Marion Township, Lawrence County, Indiana.

It is anticipated that approximately 90 acres of new permanent right-of-way will be required for the

State of Indiana)
) SS:
Orange County)

Personally appeared before me, a notary public in and for said county and state, the undersigned Arthur Hampton who, being duly sworn, says that he is president of Orange County Publishing, Inc., publisher of The Paoli News, a weekly newspaper of general circulation printed and published in the English language in the town of Paoli in state and county aforesaid, and that the printed matter attached hereto is a true copy, which was duly published in said paper for 1 time s, the dates of publication being as follows:

October 21, 2004

Arthur W. Hampton
ARTHUR HAMPTON, Publisher

Subscribed and sworn to before me this 21st day of October, 2004.

Rebecca S. Hutslar
REBECCA S. HUTSLAR, Notary Public, Orange County, Ind.
My commission expires: June 5, 2008

Claim No.....Warrant No.....

IN FAVOR OF

THE PAOLI NEWS

PAOLI, INDIANA

$.....

ON ACCOUNT OF APPROPRIATION

For.....

Appropriation No.....

Allowed....., 20.....

In the sum of $.....

.....

.....

.....

.....

.....

I have examined the within claim and hereby certify as follows:

That it is in proper form.

That it is duly authenticated as required by law.

That it is based upon Statutory Authority.

That it is apparently } Correct / Incorrect

I certify that the within claim is true and correct; that the services therein itemized and for which charge is made were ordered by me and were necessary to the public business.

....., 20.....

LEGAL ADVERTISING TABLE SHOWING PRICE PER LINE AND PER INSERTION

Effective January 1, 2004

12 Em Column

Type Size	Number of Insertions 1	2	3	4
5.5	0.538	0.804	1.073	1.342
6	0.493	0.737	0.984	1.230
6.5	0.455	0.681	0.908	1.135
7	0.423	0.632	0.843	1.054
7.5	0.395	0.590	0.787	0.984
8	0.370	0.553	0.738	0.922
9	0.329	0.492	0.656	0.820
10	0.296	0.442	0.590	0.738
12	0.247	0.369	0.492	0.615
Rate / Square	5.14	7.68	10.25	12.81

NOTE: ABOVE TABLE IS BASED ON A SQUARE OF 250 EMS.

Dave Bourff

From: Maxine Kruse [mkruse@kiva.net]
Sent: Saturday, November 06, 2004 11:52 AM
To: Dave Bourff
Cc: Maxine Kruse
Subject: Project No. STP-024-4

Dear Mr. Bourff:
As historian for Lawrence County, I have reviewed material on this project and to my knowledge, there is nothing of sufficient reason to effect historic properties in Lawrence County.

Sincerely,
Maxine Kruse
Lawrence County Historian

Oct. 29, 2004

David Bourff
Butler, Fairman and Seufert, Inc.
8450 Westfield Blvd. Suite 300
Indianapolis, IN 46240-8302

Dear Mr. Bourff,

I saw the legal advertisment in our local paper concerning reconstruction of SR37,56,150 from Mitchell to Prospect. It states there are no adverse effects to the historic district in Paoli. However, I wonder if the tree plots with the old growth trees have been considered?

I hope Paoli will not have the new, gray concrete sidewalk-by-the-road look that I've seen in other communities. I think the tree plots add to the ambience of our historic district and some of the original limestone sidewalks still exist in our community and were mentioned as a contributing factor in the community's National Register nomination back in the 90's.

How do I learn exactly what the plan is for Paoli without making a trip to your office in Indianapolis?
Thanks.

Sincerely,

Brenda Cornwell

Brenda Cornwell
214 West Main Street (SR56 US150West)
Paoli, IN 47454

Nov. 22. 2004

David Bourff
Butler, Fairman and Seufert, Inc
8450 Westfield Blvd. Suite 300
Indianapolis, IN 46240-8302

Dear Mr. Bourff,

Thank you for the information provided Monday concerning the proposed reconstruction work on SR37, SR56 and US150 through Paoli Town.

After speaking with you by phone I feel compelled to urge attention be drawn to the sidewalk-by-the-curb plan. I and other residents who live along the route feel the sidewalk proposal is progress gone awry.

Currently, our town is in the midst of a new water line project. Part of that program includes moving the municipal water lines from underneath the highway to the current sidewalk area in preparation for the Indiana Department of Transportation project through our community. Along portions of the SR37, SR56, US150 routes through town, there is a tree plot buffer zone between the highway and the sidewalk. In those areas, sidewalks are being removed, new water lines installed and new sidewalk is to be constructed over the new lines. In our conversation, I learned the IDOT plan is to remove those new sidewalks and install sidewalks curbside. That I find reprehensible for a number of reasons.

Firstly, I think removing the tree plot buffer area, especially through the historic district, will degrade the appearance of our community. We will look like every other town where IDOT has left its footprint. And if the water line project doesn't kill trees or cause them to be removed from the tree plots, the curbside sidewalk will.

Secondly, I believe it will be dangerous. We are a small community in which many people, including myself, walk for health and recreation. Some children walk to school, the swimming pool, little league games, etc. Curbside sidewalks will place those Paolians more at risk, walking adjacent to the flow of traffic on busy highways.

Thirdly, what a waste of taxpayers' money. Taxpayers are funding the water line replacement project and the new sidewalks now. Then, IDOT will be here in the future to remove those sidewalks and construct new ones curbside with taxpayer money. I feel that's abuse of tax dollars.

Since our conversation, I have spoken to a few of my neighbors on SR56-US150 and they failed to see the legal notice published in the local newspaper. Two of my neighbors are out of state for the winter and would not have seen the notice. Of course, the deadline to respond was last Friday. Therefore, I would urge a public hearing on this matter be considered so those effected by the curbside sidewalk issue have an opportunity to voice their opinions on the plan to alter the ambience and safety of our community.

Sincerely,

Brenda Cornwell

Brenda Cornwell
214 West Main Street
Paoli, IN 47454

ARCHAEOLOGICAL RECORDS REVIEW AND RECOMMENDATIONS, INDOT PROJECT STP-024-4 ( ), DES. NO. 9804680, PROPOSED ROAD REHABILITATION US 150/STATE ROUTE 56 AND STATE ROUTE 37 FROM PROSPECT TO MITCHELL, ORANGE AND LAWRENCE COUNTY, INDIANA

By

John A. Schwegman, M.A.

Submitted to:

Mr. David Bourff, P.E.
Butler, Fairman, and Seufert Consulting Engineers
8450 Westfield Blvd., Suite 300
Indianapolis, IN 46240-8302

Submitted by:

Mark Cantin, M.A.
Assistant Director
Anthropology Laboratory
Indiana State University
Terre Haute, IN 47809

August 22, 2002

REVISED SEPTEMBER 12, 2002

Indiana State University Anthropology Laboratory
Cultural Resources Management Report #02-24

ARCHAEOLOGICAL RECORDS REVIEW AND RECOMMENDATIONS, INDOT PROJECT STP-024-4 ( ), DES. NO. 9804680, PROPOSED ROAD REHABILITATION US 150/STATE ROUTE 56 AND STATE ROUTE 37 FROM PROSPECT TO MITCHELL, ORANGE AND LAWRENCE COUNTY, INDIANA

Project and Location

INDOT proposes road improvements along US 150 between Prospect and Paoli (14.5 km), in Orange County, as well as improvements north of Paoli along State Routes 56 and 37 toward Mitchell (18.5 km) in Lawrence County, Indiana. Butler, Fairman, & Seufert Consulting Engineers ("BF&S") have been retained to prepare plans for the project. This project has been divided into 5 segments. This document deals with the archaeological records review for four of the segments, numbered 2-5, with segment 1 being covered in a separate document. A general description of each segment will be given and all proposed changes to existing road parameters will be described.

Segment 2:
Segment 2 extends from east on US 150/SR 56 from Prospect to Indian Boundary Road (CR 225 West) for a distance of 11.3 km (7 mi). The existing right-of-way in area is generally 9.1 m (30ft) on both sides of the centerline. The proposed project will expanded the right-of-way to between 20 m (66 ft) and 40 m (131 ft) from the centerline. This expansion will impact an additional 22.3 ha (55 acres) of land. Land-use estimates for this area include 3.1 ha (7.7 acres) of residential area, 13.7 ha (33.9 acres) of agricultural land, and 5.5 ha (13.6 acres) of natural/wooded property. At least two small structures will be replaced within this segment as well as the limited shaping of creek banks upstream and downstream from proposed structure sites. The use of temporary runarounds will be required. Segment 2 begins in the east half of Section 27 T2N R2W, Northwest Twp, and runs east through portions of Sections 25 and 26 of that township. The segment then continues through portions of Sections 30, 29, 32, 33, and 34 of T2N R1W, Orangeville Twp., Orange Co., IN. All portions of this segment are show on USGS 7.5' French Lick topographic quadrangle map (Figure 1).

Segment 3
Segment 3 begins at Indian Boundary Road (CR 225 West) and extends east, on US 150/SR 56, 3.2 km (2 mi) to the Paoli Town Square. The existing right-of-way is generally 9.1 m (30ft) on both sides of the centerline. The proposed right-of-way is variable in width but will require an additional 1.62 ha (4 acres) in addition to the increased right-of-way at the US 150/SR56 and Willow Creek Road intersection. New proposed right-of-way land includes 0.13 ha (0.3 acre) of residential, 0.75 ha (1.9 acres) of commercial, 0.61 ha (1.5 acres) of natural, and 0.13 ha (0.3 acre) of agricultural property. In addition some temporary right-of-way may be needed for sidewalk reconstruction. Only minor bridge work is expected in this segment which includes resurfacing of existing pavement. Segment 3 begins along the east edge of Section 34 and runs through a portion of Section

35, T2N R1W, Orangeville Twp, and extends into portions of Sections 2 and 1 of T1N R1W, Paoli Twp., Orange Co., IN. All portions of this segment are shown on USGS 7.5' Paoli topographic quadrangle map (Figure 2).

Segment 4

Segment 4 begins at the SR 37/Paoli Town Square northern intersection and extends north on SR37 for 2.5 km (1.6 mi). Existing right-of-way in this urban segment varies from 18.2 m to 21.3 m (60-70 ft) on both sides of the centerline. All proposed improvements will be carried out with the existing right-of-way, therefore no additional right-of-way acquisition is expected. Segment 4 begins along the north edge of Section 1 of T1N R1W, Paoli Twp. and extends through portions of Sections 36 and 25, T2N R1W, Orangeville Twp., Orange Co., IN. All portions of this segment are shown on USGS 7.5' Paoli topographic quadrangle map (Figure).

Segment 5

Segment 5 begins 2.5 km (1.6 mi) north of Paoli Town Square and extends north on SR37 for 16.1 km (10 mi) through the town of Orleans and ends at Lawrence County Road (1000 South). The existing right-of-way varies. South of Orleans it is typically 9.1 m (30ft) on both sides of the centerline. North of Orleans to the end of the segment the right-of-way is generally 15.2 m (50 ft) on either side of the centerline. The proposed right-of-way is approximately 30 m (98 ft) to 15 m (49 ft) on both sides of the centerline. In addition a four lane passing section is to be added with a right-of-way of between 20 m (66 ft) and 40 m (131 ft) from the centerline. The expanded right-of-way will require an additional 12.65 ha (31.3 acres) of property. This additional land includes 4.16 ha (10.3 acres) of residential, 2.22 ha (5.5 acres) of commercial, and 6.28 ha (15.5 acres) of agricultural property. In addition approximately 1.3 ha (3.2 acres) will be required for the four lane passing section. Segment 5 begins at the SE corner of Section 25, T2N R1W, Orangeville Twp., Orange Co., IN. and runs through portions of Sections 30 and 19, T2N R1E, Orleans Twp.. From the north half of Section 19 to just south of the town of Orleans the segment runs directly along the Second Principal Meridian. South of Orleans the segment turns to the east and runs through portions of Sections 31, 30, 19, and 18, T3N R1E, Orleans Twp and then extends northwest through portions of Section 12 and ends in the south half of Section 1, T3N R1W, Marion Twp., Lawrence Co. IN. (Figure).

Archaeological Records Review

A review of the files maintained by this facility and the Indiana Division of Historic Preservation and Archaeology ("DHPA") found 23 archaeological sites within 400m of the proposed project limits. Included in these sites are two, 12Or552 and 12Or553, which will potentially be affected by the proposed work. Both of the affected sites are located along Segment 5 north of Paoli.

Potentially Affected Sites

12Or552

12Or552 is described as a potentially National Register eligible prehistoric Lost River chert workshop and quarry located along the north bank of the Lost River (Beard and Moffatt 1993). This large scatter of chert tools and debitage covers a large oval area approximately 550 m x 100 m and is located on both the east and west side of SR 37. Legally the eastern extent of the site is found in N1/2, SW1/4, NW1/4, Sec. 18, T2N R1E. The western limits of the site is located in NE1/4, NE1/4, SE1/4, NE1/4, Sec. 13, T2N R1W, Paoli quadrangle. (Figure 6). The site was plowed at the time of survey with no visible midden or features noted. A total of 152 prehistoric and 3 historic artifacts were recovered during the initial survey of 12Or552 (Beard and Moffatt 1993). These artifacts included:

Prehistoric

1	Late Archaic side-notched projectile point (Lost River chert)
1	Point fragment (Lost River chert)
1	Large bifacial scraper (Lost River chert)
5	Utilized flakes (Lost River chert)
112	Debitage (Lost River chert)
1	Small thumbnail scraper (Wyandotte chert)
11	Debitage (Wyandotte chert)
1	Projectile point mid-section (Jeffersonville chert)
4	Debitage (Jeffersonville chert)
1	Large biface (Ferdinand chert)
3	Debitage (Ferdinand chert)
1	Utilized flake (Harrodsburg chert)
2	Debitage (Harrodsburg chert)
1	Flake scraper (Holland chert?)
5	Debitage (Holland chert?)
1	Biface (Paoli chert?)
1	Hammerstone

Historic

1	Sherd of Flow Blue ware
2	Sherds White ware

According to the project plans, the site is located along the proposed four lane passing section expansion. Along this section the right-of-way be expanded from the current 9.1 m (30 ft) to 20 m (66 ft) on both sides of the centerline. This proposed expansion would pose a significant threat to a large section of 12Or552.

12Or553

A scatter of prehistoric cultural lithic material was designated 12Or553 (Beard and Moffatt 1993).

This site is located on the west side of SR 37 just north of the dry river bed of Lost River and was estimated to begin approximately 11 m from the centerline. Material collected from the site included one flake and two blocky fragments of Lost River chert which were recovered from an area approximately 95 m X 40 m. Legally the site is located in the SE1/4, SE1/4, NE 1/4, SE 1/4 of Sec. 13, T2N R1W, Paoli quadrangle (Figure 5).

Project plans in the site area will involve an expansion of the right-of-way from the current 9.1 m (30 ft) to 15 m (49 ft) on both sides of the centerline. This expansion will possibly impact 12Or553 based upon its currently defined location.

Sites within 400m of the Proposed Project

Along with the two archaeological sites located within the project limits, 21 other sites have been identified within 400m of project limits. All of these sites have been assigned prehistoric cultural affiliation. None of these sites should be impacted by the proposed project. Of these sites 13 were reported with very limited descriptive information on the site form. The following sections will describe the sites with more detailed forms first then discuss the sites with less information. For the location of all the sites refer to Figures 2-9.

Sites with detailed information

12Or286 is located approximately 280m west of SR37 along Segment 5 of the proposed project in the NW 1/4, of Sec. 7, T2N R1E, Mitchell quadrangle (Figure 6). Surface material collected from the site included five secondary chert flakes and one projectile point identified as an Early Archaic MacCorkle Stemmed.

12Or287 is also found in Segment 5 approximately 350m west of SR37 in the NW 1/4, of Sec. 7, T2N R1E, Mitchell quadrangle (Figure 6). Cultural material associated with the site included 12 secondary flakes and one de-cortication flake. No cultural affiliation could be determined for this site.

12Or459 is an isolated Steuben Cluster projectile point of unidentified chert. Steuben points are associated with late Middle Woodland to early Late Woodland occupations. This site is located in the NE 1/4, of Sec. 32, T2N R1W, French Lick quadrangle, along Segment 2 approximately 250m south of US 150 (Figure 3).

Site 12Or471 is located about 310m northwest of the western Hospital Road terminus, along Segment 3 (SW¼ Sec. 35, T2N R1W, Paoli quadrangle), and about 60m southwest of US 150 (Figure 4). Early Archaic St. Charles material was recovered from the site.

Site 12Or473 has been assigned Early Archaic cultural affiliation based upon the presence of a Lost Lake projectile point from the Randall Jones collection, the only artifact reported from the site. This

site is located approximately110m south of US 150 in Segment 2 of the proposed project. The general legal location of the site is the NE 1/4 of Sec. 25, T2N R2W, French Lick quadrangle (Figure 2).

Site 12Or549 is located 1300m south of the Lawrence and Orange county line, and approximately 40m west of SR 37 (Segment 5), in the SW 1/4, of Sec. 19, T3N R1E, Mitchell quadrangle (Figure 8). Cultural material reported from the site consists of two flakes of Lost River chert (Beard and Moffatt 1993). No cultural affiliation could be determined for this site.

Another site, 12Or551, is defined based upon an isolated core of Lost River chert recovered during surface survey (Beard and Moffatt 1993). The site is mapped approximately 50m west of SR 37 along Segment 5 of the proposed work. The legal location of 12Or551 is in the SE 1/4 of Sec. 12, T2N R1W, Paoli quadrangle (Figure 6). No cultural affiliation could be determined for this site.

Additionally, site 12Or610 is located about 90m east of SR 37, in Segment 5 (NW corner Sec. 30, T2N R1E, Paoli quadrangle), and is described as an isolate-flake site (Figure 5). No cultural affiliation could be determined for this site.

Sites with limited information

All the site forms with limited information were completed by J.A. Mohler in 1967. The following discussion summarizes all the available data for each site. All of these sites are located on the French Lick quadrangle map.

12Or387 is reported as a possible Fort Ancient site located in SW 1/4 of Sec. 30, T2N R1W, Orangeville Twp.(Figure 2). Ceramics are the only material indicated. Site 12Or388 is mapped over an extensive area and is indicated to be a "concentration of sites" on the form. Ceramics of un-indicated affiliation is the only cultural material noted. The general legal location of this site is the SE 1/4 of Sec. 30, T2N R1W, French Lick Twp. (Figure 3). 12Or389 is reported to be located in the SW 1/4 of Sec. 30, T2N R1W, Orangeville Twp. (Figure 2). No indication of associated cultural material is given. Another possible Fort Ancient site, 12Or390, is located in the SE 1/4 of Sec. 30, T2N R1W, Orangeville Twp. (Figure 3). Ceramics are the only material indicated. Ceramics were also reported to occur at 12Or391 which is located in the NE 1/4, of Sec. 32, T2N R1W, Orangeville Twp. (Figure 3). Site 12Or392 has no reported cultural material and is located in SW 1/4, NW 1/4, NW 1/4 of Sec. 33, T2N R1W, Orangeville Twp. (Figure 3). 12Or393 is located in the NE 1/4 of Sec. 32, T2N R1W, Orangeville Twp. (Figure 3) No cultural material is reported. 12Or401 is reported in the SE 1/4 of Sec. 23, T2N R2W (Figure 2) with no associated cultural material indicated. Another site with no cultural material indicated is 12Or402 which has a reported location in the NE 1/4 of Sec. 25, T2N R2W, Northwest Twp. (Figure 2). Site 12Or403 is reported to be in the NW 1/4 of Sec. 26, T2N R2W, with no other information available (Figure 2). 12Or406 is located within the NE 1/4 of Sec. 25, T2N R2W, French Lick Twp. (Figure 2). No cultural material is reported from this site. Ceramics and a possible Fort Ancient cultural affiliation were reported for site 12Or407. The legal location of this site is in the NW 1/4, of Sec. 25, T2N R2W, French Lick

Twp. (Figure 2). And finally site 12Or408 is reported to be located in the NE 1/4, of Sec. 25, T2N R2W, French Lick Twp. (Figure 2).

