



# CITY OF CERRITOS



**Water Department**

**Development Procedures  
and  
Standards**

**September 2004**

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## **STANDARDS**

### **GENERAL INFORMATION**

1. The City of Cerritos water system is municipally owned and operated.
2. A static pressure of 79 to 82 pounds per square inch (psi) is maintained throughout the system.
3. Gate valves, fire hydrants, services, etc., shall not be operated or used without authorization of the Water Superintendent or his authorized representative.
4. Inspections of all water facility installations or repairs shall be accomplished by water department inspectors only, under the direction of the Water Superintendent.
5. The use of water for any purpose shall be authorized by the Water Superintendent. Application shall be made and service shall be metered. Alternate methods shall be authorized only by the Water Superintendent.
6. The City of Cerritos Water Department does not perform fire flows. A representative from the Department must be present to witness all fire flows on either public or private hydrants. Depending on the area where the fire flow is to be performed, the Water Superintendent may require the flow test be performed as early as 4:00 a.m.
7. All AWWA and ANSI standards referred to herein shall mean the most recent revision of that standard in use at the time of construction or approval of plans, whichever is later.
8. All contractors or subcontractors working within the City of Cerritos on the potable or recycled water system shall have a minimum of the following current California contractor's licenses:
  - Class A: General Engineering Contractor; or
  - Class B: General Building Contractor

Note that the general building contractor must have the appropriate specialty license or subcontract with the appropriately licensed specialty contractor as follows:

- C-16 for Fire Protection Systems
- C-34 for Pipeline Contractors
- C-57 for Well Drilling

Additionally, any contractor or subcontractor working within the City of Cerritos on the potable or recycled water system shall have at least one individual with a minimum of a current Distribution I certification as issued by the California Department of Health Services. This certified individual shall be on the job site through all phases of water line construction to completion.

9. All potable and recycled water system specifications and standard drawings are the same unless otherwise noted.

## SECTION 1

### GENERAL

Section 1: All potable and recycled the same unless otherwise noted.

1-01 Map Checking: It is highly recommended that the Contractor purchase a copy of the Water Department Development Procedures and Standards to help with the project design and construction. Upon submittal of the record map for checking, the Water Superintendent will check the water system thereon, which will include valve location, fire hydrant location, pipe sizing of lines, and other pertinent information. This map will be returned to the Subdivider's Engineer who shall lay out the water system on the street plans based on the Water Superintendent's comments. Final approval will be made prior to installation by the Water Superintendent.

1-02 Main Locations:

A. Wherever practicable, water lines shall be laid 6 feet north of the south curb or east of the west curb.

B. In the event of any approved field change in alignment or depth of lines, valves or laterals, the Subdivider's Engineer shall correct the plans to the as-built condition. Approval of changes to be authorized by the Water Superintendent prior to such change.

1-03 Certificate: The supplier shall furnish a certificate if requested by the City stating that all pipe, valves, fittings, and protective coatings are new, manufactured in the United States, and fully comply with the specifications in these Standards.

1-04 Alternate Material: The provisions of this Standard are not intended to prevent the use of any material or method of construction not specifically prescribed by this Standard if such alternate has been submitted to and has been approved by the Water Superintendent. The Water Superintendent may approve such alternate if such alternate is found to be for the purpose intended and at least the equivalent of that prescribed in this Standard in quality, strength, sanitation, durability, safety, and effectiveness.

The Water Superintendent may require the person seeking approval of such alternate to submit to him, a sample of such alternate material, together with 4 copies of a technical report, including design data, report of material and chemical analysis, and details of laboratory tests which have been performed, plus copies of all tests and approvals, if any, under "AWWA," "ASTM," "ASA," or other approved testing laboratories.

1-05 Material Tests: All tests to determine compliance with any of these Specifications shall be made within the continental limits of the United States.



If requested by the Water Superintendent, the test results shall be certified by an established, reputable materials testing firm and a copy forwarded to the Water Superintendent.

It is required that the inspection of all materials be made by the Water Division Inspector. It is the responsibility of the Subdivider/Contractor, or the Subcontractor performing the work, to contact the Water Superintendent or his authorized representative a minimum of 72 hours before commencement of work for scheduling and approval of all materials.

Any materials delivered to the job site and suspected of damage due to shipping or handling, if requested by the Water Superintendent shall be tested again, and the test results certified by an approved materials testing firm.

- 1-06 Accident Prevention: Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of applicable laws and building and construction codes shall be observed. Machinery, equipment, and other hazards shall be guarded in accordance with the safety provisions of the manual of Accident Prevention in Construction published by the Associated General Contractors of America, and the Construction Safety Orders and Trench Construction Safety Orders as issued by the Division of Industrial Safety of the Department of Industrial Relations of the State of California.

All warning signs, lights, barriers, and other measures designed to protect the traveling public shall be erected and maintained in good order by the Subdivider and/or Contractor. The Contractor shall provide all necessary flagmen, barricades, delineators, signs, flashers, and any other safety equipment as set forth in the Work Area Traffic Control Handbook (WATCH) prepared by the Southern California Chapter of the American Public Works Association; the State of California Department of Transportation "Manual of Warning Signs, Lights, and Devices for Use in Performance of Work Upon Highways," or as required by the City Engineer to ensure safe passage of traffic. When an arrow board is used for traffic control, only solar models are permitted.

The work shall be carried on with regard for the rights and convenience of the property owners and residents along the line of work and the traveling public. Cross-over steel plates approved by the Water Superintendent shall be placed and other precautions taken wherever necessary to provide for at least one-way traffic along all traveled streets, unless otherwise approved by the Engineer and the agency having jurisdiction over the roads, and to provide access to driveways and residences. In case of emergency and/or failure to comply with the aforementioned regulations, the necessary remedial measure may be accomplished by the City at the Subdivider's, and/or Contractor's expense. Sidewalks shall not be closed to pedestrian traffic after working hours. If a sidewalk is closed during working hours, provisions must be made for the safe movement of pedestrians through the construction area. This is vitally important near schools. If safe movement

through the construction zone cannot be made, safe pedestrian detours with appropriate signage and assistance must be provided.

- 1-07 Setting Stakes: Where curbs have not previously been installed, the location of the line as shown on the approved plans shall be staked by a licensed surveyor or registered civil engineer.
- 1-08 Preservation of Monuments: The Subdivider shall preserve all existing benchmarks, monuments, and, in case of their removal or destruction by him or his employees, he shall be liable for the cost of their replacement.
- 1-09 Inspection: Once work has commenced, and after initial materials inspection, 48-hour notices are required of the Subdivider/Contractor, or the Subcontractor, prior to any project or progress inspection. All materials furnished and all work done shall be subject to rigid inspection under direct supervision of the Water Superintendent or his authorized representative. Work or material which does not conform to the Specification, although accepted through oversight or otherwise, may be rejected at any time. If work is to be done on any day beyond a regular 40-hour workweek or holidays, the Subdivider/Contractor shall give the City Water Department 48-hour notice in writing and receive approval from the Water Superintendent before proceeding with such work. If such work is carried out without the Water Superintendent's knowledge, the City may require any portion of the work to be removed in order that a thorough inspection may be accomplished. No backfill will be allowed until the project is inspected by the Water Superintendent or his authorized representative. At the completion of the project, a "materials used" list and a Mylar "as-built" will be required.
- 1-10 Guarantee: The Subdivider and/or Contractor shall guarantee the work against leaks and breaks due to defective materials or workmanship and against settlement of backfill and damage to resurfacing for a period of 1 year from the date of completion of the work. When defective materials or workmanship is discovered in either pipeline, backfill, or resurfacing requiring repairs to be made under this guarantee, all such repair work shall be done by the Subdivider and/or Contractor at his own expense, within 5 days after written notice of any leaks, breaks or settlements has been given to him by the City. Should the Subdivider and/or Contractor fail to repair such leaks or damage within 5 days, thereafter, the City may make the necessary repairs and charge the Subdivider with the actual cost of all labor and material required. In emergencies demanding immediate attention, the City shall have the right to repair the defect or damage and charge the Subdivider with the actual cost of all labor and material required. The Subdivider and/or Contractor shall arrange to have his faithful performance bond or a portion thereof run for a period of 1 year after the date of completion of the contract to cover his guarantee as, above, set forth.
- 1-11 Project Clean Up: The Subdivider and/or Contractor shall at all times maintain an orderly job. Tools, rubbish, and materials shall be picked up and stored in a workman like manner at all times. The Subdivider and/or Contractor shall remove from the vicinity of the completed work all materials, etc., belonging to him or used under his direction during construction. In the

event of his failure to do so, the same may be removed by the City at the expense of the Subdivider and/or Contractor and the Subdivider and/or Contractor and his sureties shall be liable for any cost or damage occasioned thereby. The Contractor shall comply with the National Pollutant Discharge Elimination System (NPDES) requirements for the City of Cerritos. The Contractor shall be very diligent about keeping mud and muddy water out of the storm drain system. The use of a multiple series of sand bags or similar devices will be required down stream of any pump or excavation dewatering process.

- 1-12 Dust Control: Adequate dust control shall be maintained at all times. Permission for use of water from City facilities must be obtained from the Water Superintendent. Reclaimed water shall be used unless permission to use potable water is received from the Water Superintendent.

END OF SECTION

## SECTION 2

### EXCAVATION

- 2-01 Trenches: The excavation for pipes shall be carried 4 inches below the bottom of the pipe or when approved by the Water Superintendent, the trench may be excavated to the bottom of the pipe and excavated around the bells.
- 2-02 Excess Excavation: In the event of excess excavation in the bottom of the trench, prior to pipe laying the trench shall be backfilled to 4 inches below the bottom of the pipe with select backfill. This material shall be placed in 4-inch layers, moistened and tamped to a relative density of 90 percent using Test Method No. 216, State of California, Division of Highways Standard Specifications.
- 2-03 Pipe Depth: All water mains shall be installed so that the top of the pipe is not less than 42 inches below the surface of the street, unless a deeper depth is specified in the excavation and/or encroachment permit. All water service connections shall be installed with a minimum of 42-inch covers. Shallower covers may be allowed if approved by the Water Superintendent.
- 2-04 Protection of Existing Structures: Whenever existing sewer lines, water lines, gas mains, culverts, or other pipe or structures are encountered in or near the lines of trenches being excavated, the Subdivider and/or Contractor shall use proper care in preserving the same intact and will be held responsible for any damage done to the existing facilities during the progress of the work.
- It shall be the duty of the Contractor to notify "Dig Alert" or each agency or jurisdiction and make arrangements for locating each agency's facilities prior to beginning construction. No excavation will be allowed until this has been accomplished.
- 2-05 Excavation In Poor Soil: Where the subgrade is soft and cannot support the pipe, a further depth shall be excavated and refilled with sand or other selected material. Where the subgrade is soft, and cannot support the pipe, a further depth shall be excavated and refilled with zero sack slurry or other select material.
- 2-06 Replacement of Sewer Lines: Wherever it is necessary for a water main to be installed deeper than a sewer main or lateral which crosses said water main or a sewer main or lateral should be broken during the construction, the Subdivider and/or Contractor shall provide ductile iron pressure pipe, couplings, and such other required material and labor to replace the sewer main or lateral as required by the City Engineer. Sewer lines must maintain at least 1-foot vertical separation at crossings. Where a sewer line crosses over a water line, the sewer line shall be encased 10 feet each direction of said crossing PER APWA Standard Plan No. 225-1. Sewer lines must maintain a 10-foot separation where lines run parallel. If spacing is less than 10 feet, the sewer line shall be encased for the entire distance or length that

is closer than 10 feet. Before repairs are covered, they shall be approved by the City Engineer.

