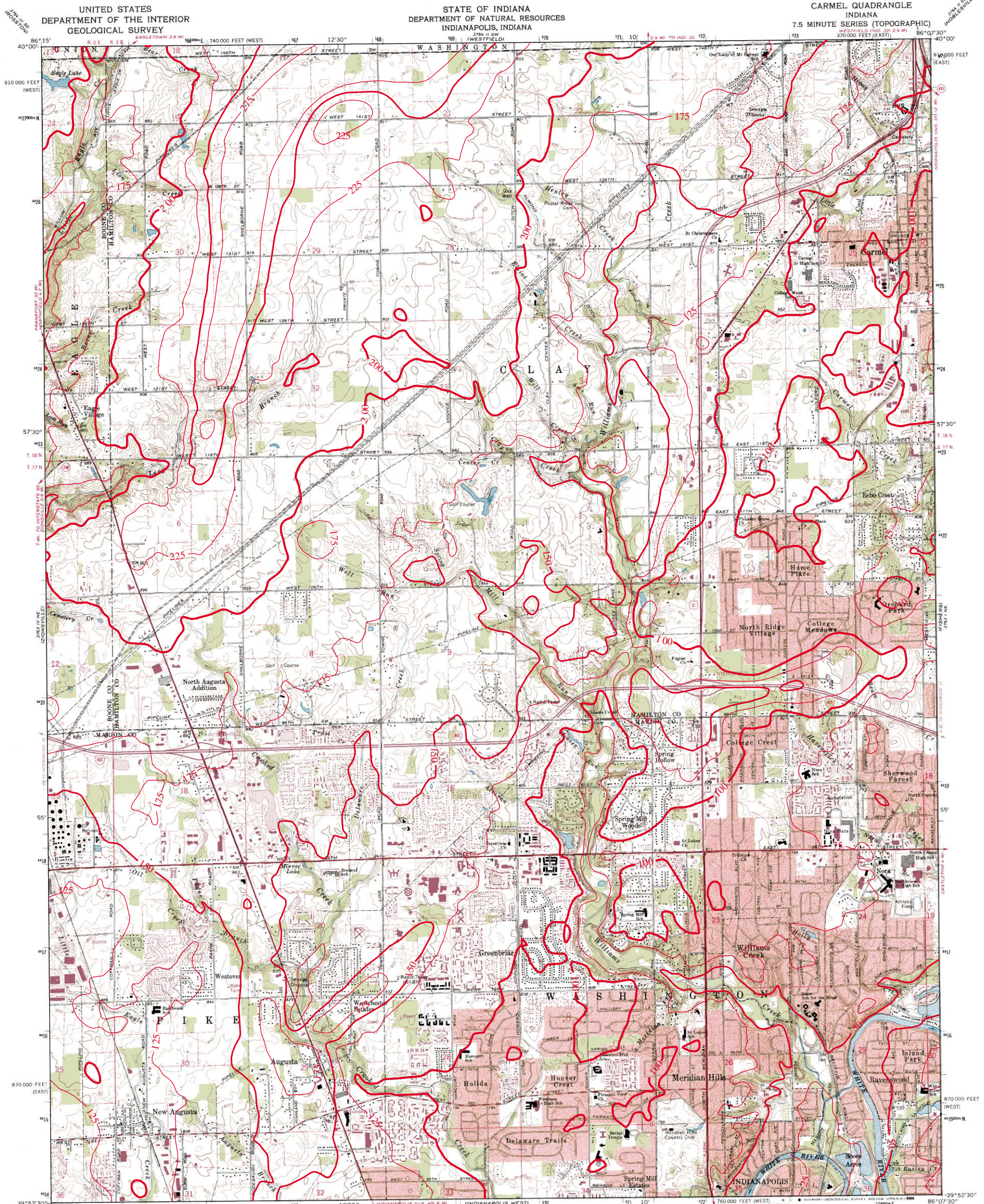
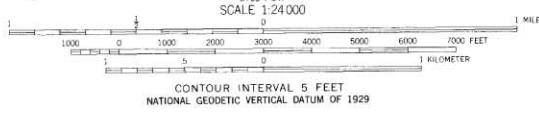
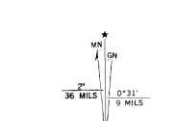


# THICKNESS OF UNCONSOLIDATED DEPOSITS OF CARMEL QUADRANGLE, INDIANA



Mapped, edited, and published by the Geological Survey  
 Control by USGS, USC&GS, and Indiana Flood Control and  
 Water Resources Commission  
 Planimetry by photogrammetric methods from aerial photographs taken  
 1951. Topography by planetable surveys 1952. Revised from aerial  
 photographs taken 1966. Field checked 1967  
 Polyconic projection  
 10,000-foot grids based on Indiana coordinate system,  
 east and west zones  
 1000-meter Universal Transverse Mercator grid ticks,  
 zone 16, shown in blue 1927 North American Datum  
 To place on the predicted North American Datum 1983  
 move the projection lines 1 meter south and  
 1 meter west as shown by dashed corner ticks  
 Fine red dashed lines indicate selected fence and field lines where  
 generally visible on aerial photographs. This information is un-checked



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS  
 FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225 OR RESTON, VIRGINIA 22092,  
 AND INDIANA DEPARTMENT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204  
 A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

**ROAD CLASSIFICATION**  
 Primary highway, all weather, hard surface  
 Secondary highway, all weather, hard surface  
 Light duty road, all weather, improved surface  
 Unimproved road, fair or dry weather  
 Interstate Route  
 U.S. Route  
 State Route

QUADRANGLE LOCATION  
 Red tint indicates areas in which only landmark buildings are shown  
 Revisions shown in purple and woodland compiled in cooperation  
 with State of Indiana agencies from aerial photographs  
 taken 1984 and other sources. This information not field checked  
 Map edited 1988

**CARMEL, IND.**  
 39086-H2-TF-024  
 1967  
 PHOTOREVISED 1988  
 DMA 3763 1 NW - SERIES V851

This map showing thickness of unconsolidated deposits was created by Glenn E. Grove, IDNR, Division of Water, Ground Water Section. The digital elevation grid of the bedrock surface was subtracted from the grid of the land surface and the resultant grid contoured in ArcInfo. The land surface elevation grid is from 1:24,000 scale digital hypsography by the U.S. Geological Survey, Reston, Virginia, 1999 and 2001. The bedrock surface elevation grid is from a digital map of the bedrock surface topography of Boone County. The bedrock surface contouring was done by Marvin B. Thompson, Ground Water Section, Division of Water, IDNR, 1999. The bedrock contouring in Marion County was modified from Fleming and others, 1993, at a scale of 1:24,000.  
 Unconsolidated thickness contour interval = 25 feet (shown in red).



Map generated by Glenn E. Grove  
 IDNR, Division of Water, Ground Water Section  
 October 28, 2002