



City of Palo Alto

Public Works Engineering

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www.CityofPaloAlto.org

Public Works Department Information for Residential Construction

The information below is intended to provide some basic guidance on issues reviewed by the Public Works Department during the Building Permit process. These guidelines will help streamline the application process and enable a Building Permit applicant to obtain a permit more quickly with fewer revisions and ultimately less time and expense.

Best Management Practices (BMP'S)

It is unlawful to discharge construction debris (soil, concrete, asphalt, saw cut slurry, paint, chemicals, etc.) or other waste materials into gutters or storm drains. The Permittee shall incorporate best management practices (BMP's) for storm water pollution prevention into all construction operations. The plan set must include the full size sheet: "Pollution Prevention—It's Part of the Plan". This sheet contains the "Best Management Practices" for this construction activity. A reproducible sheet is available free from Public Works-Engineering staff at the Development Center.

Flood Zone Requirements

Certain areas of Palo Alto are in a Special Flood Hazard Area (SFHA). Special requirements exist for construction of improvements in these SFHA areas. Before preparing and submitting your plans, it is advisable to check with the CPA Public Works Department or visit our Web site at "www.CityofPaloAlto.org" to determine if your project is within the SFHA and for general information on flood zone requirements.

If the project is in a SFHA, below is the process to expect when submitting the application for the *Building Permit*:

Before a Building Permit application is accepted, it must be screened by the Public Works Department to determine if the proposed project will be a substantial improvement or meets requirements for new construction. In the screening process, staff will look at the value of the existing house structure and compare that value with the cost of the improvement. If the cost of the project is at least 50% or greater than the value of the existing structure, it shall be determined to be a substantial improvement. When a project in a SFHA is determined to be a substantial improvement, construction shall conform to standards defined in Palo Alto Municipal Code (PAMC) Section 16.52. Basically, this will mean that not only will the new proposed floor be required to be above the base flood elevation, but the existing floors must be raised to this elevation if they are currently below it. Full conformance to the flood zone regulations includes the filling in of any existing basement or subgrade crawl space.

In the event of a substantial improvement or new construction, the elevation (relative to mean sea level) of the existing/proposed lowest floor must be certified by a licensed land surveyor or qualified civil engineer. In AO zones, the highest existing adjacent grade to the building foundation must also be included. These certifications must be placed on the plan pages and included with the initial plan submittal.

Flood vents are required for crawl spaces and storage areas (such as garages) below the base flood elevation, in accordance with PAMC 16.52.130(4). Flood vents must be on at least two sides of the enclosed space and total at least one square inch of opening for every square foot of enclosed foundation area. The bottom of these vents must be no higher than one foot above adjacent grade. The plans must show the calculation of the area of flood vents needed and a typical detail that reflects the location and construction of the same.

New basement construction or existing basement expansion is not permitted. A basement is defined by FEMA as *any* area of the building having its floor sub-grade (i.e., below ground level on all sides). To meet these requirements, fill placed inside the foundation walls must be graded so that the grade is equal to or higher than the adjacent grade outside the building.

Interim and final FEMA Elevation Certificates are required. These are completed by a licensed land surveyor, and document that the structure meets flood zone regulations. The interim Elevation Certificate must be done at the stage of construction when the lowest floor is first established and still correctable with minimum effort. Further inspections will not be provided by the Building Inspection Division until Public Works Engineering has approved the certificate. The final Elevation Certificate is required at the completion of construction.

Work in the City Right-of-Way

For any construction that is to be conducted within the City right-of-way, an approved *Street Work Permit* must be obtained from the CPA Public Works Department, Engineering Division prior to commencement of this work. This permit is in addition to and not included with the *Building Permit* issuance.

All work proposed in the City right-of-way must be shown on the plans.

All work in the City right-of-way is subject to the inspection by the CPA Public Works Inspector.

Any proposed new or enlarged driveway approaches shall conform to CPA Planning and Public Works Departments requirements. See the Public Works handout “Driveway Approach Design & Construction Requirements” for a synopsis of these requirements.

Any abandoned driveway approaches must be replaced with standard curb and gutter.

