

Part 10

COMMON PROBLEMS WITH SUBDRAINS



- **Subdrain outfalls** should be provided every 200 feet to allow ready discharge of collected moisture. These outfalls are often clogged by rodent activity, overgrown with vegetation (drawn by the water), or mechanically crushed during landscaping or remedial grading for erosion control

- **Dispersive clays** can often be identified by their *eroded demoiselle structure*, shown at left.
- **Dispersive clays** can also cause clogging of subdrains because particles are easily taken into suspension and thereby more susceptible to hydraulic piping



Dispersive clays are often recognized by their muddy, turbid water several days after precipitation has ceased

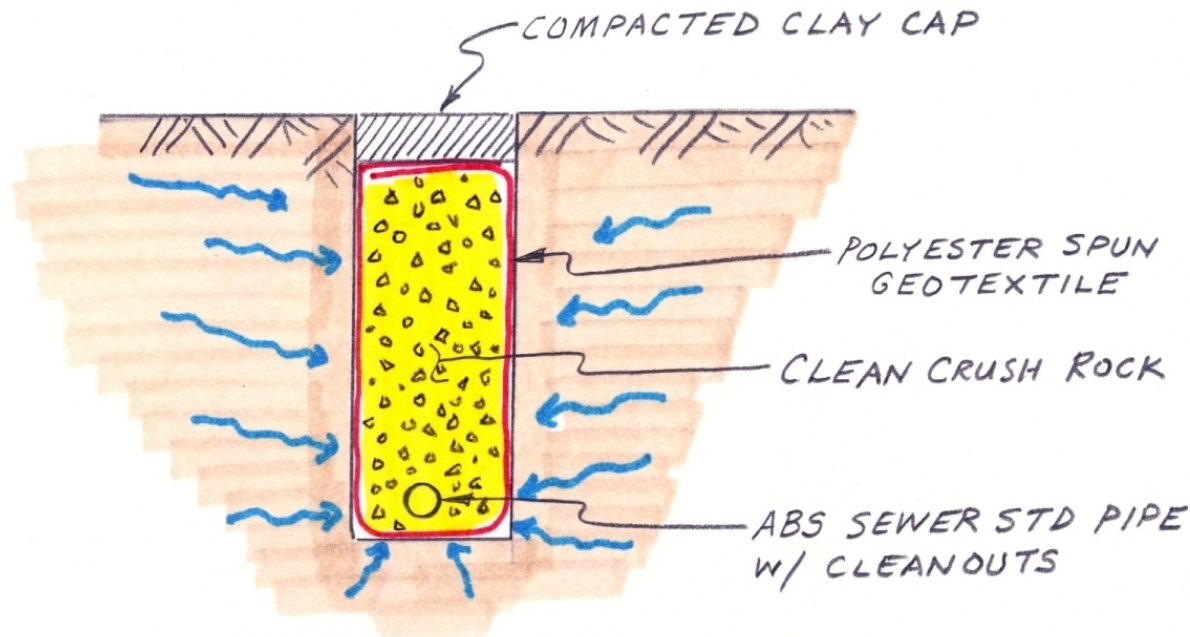
Characteristics typical of dispersive clay exposed in road cuts





- **This shows silt that clogged a subdrain collector pipe, as revealed by subsequent excavation and removal**
- **The surrounding gravel blanket will hopefully continue to collect and convey free moisture if the collector pipe becomes clogged**

MODERN ERA TRENCH SUBDRAIN



- **Subdrains should be placed along the axes of former water courses where they will be most effective – collecting water that percolates along “seepage conduits” developed over eons of time in native ground**



- **Subdrain outfall issuing iron-rich water, emanating from the rapid dissolution of buried corrugated metal collector pipes in the subdrains. Low pH materials can corrode a metalliferous pipe in a few years.**



- **Metalliferous objects**, such as corrugated metal pipes, are:
- Subject to external corrosion from clayey backfill materials (example at right); and
- Subject to abrasion-induced damage, induced by turbid flows along their inverts (example at left)