



PERMIT SUBMITTAL REQUIREMENTS FOR RETAINING WALLS

PERMITTING & DEVELOPMENT
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The purpose of this handout is to assist the public in complying with the detailed permit submittal requirements. It is not a complete list of permit or code requirements and should not be used as a substitute for applicable laws and regulations. It is the responsibility of the owner/design professional to review the submittal for completeness. Only complete applications will be accepted by the city for review.

PERMIT REQUIRED: A permit is required for Retaining Walls made of any material (concrete, masonry, ecology block, steel, railroad ties, etc.), unless specifically exempted as described in this handout.

Retaining Walls, including shoring structures, are structural systems that provide lateral support for vertical or near-vertical slopes of soil. Several common types of Retaining Walls include: gravity, semi-gravity, cantilever, soldier pile, sheet pile, proprietary modular block, mechanically stabilized earth, and soil nail retaining walls. The City of Edmonds does not consider rockeries (walls constructed of rock from the earth) to be Retaining Walls.

A Retaining Wall permit shall be required when any of the following conditions apply:

- Retaining Walls greater than four (4) feet in height to eight (8) feet in height, (see Wall Height definition).
- Retaining Walls of any height located in a designated Critical Area other than Erosion Hazard Area.
- Retaining Walls of any height located within the mapped Earth Subsidence Landslide Hazard Area of North Edmonds (ESLHA map on file at City Hall).
- Retaining Walls of any height supporting a surcharge from a street, road, alley, driveway, parking, building, structure or other surcharge or Retaining Walls that impound flammable liquids or hazardous materials. (Refer to Engineering Standard Detail E8.12.1)
- Terraced Retaining Walls are subject to the noted conditions above for permit requirements and exemptions.

EXEMPT WORK: Retaining Walls four feet in height or less measured vertically from the finished grade at the exposed toe of the wall to the highest point are exempt unless:

- a) supporting a surcharge
- b) impounding Class I, II, II-A liquids or,
- c) subject to the provisions of ECDC Chapters: 19.10, 23.50 & 23.80.

A Retaining Wall permit is not required for the following conditions; however all retaining walls must meet the General Requirements listed within this handout:

- Retaining Walls four (4) feet or less in height, provided that none of the conditions under General permit requirements apply.
- For Retaining Walls proposed for construction in conjunction with an approved subdivision or short plat, a separate retaining wall permit is not required. However, wall details shall be included on the subdivision/short plat civil drawings, the submittal requirements listed on this handout shall be submitted with the plans, and plan approval signed by the City Engineer will constitute Retaining Wall approval.
- Retaining Walls shall be designed, reviewed and approved based on the requirements of this handout.
- Retaining Walls four (4) feet or less in height proposed on an individual lot with a Critical Areas determination of Erosion Hazard Area only. Other Critical Areas determinations do not apply to this exemption.

CODES: Current Edition Adopted

- International Building Code
- WSDOT/APWA Standard Specifications for Road, Bridge, & Municipal Construction
- ECDC Chapters 18.30 & 18.40.020 & 18.70
- ECDC Chapters 19.00.010 & 23.80

FEE: Please refer to the current City fee schedule.
NOTE: Some projects may require Development Project Peer Review; when required, fees are charged plus the cost of Peer Review.

DEFINITIONS:

- **WALL HEIGHT:** For permitting purposes, Retaining Wall height is defined as the height measured vertically from the finished grade at the exposed toe of the Retaining Wall to the highest point of the finished wall.
- **SETBACK AREA HEIGHT:** For setback purposes, Retaining Wall Setback Area Height is defined as the height measured vertically from the original grade to the highest point of the Retaining Wall supporting soil.
- Refer to Engineering Standard Details E8.11 & E8.12 for additional definitions.

GENERAL WALL REQUIREMENTS:

The following apply even if a retaining wall is exempt from being permitted.

