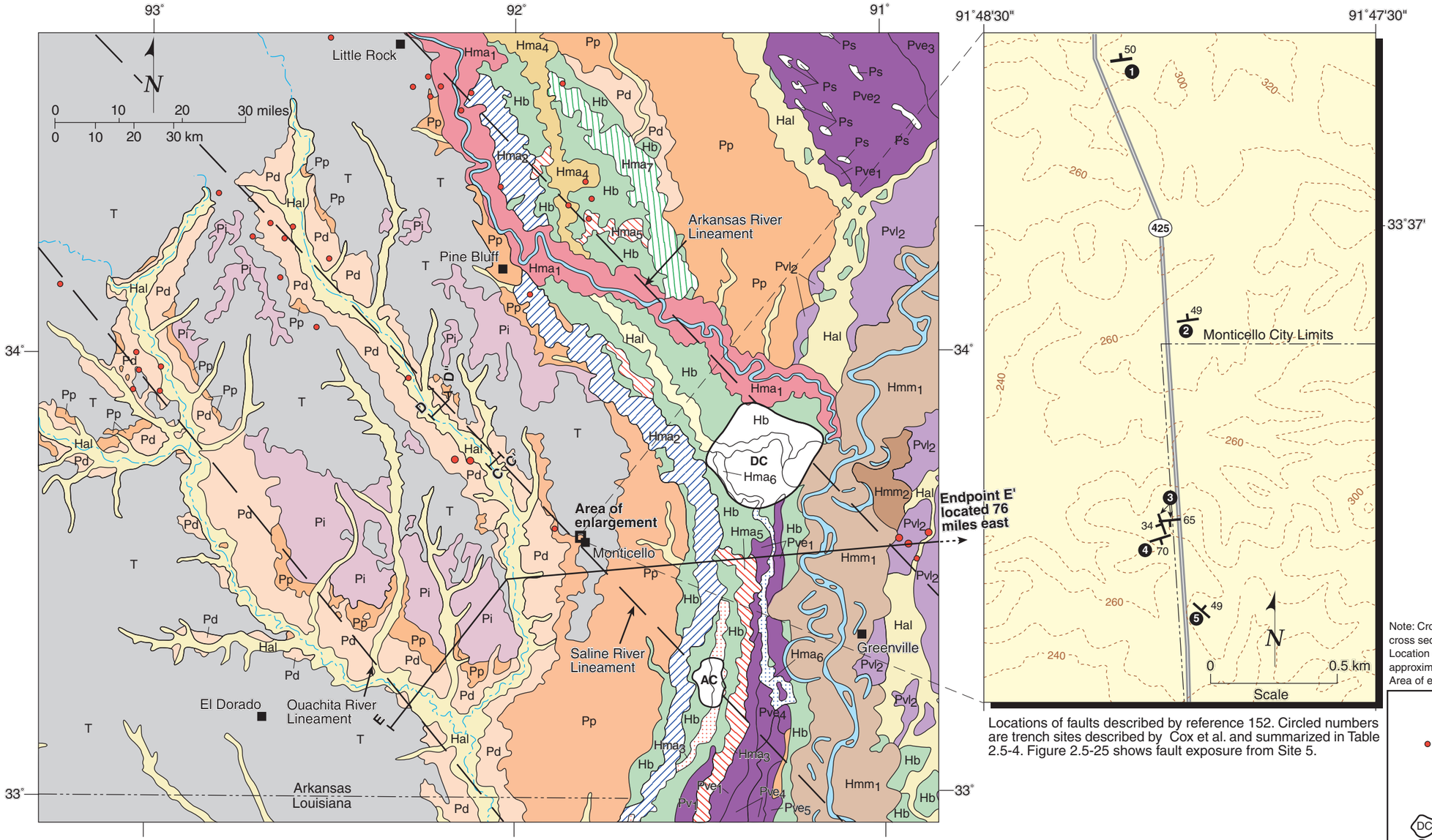

Locations of faults described by reference 152. Circled numbers are trench sites described by Cox et al. and summarized in Table 2.5-4. Figure 2.5-25 shows fault exposure from Site 5.

Note: Cross section E - E' shown on Figure 2.5-21; cross sections C - C' and, D - D'' shown on Figure 2.5-23. Location of cross sections G - G' and H - H'' are approximate. Map modified from Saucier, 1989. Area of enlargement from Reference 151.