Other Local Sites

At least 29 other sites have been recorded within a one-mile radius from the project corridor. Most of these sites occur adjacent to Paoli or to the west along US 150 (Segment 2). No information other than locational data are available from this facility.

A highly significant site located on the Paoli Quad that is potentially eligible for the National Register of Historic Places is the Cox's Woods site, 12Or1. It is situated along the left bank of Lick Creek, in the northeast corner of the Pioneer Mothers Memorial Forest about two kilometers southeast of the Paoli Town Square, in the SE¼ SW¼ Sec. 6. T1N R1E, Paoli Twp. It is an Oliver phase village surrounded by a stockaded earthen embankment which was recently excavated by Indiana University (Redmond & McCullough 1996).

Three Historic structures located in Paoli are listed on the NRHP. These are: the Thomas Newby Braxtan House (built 1893) at 210 N. Gospel St.; the Thomas Elwood Lindley House (built ca. 1869) on Willow Creek Road; and the Orange County Courthouse (built 1847), on the Town Square. Additionally, the NRHP recognizes the Paoli Historic District (built between 1840-1940), which is roughly bounded by W. Fifth St., Lick Creek, NE Third St., and Railroad St.

Currently, this facility shows 60 archaeological sites to be recorded on the Paoli quad., 41 sites on the Mitchell quad, and 29 sites on the French Lick quad. Over 520 sites have been documented in Orange County to date. As less than 1% of the county has been systematically examined for such resources, this figure reflects but a fraction of those that potentially exist

Even with the high number of previously recorded sites in the region, it is not likely that the entirety of the project has been examined by professional archaeologists. Given the density of local sites, the potential for discovery of unrecorded archaeological sites is provisionally considered high.

Previous Archaeological Surveys

The proposed bridge replacement area on US 150 over Lost River in the N ½ of Sec. 26, T2N R2W, French Lick quadrangle,(within Segment 2) has undergone extensive archaeological reconnaissance (Jackson 1997, Erickson 1997, Holycross and Stafford 2000). An initial Phase I survey of the area indicated a high potential for buried cultural horizons (Jackson 1997). A subsequent geoarchaeological subsurface study in the area, using a Giddings trailer-mounted hydraulic probe, further indicated the area has the potential to contain buried in-situ cultural deposits (Holycross and Stafford 2000).

A number of smaller-scale archaeological surveys have also been conducted along or immediately adjacent to the proposed project limits. These include: a six mile long survey which extended 100ft

beyond the present right-of-way of SR 37, beginning approximately 300m northwest of the project limits(SW 1/4 of Sec. 1, T3NR1W, Mitchell quadrangle) and ending just south of the US 50/SR 37 intersection (SW 1/4 of Sec. 3, T4NR1W, Bedford West quadrangle) (Tomak 1983); an eight acre sewage treatment project south of Orleans and east of SR 37 in the SW 1/4 of Sec. 31, T3N R1E, Mitchell quadrangle (Stafford 1988); a water line survey to the southwest of US 150 in the SE 1/4 of Sec 34 and SW 1/4 of Sec. 35, T2N R1W, Paoli quadrangle (Baltz 1988); a 3.66 acre survey for the Oak Park Apartment project on the south edge of Orleans just east of SR 37 in the NW 1/4 of Sec. 31, T3N R1E, Mitchell quadrangle (Beard 1992); two bridge replacements on US 150 over Lick Creek, one in the NW 1/4 of Sec. 33, T2N R1W, French Lick quadrangle (Beard 1993a) and the other in the NE 1/4 of Sec. 25, T2N R2W, French Lick quadrangle (Beard 1993b); a survey for waterline extensions which ran along the west side of SR 37 in Sec. 12 and 13, T2N R1W, Paoli quadrangle(Beard and Moffatt 1993); another bridge replacement reconnaissance on US 150 over Lick Creek in the NW 1/4 of Sec. 33, T2N R1W, French Lick quadrangle (Adderley 1995); a survey for proposed intersection improvement on SR 37 at Martin Road south of Orleans in the SW 1/4 of Sec. 31, T3N R1E, Mitchell quadrangle (Holycross 1998); a ca. 18 acre reconnaissance for an INDOT subdistrict complex northeast of US 150/SR 56 in the NW¼ of Sec. 35, T2N R1W, Paoli quadrangle (Gibson & Plunkett 1999); and a proposed road improvement on US 150/ SR 56, at Prospect, just west of the project area in the E ½ of Sec. 27, T2N R2W, French Lick quadrangle (Kuns and Pope 2001).

Natural and Cultural Setting

The project area is located in the Crawford Upland physiographic zone (Schneider 1966). It is characterized as an immaturely dissected plateau with narrow interfluves, deeply incised v-shaped valleys, and relief of up to 350'. Landforms of the Paoli Quad are typical of this zone, as it is dominated by rugged ridge-and-valley topography. The Chester Escarpment, which bounds the karstic Mitchell Plain, terminates about 7km to the east. The western halves of Alternate 1 and the Hospital Road corridor generally follow small tributary valleys leading from ridge flanks; the eastern halves proceed cross-country over the rugged ridge terrain. Lick Creek serves as the primary local drainage, which meets its confluence with Lost River about 15 km to the west.

The ridge capstone consists of resistant limestone, sandstone, and shale units of the Mississippian Stephensport Group. The slopes are more easily eroded shales, sandstones, and limestones of the Mississippian West Baden Group. Larger regional valleys are developed in limestones of the Mississippian Blue River Group (Gray et al. 1970). Several chert types of prehistoric significance are incorporated within this lithology. Known or probable deposits of Bryantsville, Haney, Lost River, and Indian Creek chert have been documented in the greater region (Bassett and Powell 1984; Cantin 1994), and in fact were locally documented by Baltz (1984).

The area remained unglaciated during the Pleistocene, and thus direct upland landscape modification was minimal. However, a veneer of loess mantles much of the upland landscape, into which soils have developed. Certain valleys were impounded in the Pleistocene, which resulted in the formation

and deposition of lacustrine deposits (Thornbury 1950). However, in this region, the valleys incorporate thick sequences of more recent alluvium. Soils of the greater project area are of the Wellston-Zanesville-Berks and Crider-Caneyville-Frederick associations (Wingard 1984). Such soils are described as nearly level to very steep, deep to moderately deep, and moderately well- to well drained. Both associations formed in loess and underlying lithic residuum and are described as alfisols or ultisols. Both classes are typically older, more stable soils in which pedogenesis is mature, as reflected in weathered argillic A-Bt horizonation (Bettis 1992).

Many investigators have addressed the magnitude of ecological succession at the Late Pleistocene/Early Holocene interface through the Middle Holocene (McMillan and Klippel 1981). In a general model applied to the Midwest discussed by McMillan and Klippel (1981), the Wisconsinan glacial mass began to retreat around 14,500 BP. Tundra was found in near proximity to the lead edge of the ice sheet, but a 1000 km band of spruce-dominated boreal forest extended south of this. At this time, winters were warmer and summers were cooler than today. Through time, the character of the forest was dynamic, with more deciduous mesic species encroaching or internally supplanting coniferous types. By 11,000 BP a fully deciduous forest had been established, although it was to be short-lived. It should be noted that this was a time-transgressive phenomenon, so this establishment was at different points for different regions and elevations.

Following this was the Hypsithermal, a warming/drying trend driven by Pacific air masses, which began around 8500 BP, reached its maximum at 7000 BP, and extended to 5100 BP (McMillan and Klippel 1981). During this period, mesic forests were being replaced by more xeric forms, notably prairie, which was sweeping from west to east (Prairie Peninsula expansion, which extended into northwest Indiana). Upland erosion was accelerated and severe, and valleys aggraded rapidly which altered fluvial regimes from braided types to single-channel meandering types (Hajic 1981). As such, oxbows and backwater ponds were formed. Alluvial and colluvial fan deposition commenced as well (Hajic 1981). Upland productivity was diminished as the forests shrank (Brown 1985; Brown and Vierra 1983), thus creating a substantial ecotonal area of forest-edge, which is particularly significant in the distribution of deer, a forest-edge species (McMillan and Klippel 1981). However, there is evidence that bluffslopes remained wooded by xeric species (Brown 1985; Brown and Vierra 1983:173). While the flora of the uplands was displaced, the floodplains and terraces remained wooded by mesophytic and edaphic species and was little affected by the Hypsithermal. The net effect of the Hypsithermal was an increase of the "patchiness" of resources, or the creation of a heterogeneous distribution of resources. Again, as this was a diachronic process, there is a temporal lag which is spatially manifested, from west to east. The Hypsithermal episode diminished by 5100 BP, or in the early Late Holocene/Late Archaic. A climate similar to today was then established.

Presettlement vegetation varied in response to local and regional physiography (Lindsey et al. 1969; Sieber et al. 1989). Much of the Crawford Upland was dominated by climax oak-hickory forests. A significant exception would be in the valleys of major drainages where more mesic communities would have been established, where beech-maple stands would have been more prevalent, and beneath that canopy, a more varied understory composition. On a more local scale, ridge tops and

south- and west-facing slopes would have supported oak-hickory assemblages, while north- and east-facing slopes were more mesophytic. The nearby Mitchell Plain would have supported a mesophytic community as well, and xeric "barrens" were established. The floral community would have provided a range of sustenance resources, including nuts, roots, tubers, berries, shoots, greens, and other fruits.

Most woodland and aquatic fauna native to Indiana would have inhabited this region (Mumford 1969; Sieber et al. 1989). Taxa critical to prehistoric subsistence included deer, raccoon, squirrel, turkey, waterfowl, sundry fish, turtle, and mollusc. Other fauna included various felid, canid, and ursid species. Bison entered the area late in the prehistoric sequence, ca. AD 1600.

The lithic, water, and subsistence resources of the area were capable of supporting moderate to intensive prehistoric occupation. However, archaeological sites do not occur evenly across the landscape, but instead are patterned in relation to specific geomorphic settings and resource locales. These settlement patterns, although distinct for various cultural-temporal manifestations, reflect the adaptive strategies and subsistence systems practiced by prehistoric peoples. As such, the settlement pattern of a particular hunter-gatherer group would be distinct from that of a more sedentary agrarian population, although the settlement patterns between various hunter-gatherer or agrarian groups also vary through time and across space.

Because groups of prehistoric peoples developed a variety of adaptive systems over time in response to changing environmental conditions and the introduction of new technologies, the distribution of sites and site types (e.g., village, hunting camp, lithic workshop, etc.) are expected to reflect these changes. In a generalized model of prehistoric settlement and subsistence, relatively larger base camps and villages would be predicted to occur on floodplain features and blufflines nearer to major drainages, as well as adjacent to upland/interior wetlands. These sites are typically large relative to other contemporary but ancillary sites, and contain midden and pit feature deposits. In addition, the artifactual assemblages are large and represent a wide functional array, which reflects the range of social, political, religious, and domestic activities which occur on-site. Because resources required by the inhabitants of such sites seldom occur in close proximity or are available on a seasonal basis only, it would be necessary for groups to establish smaller, more specialized or task-specific support sites. These camps would be occupied for relatively shorter periods and would not reflect intensive occupation. Consequently, the specialized or limited activity camps often lack significant deposits such as midden or pit features, and the artifactual assemblages are usually limited to few numbers of functionally restricted types. Ancillary camps can occur in a wide variety of settings, but many have been identified in upland contexts near streams. However, because of their short-term and specialized nature, ancillary or similar camps have a potential to provide valuable information to the archaeological record. In certain instances, such sites are considered to be significant and eligible for the NRHP.

All periods of Indiana prehistory (Kellar 1983) are represented by archaeological sites in and adjacent to Orange County (Adams 1946; Munson 1980; Baltz 1986; Sieber et al. 1989; Redmond and McCullough 1993 & 1996). Perhaps most frequently identified are sites of Early Archaic (ca.

8000-6000 BC), late Middle Archaic (ca. 3500-2000 BC), Late Archaic (ca. 2000-1000 BC), and Oliver phase/Upper Mississippian (ca. AD 1000-1400) affiliations. Due to subsistence patterns, a greater representation of the Archaic sites is noted in the uplands; in the bottoms, Oliver phase sites are more frequently identified. However, ancillary sites of each are found over the entirety of the landscape. A full range of site functional types from small short-term camps to more substantial villages, mortuary structures, and specialized extractive sites have been documented in the county.

Two Oliver sites within the general project area region have been recently excavated. The first is the 12Lr329, the Clampitt site (Redmond 1994), located in central Lawrence County. This one acre village site was ringed with at least one stockade, and possibly a second (though it could represent an episode of rebuilding). It was occupied from ca. AD 1276-1433, which is coeval with Fort Ancient groups of southeastern Indiana, and upstream along the Ohio. A large central plaza was defined which was virtually devoid of cultural materials and features, and homesteads were confined to the perimeter of the stockade. Subsistence evidence suggests that a major portion of the diet was based on maze, supplemented by a hunting/collecting economy.

The second site is 12Or1, Cox's Woods site (Sieber et al. 1989; Redmond and McCullough 1996), which is located about one mile east of Paoli, Orange County. It reportedly consisted of an earthen enclosure some 1200' in circumference, and possibly double-walled. Within the enclosure were numerous mounds. Mounds existed outside of the enclosure as well. It was initially test-excavated in the 1940s and 1950s by Jesuit priests from West Baden college, and in the 1990s by Indiana University (Redmond & McCullough 1993 & 1996).

Native Americans of the early Contact period included the Wyandot, Delaware, and Shawnee. Several historic villages have been documented in Orange County. These include King Billy's Village (Shawnee), located near present-day Orangeville, and an unnamed Shawnee village located just east of Paoli, which was occupied in 1788. In nearby Washington County was the Delaware Ox's Village, and a Shawnee winter camp occupied in 1796-7. The land was ceded by the Miami through the Fort Wayne Treaty of 1803. Several early Euroamerican forts were established in the region as well. In Orange County was Maxwell Fort, near present-day Leipsig. Flinn Guthrie Fort was established in 1811 near Leesville, Lawrence County. A massacre occurred here in 1813. Ft. Defiance was constructed in Jackson county in 1812. Lick Fort and Becks Fort were located in Washington County. Spring Mill, in Lawrence County, was founded in 1815, and served as a trading post. Paoli was designated as Orange County seat in 1816.

Recommendations

An archaeological reconnaissance of the entire proposed project corridor is recommended with the exception of those areas previously examined and found to hold no archaeological resources. The numerous archaeological sites that have been reported in and around the project area, especially a Register-eligible site--12Or1 (Cox's Woods)--serves to underscore the need for such a reconnaissance. The reconnaissance should be conducted within the State and Federal Guidelines. Site 12Or552, identified within the proposed corridor of impact, is a *potentially* significant and

Register-eligible site. While a quantity of artifactual material was recovered from the site, the site area is quite extensive so the relative artifact density may not be as great as initial impressions may lead one to believe. The disposition of the higher material densities relative to the proposed project right-of-way is also in need of clarification. It is possible that site 12Or552 is an amalgam of several smaller sites (or sequential series of reoccupations) with "smeared" site boundaries, given the considerable area involved. As such, we recommend to re-examine this site at the Phase Ia level under favorable survey conditions (i.e. during a period of high surface visibility). This assessment may determine that more intensive investigations are warranted (i.e. Phase II test excavation). Alternatively, the project plans could be altered to avoid disturbance to the site. No further investigations of 12Or553 are recommended at this time beyond re-identification of it through the normal course of reconnaissance for the project.

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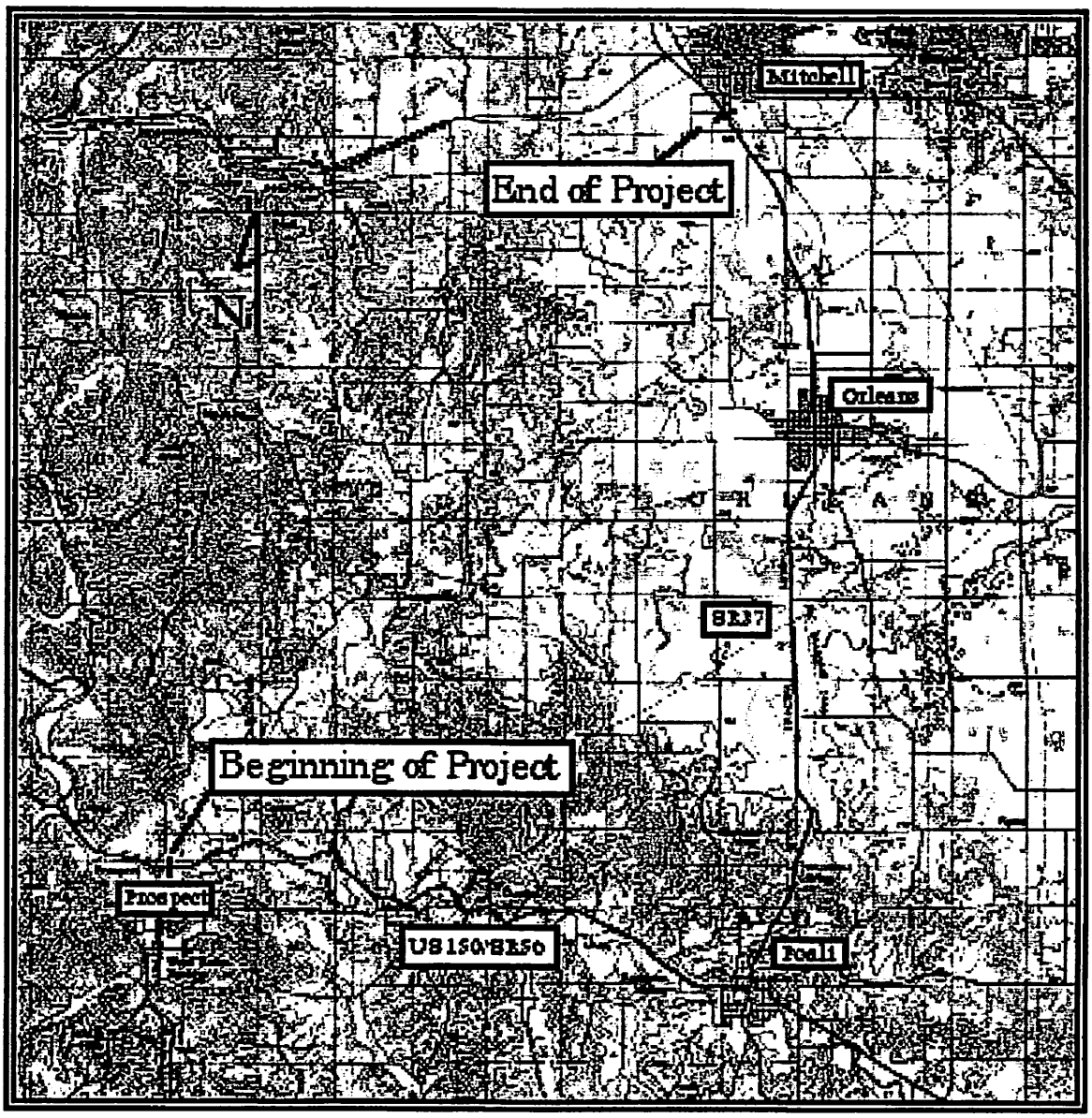

Figure 1: Proposed Project Route with Beginning and Ending Locations.