- All Retaining Wall designs that require a permit shall have plans and details stamped and signed by a WA State Licensed Professional Engineer, including the design calculations when required.
- A soils investigation/report is required to determine the classification of soil design parameters and soil design bearing capacity.
- All report recommendations shall be incorporated into the Retaining Wall design including drainage considerations.
- Retaining Walls shall not exceed three (3) feet in height, above original grade, when located in setback areas. (*See Setback Area Height definition above.*)
- Retaining Walls of any height **shall not** be constructed over public utility easements, or be constructed to adversely affect drainage, or create a sight distance hazard.
- The slope behind the top of a Retaining Wall shall be no steeper than 2:1 (horizontal:vertical) unless specifically approved by the applicant's Geotechnical Engineer. (*Refer to Engineering Standard Details E8.11 and E8.12*)
- Retaining Walls of any height **shall not** be constructed in, on, or over (developed or undeveloped) a City right-of-way, unless specifically approved by the City Engineer. Per ECDC Chapter 18.70 approval of an Encroachment Permit may be granted to locate a Retaining Wall within the City right-of-way if it does not interfere with the public's use of the right-of-way and/or if the proposal benefits the public interest, safety or convenience. (*See Handout #E26.*)
- A two (2) foot minimum shy distance shall be maintained from Retaining Walls to the edge of roads (including private access roads serving 3 or more lots), streets and alleys.
- Temporary Spoil. Unless substantiated by the applicant's Geotechnical Engineer, temporary spoil or stockpiling shall be placed no closer than two (2) feet from the surface edge of the excavation, measured from the nearest base of the spoil to the cut. Spoil should be placed so that it channels rainwater and other run-off water away from the excavation. Permanent spoils are considered to be fill and are subject to IBC permitting and fill requirements. A separate fill/grading permit may be required. (*See Handout #B37*)
- General Requirements apply even if a retaining wall is exempt from permitting requirements.

SUBMITTAL REQUIREMENTS:

- BUILDING PERMIT APPLICATION**
- CRITICAL AREAS STUDY**
 A Critical Areas Determination, issued by the Planning Division, must be completed and on file with the City. Provide applicable information as indicated by the decision for compliance with ECDC Chapter 23.80. Lots located in the mapped Earth Subsidence Landslide Hazard Area (ESLHA) of North Edmonds are subject to City Ordinance #3632, ECDC Chapter 19.10 and ECDC Chapters 23.50 & 23.80.
- 1) **SITE PLAN** - scaled 1" = 20'
 Property owner's name and street address.
 North arrow, property line dimensions, streets, alleys, driveways, parking areas, etc.
 Clearly show edge of City right-of-way, curb, gutter, sidewalk, street trees, etc.
 Detail public and private access and utility easements that encumber the property
 *Provide copies of all recorded easements that affect the property
 Show location of existing house, garage, decks, etc. on the subject property
 Show location of streams, creeks, drainage courses, etc. on the subject property
 Clearly show the proposed location of the Retaining Wall and distance to property lines
 Indicate the height of the wall, including top and bottom elevations of the wall at five (5) foot linear intervals to clearly show height of the wall along its entire length

