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PRE-MESOZOIC STRUCTURES OF THE EASTERN MUENSTER ARCH AND ADJACENT  
OUACHITA  
THRUST BELT, SOUTHEASTERN BRYAN SMALL-SCALE SALIENT, NORTHEAST TEXAS  
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Interpreted structural cross sections based upon proprietary seismic reflection profiles show several basement fault blocks and large-displacement basement faults beneath the Ouachita allochthon beneath the Mesozoic Coastal Plain around the eastern edge of the Muenster arch. Desmoinesian strata thicken eastward (and southeastward) from the Muenster arch toward the deep, northeastern part of the Fort Worth basin. The western part of the basal detachment of the Ouachita allochthon cuts upsection toward the west on the eastern Muenster arch and juxtaposes a succession of Ordovician-Pennsylvanian deep-water-facies in the hangingwall above Desmoinesian Strawn beds in the footwall.

East of the Muenster arch, a contorted succession of allochthonous strata (Ordovician-early Mississippian) overlies a folded basement arch. On the western edge of the basement arch, autochthonous and allochthonous strata are displaced by a steep, west-vergent basement fault. The contorted allochthonous strata (and underlying basement arch) is interpreted as the southwestern subsurface continuation of the allochthonous strata (and underlying basement arch) of the Broken Bow uplift (southeastern Oklahoma and northeastern Texas).

Comparison between the cross sections of the eastern Muenster arch and adjacent Ouachita thrust belt and cross sections of the Llano uplift, eastern Fort Worth basin, and adjacent Ouachita thrust belt farther south show regional variations in structure and stratigraphy.