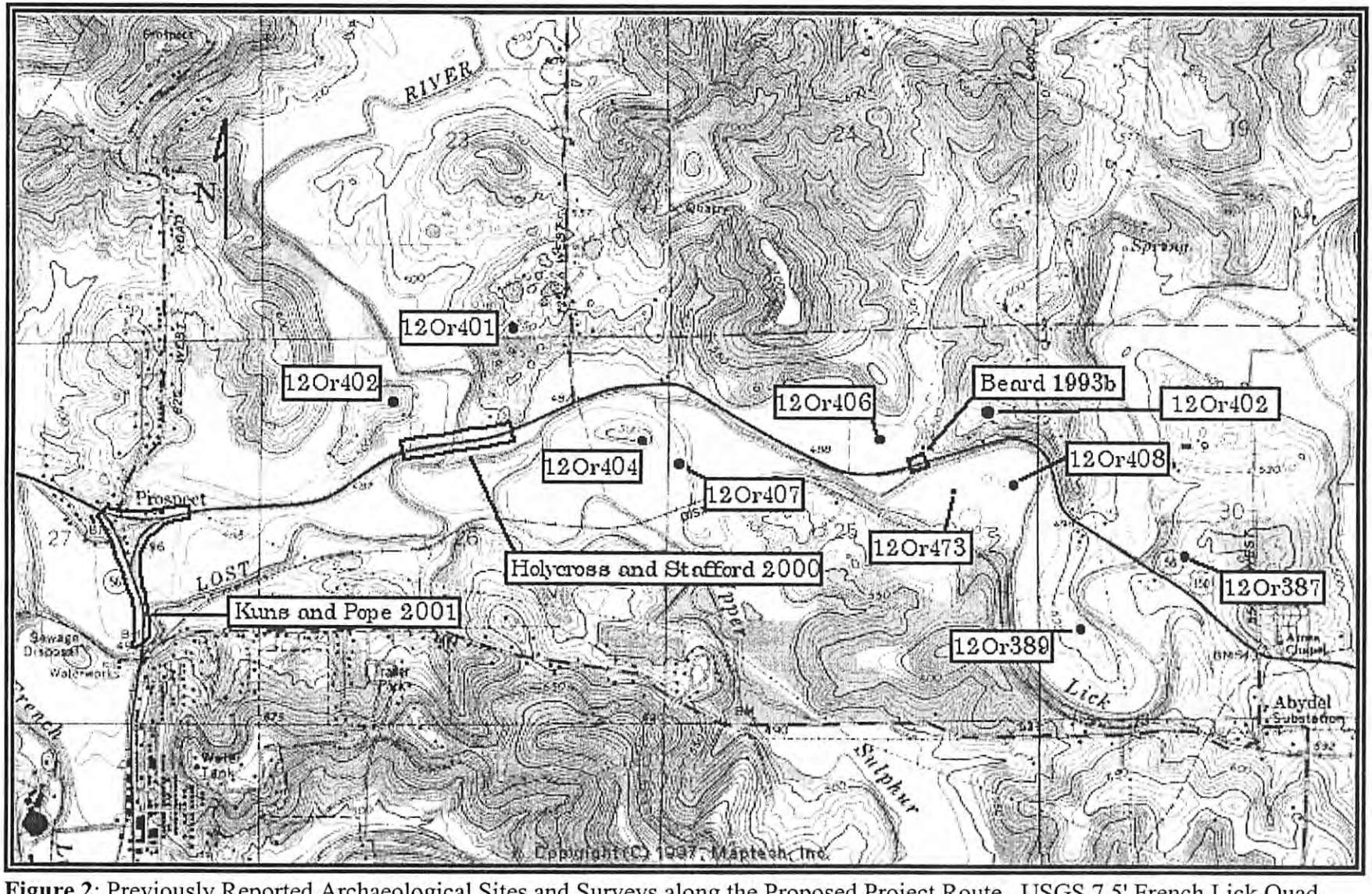

Figure 2: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' French Lick Quad.

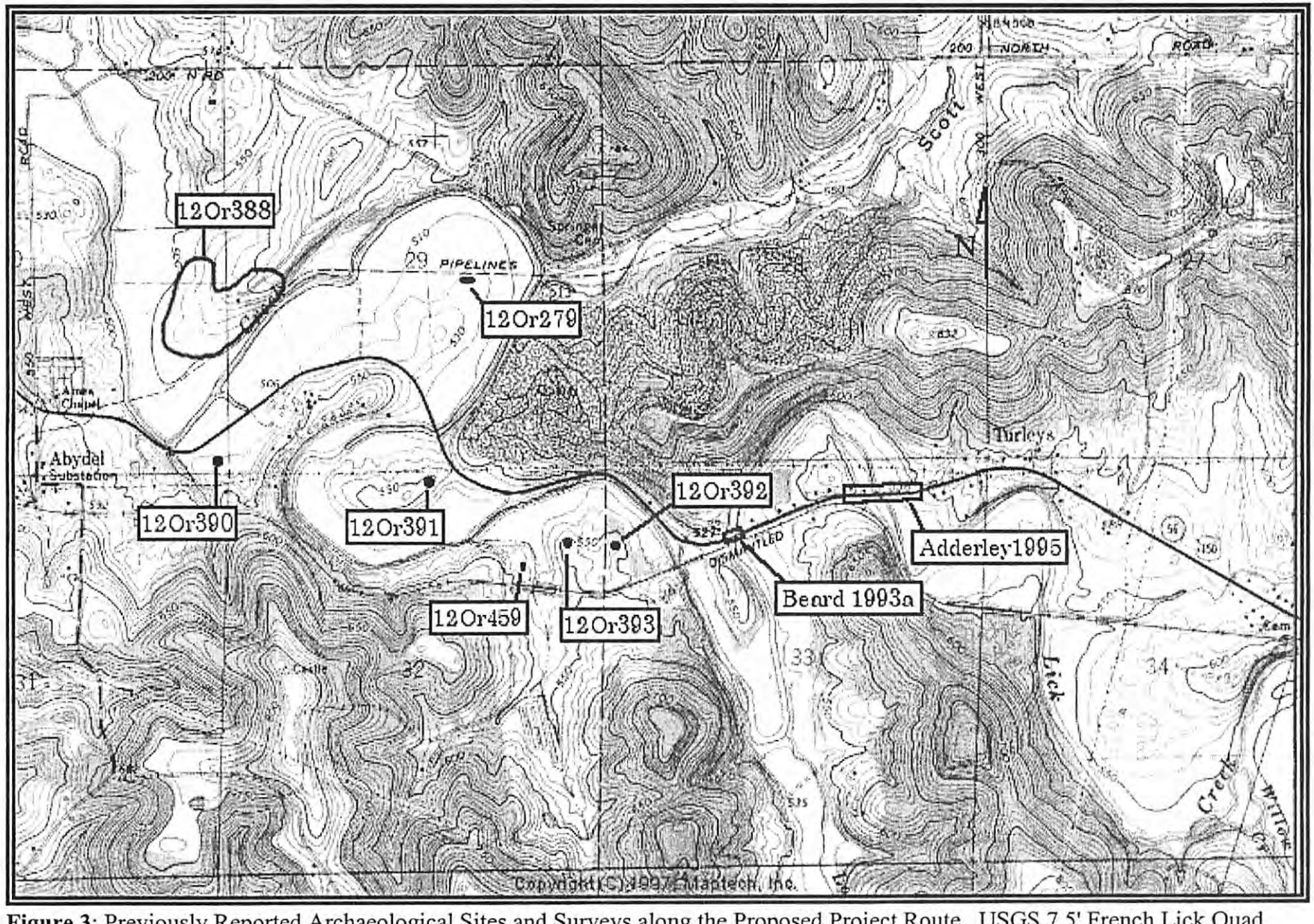

Figure 3: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' French Lick Quad.

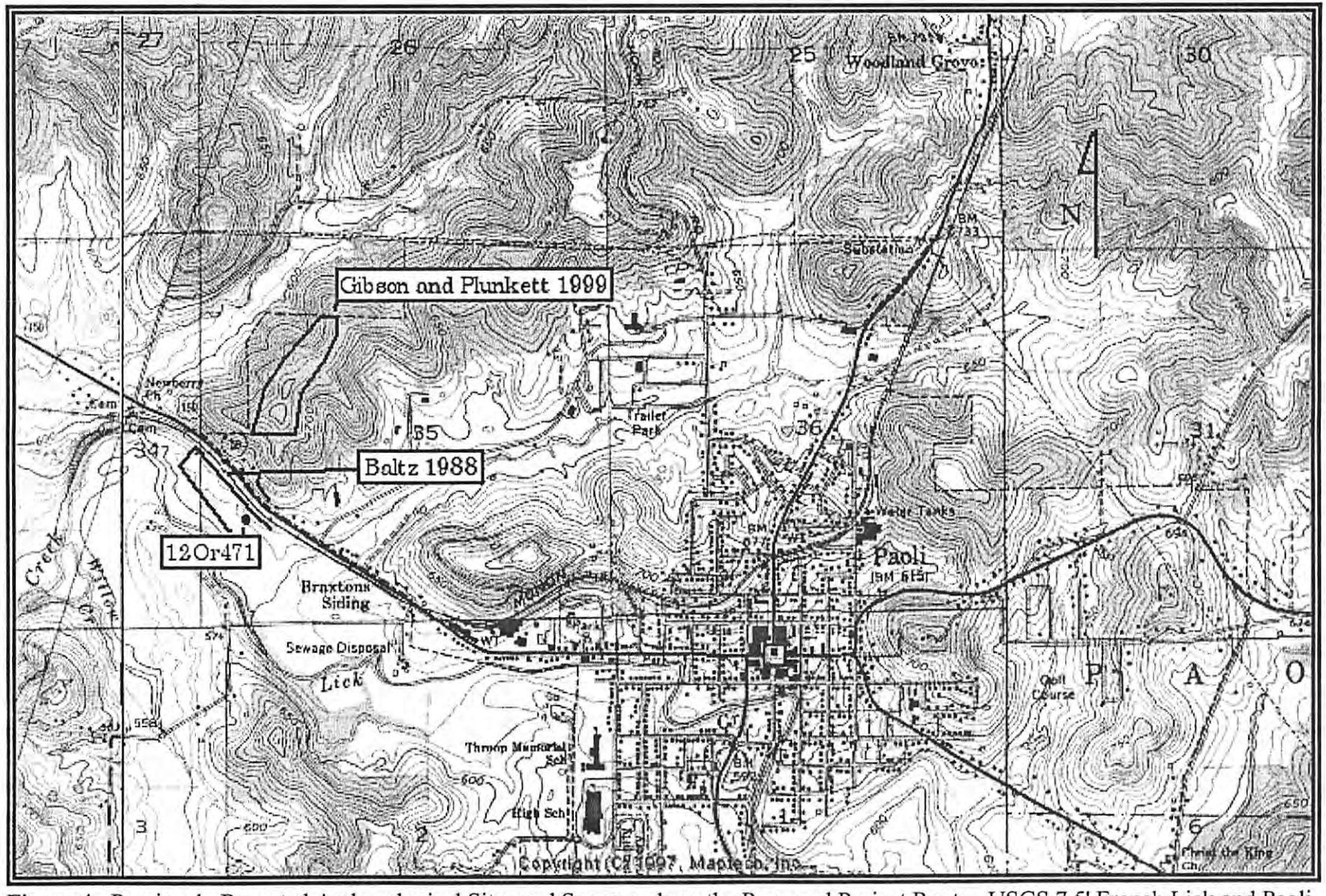

Figure 4: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' French Lick and Paoli Quads.

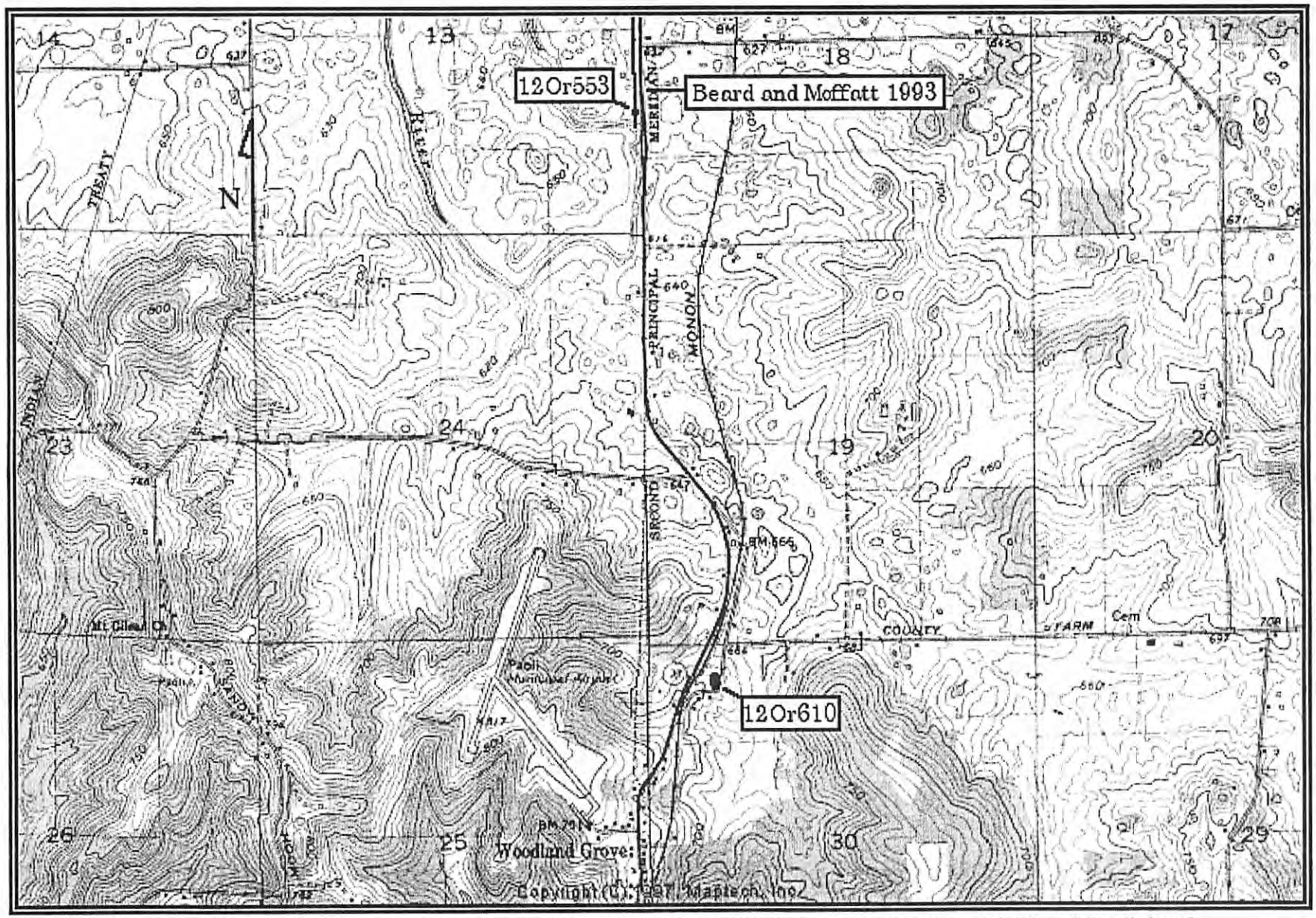

Figure 5: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' Paoli Quad.

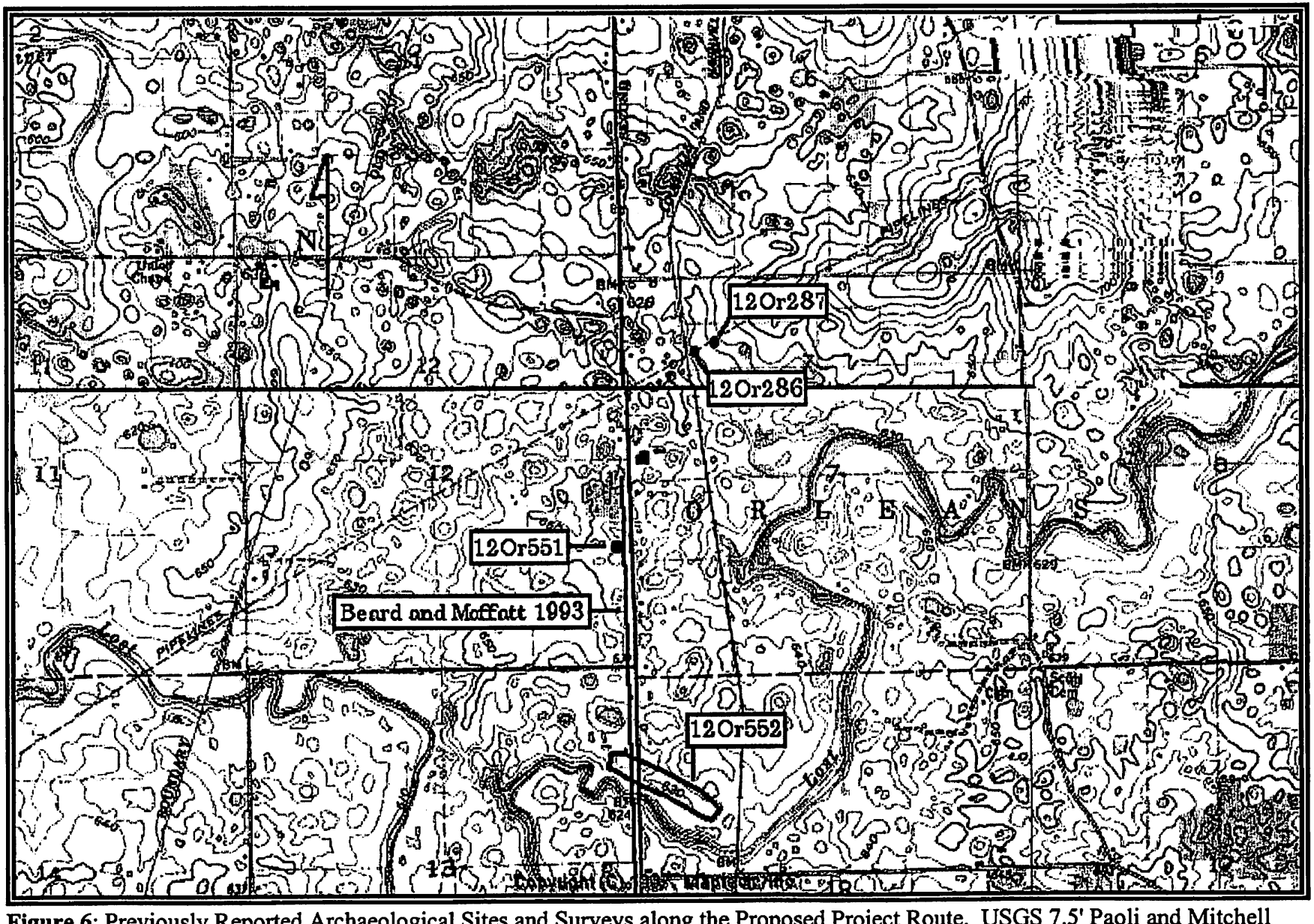

Figure 6: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' Paoli and Mitchell Quads.

