

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY


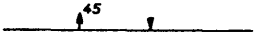

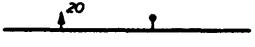

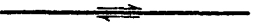

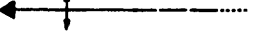
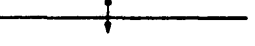

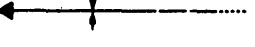
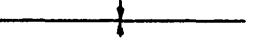

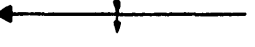
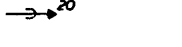
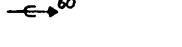
**GEOLOGIC MAP OF THE GOSHEN QUADRANGLE, FRANKLIN
AND HAMPSHIRE COUNTIES, MASSACHUSETTS**

By Norman L. Hatch, Jr. and Charles R. Warren





Prepared in cooperation with the
COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

GEOLOGIC QUADRANGLE MAP
Published by the U.S. Geological Survey, 1982

GEOLOGIC MAP SYMBOLS
COMMONLY USED ON MAPS OF THE UNITED STATES GEOLOGICAL SURVEY
(Special symbols are shown in explanation)

| | |
|---|---|
|  | Contact—Dashed where approximately located; short dashed where inferred; dotted where concealed |
|  | Contact—Showing dip; well exposed at triangle |
|  | Fault—Dashed where approximately located; short dashed where inferred; dotted where concealed |
|  | Fault, showing dip—Ball and bar on downthrown side |
|  | Normal fault—Hachured on downthrown side |
|  | Fault—Showing relative horizontal movement |
|  | Thrust fault—Sawteeth on upper plate |
|  | Anticline—Showing direction of plunge; dashed where approximately located; dotted where concealed |
|  | Asymmetric anticline—Short arrow indicates steeper limb |
|  | Overtured anticline—Showing direction of dip of limbs |
|  | Syncline—Showing direction of plunge; dashed where approximately located; dotted where concealed |
|  | Asymmetric syncline—Short arrow indicates steeper limb |
|  | Overtured syncline—Showing direction of dip of limbs |
|  | Monocline—Showing direction of plunge of axis |
|  | Minor anticline—Showing plunge of axis |
|  | Minor syncline—Showing plunge of axis |




Strike and dip of beds—Ball indicates top of beds known from sedimentary structures

 20° Inclined  Horizontal
 Vertical  40° Overturned

Strike and dip of foliation

 20° Inclined  Vertical  Horizontal

Strike and dip of cleavage

 15° Inclined  Vertical  Horizontal

Bearing and plunge of lineation

 15° Inclined  Vertical  Horizontal

Strike and dip of joints

 40° Inclined  Vertical  Horizontal

Note: Planar symbols (strike and dip of beds, foliation or schistosity, and cleavage) may be combined with linear symbols to record data observed at same locality by superimposed symbols at point of observation. Coexisting planar symbols are shown intersecting at point of observation.

Shafts

 Vertical  Inclined

Adit, tunnel, or slope

 Accessible  Inaccessible

 Prospect








Quarry

 Active  Abandoned

Gravel pit

 Active  Abandoned

Oil wells

 Drilling  Shut-in  Dry hole, abandoned
 Gas  Show of gas
 Oil  Show of oil