Explanation

Symbols

- Seismicity from center for Earthquake Research and Information New Madrid catalog as presented in Reference 152

Areas of liquefaction (Reference 151)

- DC Desha County liquefaction field
- AC Ashley County liquefaction field

Explanation

Geologic Units

- Hal Alluvium: Undifferentiated in smaller streams.
- Hb Backswamp: Areas of overbank deposition not directly affected by meandering channels.
- $Hmm_{(1,2)}$ Mississippi River meander belts: Areas of channel deposition related to lateral migration of past and present river. Final course positions are indicated, but abandoned channels (cutoffs) are not delineated.
- $Hma_{(1-7)}$ Arkansas River meander belts: Areas of channel deposition related to lateral migration of past Arkansas River courses.
- $Pve_{(1-3)}$ Valley train of early Wisconsin glaciation: Terraced outwash deposits of braided streams; five levels are recognized. Stippled pattern indicates surficial loess deposits.
- Pp Prairie Complex: A diverse depositional sequence of the Mississippi River, its tributaries, and coastal plain streams; includes terraces, fluvial (meander belt and braided stream), colluvial, estuarine, deltaic, and marine units deposited over a considerable part of the late Pleistocene (Wisconsin to Sangamon); three levels are recognized, but not mapped.
- T Tertiary and older formations: Undifferentiated. Stippled pattern indicates surficial loess deposits.
- Pvl_2 Pleistocene valley train deposits of late Wisconsin age.
- Pd Pleistocene Deweyville complex terraces
- Pi Pleistocene intermediate complex terraces
- 49 Strike and dip of fault plane observed in trenches of Reference 152

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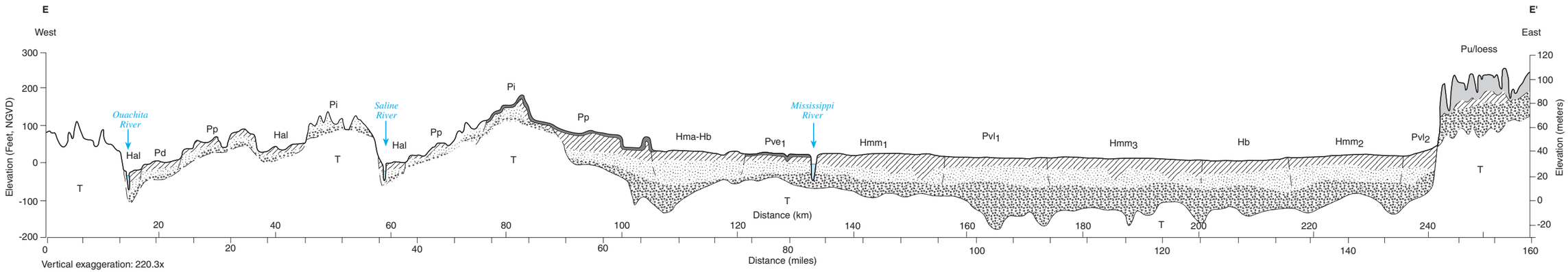
GEOLOGIC MAP IN VICINITY OF SALINE RIVER SHOWING SEISMICITY, LIQUEFACTION, AND FAULTS

FIGURE 2.5-20 REV. 0



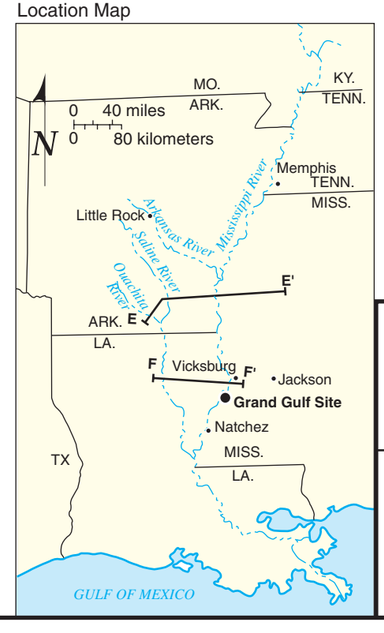
Explanation

- Loess veneer
- Loess
- Clay and silt
- Sand
- Sand and gravel
- Tertiary
- Geologic contact
- NGVD — National Geodetic Vertical Datum

Hal	Holocene alluvium undifferentiated
Hmm(1-3)	Holocene Mississippi River meander belt
Hma	Holocene Arkansas River meander belt
Hb	Holocene backswamp
Pd	Pleistocene Deweyville Complex
Pvl (1-2)	Pleistocene Valley train of late Wisconsin age
Pp	Pleistocene Praire Complex
Pi	Pleistocene Intermediate Complex
Pu	Pleistocene Upland Complex
T	Tertiary undifferentiated

Note:
From Saucier, 1991, Quaternary Nonglacial Geology: Conterminous United States, The Geology of North America, Vol. K-2, Geological Society of America, Plate 7, Lower Mississippi Valley cross section D-D'.

