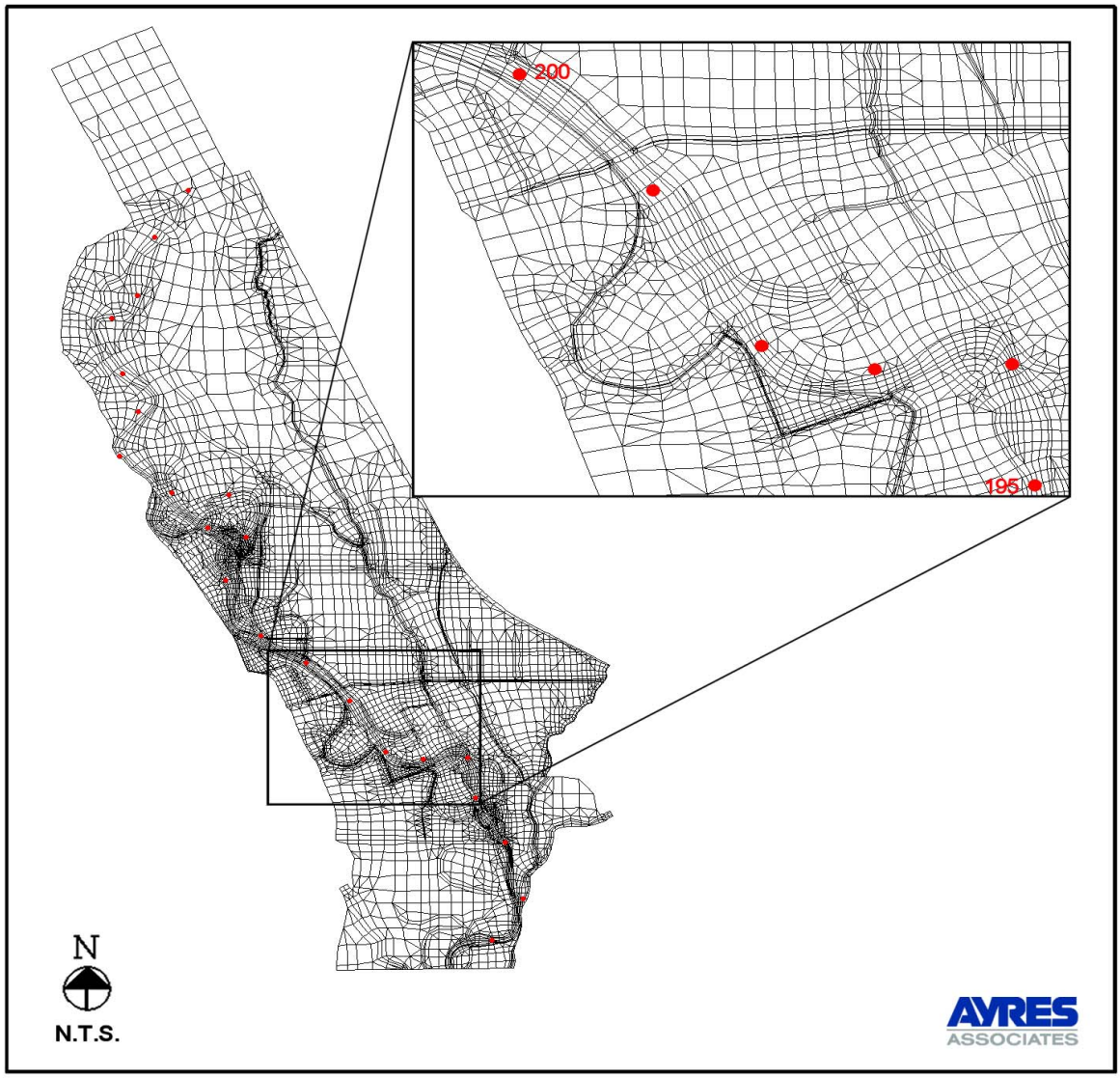

Figure 6. Plan View of the Finite Element Mesh

Geometric definition of the project reach is given in the form of a finite element network of triangular and quadrilateral elements as shown in **Figure 6**. The corner nodes of each element represent points in space (X, Y,Z) defining the topography of the project reach. These nodes were laid out using topographic mapping and aerial photography as a reference for element size and orientation. Nodes were also added at spot locations to define breaklines, structures, or other significant changes in topography. Elevation values were assigned to the nodes using a digital terrain model of the river reach. The existing model reflects the river configuration as it existed after the 1995 flood events, based upon mapping developed for the USACE in August of 1995.

In the river reach, material types within each element were categorized based on land use and roughness characteristics (dense vegetation, grassland, sandbars, etc.). The material types were assigned to each of the elements in the finite element mesh using aerial photography from the 1995 mapping effort conducted by the USACE and the 1997 Sacramento River Aerial Atlas developed by the Department of Water Resources, Northern District (DWR, 1997). A field visit was also made to confirm land usage. For each material type, a Manning's roughness coefficient (n value) was assigned to