# SECTION 15066
# TEMPORARY WATER MAINS

## PART 1 - GENERAL

### A. DESCRIPTION.

This section includes materials and installation procedures for temporary water main. Generally, this section refers to the materials and procedures for installing temporary water main in order to maintain adequate water supply and fire protection.

### B. REFERENCE STANDARDS.

The publications listed below form part of this specification to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said standards unless otherwise called for.

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|---|---|
| AWWA C900 | PVC Pressure Pipe, 4" Through 12" for Water Distribution |
| AWWA M23 | PVC Pipe-Design and Installation |
| Uni-Bell | Handbook of PVC Pipe Design and Construction |

### C. RELATED WORK SPECIFIED ELSEWHERE.

VCMWD Standard Drawings

Specifications 02221, 15000, 15041, 15044, 15150

### D. SERVICE APPLICATION.

Temporary water mains will be required as specified on the plans, specifications or as required by the District Engineer in order to maintain adequate water supply and fire protection. The temporary water main shall be maintained and repaired at all times by the Contractor until the new permanent main is placed in service. Temporary water mains may be reused in other phases as construction continues and as directed by the Owner.

### E. DESIGN REQUIREMENTS.

Temporary water main of 2” (or smaller) can be above ground or buried as approved by the District Engineer. Temporary water mains of larger than 2” shall be buried a minimum depth of 2 feet in order to protect from traffic. Temporary water service shall be connected to the temporary water main for each building or single residential unit. Each temporary water service shall be supplied with its own individual corporation stop where it connects to the temporary water main. Isolation valves must be provided at the point of connection to the permanent water source.

### F. QUALITY ASSURANCE.

A. Pipe shall carry a current certification of the National Sanitation Foundation (NSF) as acceptable to use in the transport of potable water.

### G. DELIVERY, STORAGE, AND HANDLING.

A. Pipe shall be stored in suppliers' yards and on the job site in accordance with industry standards and the manufacturer's recommendations. Pipe that has been subjected to excessive ultraviolet radiation from the sun shall not be used.

B. Proper care shall be used to prevent damage in handling, moving and placing the pipe. All pipe, fittings, valves, and other pipeline materials shall be lowered into the trench in a manner that prevents damage. The pipe shall not be dropped, dragged or handled in a manner that will cause bruises, cracks, or other damage. pipe that has been gouged or scratched shall be subject to rejection at the discretion of the District Engineer.

## H. HOT TAP CONNECTIONS.

A. Contractor shall perform all hot tap connections to existing mains in accordance with Section 15000.

## I. FITTINGS.

A. PVC solvent welded joints shall be used for installation of pipe 3” and smaller

B. Ductile-iron fittings shall be used for installation of pipe appurtenances 4” and larger in accordance with Section 15056.

C. HDPE fused fittings as specified shall be used in accordance with Section 15150.

D. Other materials shall be considered on a case by case.

# PART 2 - MATERIALS

## 2.01 TEMPORARY PIPE.

The following materials are acceptable depending on application, or as specified on the plans, to be approved by District Engineer

A. SCH80 pipe 3” and smaller.

B. PVC pipe in sizes 4" through 12" shall comply with the requirements of AWWA C900.

C. HDPE pipe per Section 15150.

D. Other material such as lay flat hose and cam lock aluminum piping can be used upon approval by the District Engineer.

## 2.02 FITTINGS.

A. PVC solvent welded joints shall be used for installation of pipe 3” and smaller.

B. Ductile-iron fittings shall be in accordance with Section 15056 The fittings shall have mechanical joint type or push-on type joints manufactured specifically for PVC pipe.

C. Ring type gaskets are approved with operating pressures up to 200psi and full face gaskets will be required with operating pressures greater than 200psi on all flanged fittings.

## 2.03 JOINTS

A. PVC solvent welded joints shall be used for installation of pipe 3” and smaller.

B. For PVC pipe 4” and larger, joints shall be prepared in accordance with the Manufacturer’s printed instructions and the Special Provisions. Gaskets shell elastomeric and

shall conform to ASTM F477. Joint shall meet the requirements of ASTM D-3139. An approved lubricant recommended by the pipe manufacturer shall be used during assembly

C. For HDPE as indicted in Section 15150.

## 2.04 IMPORTED GRANULAR MATERIAL FOR PIPE BEDDING AND PIPE ZONES.

Sand material for use in pipe bidding and pipe zones shall be in accordance with Section 02221.

## 2.05 CONCRETE.

Concrete used for thrust and anchor blocks shall be in accordance with Section 03300.

# PART 3 - EXECUTION

## 3.01 GENERAL.

At all times when the work of installing pipe is not in progress, including worker break times, the ends of the pipe shall be closed with a tight-fitting, vermin-proof and child-proof cap or plug. Do not permit trench water to enter the pipe. Do not place tools, clothing, or other materials in the pipe. The Contractor shall maintain the interior of the pipe in a sanitary condition free from foreign materials.

## 3.02 TRENCHING, BACKFILLING AND COMPACTION.

Trenching, bedding, backfilling and compaction operations shall be performed in accordance with Section 02221.

## 3.03 DEWATERING.

A. The Contractor shall provide, and maintain at all times during construction, ample means and devices to promptly remove and dispose all water from any source entering trench excavations or other parts of the work in accordance with Section 02221. Any damage caused by flooding of the trench shall be the Contractors responsibility.

B. Dewatering shall be performed by methods that will maintain a dry excavation, preservation of the final lines and grades and protection of all utilities. If flooding of the trench does occur, the Contractor shall immediately dewater and restore the trench. Damaged or altered pipeline appurtenances or trench materials shall be repaired or replaced as directed by the Engineer.

## 3.04 PIPE INSTALLATION

A. Placement and Operation

1. Water mains shall be placed parallel to each side of the street and as close as possible to the area being serviced. Water mains 2” or smaller may be surface placed depending on situation and degree of hazard towards potential damage. Piping material chosen will also dictate the required placement. Water mains 4” and larger must be trenched minimum 2 feet below surface, regardless of other factors.

2. When a street must be crossed with temporary water mains, crossing must be trenched a minimum of 2 foot below grade for all size mains.

3. The Contractor shall furnish, place and connect temporary water services from the temporary main to a point beyond each meter box. The services will consist of a service clamp, corporation stop, sufficient length of copper pipe to reach beyond each meter box, copper to iron pipe union, street ell and bushing.
4. Temporary water services range from ¾" to 2" in diameter. Temporary water services over 30 feet shall be a minimum of 1" in diameter.
5. Contractor is responsible for removing and disposing of the temporary water main upon conclusion of its use.

## B. THRUST AND ANCHOR BLOCKS.

A. Concrete thrust and anchor blocks shall be installed when necessary in accordance with Section 03300 and the VCMWD Standard Drawings. Prior to filling the pipeline with water, refer to Section 03300 for the minimum concrete curing time required.

B. Joint restraint systems, in accordance with Section 15000, may be used only where concrete thrust blocks are not possible and with prior approval of the District Engineer.

## C. DISINFECTION AND BACTERIOLOGICAL TESTING.

Disinfection, bacteriological testing and flushing shall in accordance with Section 15041.

## D. HYDROSTATIC TESTING.

Field hydrostatic testing shall be performed in accordance with Section 15044.

**END OF SECTION 15066**