2-07 Basic Separation Standards: Parallel construction. The horizontal distance between pressure potable water mains, recycled pressure water mains, and sewer mains shall be at least 10 feet.

Perpendicular construction (crossing): Pressure water mains shall be at least 1 foot above non-pressurized sanitary sewer mains where the lines cross. Where the pressure potable water main crosses either a pressurized sanitary sewer main or recycled pressure water main, the sewer or recycled lines must be encased with concrete or one continuous steel casing for 10 feet on both sides of the potable water main.

All crossing of potable water mains and sanitary sewer mains shall conform to the requirements of the State of California Department of Health Services. See Standard Drawing W-D-3A and W-D-3B.

END OF SECTION

## SECTION 3

### DISTRIBUTION SYSTEM WATER PIPE

3-01.1 Potable Material: All water pipes and fittings used in distribution water mains shall be ductile iron pipe designed for the pressure specified by the Water Superintendent, except that Class 53 or 350 pipe shall be the minimum pressure class used. All diameters shall be full nominal inside diameters; the actual diameters may not be less than the nominal by more than 5.0 percent when measured approximately 3-inches from the ends of the pipe. All ductile iron pipe shall be manufactured in accordance with AWWA/ANSI 151/A21.51.

3-01.2 Recycled Material: All water pipes and fittings used in the recycled distribution water mains shall be designed for the pressure specified by the Water Superintendent. C-900 PVC pipe, Class 53 or 350 ductile iron pipe shall be the minimum pressure class used. All PVC pipe shall be manufactured in accordance with AWWA C900. Each length of PVC pipe shall be marked showing the date of manufacture, nominal pipe size and O.D. base, the AWWA pressure class, and the AWWA specification designation (AWWA C900). All PVC pipe and fittings shall be colored purple. PVC pipe shall be purple and shall be marked on both sides of the pipe with the wording for warning /identification: "CAUTION: RECYCLED WATER---DO NOT DRINK." Lettering shall be a minimum of 5/8-inch high, black letters and shall be repeated every 12 inches. See Section 16-02-C.

All ductile iron pipe shall be manufactured in accordance with AWWA/ANSI 151/a21.51.

3-02 Hand Holes: All hand holes on potable or recycled water mains will be installed in accordance with Standard Drawing W-D-23.

3-02.1 Potable Installation: The initial backfill shall be by hand. Unless otherwise specified or shown on the plans, the pipe base and pipe zone backfill material shall be imported sand. The pipe base is defined as a layer of material immediately below the pipe zone and extending over the full trench width. The pipe base shall be a minimum of 4-inches thick. The pipe zone shall include the full width of trench from the bottom of the pipe to a horizontal level 12-inches above the top of the pipe. The trench width shall be a minimum of 8 inches on each side of the pipe. Relative compaction for the pipe base and pipe zone shall be 90 percent. Depressions shall be dug into pipe base material to accommodate the pipe bell and external joint filler form, and to permit removal of the pipe-handling sling. Pipe shall be lowered onto the bedding and installed to line and grade its full length on firm bearing, except at the bell and at sling depressions. When pipe laying is not in progress, including lunch hour, the ends of the pipe shall be closed using vermin-proof plug constructed in a manner to also prevent entry by children.

All ductile iron pipe and fittings shall be polyethylene encased (8 mil thick) in accordance with AWWA/ANSI C105/A21.5. Encasement can also be achieved through the use of continuous polyethylene sleeve material fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at each end. Sleeve color shall be blue, 8-mil thick with 1-inch black letters indicating "POTABLE WATER." See Sections 4-03-G and 4-03-H for encasement and "pipe wrap" tape.

All potable pipe installed shall have the appropriate width blue identification tape with 2-inch black letters stating "POTABLE WATER." The warning can be achieved by adding blue tape on top of the pipe. Identification tape shall be installed directly on top of the pipe longitudinally and shall be centered. The identification tape shall be installed continuously for the entire length of the pipe and shall be fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe and identification tape at no more than 5-foot intervals. Identification tape attached to the sections of pipe before laying in the trench shall have 5-foot minimum overlap for continuous coverage. Identification tape can also be achieved through the use of continuous polyethylene sleeve material fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at each end. See Section 16 for additional identification tape detail.

3-02.2 Recycled Installation: All ductile iron and cast iron pipe/fittings shall be polyethylene encased (8 mil thick) in accordance with AWWA/ANSI C105/A21.5.

Encasement can also be achieved through the use of continuous polyethylene sleeve material fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at each end. Sleeve color shall be purple, 8 mil thick with 1-inch black letters stating "CAUTION: RECYCLED WATER—DO NOT DRINK."

See Section 4-03-G for encasement and "pipe wrap" tape.

The same as potable installation, except for the following: All pipe installed shall have the appropriate width, purple identification tape with 2-inch black letters indicating: "CAUTION: RECYCLED WATER—DO NOT DRINK." The identification can be achieved by adding purple tape on top of the pipe. Identification tape shall be installed directly on top of the pipe longitudinally and shall be centered. The identification tape shall be installed continuously for the entire length of the pipe and shall be fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe and identification tape at no more than 5-foot intervals. Identification tape attached to the sections of pipe before laying in the trench shall have 5-foot minimum overlap for continuous coverage. Identification tape can also be achieved through the use of continuous polyethylene sleeve material fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at each end. All risers between the main

line and control valves shall be installed with identification tape. See Section 16 for additional identification tape detail.

- 3-03 Tracer Wire: All PVC pipe shall have a copper locator-tracer wire installed at the top center of the pipe and shall be fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at no more than 5-foot intervals and shall be under the polyethylene encasement. Tracer wire shall extend from valve to valve along main or service lines. The tracer wire shall extend into the valve box risers and meter boxes at an accessible location. All splices shall be crimped and taped with plastic adhesive "pipe wrap." Tracer wire used shall be No. 14 copper with High Molecular Weight Polyethylene (HMWPE) insulation. The wire shall be electrically continuous throughout the installed pipe system. See Section 4-03-H "pipe wrap" tape. See Standard Drawing RWD-5.

END OF SECTION



## SECTION 4

### FITTINGS AND VALVES

4-01 Ductile-Iron Fittings: Ductile-iron fittings shall be manufactured in accordance with AWWA/ANSI C110/A21.10. Ductile-iron compact body fittings may be used for fitting sizes 4-inches through 12-inches in diameter and shall be manufactured in accordance with AWWA/ANSI C-153/A21.53. All fittings shall be made with mechanical joint designed for use with the type of pipe to be joined. Retaining glands shall be EBAA Iron Mega Lug® or FORD UNI-Flange® Series 1400 with cleat style restraint lugs or approved equal. Bell ends shall be compatible with the pipe ends so as to provide confinement of the rubber rings and prevent damage to the ends of the pipe. Ring grooves and interior surfaces of the bell shall be smooth and free from ridges, notches, or uneven surfaces. "Field Lock" style gaskets will be required when deemed necessary by the Water Superintendent or his authorized representative. All fittings with flanged ends shall comply with AWWA/ANSI C110/A21.10, with a pressure rating of 150 psi. The gasket surface shall have a serrated finish of approximately 16 serrations per inch, approximately 1/32-inch deep, with serrations in either a concentric or spiral pattern. The interior of all fittings shall be coated in accordance with Section 4-03. Ductile iron fittings shall be Tyler/Union or approved equal.

#### 4-02 Valves:

- A. Potable Main Line Resilient Seat Gate Valves: 4-inch to 10-inch. All main line resilient seated gate valves shall conform to AWWA C509, and shall also be UL listed and FM approved. The valves shall be tested and certified to ANSI/NSF 61 and the following requirements:
- Valves shall be designed for a minimum working pressure of 200 psi and shall be bubble-tight at that pressure. Valves shall have non-rising stems. Stem nuts shall be independent of the gate and shall be made of solid bronze. All internal working parts, including the stem shall be all bronze containing not more than 2 percent aluminum or more than 7 percent zinc. Bronze shall be ASTM B62 (85-5-5-5) bronze, except that stem bronze shall have a minimum tensile strength of 60,000 psi, a minimum yield strength of 30,000 psi, and a minimum of 10 percent elongation in 2-inches.

Materials of construction shall be as follows:

<u>Component</u>	<u>Material</u>	<u>Reference Standard</u>
Body Operating Nut, Bonnet, Seal Plate	Cast Iron	ASTM A126, Class B
Gate	Ductile Iron	ASTM A126, Class B ASTM A536, Grade 65-45-12
Bonnet and Seal Plate Nuts and Bolts	Stainless Steel	ASTM A276, Type 316
O-Rings	Synthetic Rubber	ASTM D2000

Low friction, torque reduction thrust bearings shall be provided both above and below the stem collar. Stuffing boxes shall be O-ring seal type with two rings located in stem above thrust collar. Each valve shall have a smooth unobstructed waterway free from any sediment pockets. Gates shall be encapsulated in Buna-S rubber or nitrile elastomer. Valves shall have all internal and external ferrous surfaces coated with a fusion bonded thermosetting powder epoxy coating of 10 mils nominal thickness. The coating shall conform to AWWA C550. Valves shall open in a counter-clockwise direction. Valves shall have a 2-inch operating nut, in lieu of a hand wheel, with an operating shaft extension to a level not deeper than 2-feet below existing street grade or natural ground. The push-on joint ends shall conform to AWWA/ANSI-C111/A21.11. Valves shall be warranted by the manufacturer against defects in materials or workmanship for a period of 10 years from the date of manufacture. Valves shall be Mueller or approved equal. Valves shall be anchored as shown on Standard Drawing No. W-D-8.

B. Recycled Main Line Resilient Seat Gate Valves: 2-inch to 12-inch. All main line resilient seated gate valves shall conform to AWWA C515, and shall also be UL listed and FM approved. The valves shall be tested and certified to ANSI/NSF 61 and the following requirements:

- Valves shall be designed for a minimum working pressure of 250 psi W.O.G. and shall be bubble-tight at that pressure. Valves shall have non-rising stems and hydrostatically tested to 750 psi (maximum) for irrigation application. Valves shall be suitable for use in recycled/reclaimed water applications, capable of withstanding high-chlorine residuals, high turbidity, and corrosive water environments.

Materials of construction shall be as follows:

<u>Component</u>	<u>Material</u>	<u>Reference Standard</u>
Body	Ductile Iron	ASTM A536
Discs	Ductile Iron	ASTM A536, ASTM D429
Thrust Collar, Stem Guide	Nickel Plated Bronze	AWWA C-800, ASTM B62
Stem, Casing and Bonnet Bolts	316 Stainless Steel	ASTM 316SS
O-Rings, Gaskets, and Seals	EPDM	ASTM D429

Low friction, torque reduction thrust bearings shall be provided both above and below the stem collar. Stuffing boxes shall be EPDM O-ring seal type with three rings located in stem above thrust collar. Each valve shall have a smooth unobstructed waterway free from any sediment pockets. Wedges shall be peroxide-cured EPDM. Valves shall have all internal and external ferrous surfaces coated with ISO-9001 Dupont 4406 fusion bonded thermosetting epoxy coating of 16 mils nominal thickness. The coating shall conform to AWWA C550. Valves shall open in a counter-clockwise direction. Valves shall have a 2-inch operating nut, in lieu of a hand wheel, with a valve extension to a level not deeper than 2-feet below existing street grade or natural ground. The push-on joint ends shall conform to AWWA/ANSI-C111. Valves shall be warranted by the manufacturer against defects in materials or workmanship for a period of 10 years from the date of manufacture. Valves shall be Matco-Norca 300RW or approved equal. Valves, valve boxes, and associated appurtenances shall be installed as shown on Standard Drawing No. W-D-8.

