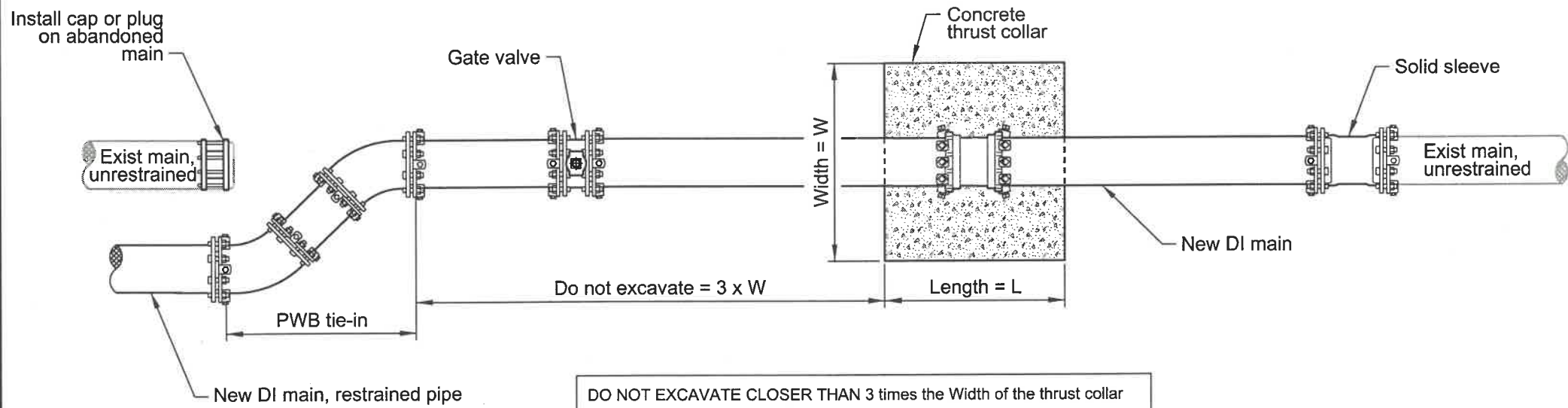


Phase 1: Install Restrained Pipe Section and Thrust Collar



Phase 2: Water Bureau Post Contract Work Plan

Construction Sequencing Notes

Phase 1: Advanced Thrust Collar Installation

1. Perform shut down on existing main.
2. Install fully restrained pipe section. Pipe length between thrust collar and tie-in connection shall be minimum 3 times thrust collar width.
3. Place concrete thrust collar per Std Drawing P-795.
4. Backfill and compact.
5. Do not close gate valve until concrete reaches a compressive strength of 3,000 psi.


Phase 2: Tie-in

1. If there is excavation work by others within 50 feet of thrust collar, do not begin tie-in work without contacting Project Engineer for approval to proceed.
2. Do not excavate closer than 3 times the width of thrust collar.
3. Install tie-in with fully restrained pipe section.

General Note:

1. Thrust collar is designed to address connection to existing unrestrained pipe section. Joint restraint for tie-in to be designed by Project Engineer of Record.

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| <p>The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user.</p> |  <p>PORTLAND WATER BUREAU CITY OF PORTLAND, OREGON</p> <p><i>[Signature]</i> Chief Engineer</p> | |
| | <p>Standard Drawing Title</p> <p align="center">Concrete Thrust Collar Sequencing Plan</p> | |
| <p>Note: All material and workmanship shall be in accordance with City of Portland Standard Construction Specifications.</p> | <p>Effective Date 11/02/2017</p> | <p>Standard Drawing No.</p> <p align="center">P-796</p> |
| | <p>Calc. Book No. PWB 1</p> | |
| | <p>Baseline Report Date 11/02/2017</p> | |