City of Phoenix
Water Services Department

Policy on Reduced Easement Standards for Incentive Ownership Projects and Residential Ownership Projects within the City of Phoenix Infill Development Incentive Districts

Purpose

To provide the City of Phoenix Water Services Department (WSD) policy for approval of reduced easement width standards for residential ownership projects located within the City's infill development incentive districts as shown in the General Plan. The policy also applies to projects outside the infill development incentive districts that are specifically identified by the City Manager as Residential Ownership Incentive Projects. This policy does not override more restrictive City Department standards or codes outside the control of the Water Services Department.

Background

The Water Services Department requires safe and quick access to all City water and sewer mains and water meters at all times in order to repair main breaks, repair service breaks, install taps, read or change meters, perform preventive maintenance, and construct main replacements. For this reason, City of Phoenix requires water and sewer mains to be constructed in streets within the public right-of-way (ROW). Water and sewer mains in easements create access problems and are currently permitted only if they meet the Water Services Department's design standards, which include:

- For single family, individually lotted, residential developments, City of Phoenix water and sewer mains may be constructed in 29.2 ft. wide Private Accessways (COP Supplement to Standard MAG Details P1020-1, P1020-2).
- For Water and Sewer Mains Located in Private Accessways, the minimum easement width shall be the entire 29.2 ft. width of the Private Accessway from the backs of the curbs. In addition, there shall be minimum 8 ft. public utility easements on each side of the Private Accessway.
- Regardless of the easement width, buildings shall have sufficient setback off the outside of the easement so that buildings, building foundations, or building slabs will not be undermined or damaged by water main break at its maximum operating pressure or sewer main collapse.

Reduced easement widths increase the risks and costs to the City. The combination of reduced easement widths without any building setback places high pressure water mains in close proximity to buildings, which increases the risk of undermining the foundation with the potential for structural damages. There is an increased risk of property damage caused from flooding if the mains break. Maintenance and repair costs increase for reduced cross-section because of extra time needed to work in tight areas and the need for specialty equipment. There is greater inconvenience to residents who cannot get access into or out of their garages if City crews are performing repair or maintenance.

The City recognizes the need to address the barriers to infill development. In an effort to promote residential ownership developments in the adopted infill development incentive districts or other City Manager designated incentive projects where the benefits to the City clearly

outweigh the increased costs and risks described above, the City will permit reduced easement standards with stipulations for certain projects.

Policy

A. For residential ownership projects located within the City's infill development incentive districts as shown in the General Plan or projects outside the infill development incentive districts that are specifically identified by the City Manager as Residential Ownership Incentive Projects, the City will accept a reduced easement standard for locating City mains in private streets with stipulations described below.

B. Water and sewer mains shall be located in a minimum 20 foot wide dedicated water and sewer easement ("Reduced Easement") within a minimum 26 ft. wide private street (COP MAG Detail P1021). The dedicated water and sewer easement shall be bounded on one side by a minimum 8 ft. wide public utility easement. A typical cross section is shown on Figure 1.

C. Building foundations shall be designed to prevent a building collapse or damage, by limiting the deflection of the foundation due to loss of soil beneath foundation in the event of water main break. A certified statement from a structural engineer registered in Arizona is required. At a minimum, one of the following alternatives shall be met.

    1. The first alternative is to construct a cut-off wall around the perimeter foundation adjacent to the street. This alternative is depicted on Figure 2. The cut-off wall shall be a minimum of two feet deep and one foot thick and shall be constructed of 500 psi concrete. The cut-off wall shall be designed by the developer's structural engineer.
    2. The second alternative shall be to design the foundation stiff enough to resist sagging in the event of ground loss beneath the foundation caused by scouring. The foundation along the side of the home that faces the street shall be designed as a 5 foot cantilever. The allowable deflection at the free edge of the cantilever shall be calculated as L/360 (1997 UBC Table 16-D) for slabs with plywood or stucco exterior housing and L/480 for brick veneer exteriors. The distance L used in the equation should be taken as twice the length of the cantilever. Therefore, for a slab supporting stucco exterior housing, the post-tensioning and slab thickness shall be designed as required to limit the deflection at the free end of the overhang to be less than 0.33 inches of differential deflection between the edge of slab and 10 feet inward. The stresses in the slab and overhang shall be kept at or below the City's building code requirements. All other applicable design cases including center lift, edge lift, etc. shall also be evaluated using the appropriate stress and deflection criteria

D. The following requirements shall also apply:
    1. The minimum clear distance between any portion of the building face, including overhangs but excluding roof eaves, across the private street is 32 ft. Roof eaves that project into the 32 ft. clear distance shall have a minimum of 18 feet vertical distance from finished floor elevation and each shall have a maximum of 18 inches horizontal projection into the 32 ft. clear distance on each side.
    2. All water main joints in the Reduced Easement shall be restrained.