Location Map



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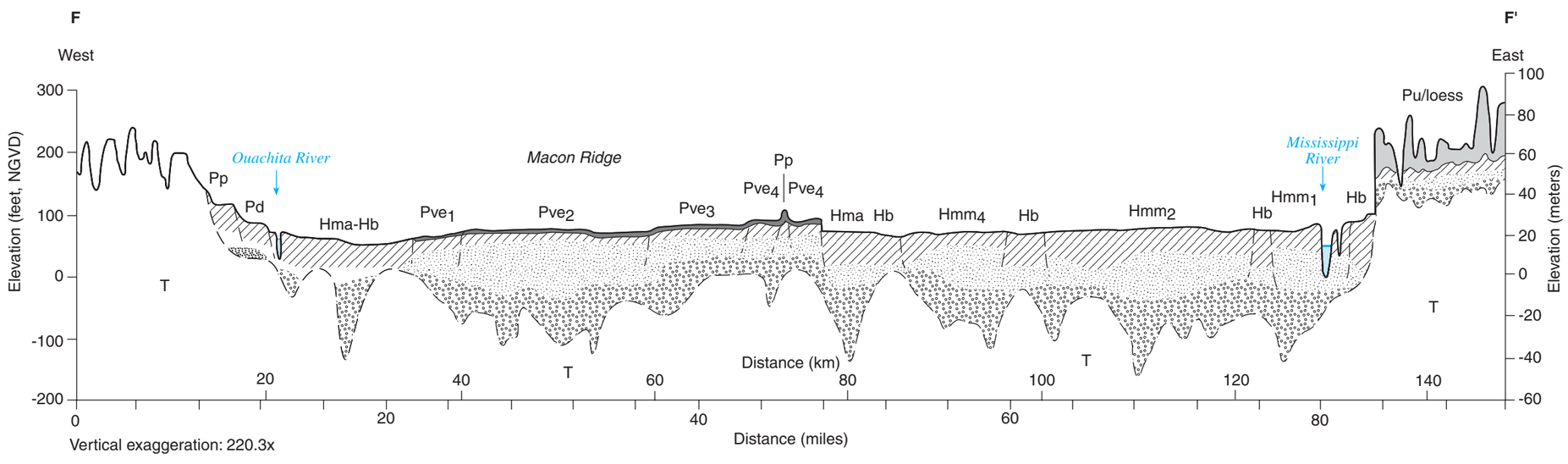
CROSS SECTION E - E'

FIGURE 2.5-21 REV. 0



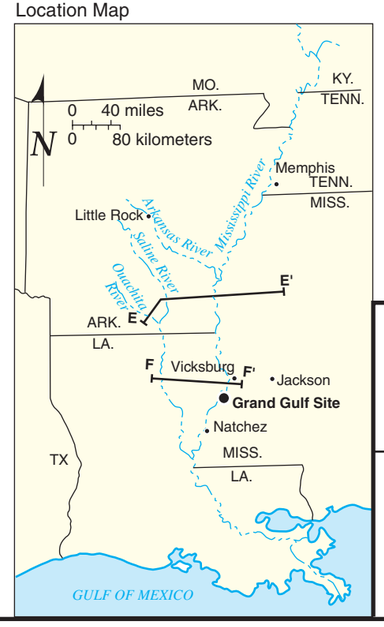
Explanation

Loess veneer	$Hmm_{(1,2,4)}$ Holocene Mississippi River meander belt
Loess	Hma Holocene Arkansas River meander belt
Clay and silt	Hb Holocene backswamp
Sand	Pd Pleistocene Dewyeville Complex
Sand and gravel	$Pve_{(1-4)}$ Pleistocene Valley train of early Wisconsin age
Tertiary	Pp Pleistocene Praire Complex
Geologic contact	Pu Pleistocene Upland Complex
NGVD National Geodetic Vertical Datum	T Tertiary undifferentiated

Notes:
Ouachita River now occupies the Holocene Arkansas River meander belt. The Arkansas River changed its course through avulsion in late Holocene time.

From Saucier, 1991, Quaternary Nonglacial Geology: Conterminous United States, The Geology of North America, Vol. K-2, Geological Society of America, Plate 7, Lower Mississippi Valley cross section E-E'.

