

Bureau of Engineering

Special Order

November 1, 2018

Special Order No. 04-1018

To All: Deputy City Engineers
Division/District Managers
Senior Managers
Group Managers

Subject: **LATERAL DEFLECTION FOR SHORING AND EXCAVATION**

All shoring submitted for excavations in or adjacent to the public right-of-way subject to Bureau of Engineering (BOE) approval shall include the basis for geotechnical design, complete structural calculations to include anticipated lateral deflection based on the soil conditions, and details of the proposed shoring. Approval of the submitted shoring is subject to the acceptance of the level of calculated deflection by the BOE reviewer, in accordance with the following guidelines:

1. The submittal must clearly identify the locations and limits of the proposed shoring and planned depth. Plans should show all subsurface utilities, curb lines, property lines, and structures within a lateral distance equal to the depth of excavation.
2. Deflection shall be calculated for primary shoring elements, such as walers, soldier beams (piles), as well as for any secondary members, such as lagging or sheeting.
 - a. Calculations shall evaluate deflection of structural elements under anticipated loading, including surcharge. Deflection calculations for piles shall be based on a minimum 5 feet fixity point below excavation level or as otherwise determined by the Soils Engineer.
 - b. If trench shields are allowed for an excavation, deflection shall be determined along the longitudinal side of the shield.
 - c. Manufacturer's calculations of deflection are acceptable for primary and secondary shoring elements if stamped plans and calculations by a Civil or Structural Engineer licensed in California are provided, and the loading parameters are clearly stated.

3. Calculated elastic deflections for primary shoring members of up to 1 inch will generally be acceptable, except for special circumstances.
4. The total of the calculated deflection for secondary members (lagging or sheeting) added to the calculated deflection for primary members may be 50 percent greater than the limits identified when struts are placed no more than 5 feet apart on center, or piles are spaced no more than 8 feet apart on center.
5. The review and approval of shoring or calculated deflection does not relieve the responsibility on the contractor or others for the protection of the public right-of-way, infrastructure and/or to repair or restore the affected property due to construction activities.

(RMK KRR TA)

EXE/KRR/TA/RMK/gva Special Order No. 04-1018	Approved By:  Gary Lee Moore, P.E. City Engineer
---	---