- C. Butterfly Valves – 12 inch and larger. Butterfly valves shall be short body, flanged type, conforming to AWWA C504-00, Class 150B. Wafer style valves are not permitted. Unless otherwise noted, minimum working differential pressure across the valve disc shall be 150 psi. Valve ends shall be flanged ends Class 125, ANSI B16.1. Valve shafts shall be 18-8 Type 304 or 316 stainless steel and have permanent static seals, which isolate the shaft from line fluid. Valve shafts shall be stub shaft or one-piece units extending completely through the valve disc. Valve bodies shall be tested at a pressure equal to twice the design working pressure.

Materials of construction shall be as follows:

<u>Component</u>	<u>Material</u>	<u>Reference Standard</u>
Body	Cast iron or Ductile iron	ASTM A48 Class 40; ASTM 126, Class B; or ASTM A536, Grade 65-45-12
Exposed body	Cast iron or Ductile iron	ASTM A276
Cap screws, and bolts and nuts	Stainless-steel	Type 304 or 316
Discs	Cast-iron, ductile iron, or Ni-Rest	ASTM A48, Class 40; ASTM A536, Grade 65-45-12; or ASTM A436, Type 1

The rubber seat shall be an integral part of the valve body. Rubber seats fastened to the disc by any means shall not be allowed. Valves shall have all internal and external ferrous surfaces coated with a fusion bonded thermosetting powder epoxy coating of 10 mils nominal thickness. The coating shall conform to AWWA C550. Valves shall be Pratt Groundhog or approved equal.

- D. Valve Stem Extensions: All valve stems that are installed more that 4 feet below existing surface shall have a standard valve stem extension fastened to the operating nut, and brought to within 2 feet below existing surface. The extensions shall be manufactured and fastened to the operating nut to meet Water Superintendent's approval. Valve stem extensions shall be Fiberplas® valve stem extension material or approved equal. See Standard Drawing W-D-32 & RWD-10.
- E. Potable Valve Boxes: All valve boxes shall be firmly supported and shall be kept centered and plumb over the operating nut of the valve. Beveled sections of pipe will not be allowed at the top of the valve extension pipe. The top cut shall be square and machine made. The final valve box elevation shall be 1/8-inch above the finished pavement surface.

The valve box assembly shall be in accordance with Standard Drawing W-D-8. All valve box risers (flu pipe) shall be 8-inch PVC pipe or C-900 Class 200 pipe.

A valve box shall be provided for every valve installed below the street pavement. All valve boxes placed in the street pavement or any location where there is vehicular traffic shall be metallic and reinforced concrete and rated for H20 loads. Valve box shall be Brooks 4TT or approved equal.

All valve boxes, covers, and caps for gate valves placed in the street parkway or any location where there is no vehicular traffic, shall be metallic and reinforced concrete. Valve box shall be Brooks 4TT or equal. These valve boxes shall have a 2-foot by 2-foot square by 6-inch thick concrete pad placed around the valve box.

All valve box covers shall be of metallic construction and shall be marked with the word "WATER" cast into the cover.

A debris cap shall be installed in each valve box. The debris cap shall be installed under the cast iron cover without interfering with cover operation. The flexible skirt shall be trimmed to provide a smooth contact with the interior diameter of the valve riser pipe. All potable valves shall have debris caps with blue handles, except for fire hydrant and fire service valves, which shall have red handles. Recycled valves shall have debris caps with purple handles. Debris caps shall be comprised of a hollow member having a cylindrical outer surface, a closure for one end and three point resilient contact pads projecting from the outer surface. The cap shall have a flexible skirt providing an outward seal preventing debris from getting past the cap. The cap must withstand without slippage a minimum vertical force of 50 pounds at a loading rate of 1.0 IN/Minute. The cap shall be molded using General Electric ABS #HIM 4500. The cap shall have retaining prongs to retain a standard locating coil. The debris cap shall be manufactured by SW Services, Inc., Phoenix, Arizona or equal.

- F. Recycled Valve Boxes: Same as potable valve box installation except the following:

All valve box covers shall be of metallic construction and shall be marked with the word "RECLAIMED or RECYCLED" cast into the cover.

The valve box shall be Brooks 1CR or approved equal. The recycled valve box assembly shall be in accordance with Standard Drawing RWD-10.

#### 4-03 Coatings For Ferrous Surfaces:

- A. General: All piping, valves, fittings, and other metal surfaces which are not made of brass, bronze, or copper shall be lined and coated as described below.
- B. Surface Preparation: All ferrous surfaces to receive protective coatings shall be sandblasted to a uniform gray metal appearance prior to the application of coatings. All surface irregularities, such as weld spatter, sharp corners, rough welds, etc., shall be ground smooth. All surfaces shall be completely free of grease, oil, and other foreign material. All surface preparation shall be in accordance with Standard Specifications for Public Works Construction "Greenbook."

C. Interior Cast Iron or Ductile Iron Surfaces: Interior surfaces of pipe, valves and fittings shall be lined with either a smooth coat of cement mortar or a powder epoxy coating. The cement mortar lining shall conform to ANSI/AWWA C104/A21.4. Lining shall be the double thickness listed in AWWA C104, Section 4.8. Lining materials shall conform to ASTM C150, Type II. Powder epoxy coating shall be Thermosetting powdered epoxy coating as described in Section 4-03 E below. Total minimum required dry film thickness in all cases will be 12 mils, except for flange faces, which shall have a minimum thickness of 5 mils and a maximum thickness of 6 mils.

D. Buried Exterior Surfaces: All buried exterior ferrous surfaces shall be coated with a coal-tar epoxy having a minimum volume solids of 78 percent and complying with MIL-P-23236. All coatings shall be applied in accordance with the coating manufacturer's recommendations or as approved by the Water Superintendent. Items to be coated shall include, but not be limited to, metal flanges, bolts and nuts, fittings, flexible pipe couplings, and structural steel.

Prime Coat: Apply to a dry-film thickness of 8 mils:

- Kop-coat 300-M, Ameron Amercoat 78 HB or approved equal.

Finish Coat: Apply two coats of 8 mils dry-film thickness for each coat:

- Kop-coat 300-M, Ameron Amercoat 78 HB or approved equal.

E. Dry Powder Epoxy: All items shall be prepared according to the manufactures surface preparation specifications. All items to be dry powder epoxy lined shall be preheated uniformly in a suitable oven. The epoxy shall then be fused uniformly to the ferrous surfaces to a total dry film thickness of not less than .008 inch, and the items shall be post cured in the oven, all in strict accordance with the epoxy manufacturer's recommendations as applied by the Fusecote Company, 9658 Alpaca Street, South El Monte, California or approved equal.

Damaged epoxy surfaces and field welds shall be coated in the field with a solvent less two component 100 percent epoxy supplied by the coating manufacture.

All epoxy linings shall be free of runs, bare or thin spots and pinholes. A check for coating integrity shall be made using a Tinker Razor 67 ½-volt wet sponge holiday detector. Coating thickness shall be confirmed with a DeFelsko Series 6000 gage. A 600-volt AC hi-pot Arc test shall be performed with no appearance of bright white Arc evidence. A Rock Island Arsenal (160 lbs-in) impact test shall be performed and be in evidence on accompanying test panel with no chipping or other coating damage visible. The Contractor shall correct any defects to the satisfaction of the Water Superintendent.

- F. Nuts, Bolts, and Washers: All nuts, bolts, and washers shall be 304 or 316 stainless steel. Bolts shall conform to ASTM A 193 (Grade B8M). Nuts shall conform to ASTM A 194 (Grade 8N). Both shall conform to AWWA C111. This includes nuts and bolts on flex and transition couplings. An anti-seize compound shall be applied to all stainless steel threads.
- G. Polyethylene Encasement: Unless otherwise specified, all water fittings and pipes must be encased by sheet or continuous polyethylene sleeve material and secured with plastic pipe wrap tape. Polyethylene sheet or sleeve encasement shall be a minimum of 8 mil thick and conform with ANSI/AWWA C105/A21.5. Encasement can also be achieved through the use of continuous polyethylene sleeve material fastened to each pipe length by plastic adhesive "pipe wrap" tape banded around the pipe at each end.
- Potable installation: Sleeve color shall be blue, 8 mil thick with 1-inch black letters indicating "CAUTION POTABLE WATER."
  - Recycled installation: Sleeve color shall be purple, 8 mil thick with 1-inch, black letters indicating "CAUTION: RECYCLED WATER—DO NOT DRINK."
- H. Pipe Wrap Tape: Adhesive backed tape for securing polyethylene sheet, sleeve material, and warning/identification tape will be required. Tape shall be a minimum of 2 inches wide and 10mil thick, such as Winmore UPC, Polyken 900, Scotchwrap 5, or approved equal.

END OF SECTION

## SECTION 5

### THRUST BLOCKS

5-01 Location: Thrust restraint and anchor blocks shall be provided on all pressure pipelines, and shall be installed as shown on the plans and at all rubber gasketed fittings that are not otherwise restrained. Thrust restraint blocks or anchor blocks shall be installed at all valves, tees, crosses, ends of pipelines, and at all changes of direction of the pipeline greater than 10 degrees deflection either vertically or horizontally when joints are not otherwise restrained.

General Requirements: Thrust restraint and anchor blocks shall be of not less than 2,000 psi concrete (Class C), and shall provide a thrust bearing area to resist horizontal or downward thrust; and shall be of sufficient gross weight and area to give bearing against undisturbed vertical earth banks sufficient to absorb the thrust, allowing an earth bearing of 1,500 pounds per square foot maximum.

Concrete Placement: Concrete shall be placed against wetted and undisturbed soil, and the exterior of the fitting shall be cleaned and wetted to provide a good bond with the concrete. The concrete interface with the fitting shall be an area of not less than the projected area of the fitting normal to the thrust resultant and centered on the resultant.

Harness and Tie-Rods: Metal harness or tie-rods and pipe clamps shall be used to prevent movement if shown on the plans or directed by the Water Superintendent. The rods and clamp harnessing arrangement shall be installed utilizing flanged harness hold-downs or lugged fittings and pipe with saddle clamps placed to bear against the pipe bells. Saddle clamps around the barrel of the pipe, which depend on friction or setscrews to prevent sliding of the clamp, are not acceptable. All surfaces of exposed and buried steel rods, reinforcing steel, bolts, clamps, and other metal work shall be coated before installation and touched up after assembly as specified in Section 4-03-D.

END OF SECTION



## SECTION 6

### CONCRETE AND CEMENT GROUT

- 6-01 Cement: All cement shall conform to ASTM C 150-61, Type II or Type V, with maximum tricalcium aluminate not-to-exceed 6 percent. The maximum percent alkalies shall not exceed 0.6 percent.
- 6-02 Sand: All sand shall be fine granular material resulting from the natural disintegration of rock and shall be free from injurious amounts of oil, mica, clay and other deleterious substances. Sand, when tested in accordance with Standard Method of Test, ASTM C117, as latest revised, and shall not exceed 3 percent by weight of clay and silt. All sand shall conform to the applicable Los Angeles County Road Department specifications for similar use, except as noted herein.
- 6-03 Rock and Gravel: All rock and gravel for use in concrete shall be mechanically washed. It shall consist of gravel or a combination of gravel and sound crushed rock, having clean, hard, tough, durable, and uncoated pieces, free from injurious amounts of soft, friable, thin, elongated, or laminated pieces, alkali, oil, organic, or other deleterious substances. The aggregates shall comply with ASTM C33 and shall be free from any substances that will react with the cement alkalies.
- 6-04 Water: Water that is clean and free from objectionable quantities of organic matter, alkali, salts, and any other impurities, which might reduce the strength, durability, and quality of the concrete shall not be used in the concrete mix.
- 6-05 Concrete: All concrete used for thrust blocks and pads shall develop an ultimate compressive strength of 2,000 psi at 28 days, in accordance with ASTM C39, as latest revised. All ready-mix concrete shall comply with ASTM C94, as latest revised.
- 6-06 Cement Mortar: All cement mortar used for lining pipe and fittings shall develop an ultimate compressive strength of 3,000 psi at 28 days, in accordance with ASTM C39, as latest revised.