Location Map



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CROSS SECTION F - F'

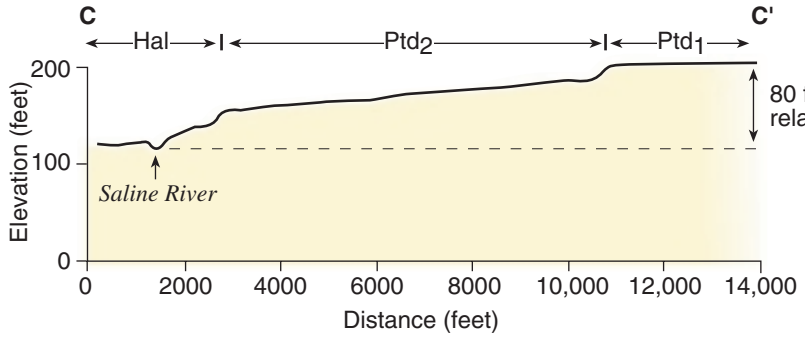
FIGURE 2.5-22 REV. 0

Estimated incision rates along Saline River

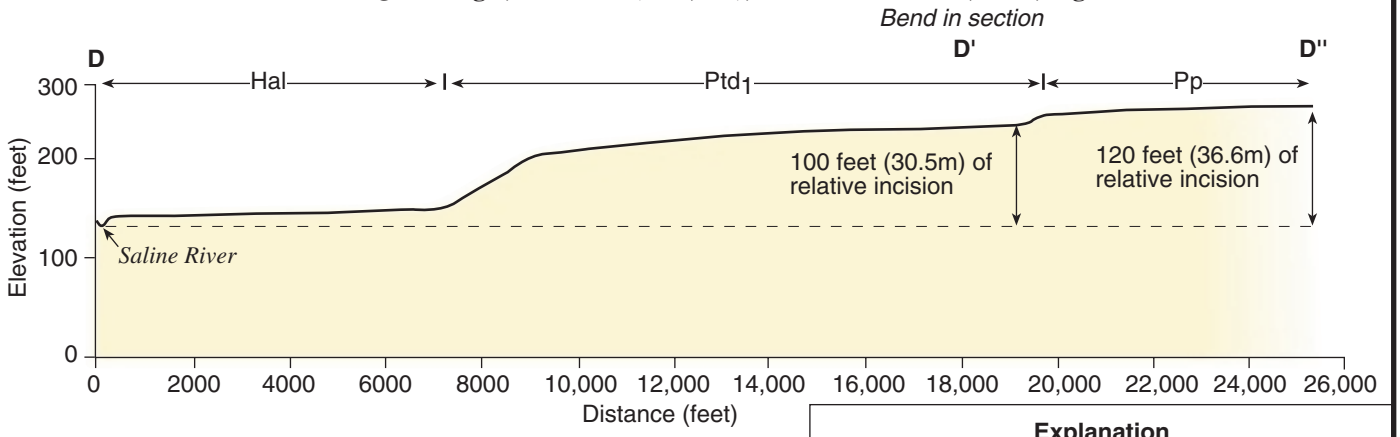
Datum	Amount of Incision	Estimated Age Range (Ka)*	Infered Incision Rate (mm/yr)
Intermediate Complex	225 ft (69 m)	800-1300	0.05-0.09
Praire Complex	120 ft (37 m)	70-120	0.3-0.5
Deweyville Terraces	80-100 ft (24-31 m)	18-30	0.8-1.7

* Age estimates for Intermediate Complex, Praire Complex, and Deweyville Terraces from Saucier, 1994.

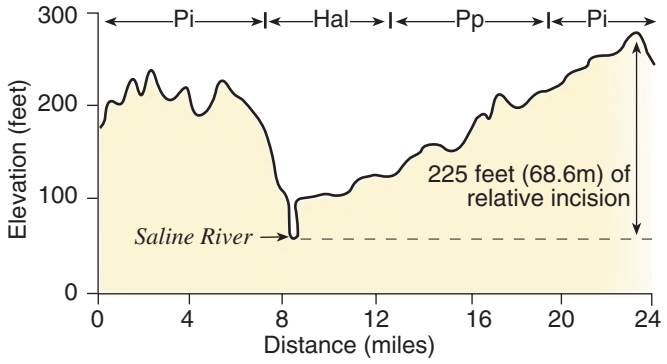
Section located on Herbine Quadrangle, Arkansas (1:24,000), Saucier and Smith, 1986, Figure 2.5-20



Section located on Rison Quadrangle, Arkansas (1:24,000), Saucier and Smith, 1986, Figure 2.5-20



Section is a part of cross section E-E' (Figure 2.5-21)



Explanation

Hal	Holocene alluvium
$Ptd_{(1,2)}$	Pleistocene Deweyville Complex terraces
Pp	Pleistocene Prairie Complex
Pi	Pleistocene Intermediate Complex