3. The private streets shall be constructed with asphalt cement (AC) pavement over ABC base per MAG standards. For inverted crown streets a concrete gutter meeting MAG standards will be permitted.
4. A minimum horizontal separation of 6 ft. between water or sewer mains and all other utilities shall be maintained at all times.
5. Meter boxes shall be located in non-paved areas. If a meter box must be located in a paved area, a traffic rated meter box and separation pavers or expansion joints around meter box shall be required. The HOA will be responsible for any pavement repairs around the meter box.
6. Individual meters shall be provided to each account-holder/owner/tenant.
7. For condominiums, individual turn off valves shall be provided at the building side for each condominium.
8. Individual building addresses shall be provided (i.e. do not label buildings A,B,C, etc).
9. Water lines shall be looped where possible. Determine the feasibility of downsizing non-looped lines to 4 inches in diameter in consultation with the Fire Department and Water Services Department. Provide adequate flushing devices, as necessary.
10. The HOA shall be incorporated with the State of Arizona as an official entity.
11. The private drives and accessways under which the City water and sewer mains are located must have an official City street name.
12. Gated communities shall provide to the Water Services Department dedicated access codes or keys. This access would be similar to the access granted to the Fire Department.
13. Where possible, the private streets under which the City water and sewer mains are located shall have a minimum of two ingress/egress points. If dead end streets must be used, the homebuilder shall make full disclosure to buyers that access in or out of their property may be denied without prior notice in order to perform maintenance or repair of the City water mains, sewer mains, or water meters.