END OF SECTION

## SECTION 7:

### PRESSURE TESTS

7-01 Hydrostatic Tests: Hydrostatic testing shall be successfully completed before any new pipelines, Potable or recycled, are connected to existing City of Cerritos pipes or mains.

- A. Prior to applying the specified test pressure, care shall be taken to ensure the expulsion through hydrants, air and vacuum valve assemblies, and services or by other suitable means, of all air within the pipe and appurtenances to be tested. If there are no air release valves, hydrants or other outlets available at the downstream end of the pipeline and at high points taps shall be installed to expel the air. These taps shall be capped, plugged, and wrapped after testing is completed.
- B. Prior to testing, isolation between existing pipelines or mains must be insured. Pressure tests shall be conducted between valves or against temporary bulkheads in the pipe. During the test, no temporary blocking will be permitted, except at temporary bulkheads. All valves, fire hydrants, service connections, fittings, collars, joints and other appurtenances shall be exposed until after successful completion of the test, unless otherwise directed by the Water Superintendent or his authorized representative.
- C. A test pressure based upon the elevation of the highest point in the line or section under test and corrected to the elevation of the test gage shall be applied by means of an approved pump and gallon water meter connected to the pipe in the manner satisfactory to the Water Superintendent or his authorized representative. The test shall be made on all sections of the pipeline in such a manner that all valves, fire hydrants, service connections, fittings, collars or joints, and other appurtenances shall have successfully withstood, for a period of 4 hours a pressure of 225 psi. When the test pressure has been reached, pumping shall be discontinued until pressure in the line has dropped 5 psi below the initial test pressure. At that time, the pressure shall again be brought back up to the initial test pressure. This procedure shall be repeated until 4 hours have elapsed from the time the specified test pressure was first applied without sign of leakage or failure.

At the end of the 4-hour period, any drop in pressure shall be recorded and the initial test pressure shall be restored by pumping. The quantity of water pumped into the line during this test shall be measured through a water meter indicating 1/10ths of a gallon. This quantity of water shall not exceed that which would result from the rate of 15 gallons per inch diameter of pipe, per mile of pipe per 24-hour day for ductile iron pipe. The above water loss is based upon a test pressure of 225 psi and must be corrected to the actual test pressure.

All defective joints, cracked or defective pipe, fittings, valves, fire hydrants, or service connections shall be removed and replaced by the Contractor. The test shall be repeated until results satisfactory to the Water Superintendent or his authorized representative are obtained.

Removal and replacement of defective joints, cracked or defective pipe, fittings, valves, fire hydrants, or service connections shall not take place prior to notification or without approval of the Water Superintendent or his authorized representative.

The aforementioned test shall be performed by the Contractor, including all work of tapping and connecting. The Contractor shall repeat the test until results satisfactory to the Water Superintendent or his authorized representative are obtained.

The aforementioned test shall be performed by the Contractor at Contractor's sole expense. The Contractor shall provide all tools, fittings, and equipment necessary to accomplish said work. The test shall be performed only in the presence of the Water Superintendent or his authorized representative. During the period of testing, the joints and taps shall be exposed and any material sweating or showing dampness will not be accepted unless otherwise approved by the Water Superintendent or his authorized representative.

When it is necessary to cover the ditch as soon as the water main is laid, the authorized representative of the Water Superintendent may permit the backfilling to be completed prior to testing and disinfecting. If the pipe then tested exceeds the allowable leakage, the pipe must be uncovered, repaired, and tested until it meets the allowable leakage.

END OF SECTION

**SECTION 8**  
**CHLORINATION**

For potable water systems only.

**8-01 General:**

**A. Description:**

This section describes the disinfection of potable water mains, services, appurtenances, and connections by chlorination, in accordance with AWWA C651 and as specified herein.

**B. Job Conditions:**

1. Discharge of chlorinated water into watercourses or surface waters is regulated by the National Pollutant Discharge Elimination System (NPDES).
2. The rate of flow and locations of discharges shall be scheduled in advance to permit review and coordination with the Water Inspector.
3. Potable water shall be used for chlorination.
4. Requests for use of water from City waterlines shall be submitted 48 hours in advance.
5. Chlorination shall be performed prior to hydrostatic testing for pipelines having a diameter of 12-inches and larger.

**8-02 Materials:**

**A. Liquid Chlorine Solution:**

Liquid chlorine solution shall be in accordance with the requirements of ANSI/AWWA B301, and shall be injected with a solution feed chlorinator and a water booster pump.

**B. Calcium Hypochlorite (Dry):**

Calcium Hypochlorite shall be in accordance with the requirements of ANSI/AWWA B300, and shall be dissolved in water to a known concentration in a container and pumped into the pipeline at a measured rate.

C. Sodium Hypochlorite Solution:

Sodium Hypochlorite shall be in accordance with the requirements of ANSI/AWWA B300, shall be diluted in water to desired concentration and pumped into the pipeline at a measured rate.

D. Sodium Hypochlorite Tablets and Adhesive:

1. Chlorine Content: The tablets shall have an average weight of 0.009 pounds each and shall contain not less than 70 percent of available chlorine.
2. Adhesive: Adhesive shall be a type that will not impart taste, odor, or detrimental compounds to the water supply and is NSF 61 approved.
3. Storage: Proper care shall be taken to store Hypochlorite tablets in tightly closed containers where they will not be accessible to children or unauthorized persons.

E. Chlorine Residual Test Kit:

For measuring chlorine concentration, a medium range, drop count, titration kit shall be used. The kit shall be capable of determining chlorine concentration in the range 1.0 to 50.0 mg/l. Test kits shall be Hach Chemical or approved equal. An adequate number of kits shall be maintained by the Contractor in good working order and available for immediate test of chlorine residuals at points of sampling.

8-03 Execution:

A. Pipelines:

1. General: Before being placed into service, all pipelines and appurtenances shall be chlorinated. Pipelines with a diameter of 10 inches or less shall be disinfected by either liquid chlorine solution injection, Calcium Hypochlorite solution injection or by use of sodium Hypochlorite tablets. The type or method of chlorination will be at the discretion of the Water Superintendent. Pipelines with a diameter of 12-inches and larger shall be disinfected by direct chlorine solution injection. Steel pipelines shall be disinfected by direct chlorine solution injection. Bacteriological testing after disinfection shall be performed by the City.
2. Chlorination Contractor: In the case of 12 inches and larger mains, chlorination shall be performed by a certified chlorination and testing contractor. Chlorination shall be in accordance with the instructions of the chlorinator manufacturer.

3. Groundwater: In the event groundwater is encountered and it is impossible to prevent its entrance into the mains, or the mains are not free from dirt, they shall be thoroughly flushed prior to disinfection. Disinfection shall be by direct chlorine solution injection.
4. Services: Every service connection served by a main being disinfected shall be tightly shutoff at the angle meter stop before water is applied to the main. Care shall be taken to expel all air from the main and services during the filling operation.
5. Chlorine Solution Injection by the Continuous Feed Method:
  - a. Chlorine solution shall be applied at the beginning of the section to be chlorinated and shall be injected through a corporation stop, a hydrant, or other approved connection to ensure treatment of the entire system being disinfected. All required corporation stops and other plumbing materials necessary for chlorination or flushing of the main shall be installed by the Contractor.
  - b. Potable water shall be introduced into the pipeline at a constant measured rate. Chlorine solution shall be injected into the potable feed water at a measured rate. The two rates shall be proportioned so that the chlorine concentration in the pipeline is maintained at a minimum concentration of 50 mg/l and 25mg/l after 24 hours in the pipe. The concentration at points downstream shall be checked periodically during the filling to ascertain that sufficient chlorine is being added.
6. Disinfection by Sodium Hypochlorite Tablets: The use of sodium Hypochlorite tablets will be permitted in pipe sizes 4- through 10-inches. The tablets shall be attached by means of an NSF 61 approved adhesive to the inside top of the lengths of pipe as they are being laid. The amount of adhesive shall be limited to the smallest practicable amount applied to one side of the tablet only. The amount of tablets used shall be adjusted so the chlorine concentration in the pipeline is maintained at a minimum concentration of 50 mg/l.
7. Disinfection of Valves and Appurtenances: During the period that the chlorine solution or slug is in the section of pipeline, valves shall be opened and closed to obtain a chlorine residual at hydrants and other pipeline appurtenances. Care shall be taken to ensure that no chlorinated water enters any active pipeline.
8. Concurrent Testing (for Pipelines with Diameter of 10-inches or Less): Disinfecting mains and appurtenances, and hydrostatic

testing may run concurrently for the required 24-hour test period. In the event there is leakage and repairs are necessary, disinfection of the pipeline shall be repeated by injection of the chlorine solution into the line as provided in this section.

9. Confirmation of Residual: After the chlorine solution applied by the continuous feed or tablet method has been retained in the pipeline for 24 hours, samples shall be taken at air valves and other points of access to confirm that a chlorine residual of 25 mg/L minimum exists along the pipeline.

With the slug method, samples shall be taken as the slug passes each access point and it leaves the pipeline in order to confirm that a chlorine residual of 25-mg/l minimum is present after 24 hours.

10. Pipeline Flushing: After confirming the chlorine residual, excess chlorine solution shall be flushed from the pipeline until the chlorine concentration in the water leaving the pipe is within 0.5 mg/l of the replacement water. Water must be dechlorinated as soon as practical after leaving the line being flushed.
11. Bacteriologic Tests: The Cerritos Water Inspector shall collect one sample for the section of main installed and a bacteriologic quality test will be performed by the City to demonstrate the absence of coliform organisms in each separate section of the pipeline after chlorination and refilling.
12. Repetition of Procedure: If the initial chlorination fails to produce required chlorine residuals and bacteriologic tests, chlorination and testing shall be repeated until satisfactory results are obtained at no cost or liability to the City of Cerritos.
13. Test Facility Removal: After satisfactory disinfection, air valves shall be replaced, the pipe coating restored, and temporary disinfection and test facilities removed.

**B. Wells and Well-Head Pump Stations:**

1. General: The well and wellhead piping shall be disinfected as a complete unit. Adequate bracing shall be provided to resist thrust.
2. Depth of disinfection: The well shall be disinfected to its full depth. the Water Superintendent or his authorized representative will determine the chlorine residual and method for disinfection.
3. Pump Column Disinfection: The pump column shall be washed with a chlorine solution, containing at least 12 percent chlorine, as the pump column is lowered into the well or pump can.

4. **Mixing:** After the well pump has been placed into position, it shall be turned on and off several times so to thoroughly mix the disinfectant with the water in the well. The pump shall be run until the water discharged has the odor of chlorine. This procedure shall be repeated several times at 1-hour intervals.
5. **Disinfection Time:** After mixing, the well shall be allowed to stand without pumping for 24 hours.
6. **Flushing:** Well water shall be pumped to waste until the presence of chlorine is no longer detectable. While pumping to waste, the water will need to be de-chlorinated. The chlorine residual shall be determined by testing for available chlorine using a test kit.
7. **Bacteriological Tests:** On two consecutive days, bacteriological samples shall be taken and submitted to the City's laboratory for examination. Samples shall be tested by the City's laboratory for coliform bacteria and heterotrophic plate count. All Coliform test results must be negative and heterotrophic plate counts must be less than 500 colonies/ml prior to placing the well into service.
8. **Repetition of Procedure:** If the laboratory analyses indicate the water is not free of bacterial contamination, the disinfection procedure shall be repeated. Depending on the level of contamination, it may be necessary to use a higher concentration chlorine solution. The water shall be then re-tested. Two consecutive samples must pass the bacteriological tests before the well can be placed into service.

