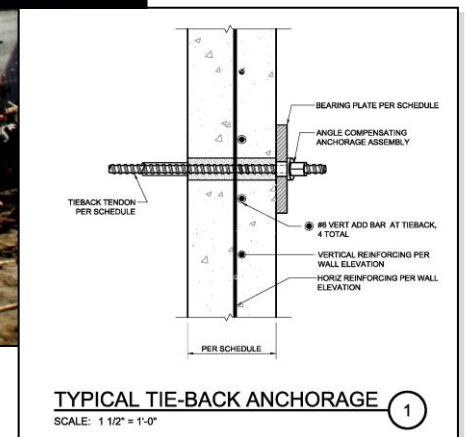




Beach Drive Residential Retaining Wall Aptos, California

Civil and Structural Engineering



Client Reference:

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Budget: \$800,000

Beach Drive is located along the base of a steeply sloping and landslide prone coastal bluff towering 100ft above the ocean. Because of the geologic setting many of Beach Drive hillside lots were believed to be undevelopable. However, Mesiti-Miller Engineering was selected to devise a system to overcome these challenges and achieve the owner's and architect's vision for several new luxury residences.

Mesiti-Miller Engineering developed an earth retaining system that allowed the residences to be constructed safely into the steep, loose bluff while resisting uniform active soil pressures of 1300 psf and uniform seismic soil forces of 460 psf and improving the overall stability of the hillside. To achieve stable, level building pads, a tiered system of retaining / shoring walls were developed. Architectural and planning constraints resulted in an 18ft-tall upper wall and a two 10ft-high lower walls. In response we developed a "top-down" system integrating temporary soldier pile shoring with the permanent concrete tied back wall, saving more than \$300,000 on the cost of construction over other designs.

The design team overcame seemingly insurmountable natural hazards, while producing a retaining wall design which substantially lowered construction costs, simplified construction and fulfilled strict developmental guidelines and architectural vision.