

### INTRODUCTION

The contour lines on these maps depict the altitude of the water level in wells open to the water-table zone and the water level in wells open to the pumped zone underlying the Naples area of Collier County (fig. 1). Both zones are within the surficial aquifer. The contours portray the configuration of the water level in the water-table zone (figs. 2-11) and the potentiometric surface in the pumped zone (figs. 14-23), in feet above or below the National Geodetic Vertical Datum of 1929 (NGVD of 1929), formerly referred to as mean sea level. The maps were prepared semiannually for both zones from 1975-79 to illustrate representative seasonal conditions and trends in the water-table zone and in the pumped zone of the surficial aquifer in the Naples area. Altitudes of water level and potentiometric surface in wells are given in tables 1 and 2.

### WATER-TABLE ZONE OF THE SURFICIAL AQUIFER

The water-table zone of the surficial aquifer consists primarily of the Pamlico Sand, the Anastasia Formation, and part of the Tamiami Formation. Water in the water-table zone is unconfined and the water table tends to follow undulations in the surface topography with a maximum altitude occurring in the areas of maximum topographic altitudes. No attempt was made to establish surface-water and ground-water relations. The hydrograph of well 322 (fig. 12) is typical of the area of highest water-level altitudes and is based on semiannual measurements from 1975-79. Figure 13 shows the hydrograph of well 409 based on semiannual measurements from 1975-79 and is representative of an area with low water-level altitudes.

### PUMPED ZONE OF THE SURFICIAL AQUIFER

The pumped zone of the surficial aquifer (locally called the Coastal Ridge aquifer) is the lower part of the surficial aquifer that underlies the semiconfining bed of clay and marl separating the two principal water-yielding zones in the Naples area — the water-table zone and the pumped zone. The pumped zone consists of limestone and marl of the Tamiami Formation and is the main source of irrigation and public water supplies in western Collier County. The potentiometric surface of the pumped zone responds rapidly to pumpage and characteristically has a cone of depression in the well-field area of western Collier County. Maximum drawdowns occur in an area that contains many irrigation wells for home and condominium lawns and the public supply wells for the City of Naples. Figures 24 and 25 show hydrographs of water levels in wells 430 and 151A in areas of the highest and the lowest potentiometric surface, respectively, recorded during semiannual measurements from 1975-79.

### SELECTED REFERENCES

- Klein, Howard, 1954, Ground-water resources of the Naples area, Collier County, Florida: Florida Geological Survey Report of Investigations 11, 64 p.  
— 1972, The shallow aquifer of southwest Florida: U.S. Geological Survey open-file report FL-72017, 20 p.  
McCoy, H.J., 1962, Ground-water resources of Collier County, Florida: Florida Geological Survey Report of Investigations 31, 82 p.  
— 1972, Hydrology of western Collier County, Florida: Florida Bureau of Geology Report of Investigations 63, 32 p.  
— 1973, Summary of hydrologic conditions in Collier County, Florida, 1972: U.S. Geological Survey open-file report FL-73022, 118 p.  
— 1974, Summary of hydrologic conditions in Collier County, Florida, 1973: U.S. Geological Survey open-file report FL-74030, 103 p.

### EXPLANATION

--- WATER-LEVEL CONTOUR--- Shows altitude of water level in the water-table zone of the surficial aquifer. Dashed where approximately located. Contour interval 1 foot. Datum is National Geodetic Vertical Datum of 1929.