C. **Reservoirs:**

1. **General:** The Contractor shall make all necessary provisions for conveying water from the City designated supply source to the points of use.
2. **Facilities to be Disinfected:** All hydraulic structures and appurtenant pressure piping shall be tested; those for potable water shall also be disinfected. In the case of a reservoir, testing and disinfecting operations shall be combined. Disinfection shall be accomplished by chlorination. All chlorination and testing operations shall be done in the presence of the City's representative.
3. **Scheduling:** Disinfection operations shall be scheduled by the Contractor as late as possible during the contract time period so as to assure the maximum degree of sterility of the facilities at the time the work is accepted by the City.



4. **Bacteriological Testing:** Bacteriological testing shall be performed by the City's laboratory. Results of the bacteriological testing shall be satisfactory to the State Department of Health or other appropriate regulatory agency. All Coliform test results must be negative and heterotrophic plate counts must be less than 500 colonies/ml for two consecutive days prior to placing the reservoir into service.
5. **Release of Disinfection Water:** After testing and disinfecting have been completed, release of water from structures shall be acceptable to the City. The released water must be dechlorinated during release.
6. **Preliminary Cleaning and Flushing:** Prior to both testing and disinfecting, all hydraulic structures shall be cleaned by thoroughly hosing down all surfaces with a high-pressure hose and nozzle of sufficient size to deliver a minimum flow of 50 gpm. All water, dirt, and foreign material accumulated in this cleaning operation shall be discharged from the structure or otherwise removed.
7. **Disinfection of Hydraulic Structures and Appurtenant Pipelines:** All hydraulic structures which store or convey potable water shall be disinfected by chlorination. Chlorination of hydraulic structures shall be performed in accordance with the requirements of ANSI/AWWA C652.
  - a. **Chlorination:** A strong chlorine solution (about 200 mg/l) shall be sprayed on all interior surfaces of the structure. Following this, the structure shall be partially filled with water to a depth of approximately one foot. During the partial filling operation, a chlorine-water mixture shall be injected by means of a solution feed chlorinating device in such a way as to give a uniform chlorine concentration during the entire filling operation. The point of application shall be such that the chlorine solution will mix readily with the in-flowing water. The dosage applied to the water shall be sufficient to provide a chlorine residual of at least 50 mg/l upon completion of the partial filling operation. Precautions shall be taken to prevent the strong chlorine solution from flowing back into the lines supplying the water. After the partial filling has been completed, sufficient water shall be drained from the lowered ends of appurtenant piping to ensure filling the lines with the heavily chlorinated water.
  - b. **Retention Period:** Chlorinated water shall be retained in the partially filled structure and appurtenant piping long enough to destroy all non-spore-forming bacteria, and in any event for at least 24 hours. After the chlorine-treated water has been retained for the required time, the

free chlorine residual in the structure and appurtenant piping shall be at least 25 mg/l. All valves shall be operated while the lines are filled with the heavily chlorinated water.

- c. Final Filling of Structure: After the free chlorine residual has been checked and found to satisfy the above requirement, the water level in the structure shall be raised to its final elevation by the addition of potable water. Before final filling is commenced, the concentration of heavily-chlorinated water remaining in the structure and piping shall, unless otherwise acceptable to the City's representative, be sufficient to produce a free chlorine residual of between 1 and 2 mg/l when the water level is raised to its final elevation. After the structures have been filled, the strength of the chlorinated water shall be determined. If the free chlorine residual is less than 1 mg/l, an additional dosage shall be applied to the water in the structure. If the free chlorine residual is greater than 2 mg/l, the structure shall be partially emptied and additional potable water added. In no case shall water be released prior to the expiration of the required retention period. If chlorinated water has to be drained from the structure, this water will have to be de-chlorinated.
8. Connections to Existing System: Where connections are to be made to an existing potable water system, the interior surfaces of all pipe and fittings used in making the connections shall be swabbed or sprayed with a one percent Hypochlorite solution before they are installed. Thorough flushing shall be started as soon as the connection is completed and shall be continued until all discolored water is eliminated.

END OF SECTION

## SECTION 9

### BACKFILL

#### 9-01 General:

##### A. Description:

This section describes excavation, backfilling, materials, testing, and shoring for underground structures.

##### B. Protection of Existing Utilities and Facilities:

1. General: The Contractor shall be responsible for the care and protection of all existing sewer pipelines, water pipelines, gas mains, storm drains, culverts, or other facilities and structures that may be encountered in or near the area of work.
2. Notification: It shall be the duty of the Contractor to notify "Dig Alert" or each affected agency of jurisdiction and make arrangements for locating each agency's facilities prior to beginning construction.
3. Damage: In the event of damage to any existing facilities during the progress of the work due to the failure of the Contractor to exercise the proper precautions, the Contractor shall be responsible for the cost of all repairs and protection to said facilities. The Contractor's work may be stopped until repair operations are complete.

##### C. Protection of Landscaping:

The Contractor shall be responsible for the protection of all the trees, shrubs, turf, fences, and other landscape appurtenances adjacent to or within the work area, unless directed otherwise on the plans. In the event of damage to landscape appurtenances, the Contractor shall replace the damaged appurtenances in a manner satisfactory to the Water Superintendent.

#### 9-02 Placing Backfill:

In the event of excavation in an existing paved street, the backfill shall meet the following requirements:

- Trenching for the water line shall be over-excavated no less than 4 inches in depth or 1/8<sup>th</sup> the diameter of the pipe being installed, whichever is greater. This over-excavated depth shall be replaced with clean imported sand as pipe bedding material. Compaction of this bedding shall result in 90 percent compaction.

- That portion of the backfill for trenches between the top of sand bedding and a line 6 inches below existing grade shall consist of wet sand (zero sack slurry) delivered by a ready mix truck.

In the event of excavation not in an existing or future paved street, the backfill shall be as follows:

- That portion of the backfill for trenches between the top of the sand bedding and a line 16 inches below existing grade shall consist of wet sand (zero sack slurry) delivered by a ready mix truck.
- The remaining backfill material shall be placed in layers not exceeding 6 inches in thickness, moistened, as required, for maximum compaction, and thoroughly compacted with hand-operated, pneumatic tampers or by other means approved by the Water Superintendent to a relative density of 90 percent as determined by the compaction test. This method will be at the discretion of the Water Superintendent

In the event the methods used by the Contractor do not accomplish the required compaction, the Water Superintendent may require that the backfill be removed and replaced in 4-inch layers and that each layer be moistened, tamped, rolled, or otherwise compacted until the required compaction is obtained.

#### 9-03 Pavement Repair in Streets:

Pavement repair in City of Cerritos streets shall be in accordance with City of Cerritos Engineering Division Standard Drawing S-D-25.

END OF SECTION

## SECTION 10

### WATER SERVICES

#### 10-01 Location and Size:

Only single service installations will be permitted with minimum size being 1 inch. Each service will be shown on the standard drawings. Services shall be located within 5 feet of the center of the lot, unless otherwise approved by the Water Superintendent, at as near right angles to the main as possible and shall be spaced a minimum of 10 feet from the sewer lateral (see Standard Drawing W-D-18). Services will not be permitted in the driveway areas. The service shall terminate in a meter box located where concrete curbs and/or sidewalks are to be constructed as part of the improvement plans, contiguously or not - 9 inches from top of curb to centerline of the meter stop and 6 inches from back of curb to vertical centerline of service stop. Actual size shall be determined by total water flow requirements in order to minimize the pressure drop and provide the quality of service required by the customers in the water system. In no case shall the diameter of the water service connection be less than required by the Plumbing Code. On service connections, a corporation stop shall be directly connected to the service saddle at the water main. Where property will be served by two or more water service connections from different street water mains, but from one source of supply, each service connection shall be equipped with an above ground double check valve to prevent inter-street flow.

If any existing water services cannot be utilized for the project in their current location that would impact the existing service location, the service shall be properly abandoned at the main. Conditions that would require abandonment are as follows, but not limited to: driveway additions, curb and gutter alignment changes, stamped concrete street surfaces, or any other change that impacts the existing service. Final determination and abandonment requirements shall be made by the Water Superintendent or his authorized representative.

One (1") inch and 2-inch service connections shall be installed as shown in Standard Drawing W-D-19 or W-D-20 as appropriate. The water service line shall be copper pressure pipe water tubing Type "K," ANSI/AWWA C800.

Water services 3 inches and larger shall be installed as shown in Standard Drawing W-D-21A or RWD-15. Four-inch (4") ductile iron pipe shall be required for 3-inch services and reduced from 4 inch to 3 inch at the meter or detector assembly.

#### 10-02 Location of Service Taps:

Service taps shall be made as shown on the Standard Drawings, and not less than 24 inches from couplings, joint, or fitting, not less than 2 feet apart, and

service saddles shall be required. Water mains shall only be tapped with a Mueller tapping machine or approved equal.

**10-03 Service Saddles:**

1. Service saddle bodies shall be manufactured of bronze and shall be tapped for an iron pipe thread. The seal with the pipe shall be a rubber gasket or an O-ring. Service saddles shall be as manufactured by James Jones, Mueller, Ford or approved equal. See Standard Drawing W-D-19 and W-D-20.
2. One-inch (1") service saddles shall be double-strap type for all sizes of asbestos-cement or ductile iron pipe. Two-inch (2") size service saddles shall be of the double-strap type for all sizes of asbestos-cement or ductile iron pipe. The straps (or bails) shall be flat and shall be manufactured of Everdur or Silnic bronze. Service saddles shall be a James Jones J-979, Mueller BR 2 B, Ford F202B or approved equal.
3. Service saddles for C900 PVC pipe shall be manufactured of bronze or Type 316 stainless steel, and shall be cast in two sections for pipe up to and including 8-inches in diameter. Service saddles for use on 10-inch and 12-inch diameter C900 PVC pipe may be cast in two or three sections. Each saddle shall accurately fit the contour of the pipe O.D. without causing distortion of the pipe. The sections shall be securely held in place with stainless steel nuts and bolts. Castings sections may be hinged and secured with stainless steel pins. The casting sections shall be tapped to receive the screws or bolts. Service saddles shall be a James Jones J-969, Mueller BR 2 S, Ford 202BS or approved equal.

**10-04 Tapping Valves and Sleeves:**

1. Tapping valves shall conform to the requirements for gate valves 4-inch and larger. Valve ends shall be flange by mechanical joint. The mechanical end shall have slotted boltholes to fit standard tapping machines. Seat rings shall be oversized to permit the use of full-size cutters. Tapping valves shall be Mueller RS, Clow RW or approved equal.
2. Tapping sleeves shall be installed in accordance with the manufacturer's instructions. The pipe barrel shall be thoroughly cleaned with a wire brush to provide a smooth, hard surface for the sleeve. The sleeve shall be supported independent of the pipe during the tapping operation. The sleeve shall be pressure tested in the presence of the Water Inspector prior to tapping. Thrust blocks shall be provided at the tapping sleeve. Tapping sleeves shall have 304 stainless steel bodies with a Flexi-Blue epoxy coated flange. Gaskets shall be Grade 60 concave wedge gasket with a wide cross-section. Bolts, nuts, and washers shall be 304 stainless steel. Stainless steel nuts shall be Teflon coated to prevent galling. Tapping sleeves shall

be a stainless steel Smith Blair CC-662, Mueller H-304 or approved equal. See Standard Drawing W-D-21 general installation.