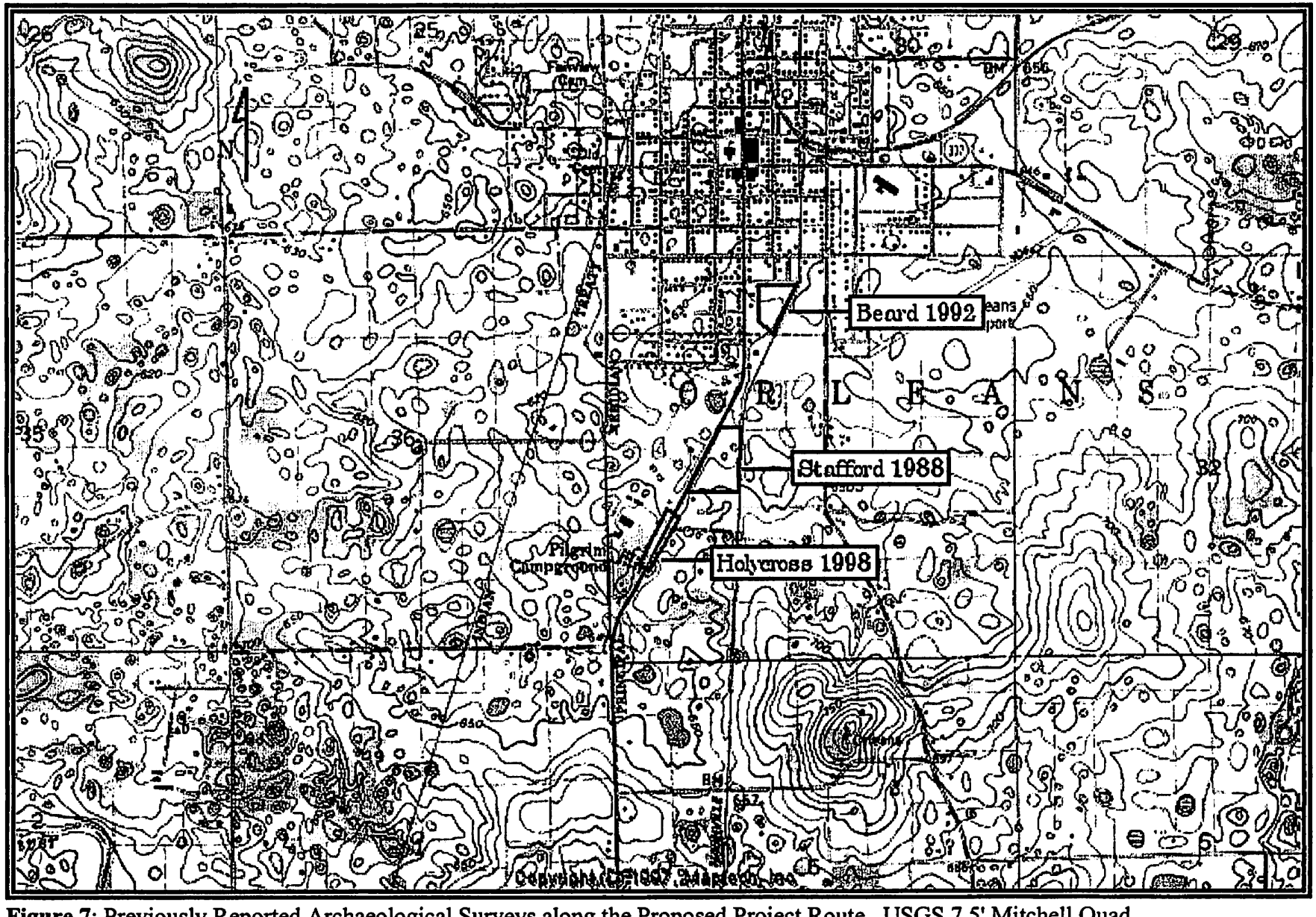

Figure 7: Previously Reported Archaeological Surveys along the Proposed Project Route. USGS 7.5' Mitchell Quad.

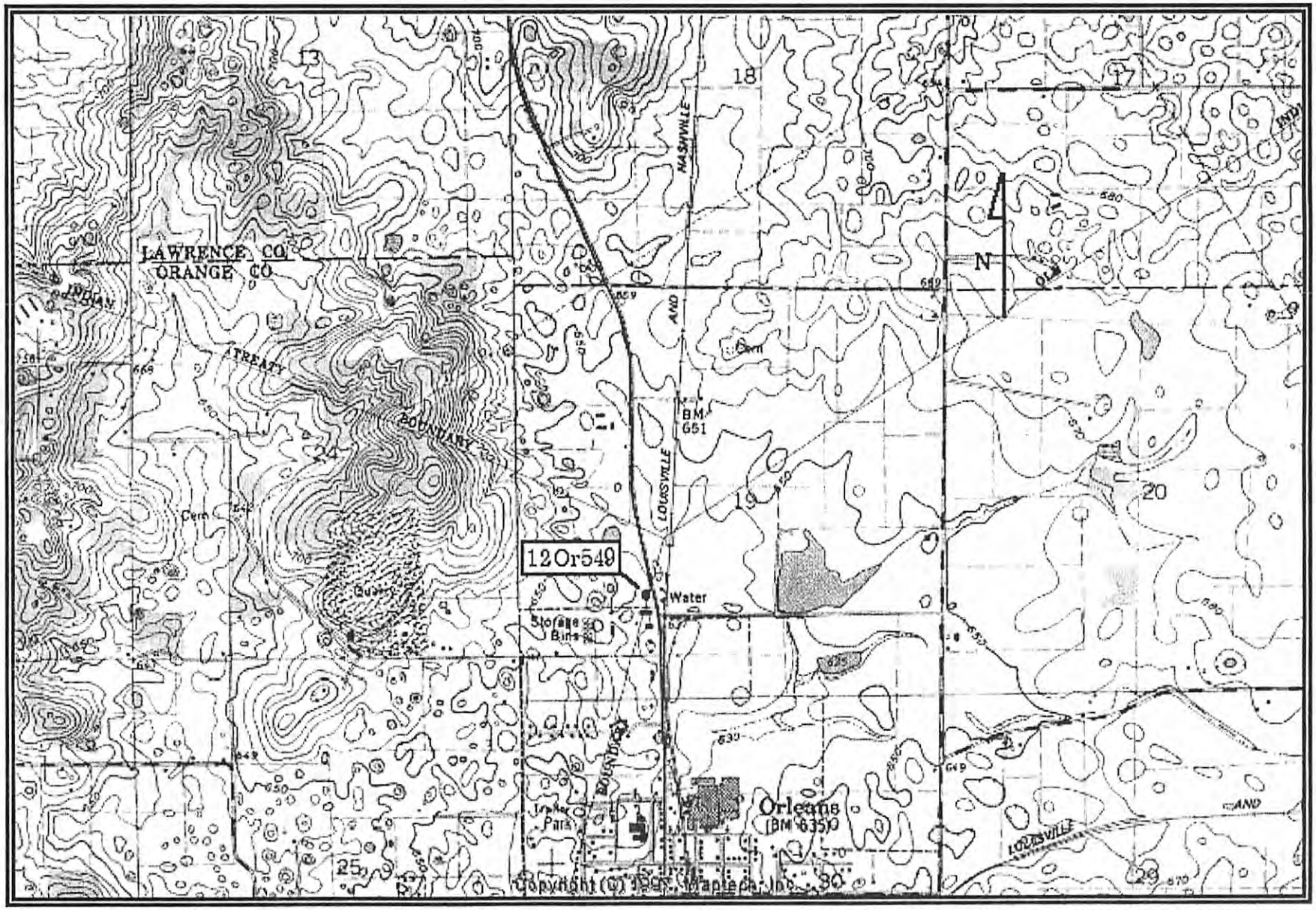

Figure 8: Previously Reported Archaeological Sites and Surveys along the Proposed Project Route. USGS 7.5' Mitchell Quad.

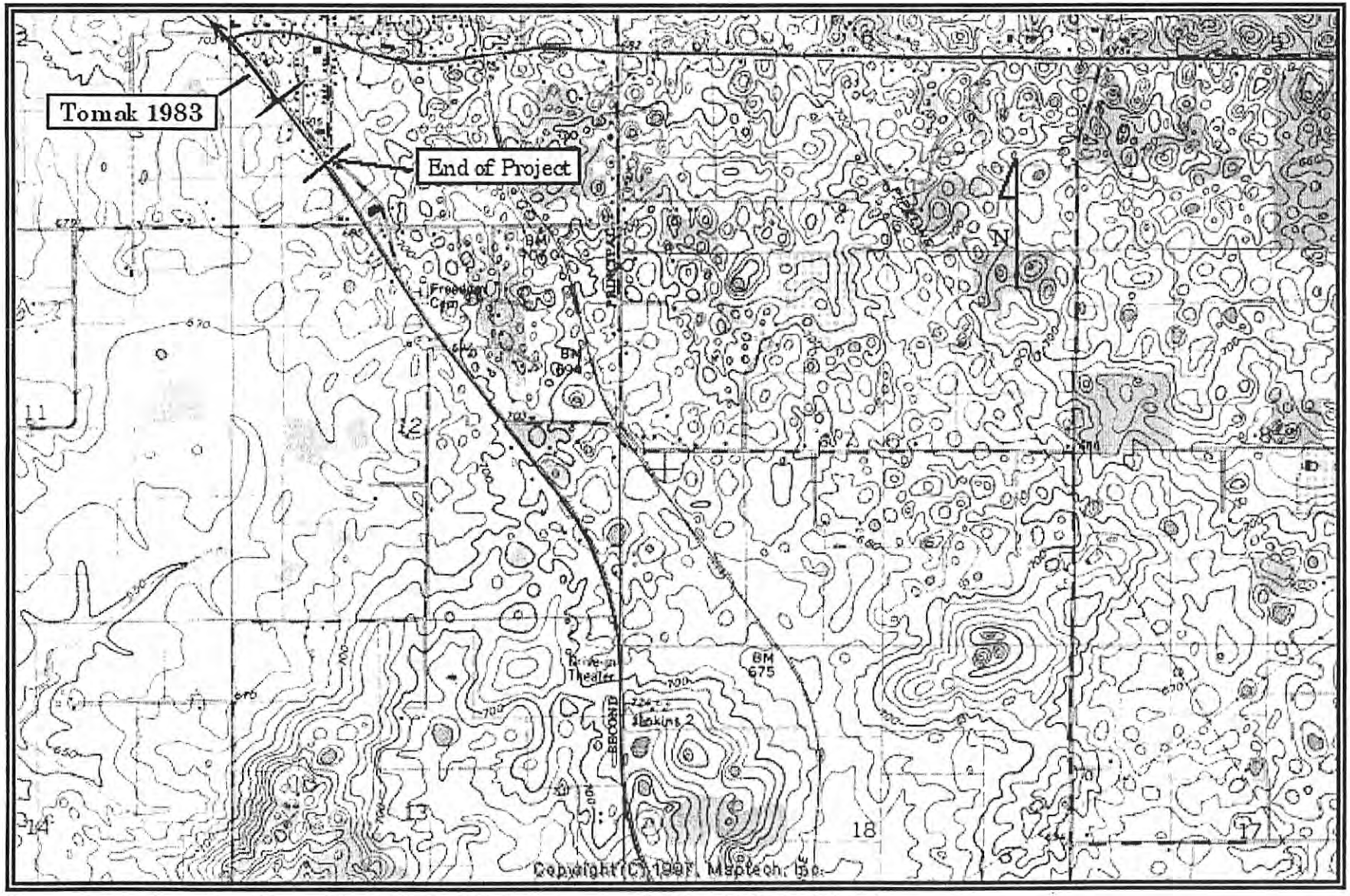

Figure 9: Northern Boundary of the Proposed Project Route. USGS 7.5' Mitchell Quad.

Phase Ia Archaeological Field Reconnaissance: INDOT Project STP -095-3 (), Des. No. 9804650, Proposed Improvements to SR 37 from 2.4 KM North of the Town Square in Paoli to CR 1000 South in Orange and Lawrence Counties, Indiana

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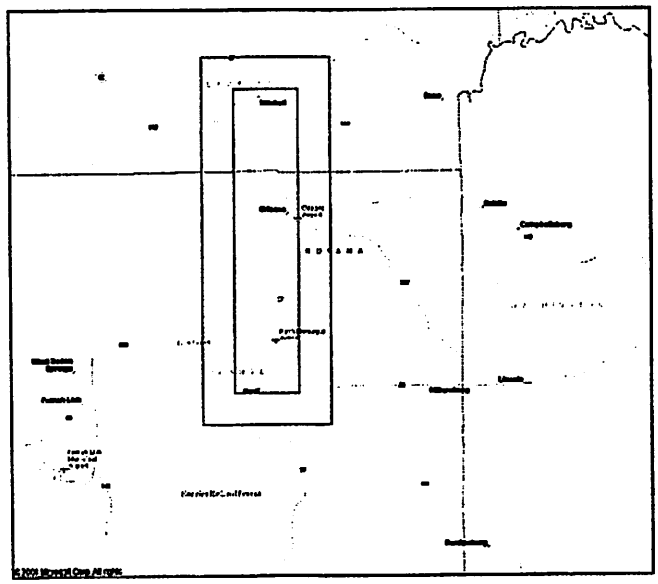
November 22, 2002

Report of Investigations: 02IN0052-P1r01



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Management Summary

In response to a request by Butler, Fairman,and Seufert, a review of all pertinent archaeological literature and a Phase Ia archaeological field reconnaissance has been conducted for the proposed road improvements to SR 37 from Paoli in Orange County to Mithcell in Lawrence County, Indiana.

The Phase Ia archaeological field reconnaissance for the proposed project was conducted between November 11 and 13, 2002 by Karstin Carmany, Jessica Fork, Kelly Williams, and Ken Spencer of Landmark Archaeological and Environmental Services, Inc. Three previously unregistered archaeological sites (12Or733, 12Or734, and 12Or735) were found during the reconnaissance. Site 12Or733 is an isolated biface fragment, and sites 12Or734 and 12Or735 are small lithic scatters. Due to the low density of artifacts and the lack of evidence of archaeological features (fire-cracked-rock, burned earth, charcoal, etc.), these sites are unlikely to contribute to our understanding of the Pre-Euroamerican Contact era of the region. Therefore, no further work is recommended.

One previously recorded site, 12Or552, a Pre-Euroamerican Contact quarry and lithic reduction site, was reinvestigated during this survey. Due to the low density of artifacts within the proposed right-of-way and the lack of evidence of archaeological features (fire-cracked-rock, significant amounts of charcoal, burned earth, etc.), it is unlikely that the portion of the site that falls within the project right-of-way can contribute to our understanding of the Pre-Euroamerican era of the region. Therefore, the portion of the site that falls within the project area is not significant and is not eligible for listing on the National Register. No further work on this portion of the site is recommended. However, if the proposed project extends outside the currently defined area of effect, then further site assessment is needed.

Three other sites, 12Or549, 12Or551, and 12Or553, are recorded within or immediately adjacent to the project area. However, despite conducting intensive investigations within and near the mapped locations of these sites, they were not relocated.

Additionally, one recent dump/structure site was documented. The site is in a pasture on the west side of SR 37 just south of CR 400 North. Eleven fragments (10 x 10 cm or larger) of concrete block made of finely crushed limestone, a piece of burned wood, one piece of rough cement, a 1969 penny, two pieces of stryofoam, and a three pieces of flat plastic were noted in ten shovel probes. Because of the lack of historic material cultural (artifacts at least 50 years old) in the shovel probes, none of the items were collected and the area does not qualify as an archaeological site.

Also, while conducted the archaeological survey, two historic structures were noted immediately adjacent to the project area. Both structures are on the east side of SR 37, and both appeared to potentially significant structures. Further assessment of both homes and the effects of the proposed project on the homes by a professional architectural historian are recommended.

In addition, Haymond silt loam alluvial soils were recorded in ten auger probes in the Lost River floodplain. Therefore, a Phase Ic subsurface reconnaissance is recommended on the total 0.10 hectares (0.25 acres) of floodplain located at the intersection of Lost River and SR 37 and on the total 0.51 hectares (1.3 acres) of floodplain located south on the intersection of Lost River and SR 37 where the river parallels SR 37.

Based on the results of the records review and Phase Ia field reconnaissance, the proposed project should not have an adverse effect on archaeological resources meeting the criteria established for inclusion to the State or National Registers of Historic Places. Federal and State environmental provisions concerning the identification of archaeological resources have been accomplished and it is recommended that construction be allowed to proceed as planned. However, if artifact concentrations, archaeological features or human remains are encountered during construction, any further disturbance must be halted until the Division of Historic Preservation and Archaeology at the Indiana Department of Natural Resources is contacted for an evaluation.

Table of Contents

Figures

Tables

Appendices

Project Description

In response to a request by Butler, Fairman,and Seufert, a Phase Ia archaeological field reconnaissance has been conducted for the proposed road improvements to SR 37 from 2.4 km north of the Paoli Town Square in Orange County north to CR 1000 South in Lawrence County, Indiana. Only the portion of the project from just north of the Paoli Town Square to CR 810 North in Orleans requires new right-of-way. The portion north of CR 810 N in Orange County to CR 1000 South in Lawrence County does not require new right-of-way. The portion of the project that was surveyed for new right-of-way starts in the SE 1/4 of Section 25, Township 2 North, Range 1 West and extends to the NW 1/4 of Section 30, Township 2 North, Range 1 East to the SW 1/4 of Section 19, Township 2 North, Range 1 East and then follows the Second Prinical Meridian between Sections 24 and 19, 13 and 18, and 12 and 7, Township 2 North in Orleans Township as shown on the USGS 7.5' Paoli, Indiana topographic quadrangle and extends north along the Second Principal Meridian between Section 12 and 7 and 1 and 6, Township 2 North to the western ½ of Sections 31, 30, and 19, Township 3 North, Range I East in Orleans Township as shown on the USGS 7.5' Mitchell, Indiana topographic quadrangle (Figures 1a-b). This portion of the project requires approximately 12.65 hectares (31.3 acres) of new right-of-way. However, a large portion of the project area has been previously surveyed; therefore, only approximately 7.34 hectares (18.15 acres) requires an archaeological investigation.

The purpose of this study was to locate archaeological resources within the project area and determine their potential eligibility for listing in the Indiana Register of Historic Sites and Structures (IRHSS) or the National Register of Historic Places (NRHP).

Natural Setting

The project is located in the Mitchell Plain bedrock physiographic unit (Schneider 1966) and within the Mitchell Karst Plain Section of the Highland Rim Natural Region (Homoya 1985). Portions of the project are underlain by Mississippian shale, siltstone, and limestone (Gutschick 1966). The surface deposits within the project lie within the Paleozoic Rocks Formation (Wayne 1966) and are in the general physiographic unit called the Mitchell Plain (Schneider 1966). The project is within the Patoka River watershed (Kingsbury 1970). The pre-Euroamerican vegetation of the area was primarily western mesophytic forest (Petty and Jackson 1966).

The project is in the Crider-Caneyville-Frederick general soil association, which consists of gently sloping to very steep, deep and moderately deep, well drained soils that formed in loess and in the underlying residuum of limestone; and in the Wellston-Gilpin-Zanesville general soil association, which consists of nearly level to very steep, deep and moderately deep, well drained and moderately well drained soils that formed in loess and in the underlying residuum of sandstone, siltstone, and shale (Wingard 1894: General Soils Map).

The specific soils types in the project area are listed in Table 1.

