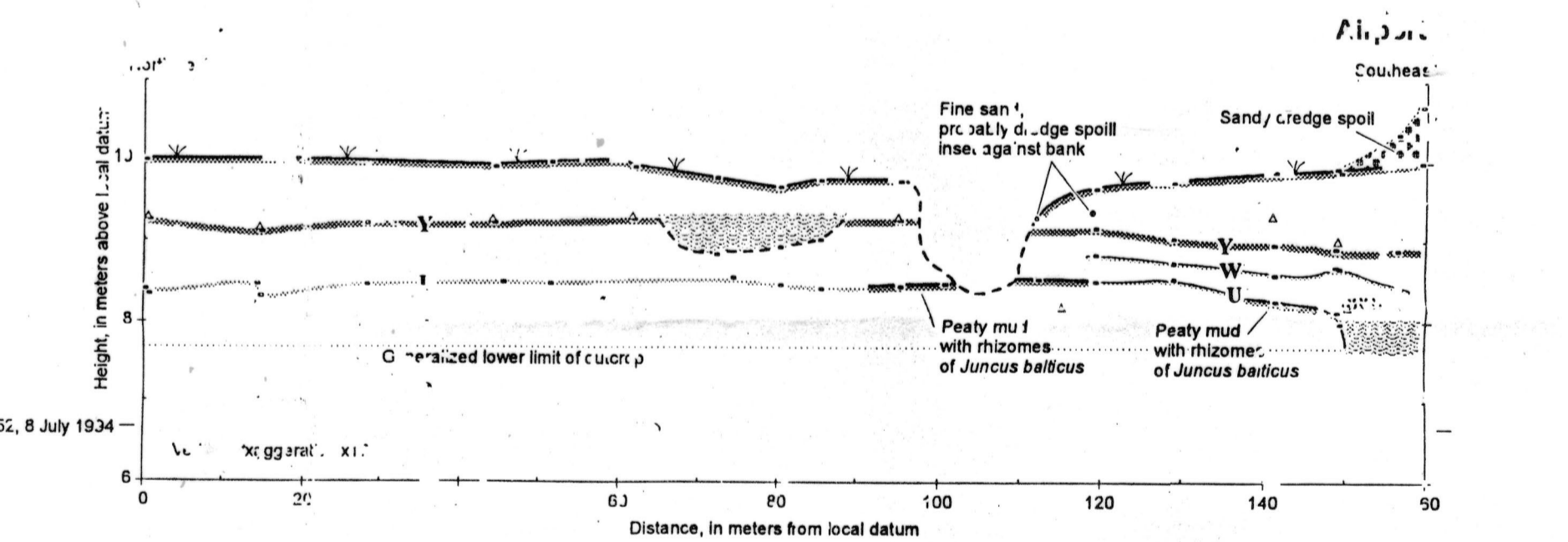
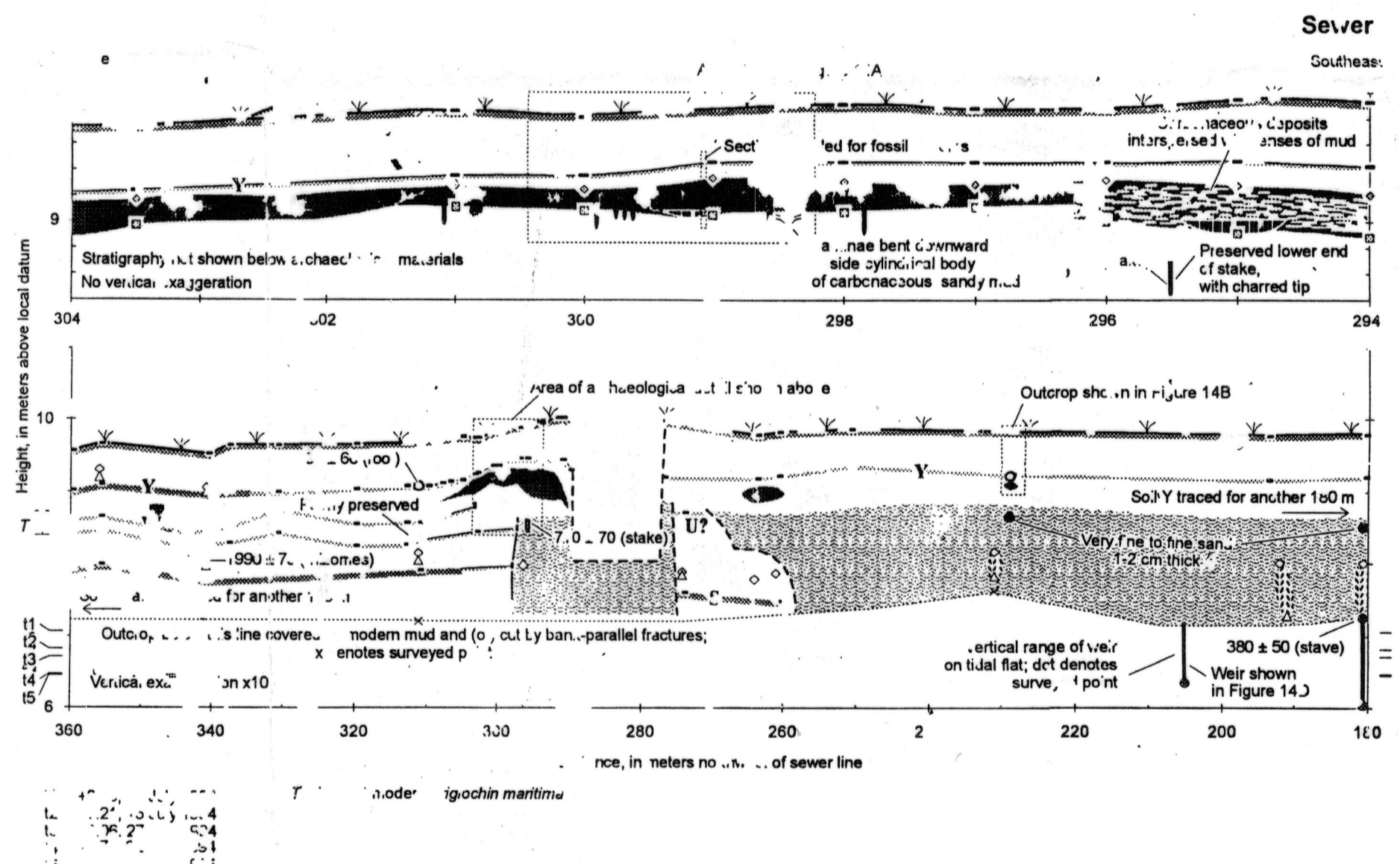
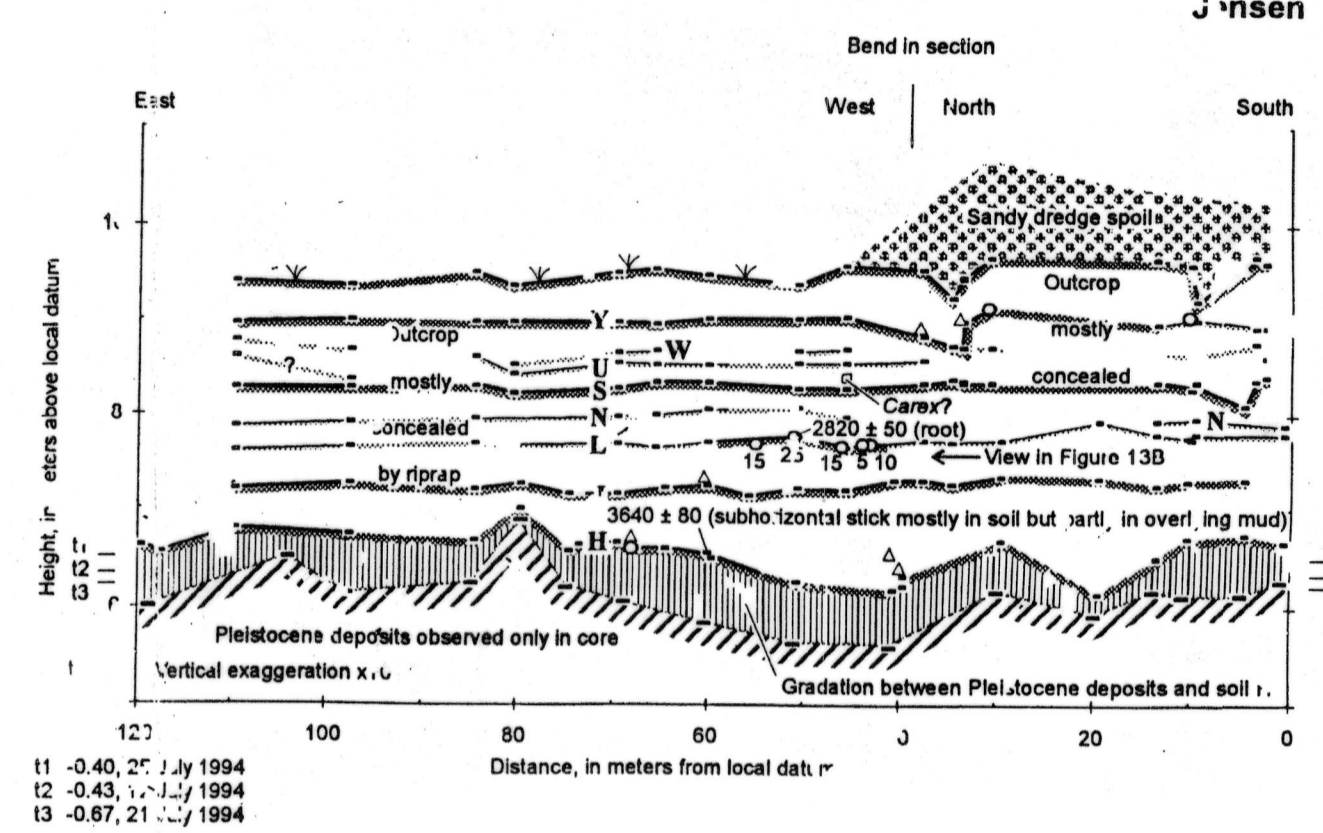
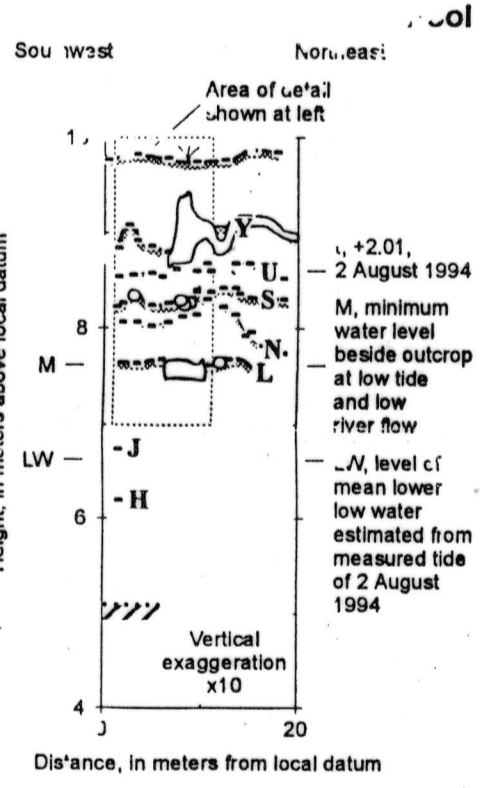
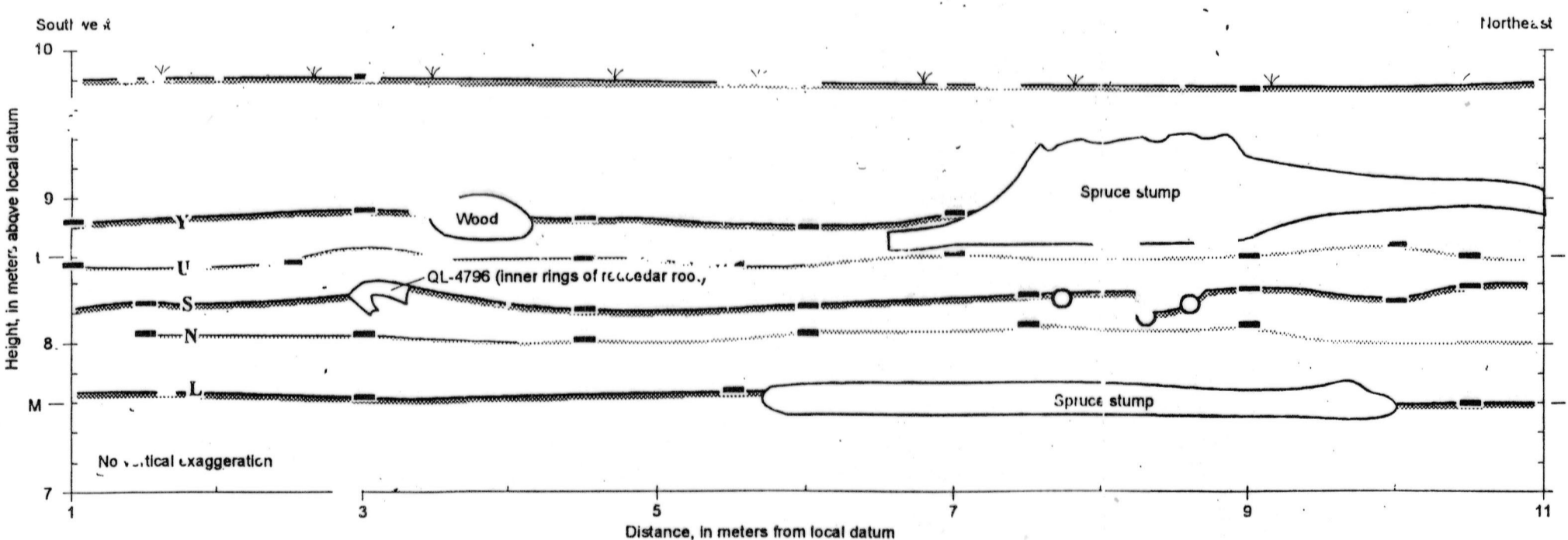
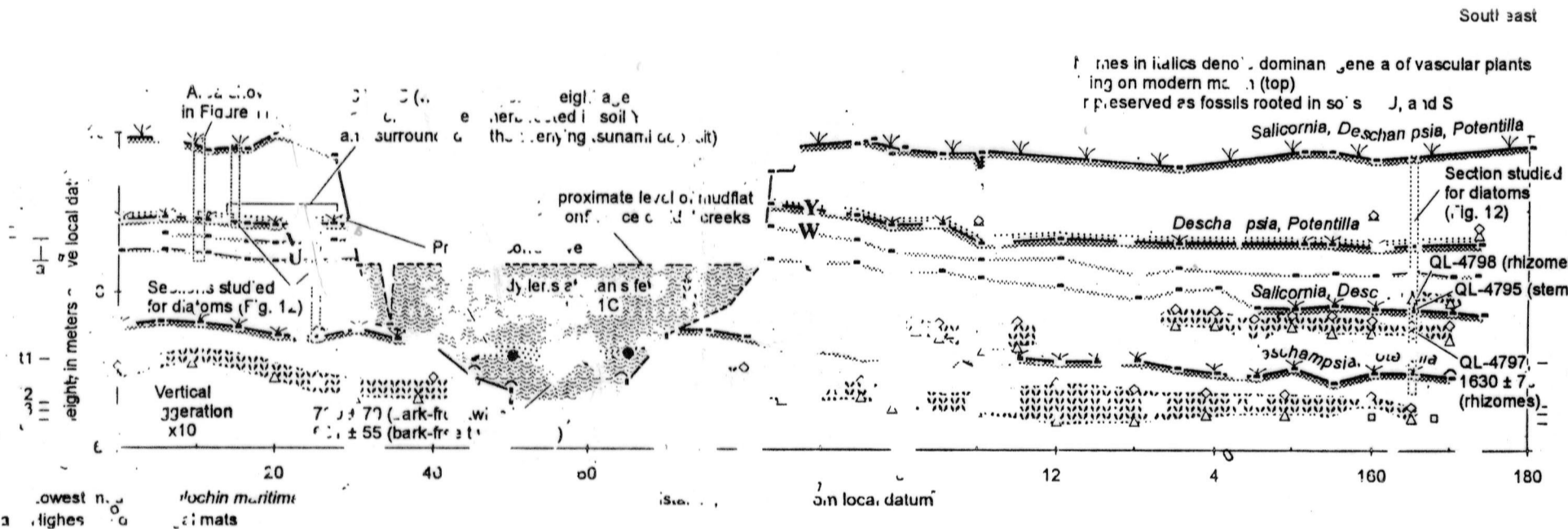
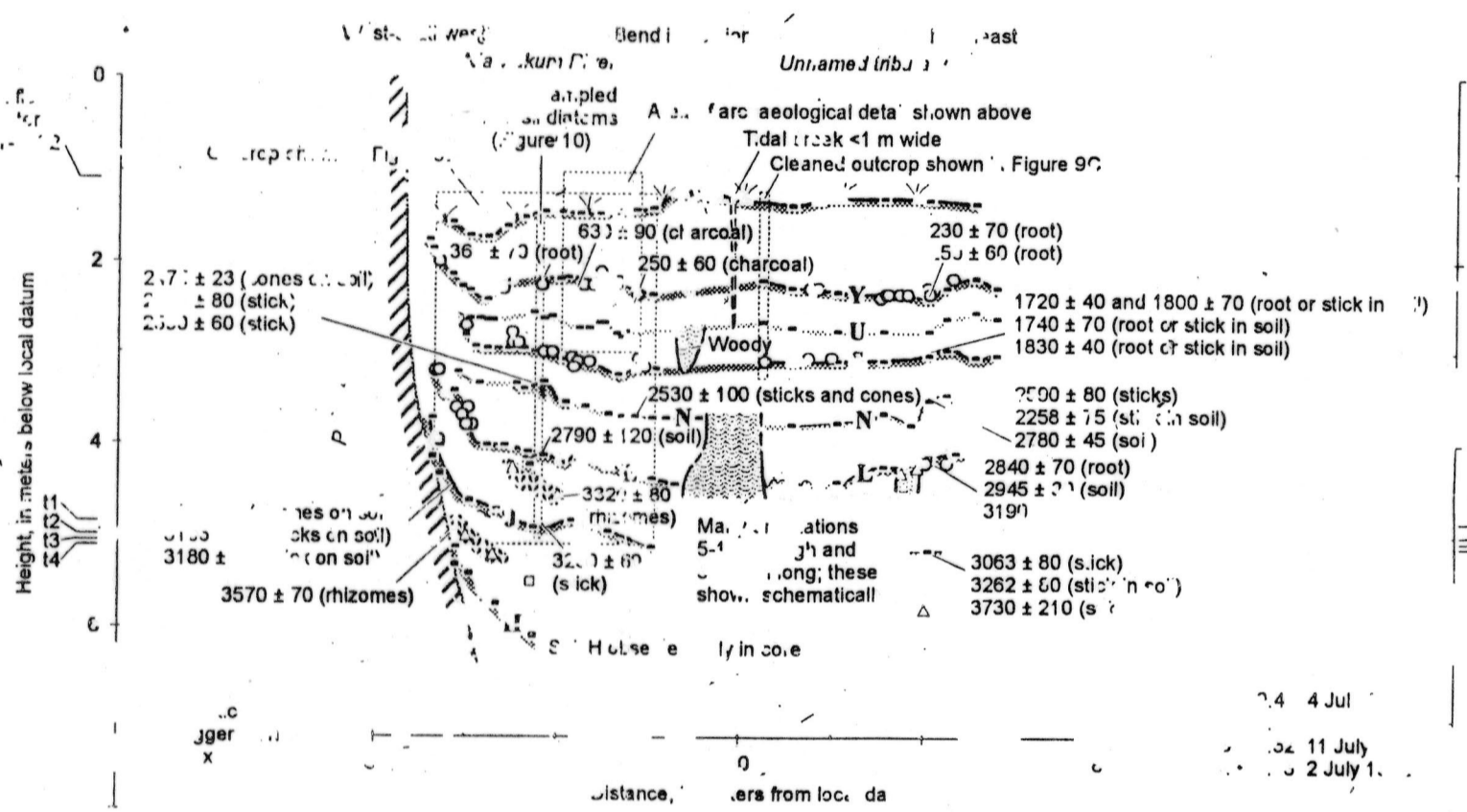
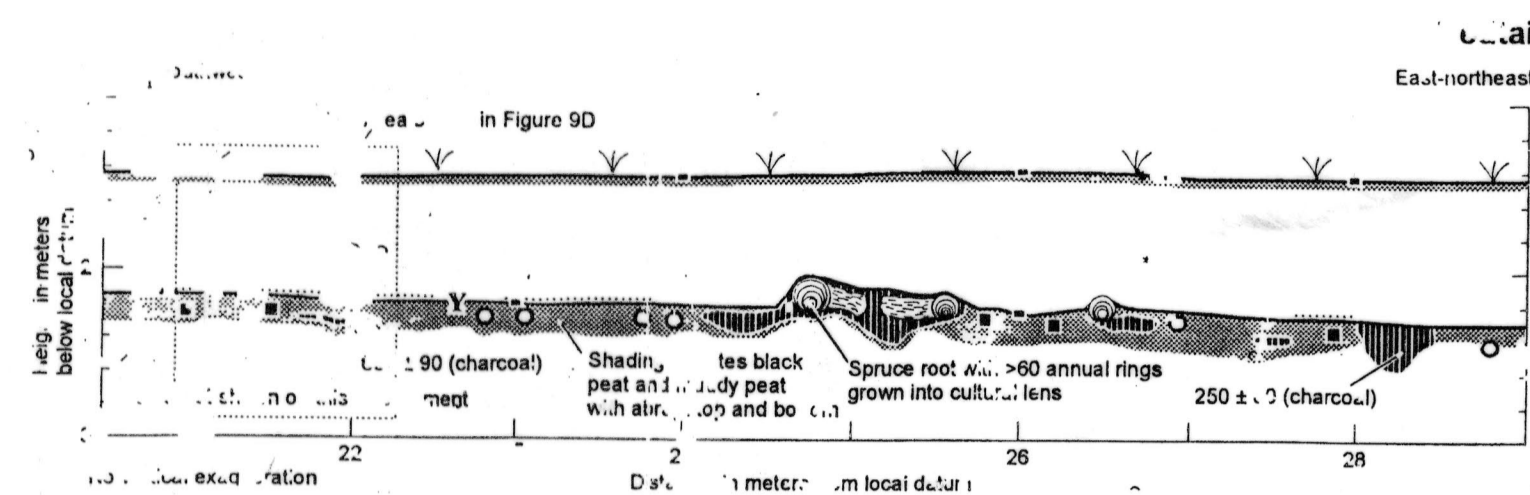


Outcrops along the Niawiakum River

Outcrops along the Willapa River



EXPLANATION

- STRATIGRAPHIC CONTACT OR UNCONFORMITY**