• Supply well

○ Observation well and number

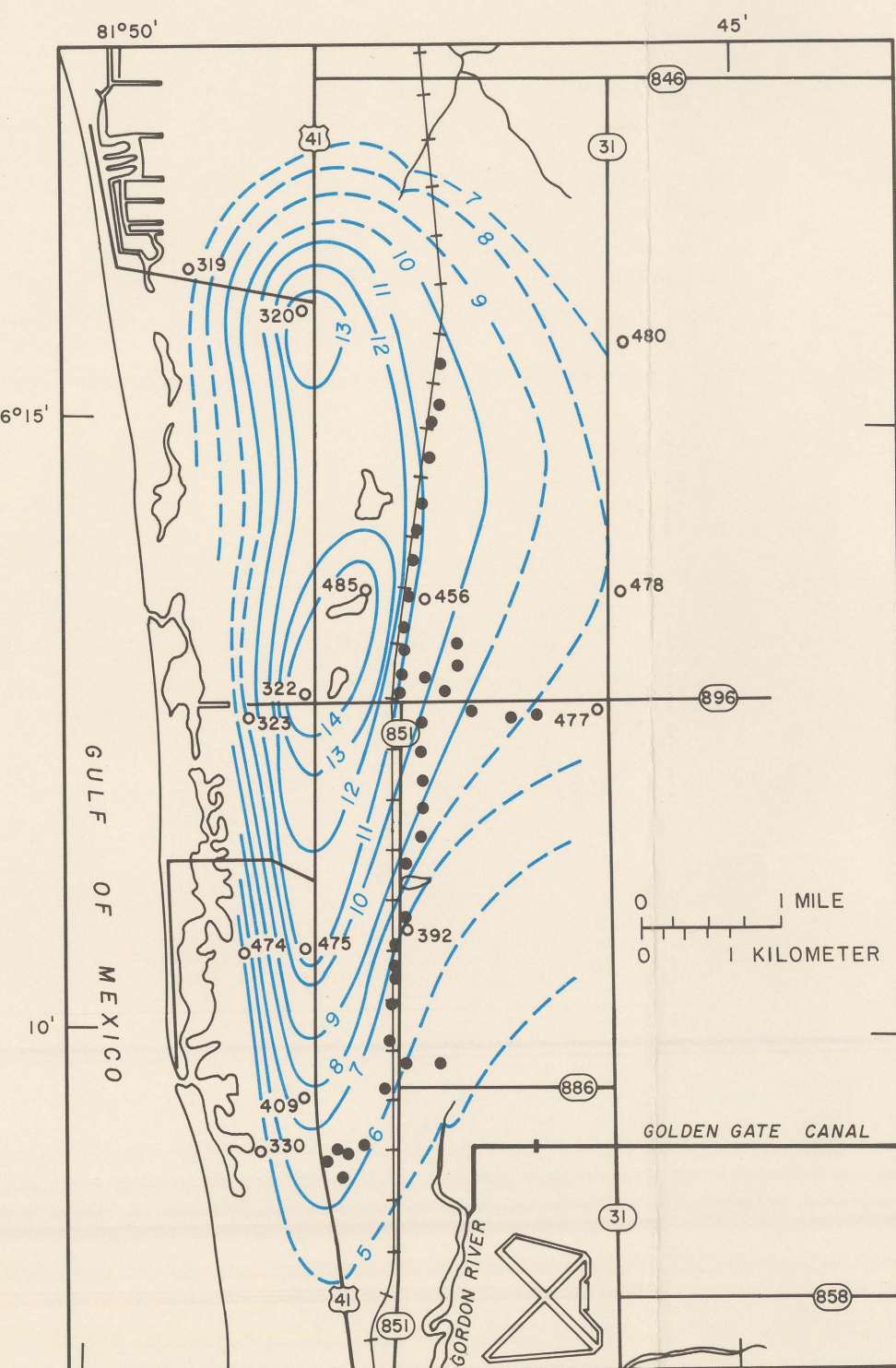


Figure 3.—Water-level contours of the water-table zone of the surficial aquifer for October 1975.

