Rancho Palos Verdes
MEMORANDUM

DRAINAGE GUIDELINES
REVISED 6-13-2023

A plan(s) showing proper drainage is required for new buildings, additions, and when deemed appropriate by the City.

1. **What is needed to show drainage? -** A site plan with spot elevations, probably both existing and proposed, is needed to show proper drainage. Please note the Building Code requires a minimum of 2% for five feet away from a building on hardscape, and 5% for five feet if on softscape. **Showing arrows with required percentage slopes and without spot elevations is not adequate**. If surface flow is not possible a storm drain may be needed.

2. **Who may prepare?** – Drainage plans may be prepared by an architect or other design professional if a grading plan is not required for the site. Otherwise, the drainage plan must be prepared, signed, and stamped by a registered Civil Engineer. Grading plans are required if there is more than 50 cubic yards of cut and cut fill on a site, or if there is any filling of earth over one foot in depth.

3. **What type of calculations?** – If storm drains are required, hydrology and hydraulic calculations are required for all pipes, major channels, outlets, catch basins, and other inlets. The City Engineer may require additional calculations as needed.

   Hydrology may be calculated using any accepted method, although the Los Angeles County Rational Method and Table 11-2 of the Uniform Plumbing Code are preferred. For the Los Angeles County Method, a 25-year storm shall be used for non-sump conditions, and a 50-year storm for sump conditions. For the Uniform Plumbing Code Method, a 4-inch per hour storm shall be used.

4. **What type/size of pipe?** – Drainage on private property and within the public right of way must be at least 6 inches in diameter and either PVC, HDPE, DIP, or CIP. If PVC or HDPE, the strength of the pipe must be at least SDR 35 or Schedule 40. 4-inch diameter pipe may be allowed for drainage solely from downspouts. All drains must have a minimum of 6 inches of cover.

5. **Can the pipe go through the curb in the public right of way?** – Yes, drainage through curbs may be accomplished using a SPPWC standard parkway culvert, a Curb-O-Let, a 3-inch, or a 4-Inch diameter pipe(s). The maximum sized pipe through a 6-inch curb is 3 inches, and the maximum sized pipe through a 8-inch curb is 4 inches. Pipes need to conform to the City standard.

6. **Do I need a permit for pipe in the public right of way?** – Yes, drainage pipe(s) installed within the public right of way requires an over-the counter encroachment permit from the City Public Works Dept.

7. **Are sump pumps allowed?** – Sump pumps are only allowed when the City Engineer determines there is a severe hardship that cannot be remedied using gravity drainage. All sump pumps must be designed so the top of the grate is at least one foot below any finished floor of livable area that could be flooded due to a failure of the pump.

8. **Can cross-lot drainage be maintained or increased?** – The Building Code allows existing drainage patterns across lots may be maintained, so long as the flow rate and/or volume of water does not increase. Also, the water may not be concentrated, such as in a pipe, so that erosion of the downstream property will occur.

9. **What are the rules regarding rip rap/outlet structures?** – All outlet structures must be sized by a Registered Civil Engineer. All outlets shall be located to minimize erosion and downstream flooding. Whenever possible, they shall be located at the bottom of slopes rather than at the top. They shall be located on private property when being used to discharge water to the street in an area where a standard curb will not exist by the end of construction.

All guidelines provided here may be modified at the direction of the City Engineer to address site-specific issues.

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ADDITIONAL REQUIREMENTS FOR PROPERTIES WITHIN PORTUGUESE BEND

Properties within the Portuguese Bend portion of the city have additional requirements regarding drainage. These are typically termed the "Monk" and the "Non-Monk" properties. When these properties are developed, the stormwater peak flows coming from these properties when development occurs cannot exceed the peak flows prior to development. This includes not only the initial development of a new home, but when changes such as the addition of hardscape are proposed that could increase peak flows. This is due to downstream drainage deficiencies.

If the property is within Portuguese Bend please complete the following checklist:

1. Does the proposed development add hardscape or otherwise potentially increase peak stormwater flows from the site? This box should always be checked if the lot is currently vacant. ☐

If the box above is checked, then please complete the following. Do not submit plans if all boxes are not checked:

1. Are the plan and calculations prepared by a Registered Professional Engineer in the State of California? ☐
2. Have you provided pre-development and post-development hydrology calculations for a 25-year rain event? ☐
3. Does the hydrology map include any offsite areas that drain to the property? ☐
4. Have you provided calculations showing the volume of flow that needs to be detained onsite in order to maintain pre-development flows in the post-development state – the delta flow volume? ☐
5. Have you designed a tank or other device sized to detain the required volume? ☐
6. Does the design provide that a sufficient area of the site is drained towards the tank that the required volume is captured? ☐
7. Does the tank have a non-mechanical outlet that will empty the tank in a constant flow over the 24 hours following the rain event? ☐
8. Does the tank have an overflow and downstream drainage devices such as pipes that conveys the water to the street? ☐
9. Does the design not have any valves that can be used to inhibit the flows coming from the tank? ☐

10. Do any pipes ending at the street end in a device that does not trap water, such as a small curb or rip rap? If no pipes at street please check box. ☐
11. Have you reviewed and are you willing to execute the drainage maintenance agreement? ☐

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