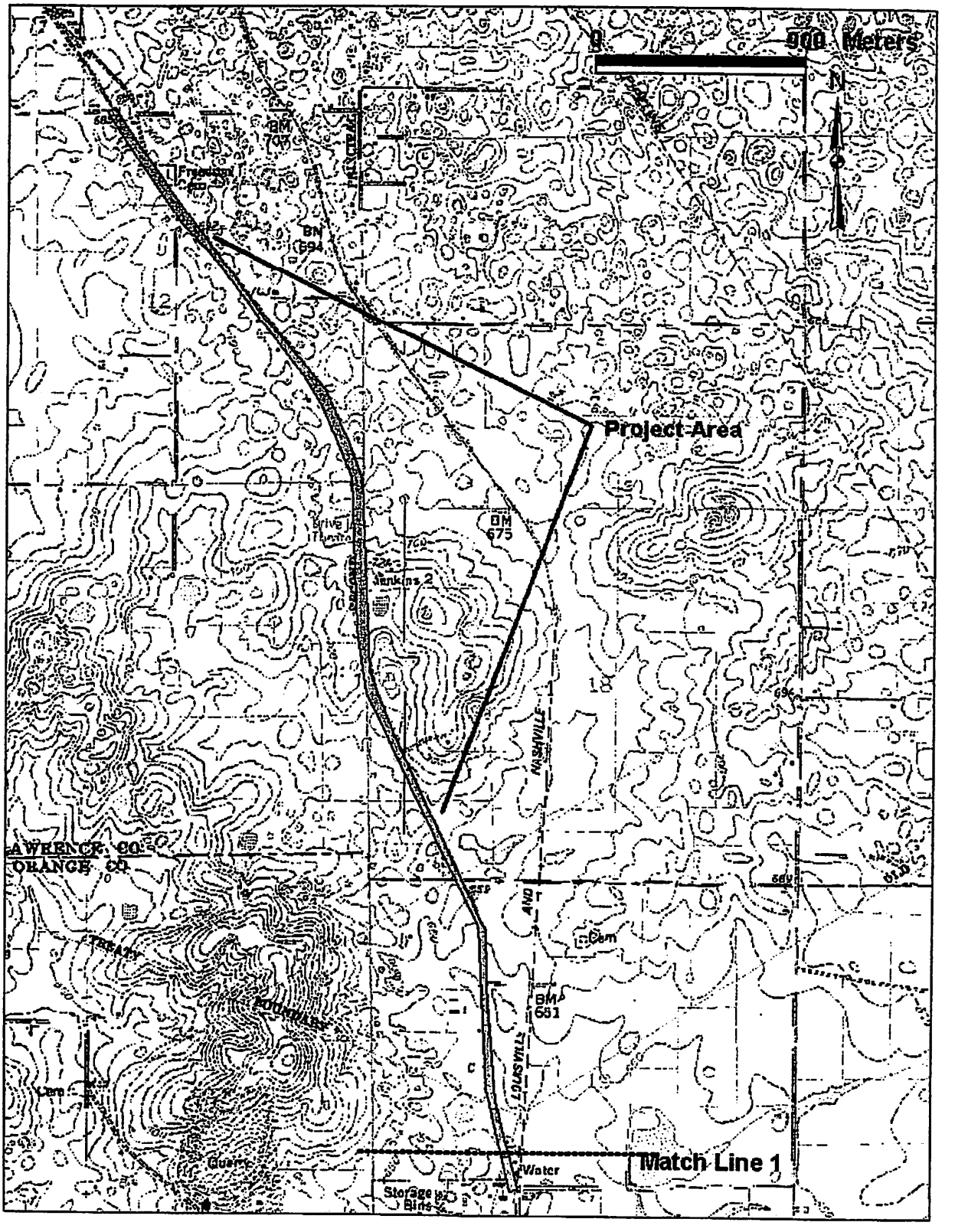

Figure 1a: Project Location Map as Shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangle

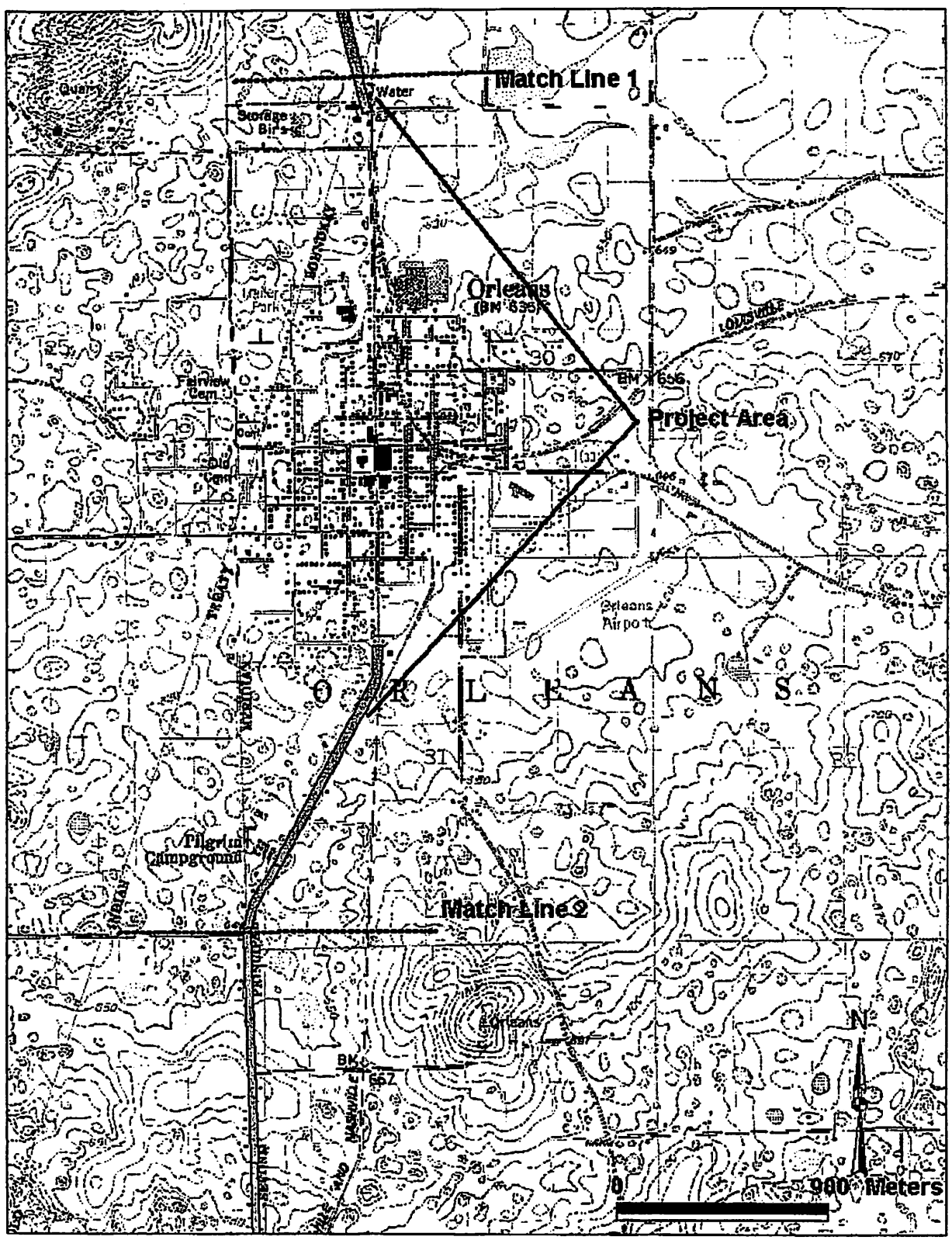

Figure 1b: Project Location Map as Shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangle

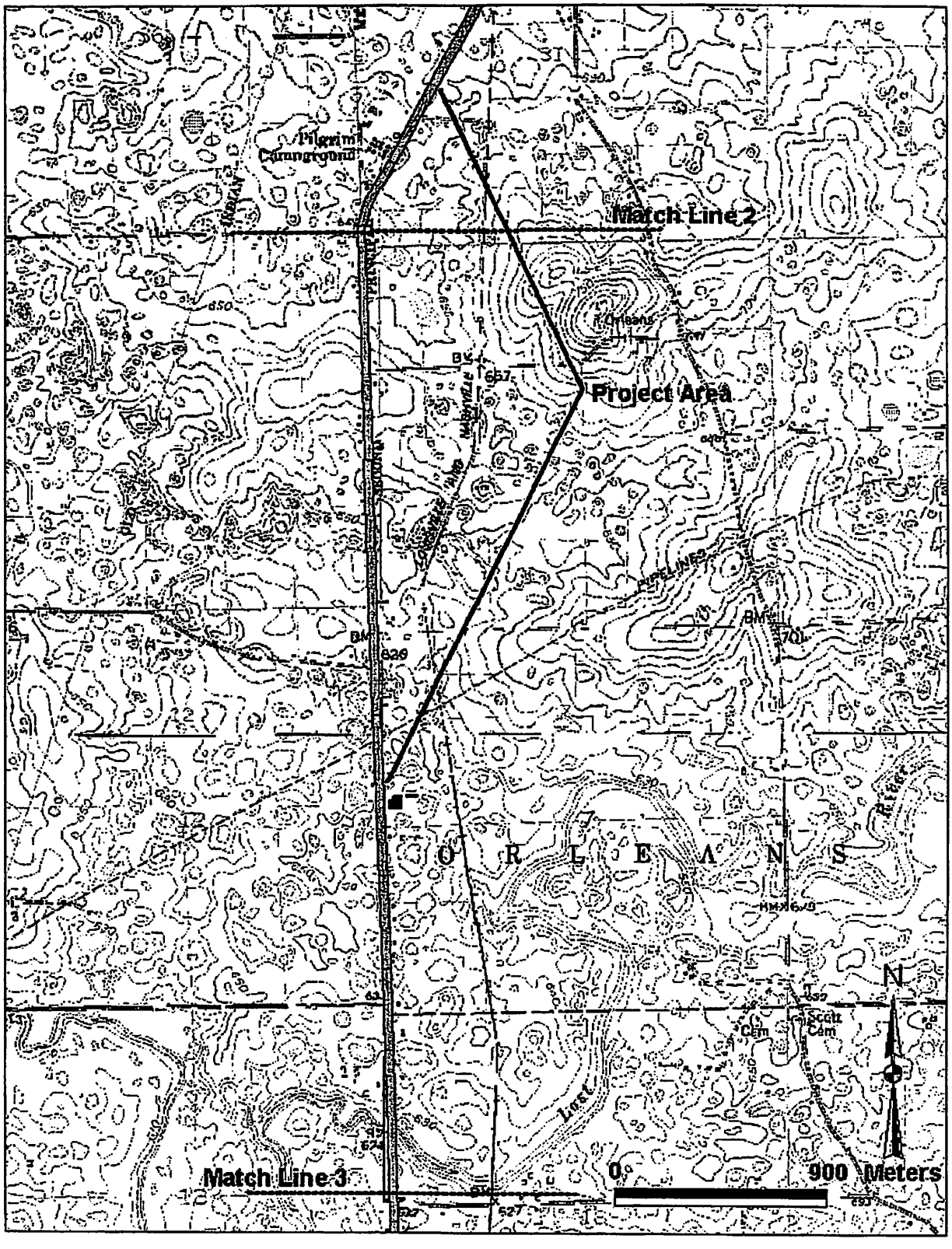

Figure 1c: Project Location Map as Shown on the USGS 7.5' Mitchell and Paoli, Indiana Topographic Quadrangles

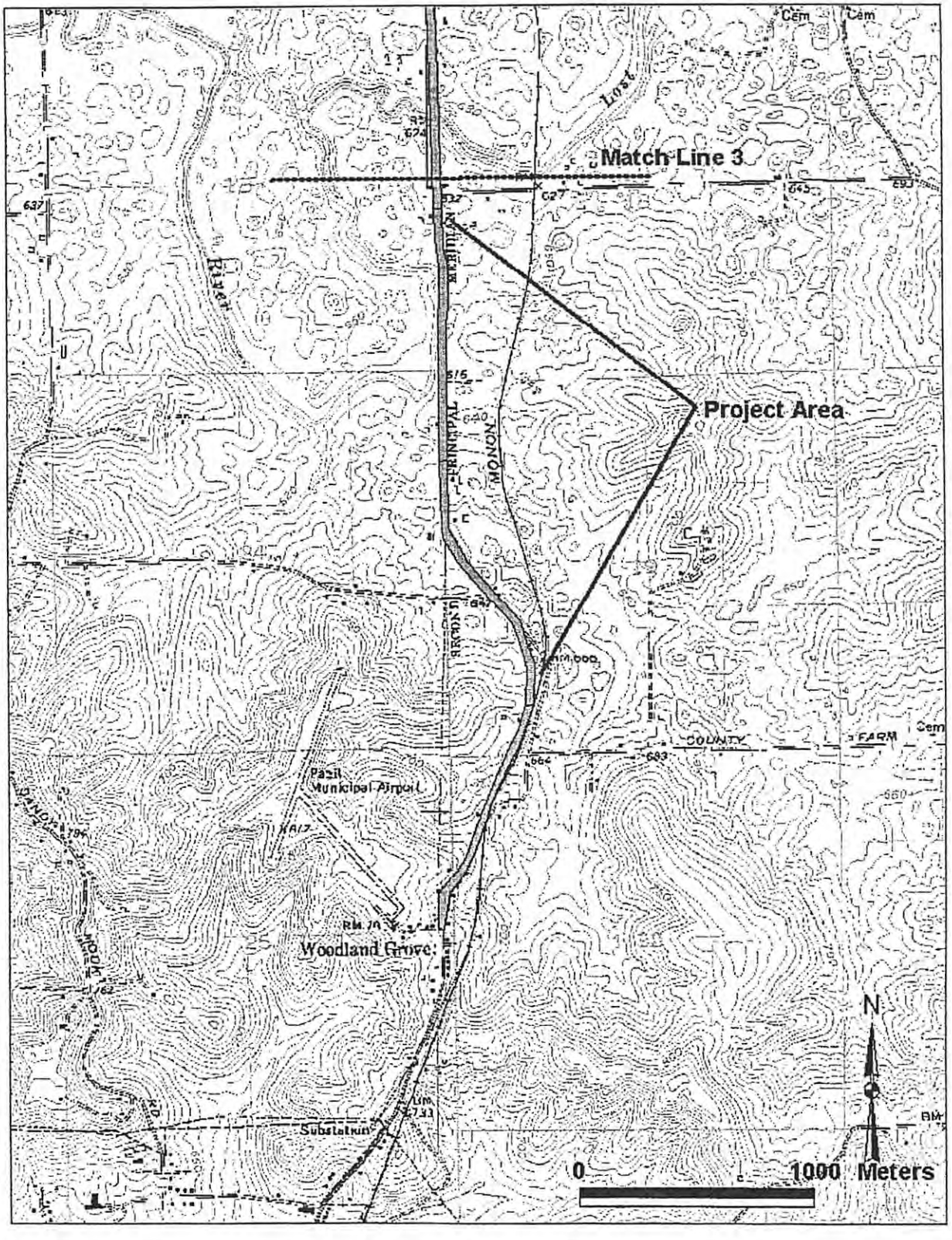

Figure 1d: Project Location Map as Shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle

Table 1: Soils Found Within the Project Area (Wingard 1984).

Soil Name and Map Symbol	Slope	Description
Crider silt loam (CrB)	2-6% slopes	Gently sloping, deep, well drained soil on ridgetops and side slopes on loess-capped uplands
Crider silt loam (CrC2), eroded	6-12% slopes	Moderately sloping, deep, well-drained soil on narrow ridges and side slopes of drainageways on loess-capped uplands
Crider-Fredericks-Caneyville silt loams (CxC2), karst, eroded	2-12% slopes	Gently and moderately sloping, deep and moderately deep, well drained soils. Crider—ridgetops between sinkholes. Frederick—upper slopes of the sinkholes. Caneyville—lower slopes of the sinkholes
Haymond silt loam (Hd), frequently flooded	Nearly Level	Deep, well drained soil on bottom lands that is subject to flooding and formed in alluvial deposits
Wellston silt loam (WeC2), eroded	6-12% slopes	Moderately sloping, deep, well drained soil on narrow ridgetops and side slopes along drainageways on the uplands
Wellston-Gilpin-Ebal silt loam (WgD2), eroded	12-18% slopes	Deep and moderately deep, well drained and moderately well drained sols. Wellston—on narrow ridgetops between drainageways and on benchlike areas on side slopes. Gilpin and Ebal—on side slopes along drainageways

Cultural Overview

Paleo-Indian (prior to 8000 B.C.)

The evidence for Paleo-Indian peoples in eastern North America includes several types of lanceolate fluted and unfluted points as well as a diverse assemblage of chipped stone tools (Griffin 1967:176; Justice 1987). During late glacial and early post-glacial times these tools were used to exploit large game such as caribou, musk oxen, mammoth, and mastodon as well as scarce edible plants. Paleoindian occupations of the surrounding area are known only from isolated artifacts in disturbed/plowzone contexts with the absence of any other associated artifacts or deposits (Tankersley 1987). Small sites with no evidence for permanent structures and low artifact densities imply high mobility and band-level social organization (Stoltman and Baerreis 1983:253-254).

Fluted Paleo-Indian points are among the most rare point types documented, and they are seldom recovered in good archaeological context. In the 1960's, the majority of reported Paleoindian sites within Indiana were from collector reported finds documented by professional archaeologists (Dorwin 1966). Since then, a number of researchers (Cochran et. al. 1990;

Smith 1984, 1987, 1989a,a; Tankersley 1987, 1989a, 1990; Tankersley et. al. 1990; Holsten and Cochran 1986) have added to the known distributions of these sites within the state. Approximately 400 of these points have been recorded in Indiana, the majority in the southern half of the state from flood plain or terrace contexts. While the number and distribution of Paleoindian artifacts in Indiana are well documented, to date, no in situ sites have been documented in the state.

Early Archaic (8000 - 6000 B.C.)

The hunting and foraging people of later Paleo-Indian and Early Archaic times slowly adjusted to the extinction of large game brought on by the changing landscapes of an increasingly warmer and drier climate. The distinction implied by the term Early Archaic is thus a blurred one, marking a time of transition from specialized hunting and limited foraging toward more regionally focused subsistence strategies that were more diverse drawing on a greater range of resources (Stoltman 1978:714; Hicks 1992:13). Tool assemblages indicate continued primary emphasis on hunting and animal processing (Griffin 1983:244), though the gathering of newly available plants and aquatic resources undoubtedly increased during this time. An increase in the number of sites encountered suggests population growth or aggregation as well as an increasingly diversified subsistence/settlement system (Mohow 1992:21).

Throughout southern Indiana, Early Archaic sites and isolated finds are documented on almost all landforms. Larger sites occur on terraces and floodplain ridges of the Ohio River and its tributaries (Sieber et. al. 1989), and are frequently deeply buried in flood plain settings (Cantin 1986; Smith 1986; Stafford and Cantin 1992). Increased evidence of upland exploitation, especially rockshelter and cave utilization, is noted for this time period (Sieber et. al. 1989). Local Early Archaic projectile point types include Thebes, Kirk and Bifurcate base clusters (Justice 1987).

Middle Archaic (6000 - 4000 B.C.)

Middle Archaic people of the Midwest adapted to a time of maximum warmth and dryness that was accompanied by the spread of prairie grasslands and oak-hickory forests. A reduction in hunting and gathering mobility brought on by this change in environment and resource availability probably fostered population growth and logistically organized collecting strategies (Brown and Vierra 1983:168; Stafford 1994:219-221). An increase in rough and ground stone tools, such as grinding stones, pestles, bannerstones, and grooved axes, marks a time of increased subsistence diversity (Griffin 1967:178), but deer, hickory nuts, and at some locations aquatic resources probably dominated the diet (Stafford 1994:223). Middle Archaic horizons from the Koster site in the lower Illinois Valley contain chipped, rough and ground stone tools, diverse antler and bone tools, hearths, roasting pits, mussel steaming pits, shell dumps, shallow storage pits and evidence for rectangular structures (Brown and Vierra 1983:183-184). High quantities of fire-cracked or fire-burned rock at Middle Archaic base camps suggests intensive food processing, probably the extraction of hickory nutmeats and oil (Stafford 1994:221). Available data suggests that during the latter portions of this period

(5500-5000 BP) some sites were being occupied for longer periods on a seasonal and perhaps multi-seasonal basis (Stafford 1994). These base camps often have dark midden stains, numerous associated pit features, and in some instances human and dog burials (Anslinger 1988).

Late Archaic (4000 - 1000 B.C.)

The Late Archaic in the Midwest is widely known as a period of increasing complexity and diversity and as a time of transition between established Archaic patterns and new Woodland patterns featuring ceramics, food production, and mound building (Griffin 1983:249; Stoltman 1978:715). Larger sites with recurrent habitations suggest considerable population growth (Griffin 1983:249), which may be linked to the gradual return of cooler and wetter conditions and the spread of modern mixed-deciduous forests. Other general trends include increasing use of plant foods, increasing numbers of grinding stones, a greater variety of preserved faunal remains, evidence for structures, the appearance of shell midden sites, long distance exchange of raw materials and finished objects, and inclusion of exchange objects in burials (Griffin 1967:178-180; Griffin 1983:249; Kellar 1983:29). Evidence for the cultivation of native plants as well as squash and gourd imports from the Southeast is evident at the end of the Late Archaic (Ford 1974:401).

Along the middle and lower Wabash River valley in Indiana and Illinois, Winters (1969) identified sites that he defined as being a part of the Riverton culture (2000-1000 B.C.). These sites ranged from shell middens along the river to terrace top settlements with houses and prepared clay floors (Winters 1969:137). Robeson Constricted Stem, Merom Expanding Stem, and Trimble Side Notched points are diagnostic of the Riverton culture along with the occurrence of Robeson gouges, grooved sinkers, limonite axes, "cloudblower" pipes, and Indian Knoll rattles. Winters looked south for Riverton antecedents, arguing against connections to the earlier "Wabash Valley Archaic" (Winters 1969:103-108). Ford (1974:395) includes the various Late Archaic manifestations discussed here in a larger mid-continent tradition called the Riverine Archaic. While the Riverine tradition clearly defines southern portions of Indiana, the Late Archaic cultures in the northern half of the state are not as well understood.