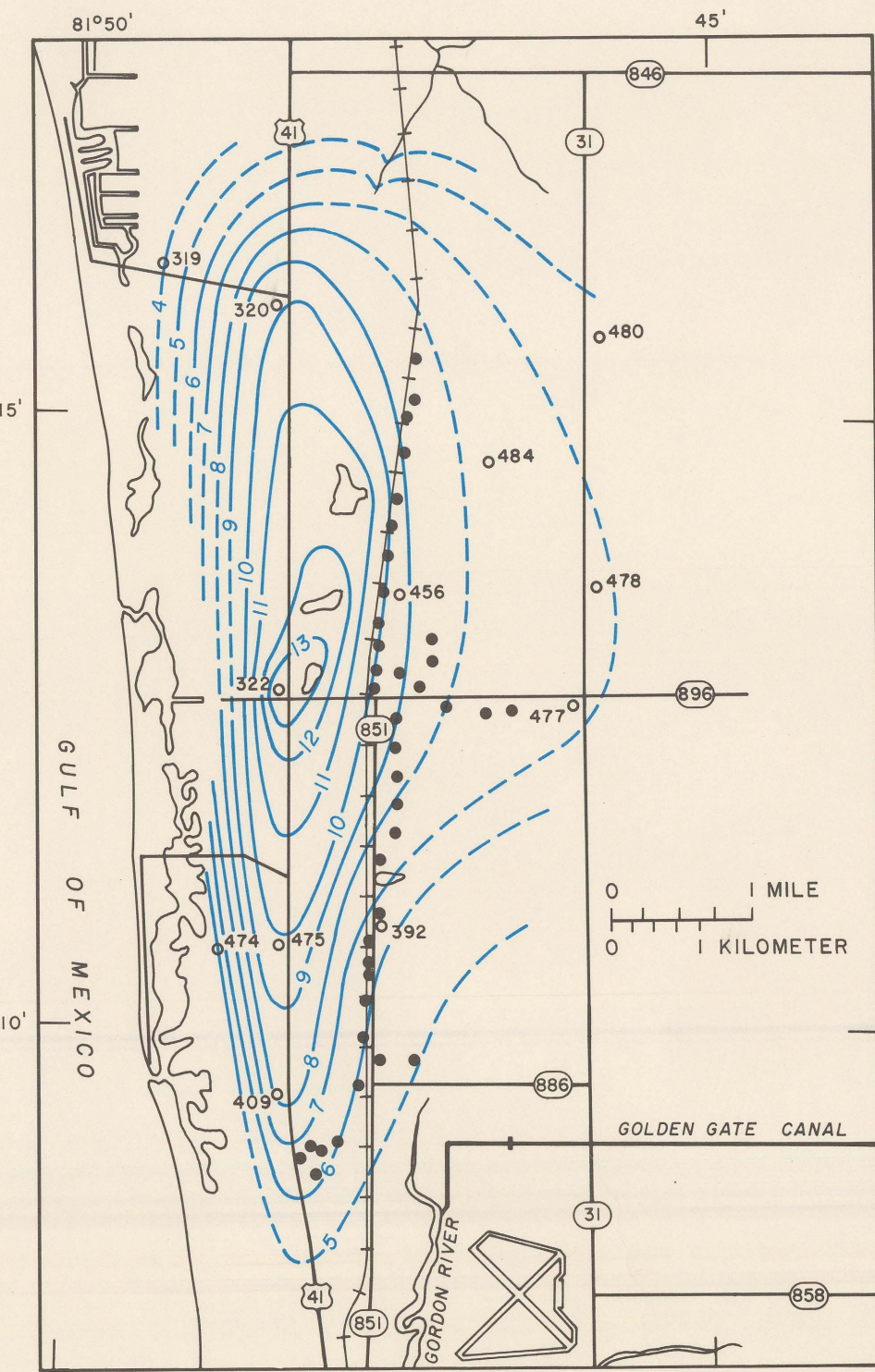


Figure 5.—Water-level contours of the water-table zone of the surficial aquifer for October 1976.