Any construction within CPA right-of-way or easements shall conform to standards established in the CPA Standard Specifications for the Public Works Department and the Utilities Department, as applicable.

Street Trees

All existing street trees (trees within the City right-of-way) must be shown on the plans. The trunk diameter and the distance from the left property line to these trees must also be included.

Any excavation or paving within ten (10) feet of a street tree must be approved by the CPA Arborist.

The removal of any existing or new street tree installation must have the approval of the CPA Arborist. This approval should be obtained prior to submission of plans to Building Department.

The Permittee shall provide protection of City trees at the work site to the satisfaction of the CPA Arborist.

Storage in the City Right-of-Way

No storage of materials, facilities or equipment is permitted in the City sidewalk or street area. This includes sanitation facilities, office trailers, dumpsters and storage containers.

Site Drainage Requirements

A "Grading and Drainage Plan" must be submitted with *Building Permit* applications for all new single family residences. This plan must show both existing and proposed spot elevations and drainage patterns. This plan may be prepared by a qualified engineer or architect and be wet-signed and stamped.

The Permittee shall not alter pre-existing drainage patterns existing from adjacent properties in a manner that negatively impacts those properties.

Roof water down spouts discharging to two foot (or longer if desired) splash blocks must be provided to carry this rain water away from the foundation.

The site shall be fine graded to provide a minimum of 2% slope away from house foundation and adjacent properties.

See the Public Works handout "Grading & Drainage Plan Guidelines for New Single Family Residences" for more information.

Projects Adjacent to Creeks

Any projects alongside a creek may be required to demonstrate that the stability of the creek embankment will not be jeopardized.

Impervious Area Worksheet

A *Building Permit* application submittal must include a filled-out form "Impervious Area Worksheet for Land Developments" if the project will be creating or replacing 500 square feet or more of impervious surface. This form provides a determination of the new or adjusted impervious area on the project site. Information and a copy of the form are available at the Development Center or on our website (www.cityofpaloalto.org/depts/pwd/forms_permits.asp).

Basement Construction

Due to high groundwater throughout much of the City and Public Works prohibiting the pumping and discharging of groundwater, perforated pipe drainage systems at the exterior of the basement

walls or under the slab are not allowed for sites on the bay side of Foothill Expressway. A drainage system is, however, required for all exterior basement-level spaces, such as lightwells, patios or stairwells. This system consists of a sump, a sump pump, a backflow preventer, and a closed pipe from the pump to a dissipation device onsite at least 10 feet from the property line, such as a bubbler box in a landscaped area, so that water can percolate into the soil and/or sheet flow across the site. The device must not allow stagnant water that could become mosquito habitat. Additionally, the plans must show that exterior basement-level spaces are at least 7" below any adjacent windowsills or doorsills to minimize the potential for flooding the basement. Public Works recommends a waterproofing consultant be retained to design and inspect the vapor barrier and waterproofing systems for the basement.

Basement Excavation Dewatering

Basement and below-grade parking structures may require dewatering during excavation and construction. The contractor is required to prepare and submit a dewatering plan to Public Works prior to commencing dewatering. Public Works will review the plan and issue a dewatering permit with certain conditions and requirements. See Public Works' Construction Dewatering System Policy and Plan Preparation Guidelines for more information.

Fences

Any proposed new construction or replacement of any fence that is within a City easement, including the public right-of-way, must have an approved *Encroachment Permit* from the Public Works Department prior to performing the work.

Other Miscellaneous Encroachments into City Easements

Any proposed encroachment within a City easement, including the public right-of-way, must have an approved *Encroachment Permit* from the Public Works Department prior to installing the encroachment. These include proposed encroachments such as roof eaves, auxiliary buildings, spas, pools, curb drainage outlets, building foundation structures, etc. It is suggested that a specific inquiry to the acceptability of the proposed encroachment be made prior to the *Building Permit* application submission. This inquiry should be made to the Public Works Department.

This publication is intended to be an informal means of informing the public about a City process. Although it is assumed the information provided is accurate, the sheet is not intended to create any sort of legal obligation on the City's part. The actual process is governed by City ordinances, regulations and procedures, and the reader should make specific inquiry to the City for specific cases.