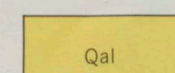
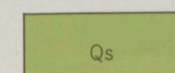


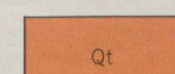
EXPLANATION



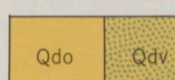
Alluvium
Stream deposits of stratified gravel, sand, silt, and clay; 1-50 feet thick



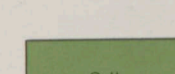
Swamp and marsh deposits
Generally water-saturated organic materials intermixed with sand, silt, and clay; 5-60 feet thick



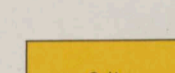
Terrace alluvium
Redeposited alluvium marking former positions of stream channels; at altitudes of 845, 835, 800, and 750 feet



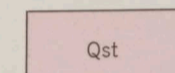
Outwash
Stratified sediments deposited by streams, mostly medium sand; 25-250 feet thick
Qs, outwash plain, includes fill materials
Qvt, valley train



Lake sediments
Stratified fine sand, silt, and clay redeposited within shallow glacial basins



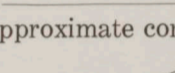
Till deposits
Gray to tan, unstratified material boulder-to clay-size, characterized by carbonates, quartzite, and shale particles; 5-40 feet thick



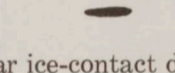
Till deposits
Pale red, unstratified material, mostly sand, characterized by sandstone, felsite, and gabbro particles; 15-45 feet thick



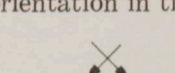
Bedrock



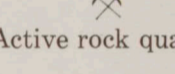
Approximate contact



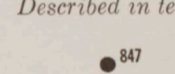
Terrace



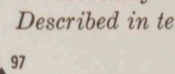
Linear ice-contact deposits



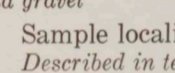
Stone orientation in till deposits



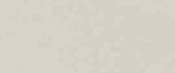
Active sand and gravel pit



Active rock quarry



Sand and gravel or stone processing plant
Described in text



Locality
Described in text



Sand and gravel



Clay



Sample locality
Described in text

HOLOGENE

PLEISTOCENE

WISCONSIN STAGE

GRANTSBURG SUBLOBE OF DES MOINES LOBE

SUPERIOR LOBE

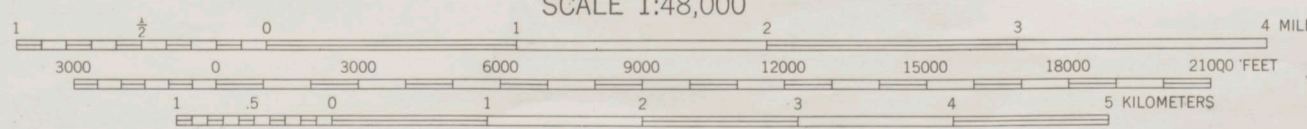
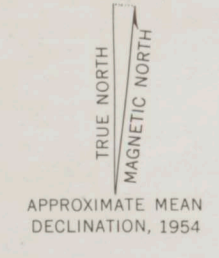
QUATERNARY

Base from U.S. Geological Survey, 1954
Interstate highways and associated collectors as of 1969
Lakes and swamps as of 1969
Pits and quarries as of 1969

GEOLOGIC MAP OF THE MINNEAPOLIS QUADRANGLE, MINNESOTA
SURFICIAL GEOLOGY

By
R. K. Hogberg

SCALE 1:48,000



CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

1970