**10-05 Corporation Stops:**

Corporation stops shall be manufactured of bronze. The inlet fitting shall be a male iron pipe thread when used with saddle and the outlet connection shall be a compression type. One inch (1") and 2-inch corporations stops shall be a Mueller 110 H-15013, Ford FB1100-4Q, FB1100-7Q as appropriate or approved equal. See Standard Drawing W-D-19 or W-D-20.

**10-06 Angle Meter Stops:**

Angle meter stops shall be manufactured of bronze. The inlet connection shall be a compression type and the outlet fitting shall be a meter flange or meter coupling. The angle meter stops shall be of two sizes, 1 inch and 2-inch. If a 5/8 inch by 3/4-inch meter is installed, then two 1 inch by 3/4-inch bronze meter bushings shall be supplied. The meter bushings shall be attached to the inlet and outlet of the 5/8 inch x 3/4-inch meter. The inlet and outlet shall form an angle of 90 degrees on a vertical plane through the centerline of the meter stop. A rectangular lug and lock wing shall be provided on the top of the fitting to operate the shutoff mechanism. Angle meter stops shall be ground key style. One inch shall be Mueller 110 H-14258, Ford KV43-444WQ or approved equal. Two inch (2") shall be Mueller 110 H-14277. See Standard Drawing W-D-19 or W-D-20.

**10-07 Compression Fittings:**

Compression fittings shall be manufactured of bronze. Splices and 90-degree fittings shall be compression type. Compression fittings shall be Mueller 110, Ford Quick Joint or approved equal.

**10-08 Meter Service Inspection:**

No portion of the meter service connection shall be backfilled or covered until flushed and pressure tested and authorized by the Water Superintendent or his authorized representative.

**10-09 Meter Installation:**

The Subdivider or Contractor shall furnish and install meter couplings, bushing, washers, meter spacers and meter boxes. Only the water meters shall be furnished and installed by the City at the Developer's or Contractor's expense.

In some cases where an uninterrupted water supply is required, the installation will require a bypass around the meter. See Standard Drawing W-D-20A and W-D-21B.

#### 10-10 Water Meter Boxes:

Water meter boxes shall be furnished and installed true to line and grade by the Developer and/or Contractor and shall be flush with the top of concrete curb.

All meter boxes and covers shall be precast of either concrete, reinforced polymer/plastic mortar, or high-density polyethylene. All concrete used for meter boxes for 1½ inch and larger meters shall be reinforced. One and one-half inch (1½") and 2-inch meter boxes shall have reading lids. See Standard Drawing W-D-25 through W-D-31.

Meter box covers within roadways shall be cast-iron or steel designed to withstand H-20 highway loading, with reading lid.

Meter boxes shall not be installed until after curbs and sidewalks are in and the area between has been graded.

All vaults for 3, 4, 6-inch and larger meter installations with bypass assemblies shall have double vault doors that are spring or pneumatic assist with reading lids. Vault doors shall be appropriately sized to the vault type and size specified on the plans or as directed by the Water Superintendent or his authorized representative. The vault doors shall consist of ¼-inch thick aluminum diamond plate reinforced for 300-p.s.f. live load. The frame shall consist of an extruded aluminum with integral anchor flange and door seat on all four sides. The floor access door shall be equipped with a drop handle that does not protrude above the cover and 316 stainless steel hold open arms with red vinyl covers that automatically lock the doors in the 90-degree upright position. One door shall have a hinged 6-inch by 6-inch square aluminum reading insert lid located in the center of the door. The hinge and hardware shall be 316 stainless steel. The doors shall have 316 stainless steel hinges, assist springs, and tamper resistant bolts/locknuts. The vault doors shall also be equipped with a 316 stainless steel slam lock and removable handle key. The vault door and frame assembly shall be an APD 300 manufactured by U.S.F. Fabrication, Inc., or an approved equal. Manufacturer shall guarantee the door against defects in materials and workmanship for a period of 10 years.

Reading lids shall be required on all vaults for 3-inch, 4-inch, and 6-inch turbine and compound meters.

#### 10-11 Spacers:

Permission from the Water Superintendent may be obtained to install spacers in meter boxes in tracts in lieu of meters during construction of houses. See Standard Drawing W-D-19 and W-D-20. The charge for water usage shall be paid in advance of receiving service. A meter must be installed before landscaping is installed or the building is occupied.



#### 10-12 Repair Clamps:

Repair clamps shall be 304 stainless steel with high strength ductile iron lugs ASTM A536. The gasket material shall be Nitrile NSF 61 listed. The bridge plate shall be 304 stainless steel recessed flush and bonded into the gasket. Bolts, nuts, and washers shall be 304 stainless steel. Stainless steel nuts shall be Teflon coated to prevent galling. Repair clamps for pipe 4 inch through 10 inch shall be Smith-Blair Full Circle Double Band 227 or approved equal. Repair clamps for pipe 12 inch and larger shall be Smith-Blair Full Circle Triple Band 228 or approved equal.

#### 10-13 Transition and Pipe Couplings:

Transition and repair couplings shall be long barreled ductile iron sleeves meeting ASTM A-536. Ends shall have a smooth taper for uniform gasket seating. Follower flanges shall be ductile iron ASTM A-536. Thickness of follower to be determined by coupling size. Gasket material shall be Nitirle (Buna N) Grade 60, NSF 61 listed. Nuts and bolts shall be 304 stainless steel. An anti-seize compound shall be applied to all stainless steel threads. Finish of coupling and followers shall be a fusion bonded epoxy coating. Standard shop coats are not permitted. Transition and repair couplings shall be Smith Blair long sleeve 442 omni-coupling or Quantum, or Romac XR501 or 501 long barrel. Ford FC2A-ESH is acceptable only if supplied with factory fusion bonded epoxy coatings.

#### 10-14 Cross Connections:

Cross connections of any type which permit a backflow of water from a supply other than that of the City into the City mains are prohibited. A cross connection constituting a potential backflow hazard is permissible only when approved by the Water Superintendent and shall be protected by a Reduced Pressure Principal Device, subject to the City Water Department inspection and regulations at all times for the purpose of avoiding possibility of backflow. All installations shall comply with the requirements of the latest edition of AWWA C506 and the "Manual of Cross-Connection Control," Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California, School of Engineering. See Section 11 and Section 15 and Standard Drawing W-D-9, W-D-35 AND W-D-36.

#### 10-15 Temporary Water Service:

Application shall be made to the Water Department for temporary service desired, such as water used in construction for compaction, flooding of ditches, sprinkling, etc. Depending on the location of the construction, the Water Superintendent may require recycled water to be used. Upon the deposit of such sum as the Water Superintendent may require, the Subdivider and/or Contractor shall furnish and install an Eddy Valve on the fire hydrant. If potable or recycled water is to be used in a water truck, it must be certified by the Water Inspector prior to use. Service is to be rendered out of existing City fire hydrants only in the nearest tract or development. The use of pipe wrenches to open fire hydrants shall not be

permitted. Only spanner type fire hydrant wrenches, or approved Fire Department wrench shall be used.

The Water Superintendent will stop all irregularities that might affect the use of water or fire hydrants.

END OF SECTION

## SECTION 11

### MISCELLANEOUS VALVES

#### 11-01 Reduced Pressure Detector Check Assembly:

The reduced pressure detector check assembly with by-pass meter shall be installed above ground in compliance with Standard Drawing D-W-9. The reduced pressure detector check assembly shall be installed as close to the street as possible. The function of the by-pass meter is to detect possible leakage or unauthorized use of water from fire or automatic sprinkler systems; prevent loss of water from fire services or "wet pipe" sprinkler systems. The reduced pressure detector check assembly, by-pass meter and reduced pressure principal backflow prevention assembly (RP) shall be furnished as one complete unit with rising stem valves. The reduced pressure detector check assembly shall be from the list of approved backflow prevention assemblies supplied by Los Angeles County of Health Services. Upon completion of the installation of the device, a test shall be performed and a certificate of the adequacy and operational compliance shall be furnished to the Water Department. The test shall be performed by a testing company approved by the Los Angeles Health Department.

For some installations where an uninterrupted water supply is required, dual parallel backflow devices may be required as determined by the Water Superintendent.

See Standard Drawing W-D-9.

#### 11-02 Double Check Detector Assembly:

The double check detector assembly with by-pass meter shall be installed above ground in compliance with Standard Drawing D-W-9. The double check detector assembly shall be installed as close to the street as possible. The function of the by-pass meter is to detect possible leakage or unauthorized use of water from fire or automatic sprinkler systems; prevent loss of water from fire services or "wet pipe" sprinkler systems. The double check detector assembly, by-pass meter and double check backflow assembly (DC) shall be furnished as one complete unit with rising stem valves. The double check detector assembly shall be from the list of approved backflow prevention assemblies supplied by Los Angeles County of Health Services. Upon completion of the installation of the device, a test shall be performed and a certificate of the adequacy and operational compliance shall be furnished to the Water Department. The test shall be performed by a testing company approved by the Los Angeles Health Department.

For some installations where an uninterrupted water supply is required, dual parallel backflow devices may be required as determined by the Water Superintendent.

See Standard Drawing W-D-9.

### **11-03 Air and Vacuum Release Valves:**

All air and vacuum release valves shall be installed in the water system at all points where it is indicated that air pockets may form. The design shall be such so as to ensure the release of air from the water main when the pressure inside the line is below atmospheric pressure. All valves shall be designed for a minimum of 150 PSI operating pressure. The Type K copper piping from the water main shall terminate in an angle meter stop in a number three meter box next to the air vacuum release valve. Type K copper pipe and brass pipe shall be plumbed from the angle meter stop to the air vacuum release valve. See Standard Drawing W-D-14.

END OF SECTION

## SECTION 12

### BLOW-OFF ASSEMBLIES

#### 12.01 Blow-Off Assemblies:

A blow-off shall be provided to facilitate draining and flushing of the line wherever a pipeline dead-ends and at low points as required by the Water Superintendent.

Permanent type blow-offs shall be 4-inch located in the parkway as shown in Standard Drawing W-D-12 or R-W-D 20.

Temporary blow-offs shall be 2-inch located in the parkway complete with meter box as shown in Standard Drawing W-D-13.

END OF SECTION

## SECTION 13

### FIRE HYDRANT ASSEMBLIES

#### 13.01 Location and Elevation:

Fire hydrant assemblies shall be located as shown on approved plans in accordance with the Los Angeles County Fire Department. The fire hydrant shall be installed as shown on Standard Drawing W-D-10.

#### 13.02 Bury Section:

The bury section shall be cast iron and shall be cement lined. Inlet connection shall be mechanical joint and be sized to be a 6-inch ring-grooved connection. The bury depth will normally be 48-inches, but different depth buries on fire hydrants buries may be required to fit abnormal pipe depths depending upon field conditions. Flanged end shall be 8 hole. A minimum of 6 inch by 6 inch, 8-hole breakaway spool will also be required. See Standard Drawing W-D-10.

#### 13.03 Break-Off Bolts:

Break-off bolts shall be used in connecting the fire hydrant to the hydrant bury. Bolts shall be installed nut side up with the bolts filled and covered with silicone caulking. Clearance shall be made for removal of all bolts. Bolt size shall be 5/8 by 3 inch. See Standard Drawing W-D-10.