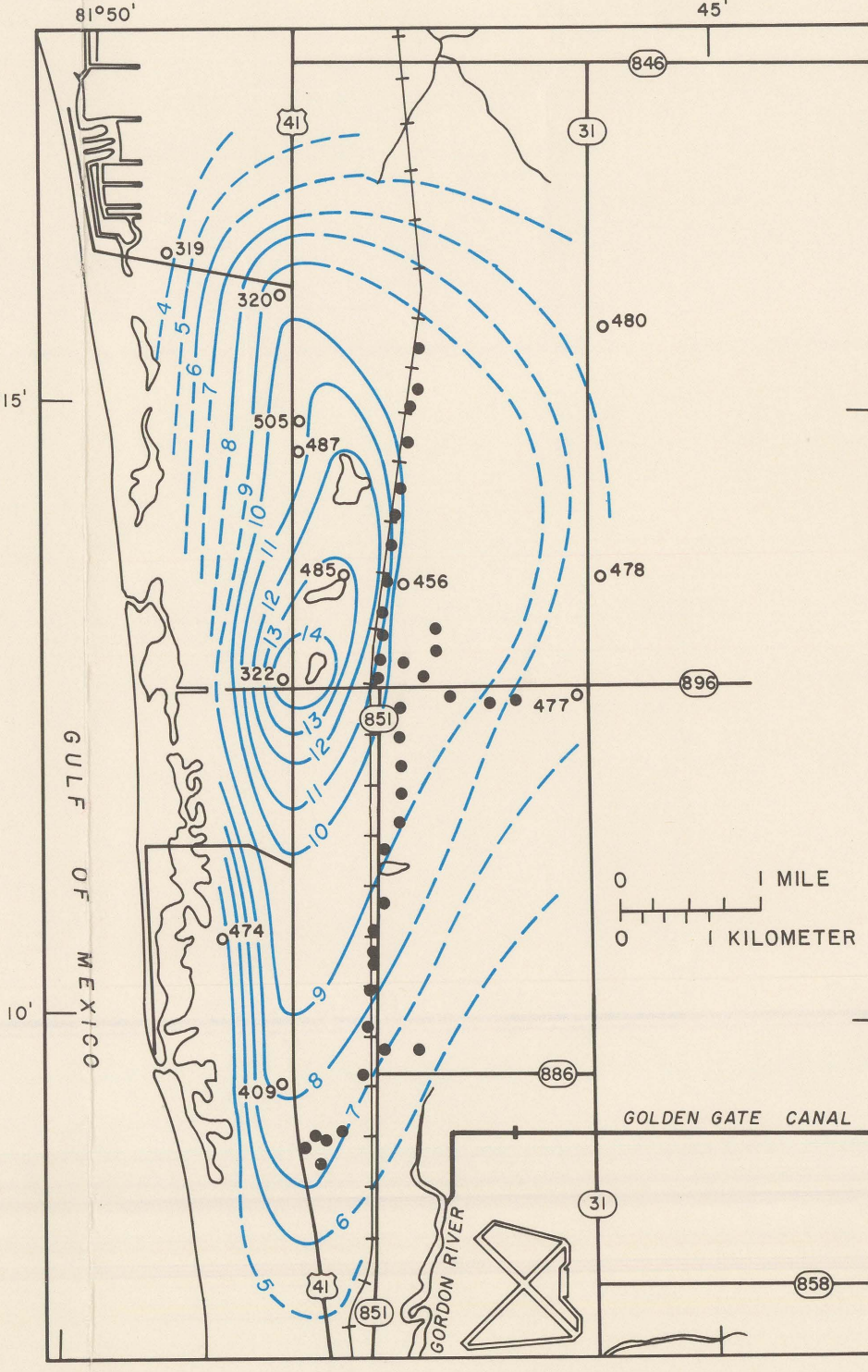


Figure 7.—Water-level contours of the water-table zone of the surficial aquifer for October 1977.

