



**EXPLANATION**

**HIGH-WATER MARK**  
High-water mark and identification number. Number in parenthesis is elevation of high-water mark in feet above mean sea level.

**SURVEY MARK**  
Reference mark and identification number. Number in parenthesis is elevation of reference mark in feet above mean sea level.

Note: Topographic contours on this map are in meters above mean sea level. To convert from meters to feet, multiply by 3.281. High water mark and survey mark elevations are shown in feet above mean sea level. To convert feet to meters, multiply by 0.3048.

Mapped, edited, and published by the Geological Survey  
Control by USGS and NOS/NOAA  
Topography by photogrammetric methods from aerial photographs taken 1941 and planetable surveys 1943 and 1950. Revised from aerial photographs taken 1967 and 1968. Field checked 1969  
Selected hydrographic data compiled from NOS chart 903 (1970)  
This information is not intended for navigational purposes  
Polyconic projection. Puerto Rico Datum, 1940 adjustment  
2000-meter grid ticks based on Puerto Rico coordinate system  
1000-meter Universal Transverse Mercator grid, zone 19  
Barrio and municipality boundaries by the Puerto Rico Planning Board  
Kilometric reference distances shown in red  
Revisions shown in purple and woodland compiled from aerial photographs taken 1977 and other sources. This information not field checked. Map edited 1982

UTM GRID AND 1982 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:20,000

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

5 0 5 10 15 20 25 30 METERS

CONTOUR INTERVAL 10 METERS  
DASHED LINES REPRESENT 5-METER CONTOURS  
DOTTED LINES REPRESENT 1-METER CONTOURS  
DATUM IS MEAN SEA LEVEL  
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER  
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE  
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
THE MEAN RANGE OF TIDE IS APPROXIMATELY 0.3 METERS  
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

Terres-Starr, Herbert, 1996. Storm-tide elevations caused by Hurricane Hugo on the U.S. Virgin Islands and Puerto Rico, September 18, 1989. U.S. Geological Survey Open-File Report 92-87

PUERTO RICO  
QUADRANGLE LOCATION

**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  
Insular Route

VEGA ALTA, P. R.  
N1822.5-W6615.7.5

1969  
PHOTOREVISED 1982  
DMA 1323 III SE-SERIES E835

MAP SHOWING ELEVATIONS OF HIGH-WATER MARKS AND SURVEY MARKS USED TO DOCUMENT THE EFFECTS OF STORM TIDES CAUSED BY HURRICANE HUGO, SEPTEMBER 18, 1989: VEGA ALTA QUADRANGLE, P.R.