Early and Middle Woodland (1000 B.C. - A.D. 500)

Roughly simultaneous occurrence of ceramic manufacture, food cultivation, and artificial earth constructions characterizes the Early and Middle Woodland periods in the Midwest. Following developments in the Middle Atlantic area, cord-marked ceramics such as Marion Thick spread rapidly. More complicated indigenous ceramics with rocker and dentate stamped decoration appeared during the Middle Woodland along with trade vessels from the Southeast (Griffin 1967:184; Griffin 1983:254). Intensive hunting and gathering appears to have been supplemented by cultivation of squash and gourd and the indigenous cultigens sunflower, sumpweed, and goosefoot (Stoltman 1978:718; Ford 1974:401).

The Adena culture is the most well understood Early Woodland tradition in Indiana. Adena culture sites are the most commonly identified within east-central Indiana. They usually consist of small hamlets with large residential structures which are located near major drainages. Burial ceremonialism continues to heighten during Adena times, with log or bark lined tombs constructed within man made earthen structures.

Evidence suggests a hunting and collecting subsistence strategy. Limited experimentation with agriculture is suggested with the cultivation of squash (Cucurbita pepo) and starchy seeds, mainly Goosefoot (Chenopodium berlandieri), Maygrass (Phalaris caroliniana) and Knotweed (Polygonum erectum), all of which occupy a prominent position in many Middle and Late Woodland seed collections (Asch and Asch 1985). Ceramics are described as thick with very coarse grit temper. Vessels are typically jar shaped with flattened bases and cordmarked interior and exterior surfaces. Points commonly associated with this period include the Adena and Saratoga clusters (Justice 1987). The use of Wyandotte and other higher quality chert types replaces the use of local gravel cherts.

The Hopewell Culture dominates the Middle Woodland Period, which is largely a continuation of the preceding Adena period. However, Hopewell Cultures saw the climax of burial ceremonialism, widespread trade and social interaction (Kellar 1983), as well as burial mound, mound complex and earthwork construction. Diagnostic projectile points of this period include Snyders, Chesser, Lowe, and Stueben types (Justice 1987). Astronomical alignments between some Middle Woodland mound sites in east-central Indiana have also been recognized (Cochran 1992). Other regional phases of the Middle Woodland time frame within Indiana include the Mann, Goodall Focus, Allison-Lamotte, Havanna, and Scioto (Kellar 1979, Ruby 1994, Quimby 1941, Schurr 1997a).

Late Woodland and Mississippian (A.D. 500 - 1650)

The Late Woodland saw a decline in the construction of earthworks and mounds, and a major reduction in trade and the use of exotic materials. Late Woodland cultures are very poorly defined in Indiana. Components of the Albee Phase, while geographically confined to the White River drainage and it's tributaries, are linked to the region. Diagnostic artifacts include globular, grit tempered jars with wedge shaped profiles. Exterior surfaces are vertically cordmarked. Point types recovered from Late Woodland contexts include the Madison and Levanna trianguloid, as well as Jacks Reef and Raccoon side notched varieties (Justice 1987). Temporal limits have not been established, although current data suggests a range from 1200-800 years B.P. (Anslinger 1990). In some portions of Indiana, Late Woodland cultures existed until contact with Euro-Americans.

The Angel, Murphy, and Vincennes Complexes represent Mississippian cultural patterns in southern Indiana. The forty-hectare Angel Mounds site and associated villages, hamlets, and camps are located in the southwestern tip of the state along the Ohio and Wabash Rivers. The Angel Mounds site represents a palisaded town with platform mounds, plazas, rectangular house remains, and a main occupation date between 1200 and 1400 A.D. (Griffin 1983:283). Diagnostic artifacts include typically Mississippian ceramic bowls, bottles, plates

and jars and small triangular arrow points. Some Angel vessels feature negative painted motifs and effigies (Griffin 1983:286-288). Distinctly less complex Mississippian sites of the Murphy and Vincennes complexes are located along the lower Wabash River in Illinois and Indiana (Griffin 1978:550). The Caborn-Welborn phase of Mississippian, with more dispersed and unfortified settlements, replaces earlier Mississippian occupations in the Ohio/Wabash area after A.D. 1450 and continues until the time of European exploration of eastern North America (Griffin 1983:288).

Whereas most of the Late Woodland Period for Indiana provides a general image of cultural continuity, the region became relatively depopulated during the centuries before direct European contact (Hicks 1992:42). Population movements probably resulted from indigenous social and ecological factors as well as indirect impacts from European presence on the continent.

Post-Euroamerican Contact (A.D. 1650-Present)

Historically, the first recorded people in the area now referred to as Orange County were Native Americans. The Shawnee had a village recorded by Guernsey as Kingbilly's Village. Guernsey also recorded several Indian trails in the area along the numerous creeks and streams, including the Lananzokimiwi Trail. He also recorded Captain Kirby's Road, later known as the Cincinnati Trace. The area was ceded to the United States government trough a series of treaties including the 1803 Treaty of Fort Wayne and the 1804 Treaty of Vincennes (Figure 2) (Guernsey 1932).

Orange County was the last county to be organized under the Territorial Government in 1815. By 1818 the County's boundaries reflected their current state. Due to the rugged terrain, agriculture was not a prosperous venture and the economy has relied on tourism and small manufacturing (Taylor et al. 1989:336-337).

Paoli was designated as the county seat in 1816 and was predominately settled by Quaker families led by Jonathan Lindley, a wealthy Carolina businessman who platted the town in 1811. The town was named after the son of the North Carolina governor who died prior to Lindley's migration (Taylor et al. 1989:338).

Historic maps of the project area show the historic Towns of Orleans and Paoli, the Dry Bed of Lost River, six schoolhouse, five homesteads, two churches and cemeteries, several county roads, a treaty boundary line and two trails near the project area (Figures 2 and 3).

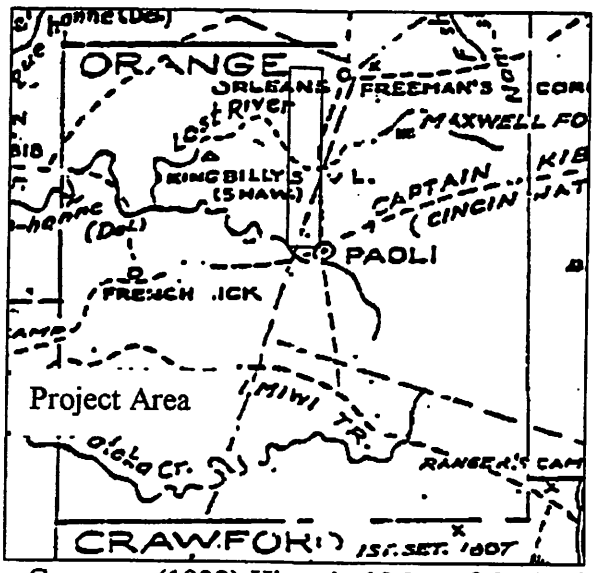

Figure 2: Guernsey (1932) Historical Map of the Project Area

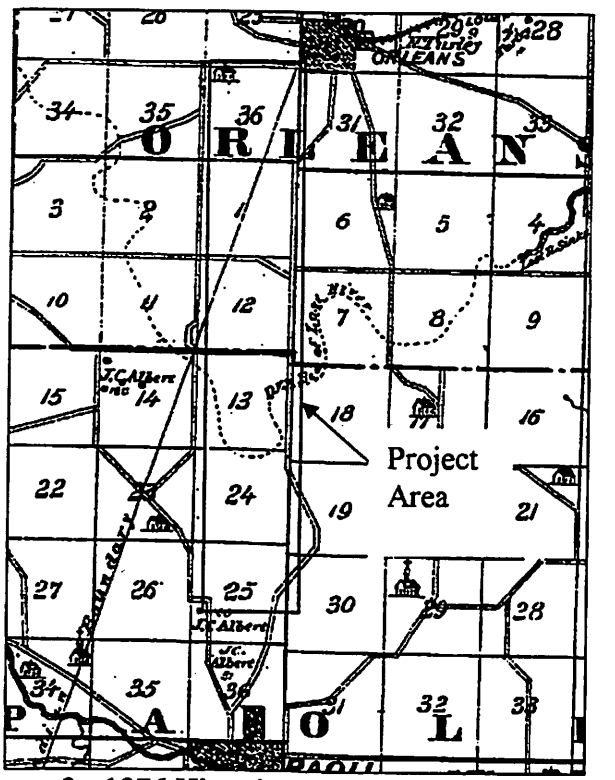

Figure 3: 1876 Historical Map of the Project Area

Archaeological Records Check

Records at the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology (DHPA) show at least 603 archaeological sites in Orange County. A review of archaeological site registrations and pertinent archaeological literature, conducted prior to the field investigations, revealed that several professional surveys have been conducted within a mile of the project, two of which have been conducted within the project

area. Indiana State University has conducted a records review for the entire project area, including this portion (Segment 5) (Schwegman and Cantin 2002). Schwegman recorded 23 sites within a 400 meter corridor around the proposed project, two of which (12OR552 and 12Or553) fall within Segment 5 of the project and may be affected by it. Only those sites located within and those surveys that have taken place within this portion of the project area will be reviewed here.

Three surveys have taken place on or along SR 37 directly south of Orleans and north of CR 600 N (Beard 1992, Stafford 1988, and Holycross 1998). None of these surveys recorded any archaeological sites. Two surveys conducted by Landmark intersect the current project area (Wappenstein and Plunkett 1998, Wappenstein and Plunkett 1999). As a result of these surveys, site 12Or610, a Pre-Euroamerican Contact isolated lithic that is not eligible for listing on the National Register, was recorded within a mile of the project area.

Two other surveys, both conducted by Landmark, have taken place in the same location within the current project area. Both surveys were conducted prior to the placement of waterlines along the west side of SR 37 from CR 600 N pass Airport Road north of Paoli, the southern extent of the current project area (Beard and Moffatt 1993, Wappenstein and Plunkett 1998). As a result of these surveys, five sites were recorded within a mile of the project area. Site 12Or549 is a Pre-Euroamerican Contact lithic scatter consisting of two flakes. No further work was recommended on this site. Site 12OR554 is a collector reported Terminal Archaic site consisting of Turkey-tail points. As reported, the site fell outside the waterline project area and no further work was recommended. The site also falls well outside the current project area.

Three other sites fall within the current project area. Site 12Or551 is a Pre-Euroamerican Contact isolated lithic. No further work was recommended on the site. Site 12Or553 is a small Pre-Euroamerican Contact lithic scatter consisting of three flakes. No further work was recommended on the site. Site 12Or552 is a Pre-Euroamerican Contact quarry and workshop site recorded just north of Lost River on a ridge paralleling the river. The site may be eligible for listing on the National Register and further work on the site was recommended, if construction activities extended into the undisturbed portions of the site.

There are no National Register of Historic Places sites or Indiana Register of Historic Sites and Structures sites in or immediately adjacent to the project area (DHPA 1999).

Field Reconnaissance

Methodology

Methodology was determined by the surface visibility, amount of previous disturbance, terrain, and vegetation found within the project area.

Surface visibility was estimated to be below 30% in all of the project area. Therefore, shovel probes were placed on a 10 meter (32.8 feet) grid in all areas that were not severely sloped or visually disturbed. Shovel probe holes were 30 cm in diameter and excavated down

to 50 cm or to subsoil, whichever came first. All soil from the shovel probes was thoroughly troweled and hand sifted in search of artifacts. Radial shovel probes were placed in each cardinal direction 5 meter (16.4 feet) from all positive shovel probes in order to determine site boundaries or until the project boundaries had been reached. All artifacts (excluding fire-cracked-rock and brick, which were counted) were collected from each positive shovel probe.

All artifacts collected were cleaned with water and a soft brush and analyzed at the laboratory of Landmark Archaeological and Environmental Services, Inc. Permanent curation of all recovered artifacts will be at the Department of Sociology and Anthropology, Purdue University, West Lafayette, Indiana.

Results of the Reconnaissance

Karstin Carmany, Jessica Fork, Kelly Williams, and Ken Spencer of Landmark Archaeological and Environmental Services, Inc conducted the Phase Ia archaeological field reconnaissance for the proposed road improvements to SR 37 from Paoli to Orleans between November 11and November 13, 2002.

The project required one transect to be traversed over the area paralleling SR 37 (approximately 15 meters from the centerline) from Harvest Street in Orleans to Airport Road in Paoli, except for a portion that extended just north of Lost River for 1,351 meters where two transects were required. However, because the western portion from CR 600 N south to Airport Road had already been surveyed twice, only the area east of SR 37 was surveyed, except where two transects were needed. In that area, one transect was traversed along the outer most portion of the proposed right-of-way on the west side of SR 37 (approximately 25 meters from the centerline of SR 37).

In the locations of previously recorded sites 12Or551 and 12Or553, one transect was traversed over the areas in an attempt to relocate the sites. Neither site was relocated. In the location of site 12Or552, two transects were traversed over the area on both sides of SR 37 relocating the site.

Three previously unrecorded archaeological sites were found during the reconnaissance. A summary of each site follows:

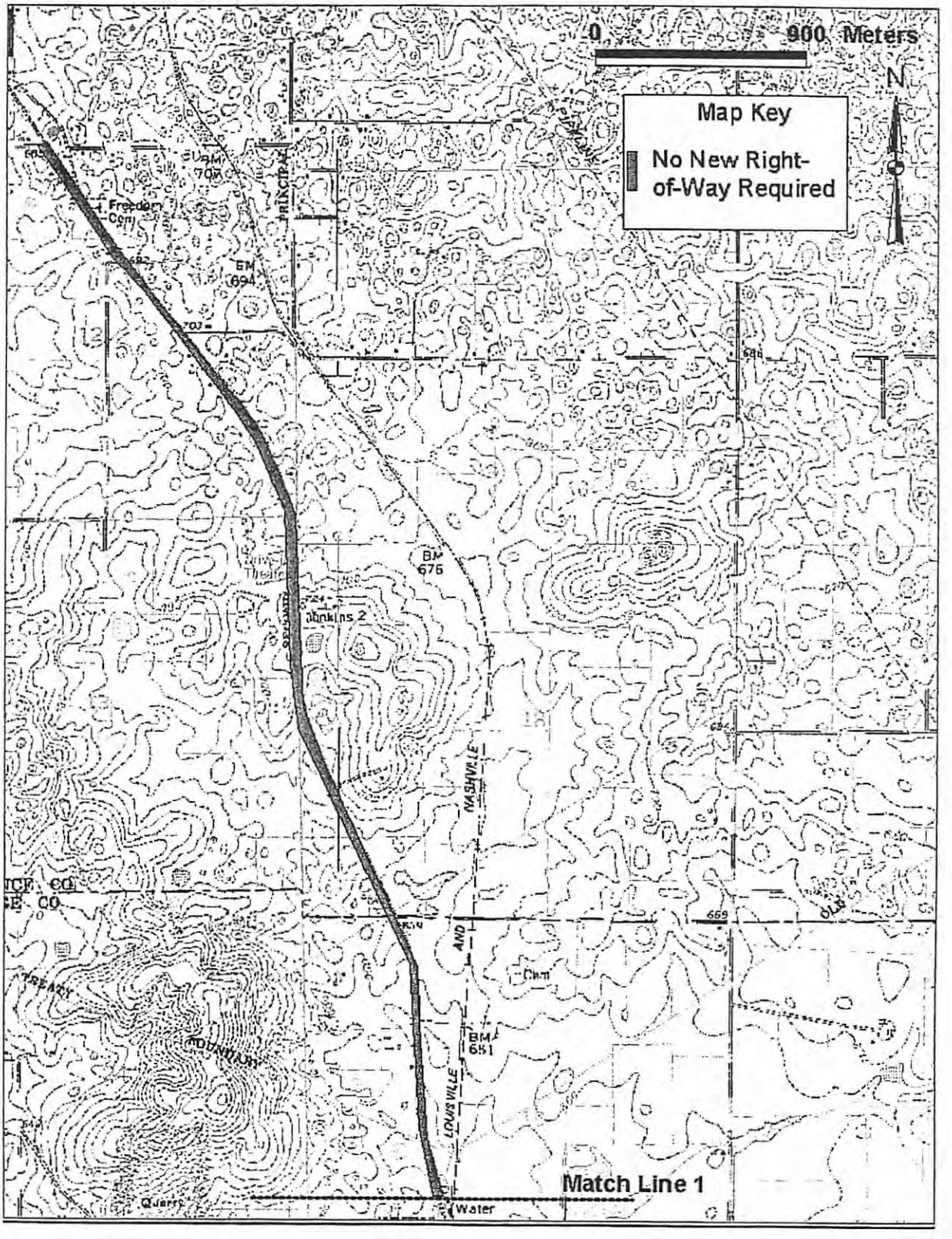

Figure 4a: Survey Map as Shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangle

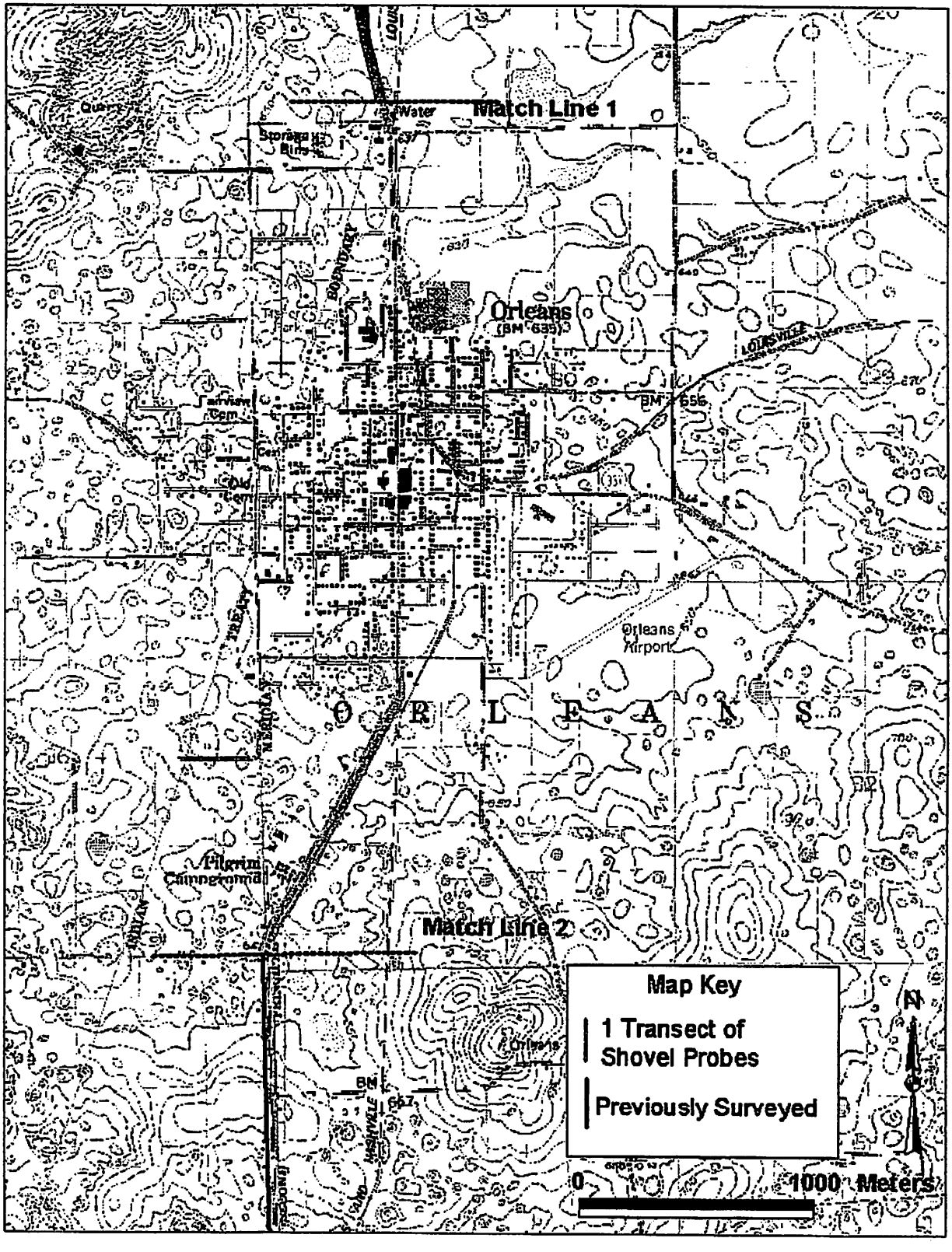

Figure 4b: Survey Map as Shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangle