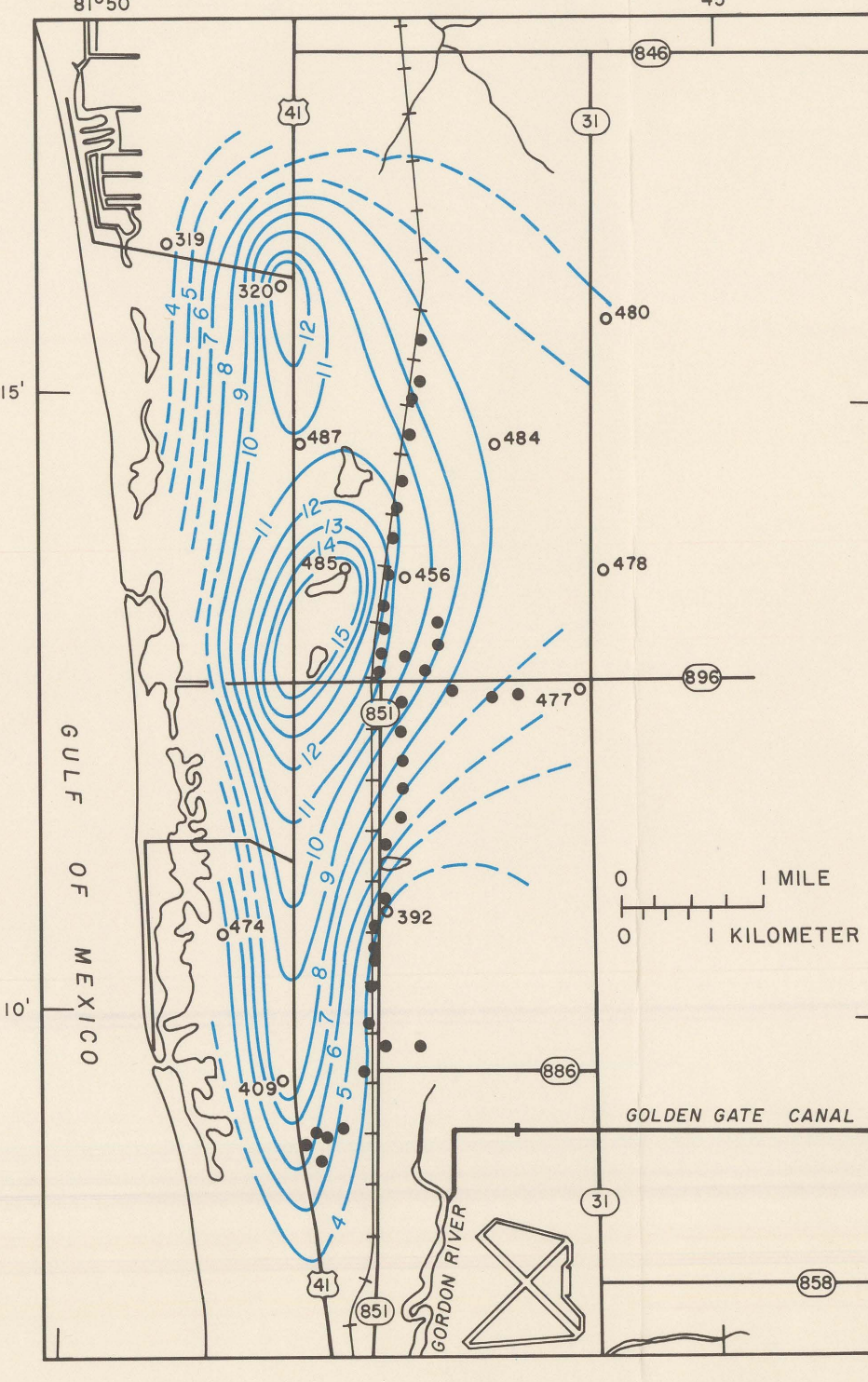


Figure 9.—Water-level contours of the water-table zone of the surficial aquifer for October 1978.