- Clearly show how wall drain pipe will connect or discharge to an approved drainage system`
 - Show existing and proposed grade contours at two (2) foot linear intervals for slopes up to 15% and five (5) foot linear intervals for slopes exceeding 15% slope
- 2) **SOILS INVESTIGATION OR SOILS REPORT**
Work shall be performed by a Washington State licensed Professional Geotechnical Engineer or Engineering Geologist.
- Soils investigation/ report recommendations shall be incorporated into the Retaining Wall design and shall conform to the requirements of IBC 1802 and IBC Table 1804.2.
 - The classification of soil and design bearing capacity must be determined based on observation and tests of the soil materials disclosed by borings or excavations. Such work shall be performed by a Washington State Licensed Professional Geotechnical Engineer or Engineering Geologist.
- 3) **GRADING PLAN** *(Refer to Handout #B37)*
When fill or grading for Retaining Walls exceeds 50 cubic yards, a separate grading plan with yardage calculations must be submitted (additional permit fees required). **Exception:** Grading in designated Critical Areas or within the mapped ESLHA requires grading plans, peer review and additional permit fees regardless of the amount of grading or fill.
- Grading plans must show:**
- Existing grade contours and proposed finished grades at two (2) foot intervals for lots with slopes of up to 15%. For lots with 15% slopes or greater show all grades at five (5) foot intervals.
 - Clearly define grading limits and trees to be removed and/or retained.
 - Detail permanent slope protection, indicate setbacks from top and toe of slopes, the slope of the lot and methods for temporary and permanent erosion control.
 - Provide calculations and specify the number of cubic yards to be removed, filled, or graded.
 - NOTE: When grading exceeds 499 cubic yards, an Environmental Checklist and APO list must be submitted for SEPA review, (a separate fee is required for SEPA review).
- 4) **RETAINING WALL SECTION AND ELEVATION VIEWS**
(Refer to Engineering Standard Detail E8.11 and/or E8.12)
Stamped and signed by a Washington State licensed Engineer with the following:
- Typical section view of the Retaining Wall.
 - Footing and wall detail: specify width, maximum height, reinforcing steel schedule, rebar spacing, etc.
 - Wall detail: specify width, height, steel schedule, etc.
 - Drainage provisions behind wall (piping size and material) and backfill proposed. Clearly show how Retaining Wall drain pipe will connect or discharge to an approved drainage system.
- 5) **RETAINING WALL DESIGN CALCULATIONS**
Stamped and signed by a Washington State licensed Engineer with the following:
- Soils classification, unit weight of soil, allowable bearing pressure, active and passive earth pressures, liquefaction potential, coefficient of friction, seismic loads, site specific surcharge loads, water table information, grading calculations, global slope stability, sliding resistance, overturning, local capacity of walls (bending, shear, deflection, embedment), lagging design and fascia design.
 - For manufactured systems (i.e., block walls, keystone) and other engineered Retaining Wall systems provide the installation instructions with the permit application submittal.
- 6) **EROSION CONTROL PLAN**
(Refer to Engineering Standard Details E1.1, E1.1.1 and E1.3)
- ECDC Chapter 18.30.
 - For Retaining Walls in Critical Areas designated as geologically hazardous areas or, in the mapped ESLHA, a letter from a Washington State licensed Geotechnical Engineer addressing the criteria of ECDC Chapter 23.80.070.
- 7) **LETTER FROM GEOTECHNICAL ENGINEER SPECIFICALLY ADDRESSING THE CRITERIA OF ECDC CHAPTER 23.80.070**
- For Retaining Walls in designated geologically hazardous Critical Areas or in the mapped ESLHA, the Geotechnical Engineer of record shall submit a stamped and signed letter acknowledging that the criteria of ECDC Chapter 23.80.070 has been reviewed and all applicable design considerations for code compliance have been incorporated into the plans.

GENERAL INSPECTION REQUIREMENTS

If the Retaining Wall is located on private property and is permitted as part of a building permit or as a separate Retaining Wall permit, the property owner is responsible to call the City Building Department 425-771-0220 during business hours or schedule online at:

The standard but not limited to Inspections are:

- Location and Setbacks
- Verification of Bearing Soil
- Placement of Reinforcement
- Wall Drainage (behind wall and to a point one foot away from wall)
- Drainage dispersal inspection (inspected by City Engineering Division for drainage one foot away from wall to approved dispersal area)
- Final Inspection and Height

If the Retaining Wall is constructed as part of a subdivision or short plat site improvement, the property owner is responsible to call the City Engineering Inspection line (425-771-0220 ext. 1326) for the noted inspections above.

FIELD REPORTS by the Geotechnical Engineer of record shall be submitted in a timely manner to the Building Division for review and approval for private individual lot development and to the Engineering Division for subdivision/short plat and right-of-way development.