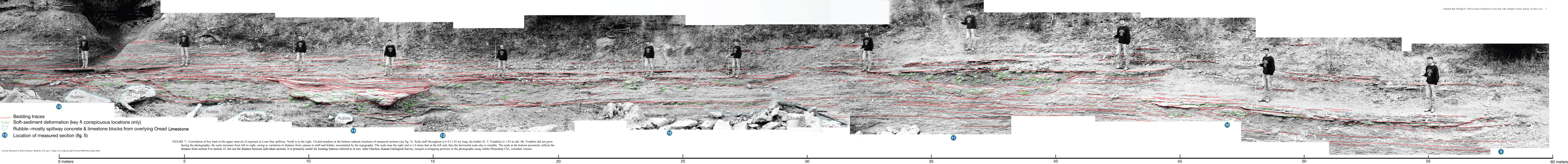


FIGURE 5—Correlated sections of the Lawrence Formation from the Lone Star spillway. Locations of sections are shown in fig. 4.

Deformational structures noted include convolute lamination, load casts, and pseudonodes. Convolute lamination is "irregular wavy laminae confined within a single sediment layer" (Middleton, 2003). "Irregular" typically involves crumpling or oversteepening in defiance of gravity. Load casts are sole marks that deform the base of a bed, generally sandstone or siltstone overlying mudstone (Allen, 2003). "Pseudonodes are a soft-sediment deformation structure comprising rounded masses of clastic sediment set in a similar or finer-grained matrix" (Owen, 2003b). In measuring sections, we tried to distinguish among load casts, pseudonodes, and ball-and-pillow structure. The intention was to apply ball-and-pillow to deformation that affected an entire layer, rather than the basal part only (Allen, 2003; Owen, 2003b). Pseudonodes were to designate isolated masses, overlain as well as surrounded by matrix, the "detached pseudonodes" of Owen (2003b). This proved impractical, owing to considerable variation in usage among individual operators and the fact that "The terminology... is highly confusing" (Owen, 2003b). In this compilation ball-and-pillow and pseudonodes were lumped together as pseudonodes. The instructor (Enos) edited each student's sections in the field. Each section was redrafted for this illustration by Enos to incorporate field edits, to include observations from both operators in sections that were measured twice (1992 and 1994), and to provide uniform representation. The sections used were measured by 1. Terrance Huettl, 2. Jon Holgren, 3. Ryan Pearson and Monica Hochanadel, 5. Matt Brookshier, 6. Glenn Newell, 7. Peter Cattaneo, 9. Gregory Siek (base) and Matthew Briney (top), 10. John Keller, 11. Merritt Forman and Lisa Armatas, 12. Robert Jefferson, 13. Victoria Glenn-Christensen, 14. Staci Goetz, 15. Doug Linger and Shiela Kortlucke. Sections 4 and 8 were not satisfactorily completed.



- Bedding traces
- ~ Soft-sediment deformation (key & conspicuous locations only)
- Rubble Rubble—mostly spillway concrete & limestone blocks from overlying Oread Limestone
- 15 Location of measured section (fig. 5)

FIGURE 7—Correlation of key beds in the upper interval of exposure at Lone Star spillway. North is to the right. Circled numbers at the bottom indicate locations of measured sections (see fig. 5). Scale staff throughout is 6 ft (1.83 m) long; the holder (S. T. Franklin) is 1.93 m tall. Mr. Franklin did not grow during the photography; the scale increases from left to right, owing to variations in distance from camera to staff and holder, necessitated by the topography. The scale near the right end is 1.6 times that at the left end; thus the horizontal scale also is variable. The scale at the bottom accurately reflects the distance from section 9 to section 15, but not the distance between individual sections. It is primarily useful for locating features referred to in text. John Charlton, Kansas Geological Survey, merged overlapping portions of the photographs using Adobe Photoshop CS3, extended version.