- Survey point
 - Top of soil or of Pleistocene deposits
 - Top and bottom of cultural lens—Shown only for archaeological detail at Sewer locality
 - Bottom of probable tsunami deposit—Shown only for sandy lens in channel fill at Oyster locality
 - Continuity of soil—Shown by solid line where continuity observed; shown only by top of shading where continuity of soil inferred
 - Old soil
 - Faint soil
 - Location of buried soil—Inferred correlation shown in Figure 8
 - Top of Pleistocene deposits
 - Sandy bed probably deposited by tsunami
 - Bed with multiple sandy laminae
 - Bed with single lamina of very fine sandy silt
 - Channel fill—Bounded by solid line where unconformable edge observed; bounded by dotted line where such unconformity inferred
- LIVE PLANTS OF MODERN TIDAL MARSH**
- FOSSILS**
- Stems and leaves of herbaceous plants root buried in sand and mud—Shown only where observed
 - Stem of Sitka spruce at Sewer locality of silt—Shown to scale, by concentric circles, only for largest roots in detail for archaeological features at Redtail locality
 - Rhizomes of *Triglochin maritima*—Surveyed position of lowest (triangle) and highest (diamond) rhizomes
 - Large mass of rhizomes—Commonly composed of calcified, orange-brown, rounded masses that protrude slightly from low-tide outcrop (Figure 11D)
 - Shell of *Macoma baltica*—Typically disarticulated. Found only at Oyster locality
- SOIL FEATURES**
- Contains charcoal and other materials
 - Shaped symbols at bottom denote filled stake holes. Shown only for Sewer locality
 - Cracks—Plotted separately only for Redtail locality
 - Reddish-brown lens—Probably contains wood ash and marine fire pits
- DATE AND HEIGHT SYMBOLS**
- Age in years before A.D. 1950
 - Low tide—Label gives predicted height, in meters with respect to mean lower low water. Horizontal line shows observed level
- SIGNIFICANCE OF AREAS SHOWN IN WHITE**
- Between successive surveyed soils, areas in white denote mud except where noted otherwise. Beyond the lateral limits of surveyed soils, areas in white denote concealed or buried outcrop

Holocene stratigraphy at six outcrops along the Niawiakum and Willapa Rivers, Pacific County, Washington

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.