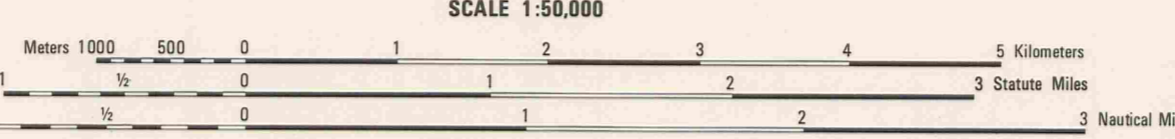
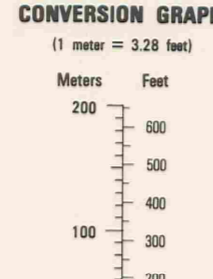


Prepared by the U.S. Geological Survey for publication by the Defense Mapping Agency Hydrographic/Topographic Center, Washington, D.C.  
 MAP INFORMATION AS OF 1989



**LEGEND**  
 CAUTION: ALL TELEPHONE AND ELECTRIC SERVICE LINES ARE NOT SHOWN.  
 A LANE ON THIS MAP IS CONSIDERED TO BE 1.5 METERS WIDE.  
 IN DEVELOPED AREAS ONLY THROUGH ROADS ARE CLASSIFIED.  
 THERE MAY BE PRIVATE HOLDINGS WITHIN THE BOUNDARIES OF THE NATIONAL OR STATE RESERVATIONS SHOWN ON THIS MAP.

- |   |  |
|---|--|
| <p><b>ROADS</b></p> <ul style="list-style-type: none"> <li>Divided highway with median strip</li> <li>Primary, all weather, hard surface</li> <li>Secondary, all weather, hard surface</li> <li>Light duty, all weather, hard or improved surface</li> <li>Fair or dry weather, unimproved surface</li> <li>Trail</li> <li>Route markers: Interstate, Federal, State</li> <li>Bridge</li> <li>RAILROADS (Standard gauge 1.44m - 4'8 1/2")</li> <li>Single track</li> <li>Multiple track</li> <li>Nonoperating</li> <li>Railroad station: Location known, Location unknown</li> <li>Car line</li> <li>Railroad bridge</li> <li>Tunnel: Highway, Railroad</li> </ul> <p><b>BOUNDARIES</b></p> <ul style="list-style-type: none"> <li>National, with monument</li> <li>State, territory</li> <li>County, parish</li> <li>Civil township, town</li> <li>Incorporated city, village, town</li> <li>Reservation: National, State, Military</li> </ul> | <p>Power transmission line</p> <ul style="list-style-type: none"> <li>Buildings</li> <li>Structures</li> <li>Church, school</li> <li>Power substation</li> <li>Windmill, Watermill</li> <li>Well, Tank</li> <li>Mine shaft</li> <li>Open pit mine or quarry</li> <li>Horizontal control station</li> <li>Bench mark, monument</li> <li>Bench mark, non-monumented</li> <li>Spot elevations in meters</li> <li>Leaves, rims, dikes</li> <li>Bluffs, cliffs</li> <li>Woodland</li> <li>Scattered trees, scrub</li> <li>Vineyard, Orchard, plantation</li> <li>Intermittent lake: Dam, Earthen, Masonry</li> <li>Stream: Perennial, Intermittent</li> <li>Marsh, swamp</li> <li>Small falls, Large falls</li> <li>Small rapids, Large rapids</li> </ul> |
|---|--|



**ELEVATIONS IN METERS**

CONTOUR INTERVAL 10 METERS

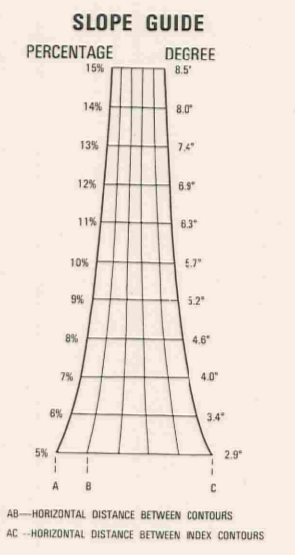
**ELLIPSOID** GEODETIC REFERENCE SYSTEM 1980  
**GRID** 1,000-METER UTM ZONE 18 (BLACK NUMBERED LINES)  
**PROJECTION** TRANSVERSE MERCATOR  
**VERTICAL DATUM** NATIONAL GEODETIC VERTICAL DATUM OF 1929  
**HORIZONTAL DATUM** NORTH AMERICAN DATUM OF 1983  
**CONTROL BY** U.S.S. AND MICHIGAN  
**PREPARED BY** U.S. GEOLOGICAL SURVEY  
**PUBLISHED BY** DMAHTC 4-92

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225  
 OR RESTON, VIRGINIA 22092

|   |  |
|---|--|
| <p><b>SAMPLE 1,000 METER GRID SQUARE</b></p> <p>12 13</p> <p>100,000 M. SQUARE IDENTIFICATION</p> <p>US</p> <p>GRID ZONE DESIGNATION</p> <p>18S</p> | <p><b>100 METER REFERENCE</b></p> <p>1. Read large numbers labeling the VERTICAL grid line left of point 12.3</p> <p>2. Read large numbers labeling the HORIZONTAL grid line below point and estimate tenths (100 meters) from grid line to point 43.8</p> <p>Example: 123456</p> <p>WHEN REPORTING ACROSS A 100,000 METER LINE, PREFIX THE 100,000 METER SQUARE IDENTIFICATION IN WHICH THE POINT LIES.</p> <p>Example: US123456</p> <p>WHEN REPORTING ACROSS THE GRID ZONE DESIGNATION AREA, PREFIX THE GRID ZONE DESIGNATION.</p> <p>Example: 18SUS123456</p> |
|---|--|

THIS MAP IS RED-LIGHT READABLE

GRID CONVERGENCE  
 1 IN 157 MILLS  
 FOR CENTER OF SHEET



|                   |  |  |  |
|-------------------|--|--|--|
| <b>BOUNDARIES</b> |  | <b>ADJOINING SHEETS</b>  |  |
| <p>Cas County</p> |  | <p>708 I 7150 IV 7150 I</p> <p>708 II 7150 III 7150 II</p> <p>708 I 7148 IV 7148 I</p> |  |