#### 13.04 Fire Hydrants:

Unless otherwise approved by the Water Superintendent, residential fire hydrants shall be 6 inch by 4 inch by 2½ inch James Jones 3710, 8-hole flange. Industrial fire hydrants shall be 6 inch by 4 inch by 4 inch by 2½ inch James Jones 3775, 8-hole flange. Upon completion of installation, all parts of facilities above ground, with the exception of the stems and threads, shall be painted with two coats of primer, and two finish coats of waterproof Cerritos Yellow. This paint will be made available to the Contractor from the City at the Contractors expense. See Standard Drawing W-D-10.

END OF SECTION

## SECTION 14

### WELL DESTRUCTION

#### 14-01 General:

All existing wells that are to be abandoned in the area to be developed, shall be destroyed and sealed in accordance with these Standards and in such a manner as to prevent impairment to ground water quality.

A special well destruction permit is required from the City of Cerritos plus a permit from Los Angeles County Department of Health Services, Public Health Programs & Services, Water, Sewerage & Subdivision Control Program Bureau of Environmental Protection. See Standard Drawing W-D-1.

#### 14-02 Procedure:

Any obstruction in the well that might interfere with effective sealing shall be removed. The open well shall then be filled with impervious filler material from the bottom of the well to a point no higher than 50 feet below the surface of the ground.

If there is an annular space between the drilled hole and the well casing, such as is the case with a gravel pack well, grout or neat cement, as described below, shall be pumped through rips or perforations in the well casing. The pumping shall be continued until the grout returns to the ground surface through the annular space between the drilled hole and the well casing.

As shown on Standard Drawing No. W-D-1, a pit shall be dug at least 6 feet deep around the well casing, and the casing shall be cut off at approximately 6 inches above the bottom of the pit. The open well above the impervious filler material shall be filled with cement grout containing not more than two parts sand to one part cement and not more than 6 gallons of water per sack of cement, or with neat cement consisting of water and cement only in the proportions of 5 gallons of water per sack of cement. The grout shall be applied continuously, beginning at the top of the filler material and moving upward to the top of the casing, using a dump bailer, a grouting pipe, or similar means.

As the grout fills the casing, it shall be allowed to spill over into the pit at the top of the casing, filling the bottom of the pit to form a cap at least 1 foot thick. After the sealing material has set, the remainder of the pit shall be filled with native material as shown on the drawing W-D-1.

END OF SECTION

## SECTION 15

### BACKFLOW PREVENTION DEVICES AND CROSS CONNECTION

#### 15.01 Cross Connection Control:

To comply with the regulations of the State of California Department of Health Services, Los Angeles County Department of Health Services, which prohibits unprotected cross connections between the public water supply and any unapproved source or connection, the Water Superintendent shall require the installation of approved backflow prevention devices by and at the customer's expense. Maintenance and testing of the device shall be at the customer's expense.

The degree of hazard and the type of backflow prevention device required to abate the cross connection shall be determined by the Water Superintendent.

If potable and recycled water are located on the same property, a "Reduced Pressure Principle Backflow Prevention Assembly (RP)" shall be installed downstream of the water meter to protect the potable water service.

#### 15.02 Testing:

Upon completion of the installation of the device, a test shall be performed and a certificate of the adequacy and operational compliance shall be furnished to the Water Department. After the initial test at installation, the device shall be tested at least one time each year but can be required by the Water Superintendent to be tested at more frequent intervals. All tests shall be performed by persons having a valid Certificate of Competence issued by Los Angeles County Department of Health Services.

#### 15.03 Installation:

Installation shall comply with the requirements of the Los Angeles Department of Health Services, the latest edition of the Manual of Cross Connection Control and with the latest plumbing codes and applicable local agency requirements. See Standard Drawing W-D-35 AND W-D-36.

END OF SECTION



## SECTION 16

### WATER FACILITIES WARNING/IDENTIFICATION

#### 16-01 General:

A. Description:

This section describes materials and installation of potable and recycled water facilities warning/identification for pipe, valves, valve boxes, and other pipeline appurtenances.

B. Submittals:

Submit material samples of warning/identification tape to the Water Inspector for approval.

Submit drawings showing location of warning signs.

#### 16-02 Materials:

A. Buried Piping Warning/Identification Tape and Locator Tape:

Plastic warning/identification tape shall be an inert plastic film specifically formulated for prolonged underground use. The minimum thickness shall be 4 mils.

Locator tape shall be installed over non-metallic pipe, shall be similar to warning tape, and shall include a metallic substance that can be registered by a magnetic field location device. Minimum thickness for locator tape shall be 5 mils. Locator tape shall be supplied by T. Christy Enterprises, Inc., or an approved equal.

See table below for tape widths:

<b>PIPE SIZE</b>	<b>TAPE WIDTH</b>
OVER 12"	12"
8" THRU 12"	6"
4" THRU 6"	3"
1" THRU 3"	2"

1. Potable Water Pipelines:

Lettering for warning/identification: Tape shall be blue with a minimum of 2-inch black letters stating: "POTABLE WATER."

Lettering for locator tape: Tape shall be blue with a minimum of 2-inch black letters stating: "CAUTION: POTABLE WATER LINE BELOW."

2. Irrigation pipelines: (Fed from potable water source after backflow)

Lettering for warning/identification: Tape shall be yellow with a minimum of 2-inch black letters stating: "NON-POTABLE WATER FOR IRRIGATION USE."

3. Water feature or industrial use pipelines: (Fed from potable water source after backflow)

Lettering for warning/identification: Tape shall be yellow with a minimum of 2-inch black letters stating: "NON-POTABLE WATER FOR INDUSTRIAL USE."

4. Recycled Water Pipelines:

New installations of recycled waterlines should be purple pipe per Section 3-01.2 and 16-02-C

Lettering for warning/identification: Tape shall be purple with a minimum of 2-inch black letters stating: "CAUTION: RECYCLED WATER – DO NOT DRINK"

Lettering for locator tape: Tape shall be purple with a minimum of 2-inch black letters stating: "CAUTION: RECYCLED WATER LINE BURIED BELOW – DO NOT DRINK"

B. Stenciled Pipe – Underground Use

Pipe may be stenciled or colored for identification as an alternate to warning/identification tape. Unless noted otherwise, letters shall be a minimum of 2-inches high and identification shall be stenciled on both sides of pipe at a maximum of 5-foot intervals.

1. Potable Water Pipelines: Lettering shall be of a color that contrasts with the background color of the pipe, and shall be marked: "POTABLE WATER." For PVC piping, pipe shall either be blue, or shall be white with blue stenciling and the marking "POTABLE WATER" in 5/8-inch letters repeated at 1-foot intervals.
2. Recycled Water Pipelines: Lettering shall be purple and worded: "CAUTION: RECLAIMED WATER – DO NOT DRINK" in 5/8-inch letters repeated at 1-foot intervals.

C. Purple PVC Pipe for Recycled Water Pipelines:

PVC Pipe Coloring and Markings:

PVC pipe shall be purple, and shall be marked on both sides of the pipe with the wording: "CAUTION: RECYCLED WATER – DO NOT DRINK." Lettering shall be a minimum of ½-inch high black letters, and shall be repeated every 12 inches. The purple pipe color shall be achieved by adding pigment to the PVC material as the pipe is being manufactured.

Each length of PVC pipe shall be marked showing the date of manufacture, nominal pipe size and O.D. base, the AWWA pressure class, and the AWWA specification designation (AWWA C900). All PVC pipe and fittings shall be colored purple. PVC pipe shall be purple and shall be marked on both sides of the pipe with the wording for warning/identification: "CAUTION: RECYCLED WATER---DO NOT DRINK." Lettering shall be a minimum of 5/8"-high black letters and shall be repeated every 12-inches.

D. Warning Labels and Tags:

Labels shall be inert plastic film specifically formulated for prolonged exposure. The minimum thickness shall be 4 mils for adhesive backed labels and 10 mils for tag type labels. Tag type labels shall have reinforced tie holes and shall be attached with heavy-duty nylon fasteners. The size, type of label and location shall be dictated by each individual application and subject to a to acceptance by the Water Superintendent or his representative.

1. Potable Water Identification: Labels shall be prepared on a build field, and shall have the words: "POTABLE WATER" printed on the field in black letters. Minimum letter height shall be ½-inch.
2. Recycled Water Identification: Labels shall be prepared on a purple field, and shall have the words: "CAUTION: RECYCLED WATER – DO NOT DRINK" printed on the field in black letters. Minimum letter height shall be ½-inch.

16.03 Execution

A. Installation of Pipe Warning Tape and Locator Tape:

1. Warning/Identification Tape: Warning tapes shall be installed directly on the top of the pipe longitudinally and shall be centered. The warning tape shall be installed continuously for the entire length of the pipe and shall be fastened to each pipe length by plastic adhesive tape banded around the pipe and warning tape at no more than 5-foot intervals. Taping attached to the sections of pipe before laying in the trench shall have 5-

foot minimum overlap for continuous coverage. All risers between the main line and control valves shall be installed with warning tape.

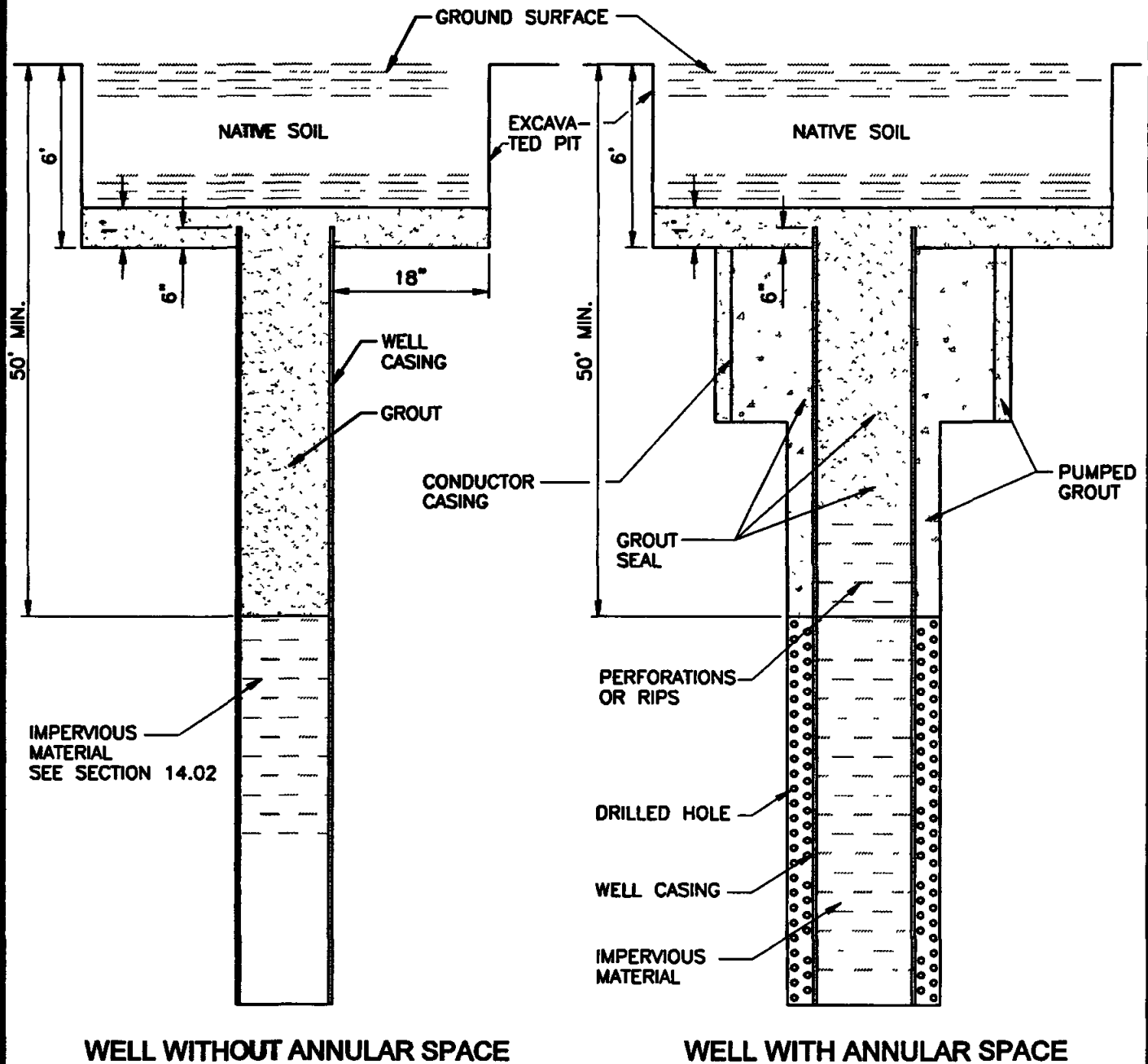
2. Locator Tape: Locator tape shall be installed directly on top of the pipe zone backfill layer, and shall be centered over non-metallic pipelines. Locator tape shall be buried no less than 12 inches and no more than 18 inches.

