



Gravity and Geogrid-Reinforced Retaining Walls

INFORMATION
GUIDELINE
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CITY OF ESCONDIDO • BUILDING DIVISION • 201 N. BROADWAY, ESCONDIDO, CA 92025 • (760) 839-4647



A **Gravity** retaining wall system depends on its weight and geometry to counteract the lateral earth pressure and other lateral forces. These walls generally utilize modular concrete units in a running bond without the use of mortar.

A **Geogrid-Reinforced** retaining wall system is designed as a reinforced soil-retaining wall that depends on the weight and geometry of the reinforced soil mass to resist lateral earth pressures and other lateral forces. These walls generally utilize modular concrete units in a running bond without the use of mortar.

A **Reinforced Masonry** Retaining wall is designed to comply with Chapters 16 and 21 of the code. The system is designed as a steel-reinforced wall that depends on traditional reinforced masonry to resist lateral earth pressures and other lateral forces. Please refer to **Information Guideline 2**.

There are various manufacturers of gravity wall systems that are Listed and approved through ICC Evaluation Service, Inc. (ICC-ES). The City of Escondido does not endorse any particular "brand" of gravity type retaining wall system. The purpose of this guideline is to provide basic information to assist our customers in obtaining permits, in constructing the wall system and in getting the proper inspections.

Permit requirements

Construction of retaining walls, except those less than three feet high and not supporting a surcharge, requires a permit and is regulated by local building and zoning codes.

Installation

Retaining Wall systems must be installed per the manufacturer's installation manual, the approved engineering calculations and the latest ICC-ES Report.

Plan check submittal requirements

All plans must be drawn to scale.

A soil investigation report may be required based upon the engineering design and ICC-ES Report.

Three copies of the Plot Plan drawn to scale, indicating the location, length and height of the wall, lot drainage patterns, and the distance to the property line and adjacent structures on the lot. Contact the Planning Division for setback requirements.

If the manufacturer provides a "Standardized Design", please provide two copies of the "**Standardized Manual**" with the Civil Engineer's Stamp, seal, signature and license expiration date indicated on the cover sheet. The applicant must "Highlight" on the plan the wall to be used for construction.

Wall designs utilizing geogrid reinforcement must be located on the lot such that the geogrid will not be placed across the property line.

One copy of the latest Design Manual and the ICC-ES Report.

When the wall design is other than the "Standardized Design", submit Two copies of structural calculations and plans prepared, signed, sealed and stamped by a California registered Architect or civil engineer.

For "Designed" retaining walls, specify the concrete modular unit type to be used.

The plans must be prepared under the supervision of, and signed, sealed and stamped by a California registered architect or civil engineer, and shall include wall profiles, geogrid type and placement, and required details.

Two copies of the Soil Investigation report prepared by a California registered Civil or geotechnical engineer.

Special Inspection requirements must be listed on the Title Sheet.

For more information on gravity type retaining walls, please visit the ICC-ES web site at www.iccsafe.org

Special Inspection

Walls generally require Special Inspection per the ICC-ES Report. Special Inspection is usually required for soil and foundation conditions, wall angle, reinforced backfill placement, structural geogrid installation and wall drainage in accordance with Chapter 17 of the California Building Code, the Soil Investigation Report, the ICC-ES Report and the Manufacturers Design Manual.

Please complete the "Special Inspection Program" documentation available at the Building Division counter.

Special Inspections are in addition to the required inspections performed by City Building Inspectors.

Inspections

If the retaining wall is part of a Grading Permit, contact the Field Engineering Department at 760-839-4664 for pad certification requirements.

At the first inspection the wall location must be "staked" to verify appropriate setbacks, maximum geogrid length and location on property. Property lines must be identified. The maximum height of the wall and conditions from the soil investigation report are verified. Foundation/Leveling pad and setbacks must be passed prior to the placement of the first concrete units.

The Wall drainage system when required by the soils investigation report.

The first level of geogrid placement must be verified and inspected by the building inspector as to the type, orientation and length. Any alignment or interlocking pins and core fill when used are checked at this inspection. The building inspector will determine subsequent levels of the geogrid placement inspection.

Wall heights vary and may require continuous Special Inspection. The Special Inspection does not eliminate the inspections by the City Building Inspector.

Final Inspection shall not be requested until the wall and all required drainage structures have been completed.

When Special Inspection is required a "Final Special Inspection Report" shall be submitted to and approved by the building inspector before Final Approval will be granted.