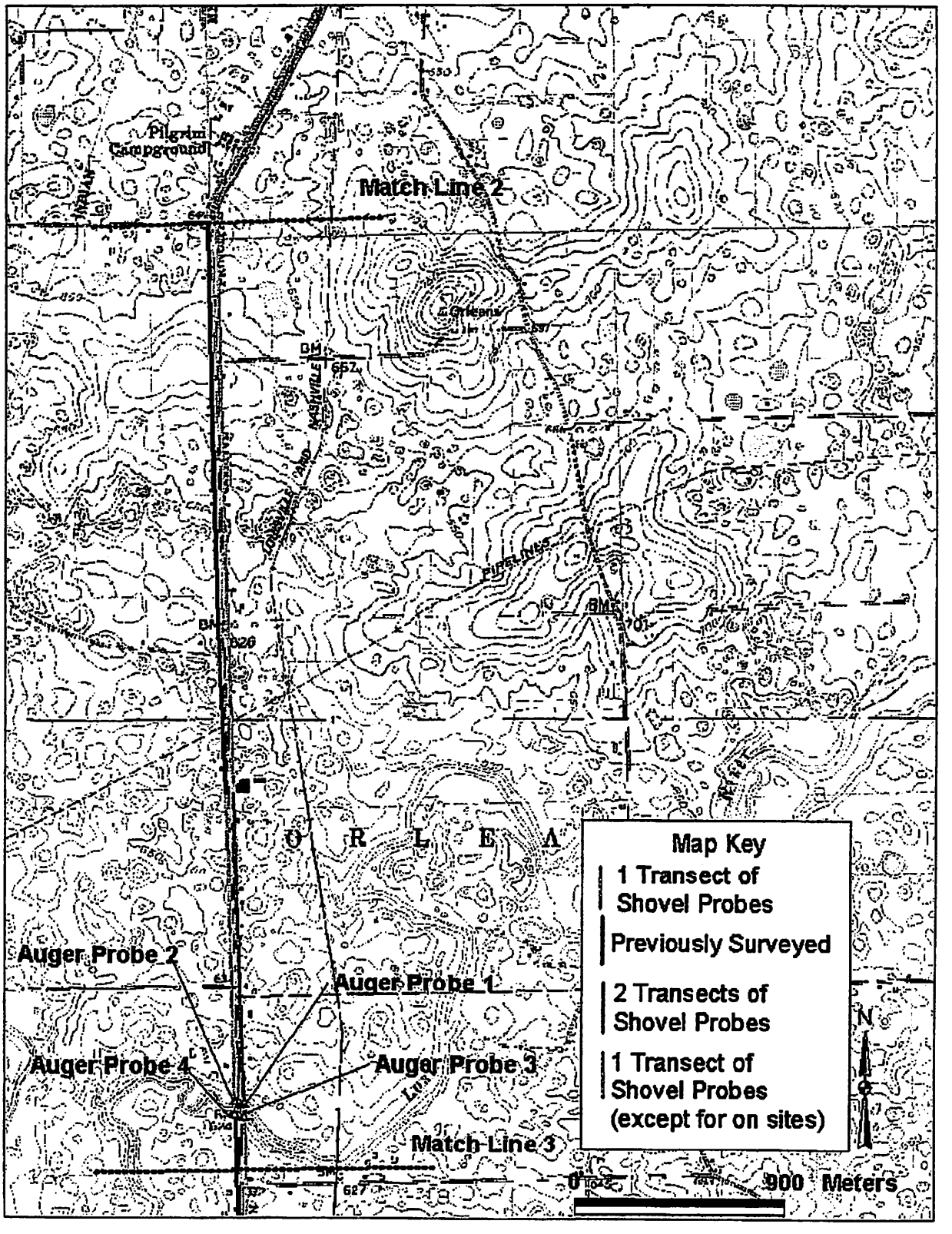

Figure 4c: Survey Map as Shown on the USGS 7.5' Mitchell and Paoli, Indiana Topographic Quadrangles

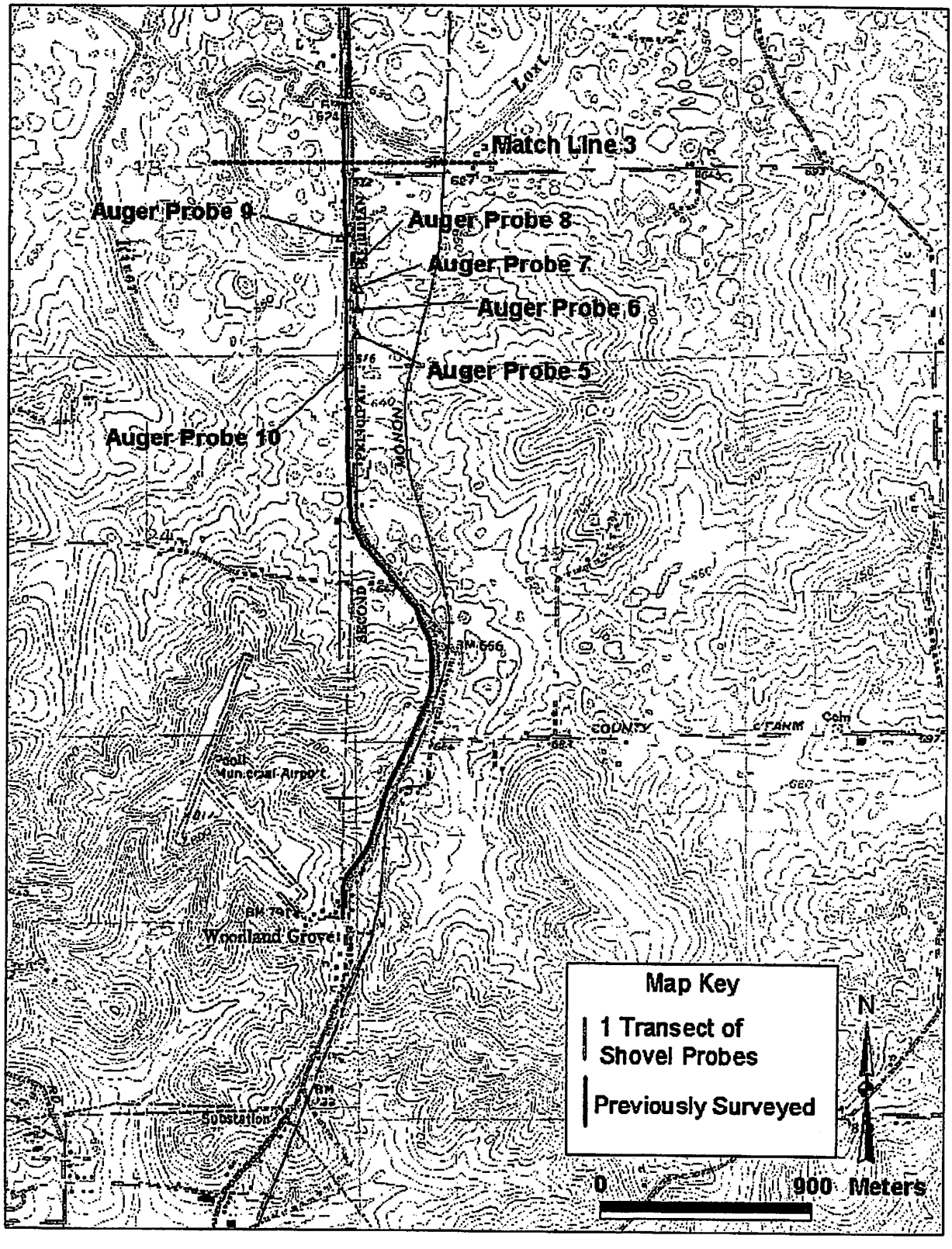

Figure 4d: Survey Map as Shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle

12Or733

Location: SW ¼ of the SW ¼ of the NW ¼ of the NW ¼ of Section 6, Township 2 North, Range 1 East Orleans Township as shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangle near Orleans, Indiana in of Orange County (Figure 5a).
Physiographic Zone: Mitchell Plain
Topography: Rolling side slope
Elevation: 660' AMSL
Soil Type: Crider silt loam (CrC2), eroded, 6-12% eroded
Watershed: Patoka River
Closest Water Source: Lost River
Distance to Water Source: 2300m to southeast
Cultural Affiliation: Unidentified Pre-Euroamerican Contact
Site Type: Isolated Lithic
Artifacts: 1 biface fragment
Dimensions: 10 x 10 meters
Discussion: The site was located while conducting one transect of shovel probes across a pasture. Once the site was encountered, radial transects were placed in each cardinal direction from every positive shovel probe until the site boundaries were reached. One positive shovel revealed a broken biface. Due to the low density of artifacts and the lack of archaeological features (fire-cracked-rock (FCR), charcoal, burned earth, etc.), this site is unlikely to contribute to our understanding of the Pre-Euroamerican Contact era of the region. Therefore, it is not eligible for listing on the National Register, and no further work is recommended.

12Or734

Location: SW ¼ of the SW ¼ of the SW ¼ of the NW ¼ of Section 18, Township 2 North, Range 1 East, as shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle near Orleans, Indiana Orleans Township of Orange County (Figure 5b).
Physiographic Zone: Mitchell Plain
Topography: Terrace overlooking a floodplain
Elevation: 630' AMSL
Soil Type: Crider-Fredericks-Caneyville silt loams (CxC2), karst, eroded, 2-12% slopes
Watershed: Patoka River
Closest Water Source: Lost River
Distance to Water Source: 70 meters to the east
Cultural Affiliation: Pre-Euroamerican Contact
Site Type: Small lithic scatter
Artifacts: 2 pieces of shatter
Dimensions: 10 x 10 meters (Figure 6)
Discussion: The site was located while conducting one transect of shovel probes across a pasture. Once the site was encountered, radial transects were placed in each

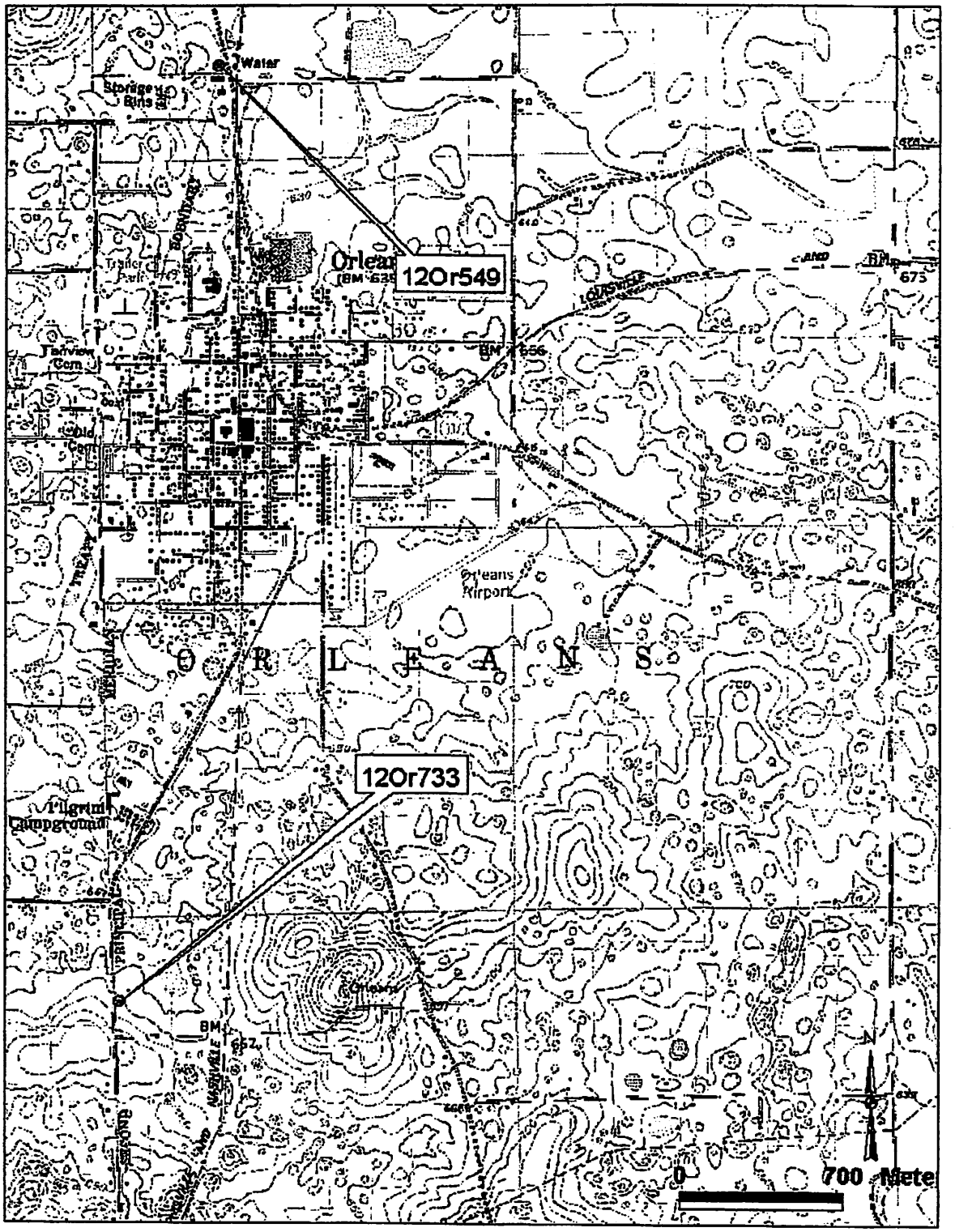

Figure 5a: Site Location Map as Shown on the USGS 7.5' Mitchell, Indiana Topographic Quadrangles

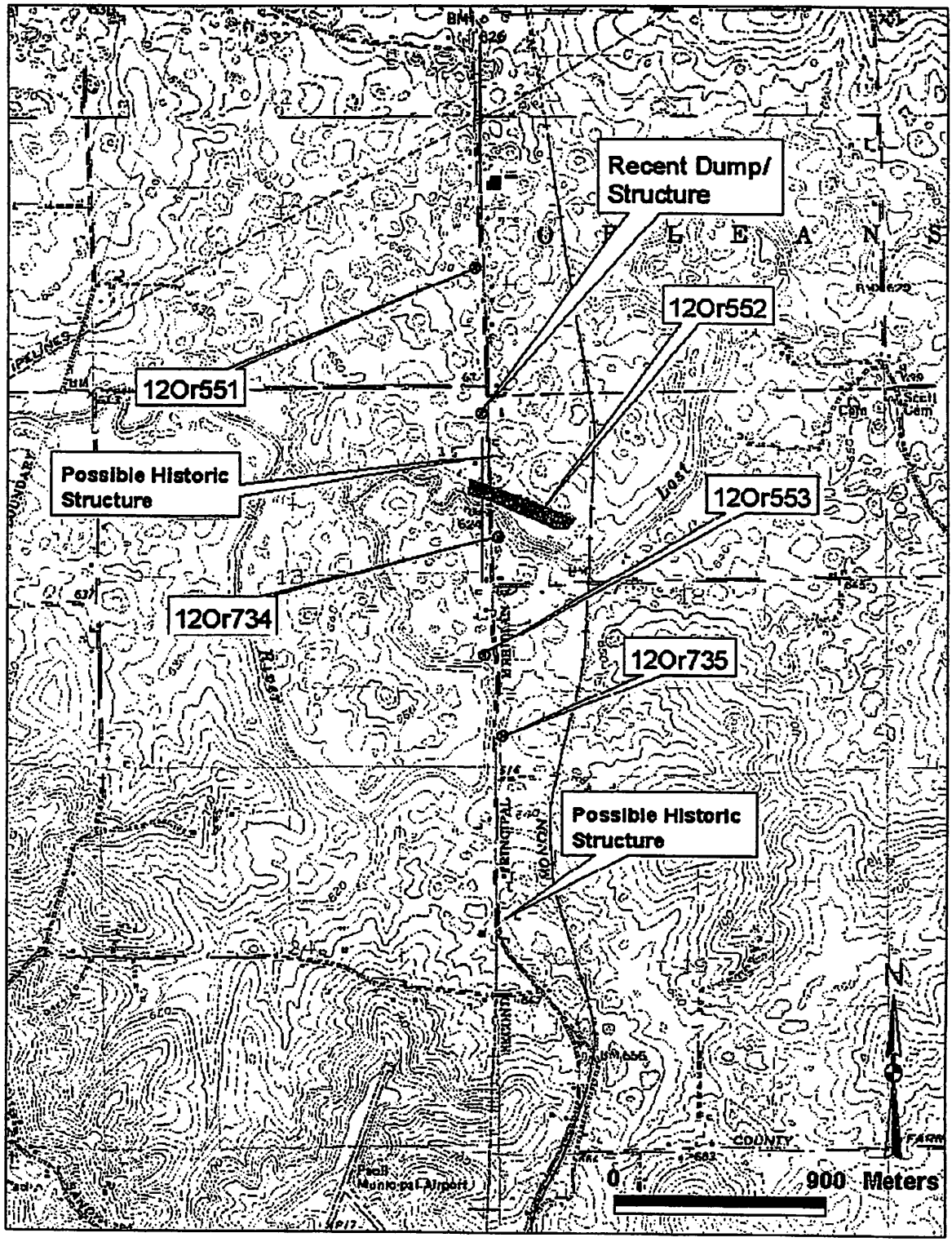

Figure 5b: Site Location Map as Shown on the USGS 7.5' Mitchell and Paoli, Indiana Topographic Quadrangle

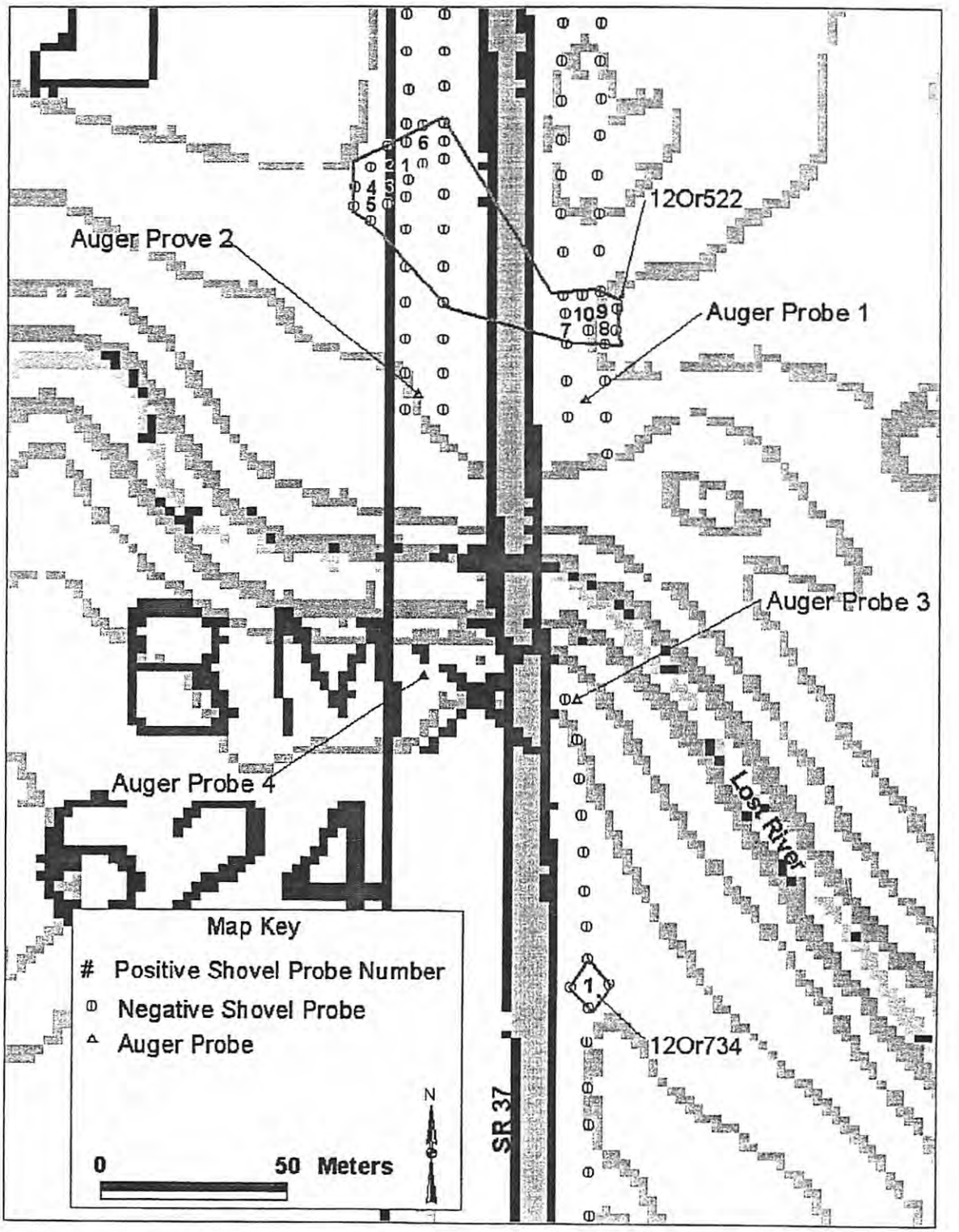

Figure 6a: Location Map of Auger Probes 1-4 and Sites 12Or552 and 12Or734

cardinal direction from every positive shovel probe until the site boundaries were reached. One positive shovel revealed a broken biface. Due to the low density of artifacts and the lack of archaeological features (fire-cracked-rock (FCR), charcoal, burned earth, etc.), this site is unlikely to contribute to our understanding of the Pre-Euroamerican Contact era of the region. Therefore, it is not eligible for listing on the National Register, and no further work is recommended.