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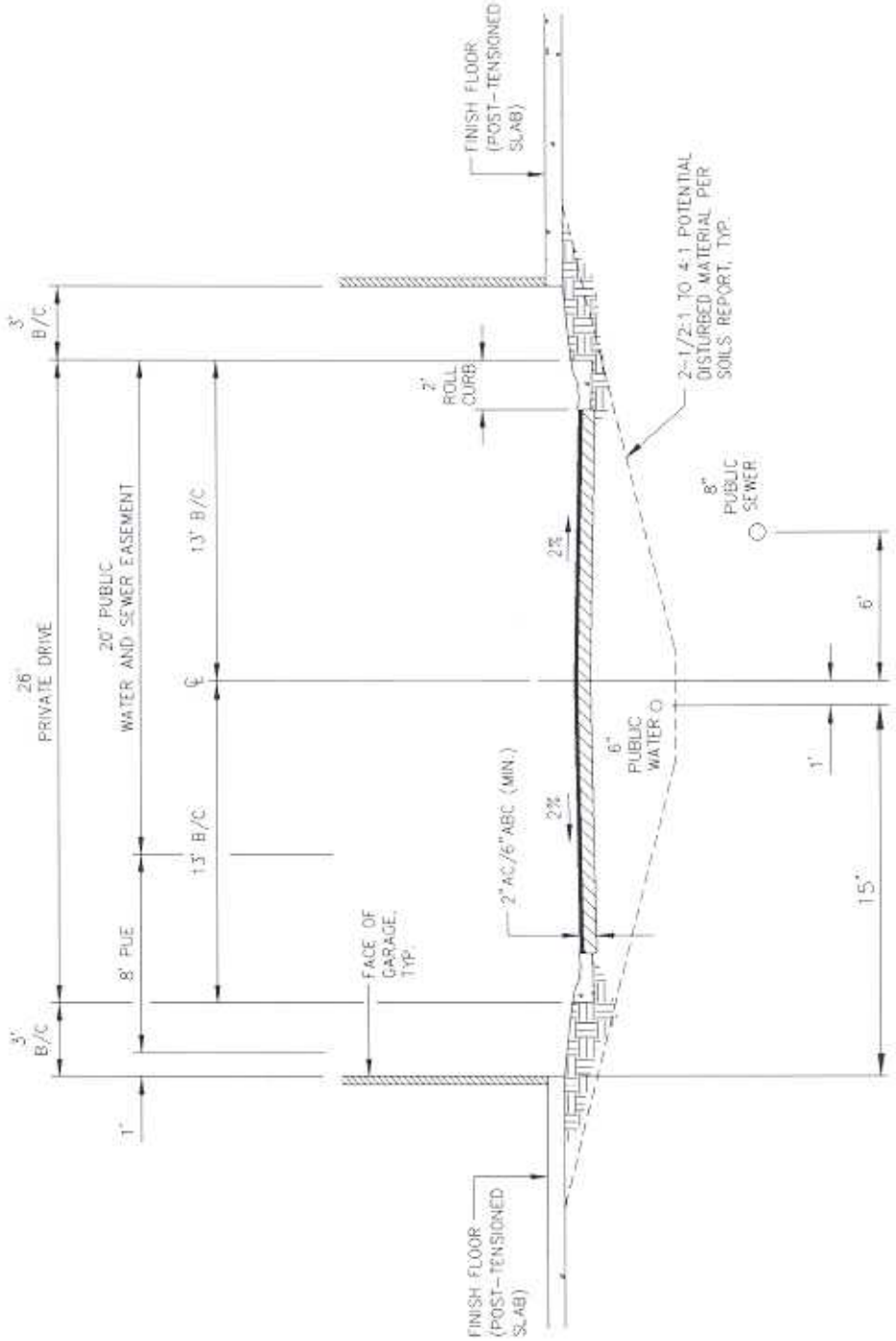
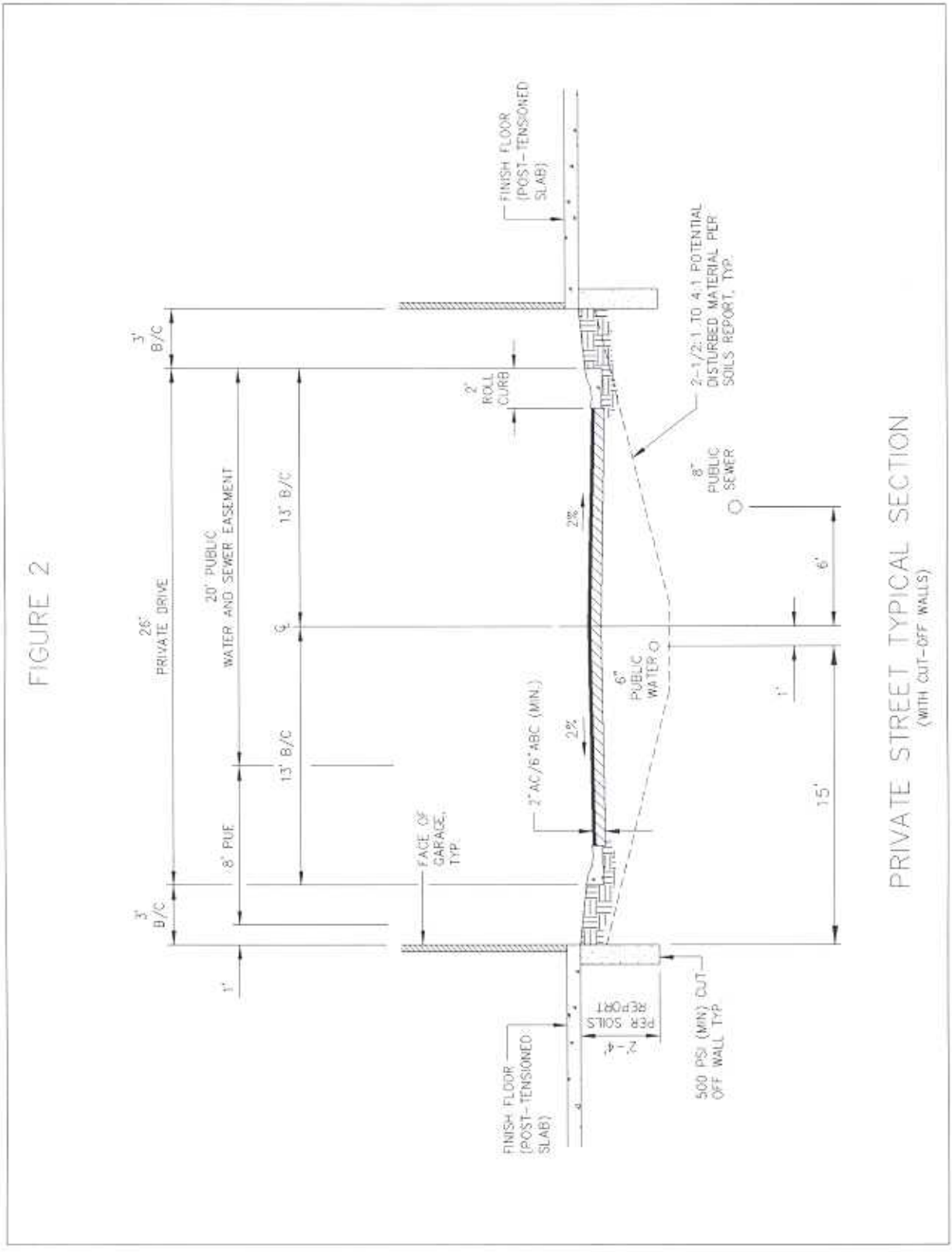
FIGURE 1



PRIVATE STREET TYPICAL SECTION

FIGURE 2



PRIVATE STREET TYPICAL SECTION
(WITH CUT-OFF WALLS)