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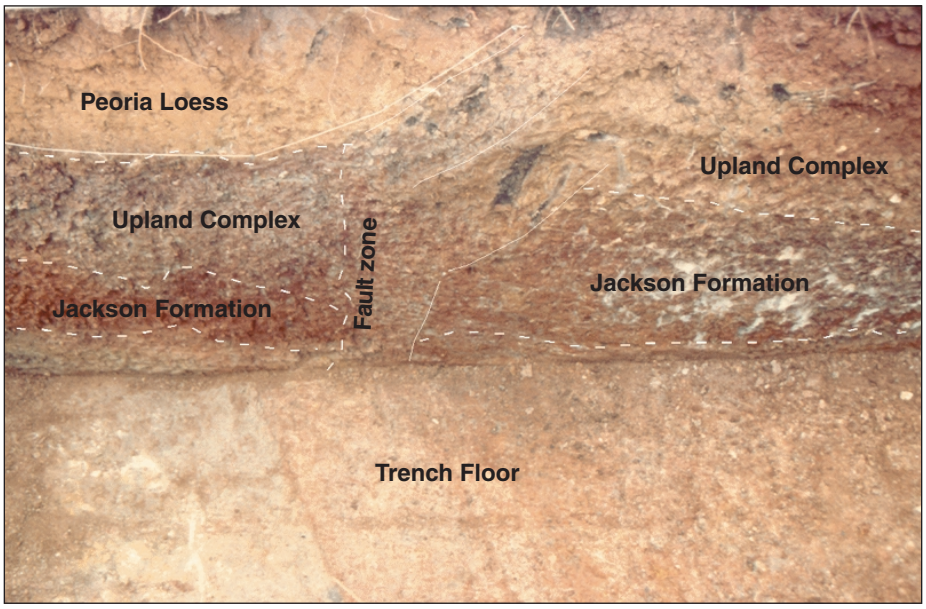
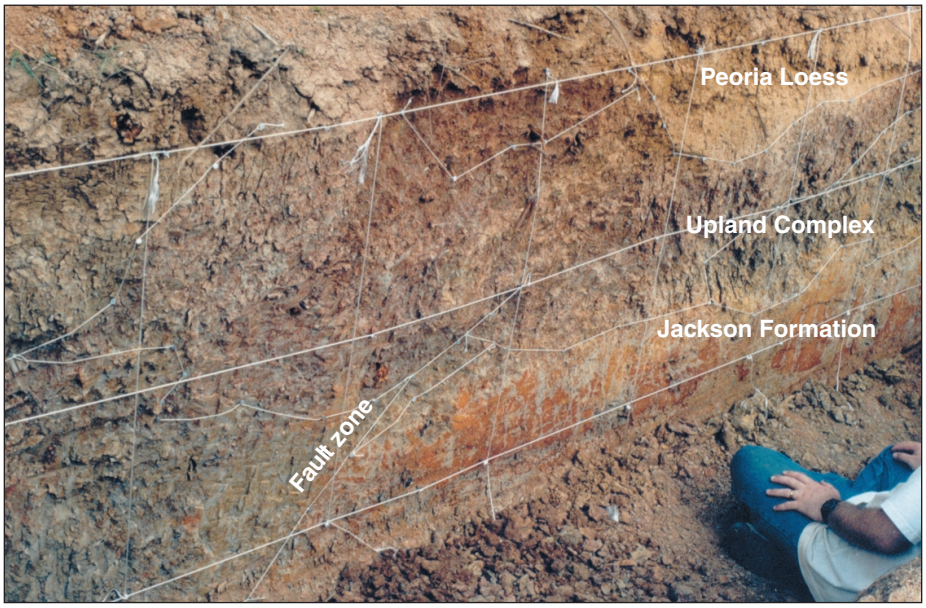
CALCULATION PACKAGE
SEISMIC SOURCE CHARACTERIZATION

CROSS SECTIONS USED TO INFER INCISION RATE AND UPLIFT RATE

FIGURE 2.5-23 REV. 0



A) Photo of Trench 4 showing fault zone within Saline River source zone. Exposed fault possibly deforms Peoria Loess. Photo provided by R. Cox, 2003.



B) Photo of Trench 5 showing deformed Eocene Jackson Formation and possible deformation of Peoria Loess. Photo provided by R. Cox, 2003.

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TRENCH EXPOSURES OF THE SALINE RIVER FAULT ZONE NEAR MONTICELLO, ARKANSAS

FIGURE 2.5-24 REV. 0