12Or735

Location: NW ¼ of the SW ¼ of the SW ¼ of the SW ¼ of Section 18, Township 2 North, Range 1 East, Orleans Township as shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle near Orleans, Indiana of Orange County (Figure 5b).
Physiographic Zone: Mitchell Plain
Topography: Floodplain
Elevation: 610' AMSL
Soil Type: Haymond silt loam (Hd), Nearly level
Watershed: Patoka River
Closest Water Source: Lost River
Distance to Water Source: 65 meters to west
Cultural Affiliation: Unidentified Pre-Euroamerican Contact
Site Type: Small lithic scatter
Artifacts: 2 tertiary flakes and 1 piece of shatter
Dimensions: 30 m N/S by 10 m E/W (Figure 6)
Discussion: The site was located while conducting one transect of shovel probes across a pasture. Once the site was encountered, radial transects were placed in each cardinal direction from every positive shovel probe until the site boundaries were reached. One positive shovel revealed a broken biface. Due to the low density of artifacts and the lack of archaeological features (fire-cracked-rock (FCR), charcoal, burned earth, etc.), this site is unlikely to contribute to our understanding of the Pre-Euroamerican Contact era of the region. Therefore, it is not eligible for listing on the National Register, and no further work is recommended.

One previously recorded site was relocated during the investigation. A summary of site 12Or552 follows:

12Or552

Location: Extends from the SE ¼ of the SE ¼ of the NW ¼ of Section 13 southeast to SE ¼ of the SW ¼ of the NW ¼ of Section 18 or Township 2 North, Range 1 East, Orleans Township as shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle near Paoli, Indiana of Orange County (Figure 5b)
Physiographic Zone: Mitchell Plain
Topography: Terrace paralleling Lost River on north side
Elevation: 630' AMSL
Soil Type: Crider-Fredericks-Caneyville silt loams (CxC2), karst, eroded, 2-12% slopes
Watershed: Patoka River

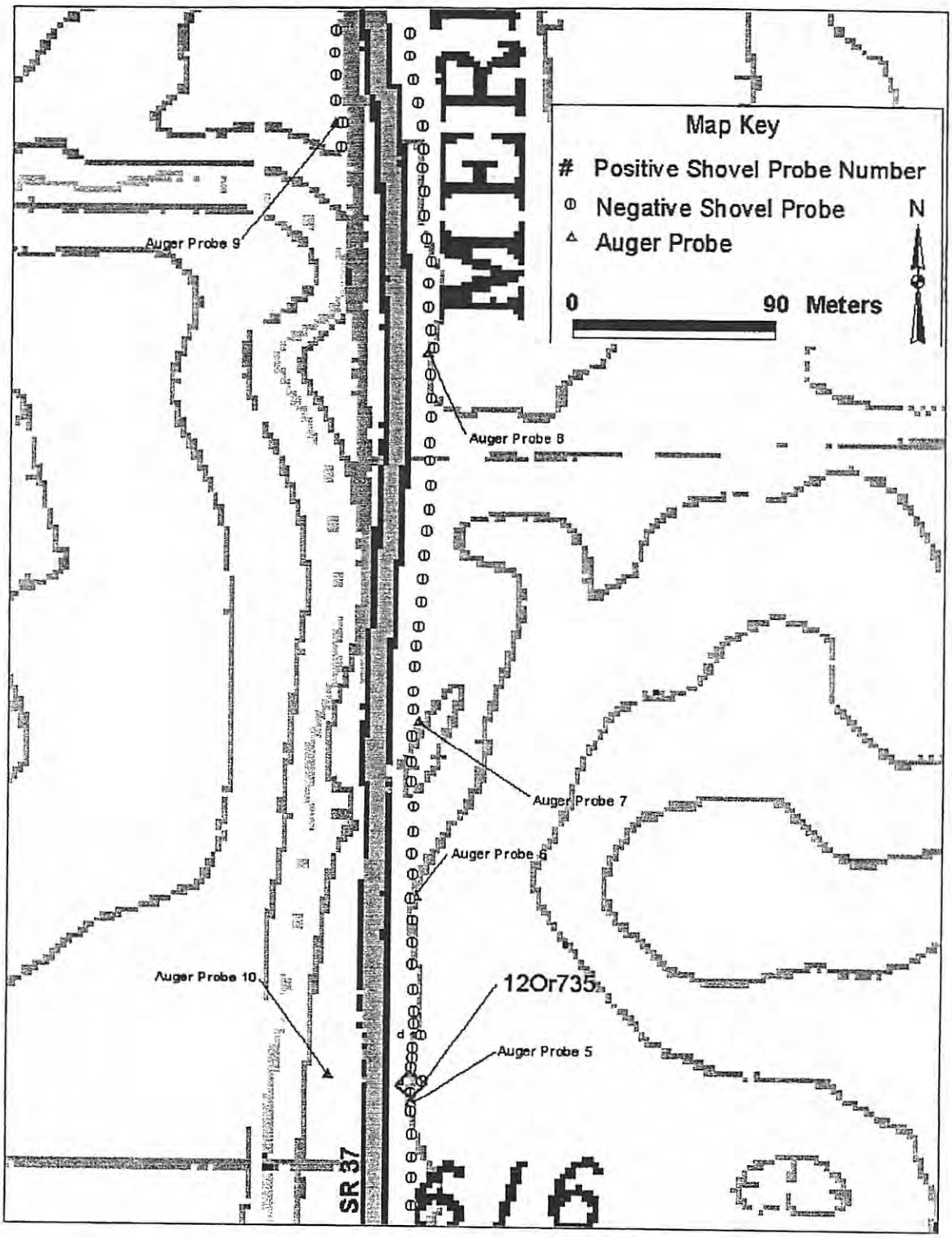

Figure 6b. Location Map of Auger Probes 5-10 and Site 12Or735

Closest Water Source: Lost River
Distance to Water Source: 65 meters to south
Cultural Affiliation: Unidentified Pre-Euroamerican Contact
Site Type: Lithic Scatter
Artifacts: 3 tertiary flakes, 2 utilized flakes, 2 retouched flakes, 7 pieces of shatter
Dimensions: 60 meters N/S by 75 meters E/.W (within the proposed project right-of-way (Figure 6a)
Discussion: The site was originally recorded in 1993 by Landmark as a "prehistoric quarry and workshop site for Lost River chert" (Beard and Moffatt 1993) on both sides of SR 37 on a plowed ridge that parallels the Lost River, which consisted of 152 artifacts and may be eligible for listing on the National Register. Another survey conducted by Landmark across the site on the west side of SR 37 did not relocate the site (Wappenstein and Plunkett 1998).

The site was relocated within the current proposed project boundaries. A total of 14 pieces of debitage were collected from a total of 10 positive shovel probes. Each positive shovel probe had radials placed in each cardinal direction on a 5 meter grid. One shovel probe (shovel probe #3) contained very small pieces of charcoal near the ground surface. There was no other evidence of archaeological features (FCR, burned earth, or additional charcoal) was noted on the site. The typical shovel probe on the site revealed approximately 26 cm of a 10YR 4/4 (dark yellowish brown) silt loam with a 5YR 5/6 (yellowish red) silty clay loam.

A portion of the site from the edge of the west side of SR 37 extending west for approximately 12 meters was disturbed by the recent placement of a waterline.

Approximately 68 shovel tests were excavated across the area defined as site 12Or522 that falls within the current project boundaries. Of these, there were only 10 positive shovel probes with only 14 pieces of debitage recovered. The range of lithic classes is limited, with no large primary or secondary flakes recovered. Due to the low density of artifacts collected from the portion of the site that falls within the project boundaries, it is unlikely that this portion of the site can contribute to our understanding of the Pre-Euroamerican Contact era of the region. Therefore, the portion of the site within the project area is not eligible for listing on the National Register, and no further work is recommended. However, if construction activities extend outside the currently defined project area, then further assessment of the site in areas that may be impacted is recommended.

In addition to the above sites, evidence of a possible recent dump or structure was located in a pasture on the west side of SR 37 south of CR 400 N (Figures 5b, 6c). Eleven fragments (10 x 10 cm or larger) of concrete block made of finely crushed limestone, a piece of burned wood, one piece of rough cement, a 1969 penny, two pieces of stryofoam, and a three pieces of flat plastic were noted in ten shovel probes. Shovel probes were placed on a 5 meter grid in the area and extended west approximately 10 meters outside the project area. The positive shovel probes are located just south of a

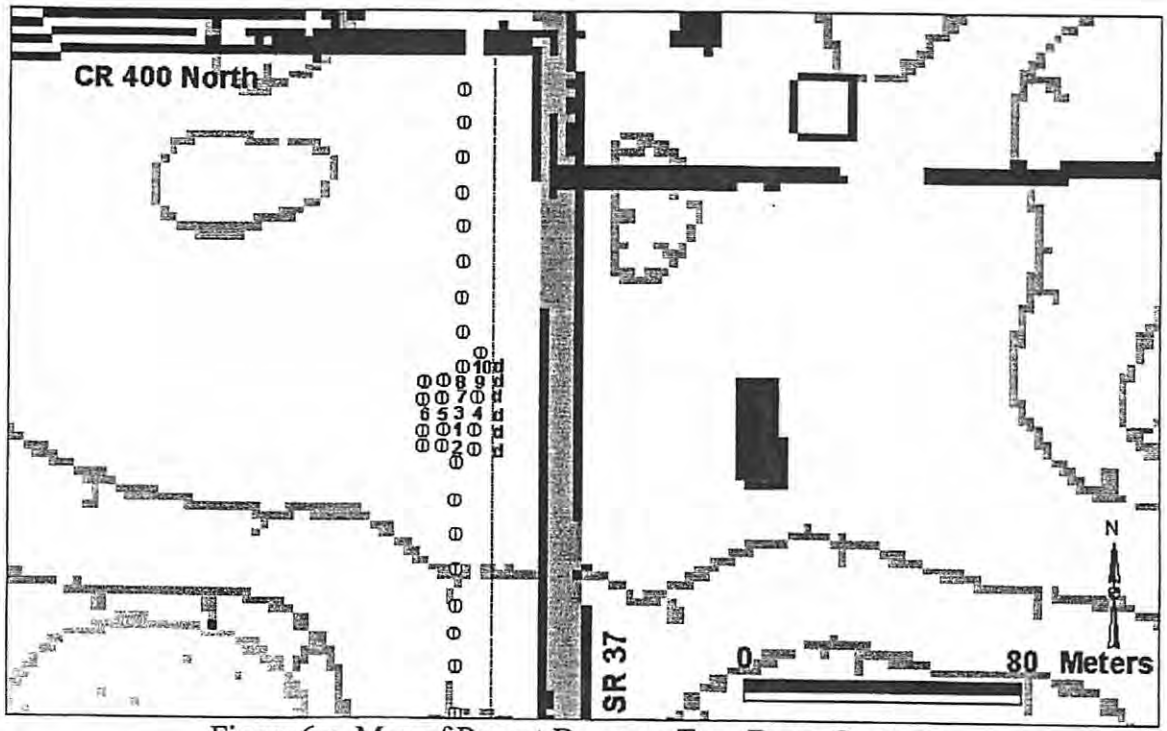

Figure 6c: Map of Recent Dump or Torn Down Structure

sinkhole. There was no evidence (driveway gravel, coal slag, cement fence post/driveway markers, mortar, or brick) that this may have been anything other than a recent dump for building materials or possibly a recent small farm structure that was burned or torn down. Due to the lack of historic material cultural (artifacts at least 50 years old) in the shovel probes, none of the items were collected and the area does not qualify as an archaeological site.

A portion of the proposed project was found to be located within well-drained alluvial soils (Figure 7). Ten auger probes were placed in the portions of the project area that fall within Haymond soils as they are listed in the soils book (Figures 4b, 4c, 6a-b) (Wingard 1984). The auger probes were excavated in 10 cm levels and examined for color and texture in an effort to determine if the proposed project would indeed fall in well drained alluvial soils. A summary of the findings are in Appendix B.

The auger probes revealed that portions of the project area do fall in well drained alluvial soils. All augers revealed the presence of fine textured soils to a minimum depth of 120 cm. Therefore, a Phase Ic subsurface reconnaissance of these areas is recommended. The areas recommended are located in Figure 7 and total approximately 6,148.22 square meters. One to three percent of this area should be excavated in a Phase Ic to determine the presence of deeply buried archaeological deposits.

Also, while conducted the archaeological survey, two historic structures were noted immediately adjacent to the project area. Both structures are on the east side of SR 37 (Figure 5b), and both appeared to potentially significant structures. Further assessment of both homes

and the effects of the proposed project on the homes by a professional architectural historian are recommended.

Recommendations

Based on the results of the Phase Ia field reconnaissance and other available data, the proposed project should not have an adverse effect on archaeological resources meeting the criteria established for inclusion to the State or National Registers of Historic Places if the above recommendations are followed and a Phase Ic subsurface investigation is conducted in the areas containing alluvial soils. In addition, it is recommended that the two structures noted during the survey be investigated by a professional architectural historian.

Federal and State environmental provisions concerning the identification of archaeological resources have been accomplished, and it is recommended that construction be allowed to proceed as planned. This is with the understanding that if human remains, features, or midden deposits are revealed during construction, any disturbance must be halted until the Division of Historic Preservation and Archaeology at the Indiana Department of Natural Resources is contacted for an evaluation.

The study was conducted per guidelines in "The Management of Archaeological Resources, The Airlie House Report" (McGimsey and Davis 1977), and the "Indiana Archaeological Report Guidelines, 1989", issued by the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology. The study is in compliance with recent amendments to the Indiana Historic Preservation Act (IC 14-21-1). The archaeological records check, Phase Ia field reconnaissance, and the report and recommendations have been accomplished or directly supervised by a Professional Archaeologist meeting the standards set forth by the U.S. Department of the Interior.

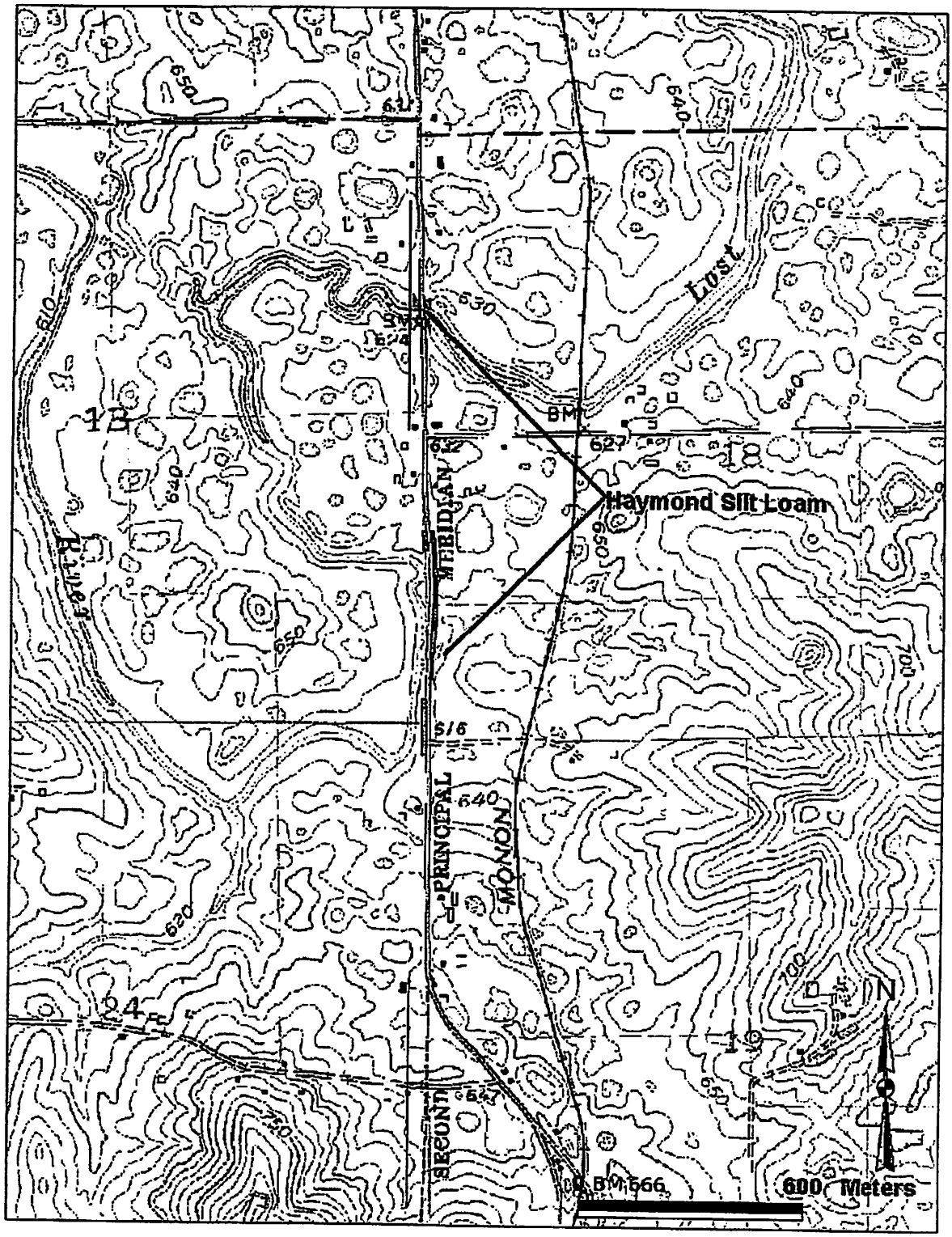

Figure 7: Location of Alluvial Soils as Shown on the USGS 7.5' Paoli, Indiana Topographic Quadrangle