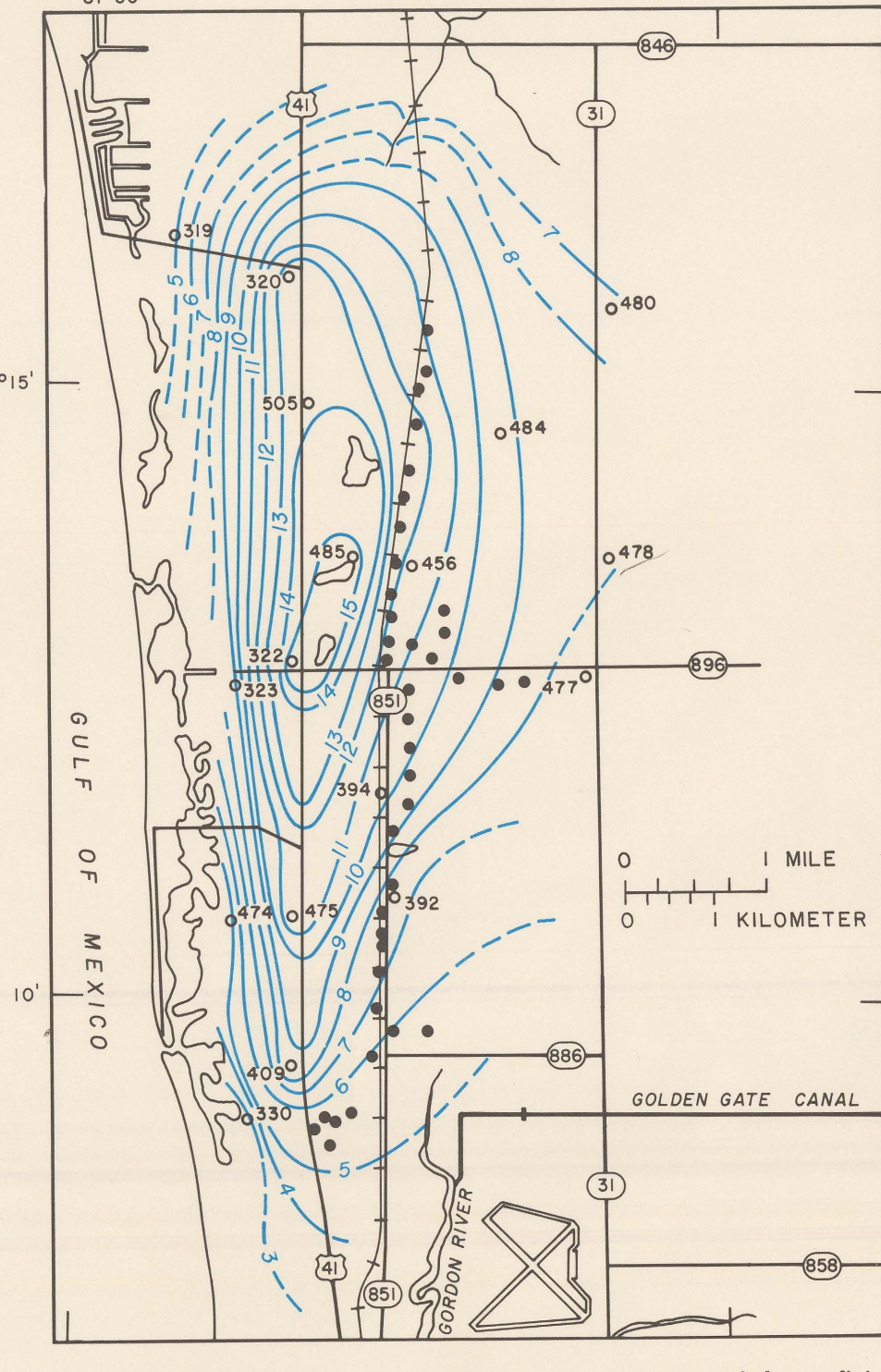
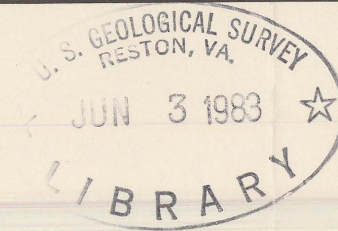


Figure 11.—Water-level contours of the water-table zone of the surficial aquifer for October 1979.

## SEMIANNUAL WATER-TABLE AND POTENTIOMETRIC SURFACE FOR TWO WATER-YIELDING ZONES IN THE SURFICIAL AQUIFER, 1975-79, NAPLES AREA, FLORIDA

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1982



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