**B. Installation of Warning Labels and Signs:**

1. Method of Attachment: Warning labels shall be firmly attached using heavy-duty nylon fasteners, and shall be sized and installed at locations as shown on the plans.
2. Equipment Requiring Labels or Tags: Warning labels shall be installed on all appurtenances in vaults, such as, but not limited to, air release valves, blowoffs, and meters, and on designated facilities, such as, but not limited to, controller panels and wash down or blowoff hydrants on water trucks and temporary construction services. Pumps and pipe shall be identified with a painted label.
3. Painted Labels: Painted labels may at the Water Superintendent's discretion be acceptable in lieu of plastic labels.
4. Placement of Signs: Signs shall be placed around the project site at the discretion of Los Angeles Department of Health Services and the Water Superintendent.

END OF SECTION

# STANDARD DRAWINGS



REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
 DIVISION**

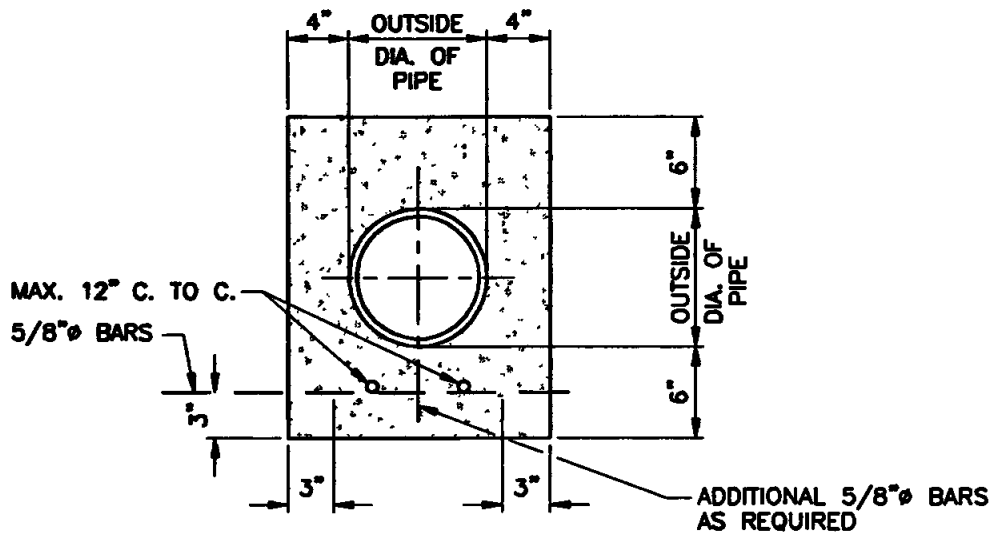
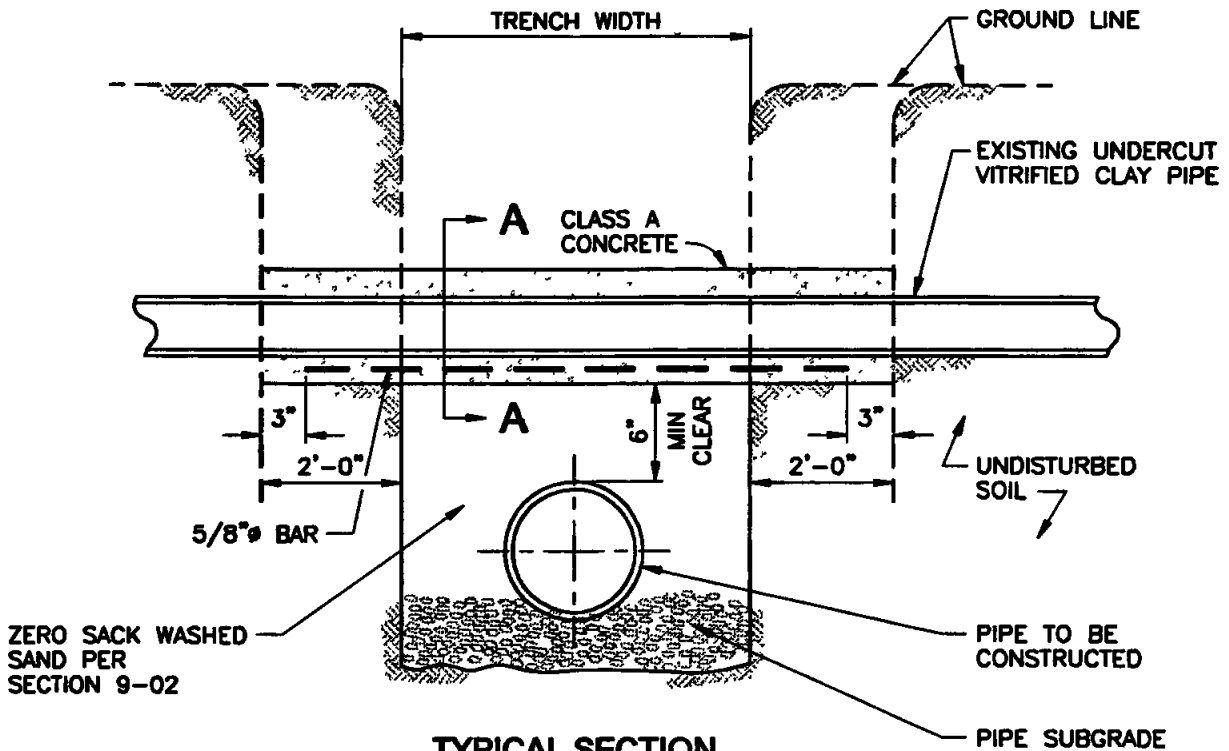
WELL DESTRUCTION  
 PROCEDURE

APP. *Joe Holder*  
 WATER SUPERINTENDENT

STANDARD  
 DRAWING NUMBER

**W-D-1**

DATE: OCTOBER 2004



**NOTES:**

<b>A</b>	ALL CROSSING REQUIREMENTS SHALL BE REVIEWED AND DETERMINED BY THE WATER UTILITY ADMINISTRATOR
<b>B</b>	SEE SECTIONS 2-06 AND 2-07 AND STANDARD DRAWING W-D-3B
<b>C</b>	ONE FULL LENGTH OF PIPE CENTERED ON SEWER

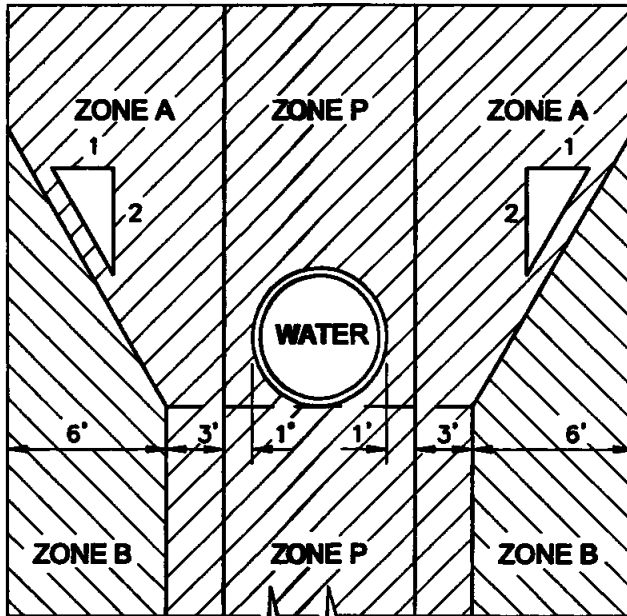
REVISED: 06-11-04

# CITY OF CERRITOS

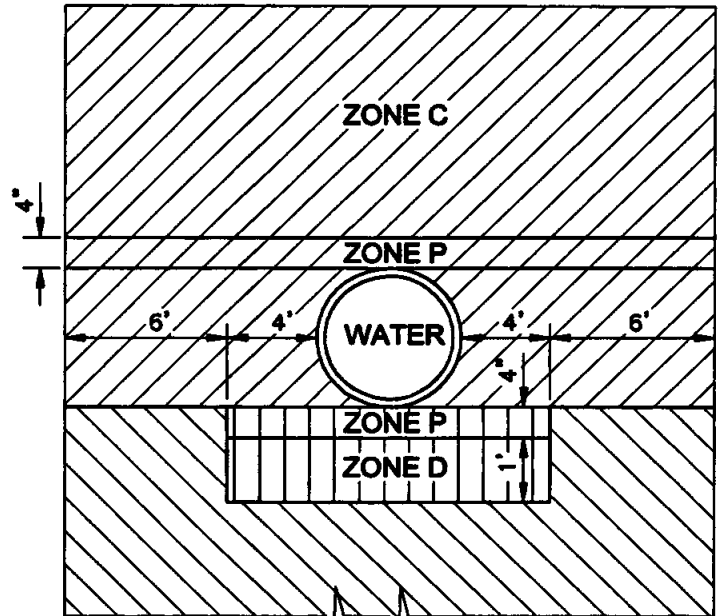
PREPARED BY  
**CERRITOS WATER  
DIVISION**

TYPICAL WATER  
AND SEWER CROSSING  
APP. Joe Holdren  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-3A**  
DATE: OCTOBER 2004



PARALLEL CONSTRUCTION



PERPENDICULAR CONSTRUCTION

**SPECIAL CONSTRUCTION REQUIRED FOR SEWER**

**ZONE**

A	SEWER LINES WILL NOT BE PERMITTED IN THIS ZONE WITHOUT SPECIAL PERMISSION FROM THE DEPARTMENT OF HEALTH
B	EXTRA-STRENGTH VITRIFIED CLAY PIPE WITH COMPRESSION JOINTS; OR CONCRETE PIPE WITH REINFORCED CONCRETE COLLARS AROUND THE JOINTS, WHICH JOINTS SHALL HAVE A MINIMUM THICKNESS OF SIX INCHES AND A MINIMUM DISTANCE ALONG THE PIPE OF SIX INCHES ON EITHER SIDE OF THE JOINT; OR RUBBER GASKETED REINFORCED CONCRETE PIPE; OR RUBBER GASKETED ASBESTOS-CEMENT PIPE; OR RUBBER GASKETED PLASTIC PIPE; OR CAST IRON PIPE WITH COMPRESSION JOINTS
C OR D	CLASS 150 OR HEAVIER DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND APPROVED MECHANICAL JOINTS; OR ANY SEWER PIPE WITHIN A CONTINUOUS STEEL CASING. CASING SHALL HAVE A THICKNESS OF NOT LESS THAN ONE-FOURTH INCH AND ALL VOIDS BETWEEN SEWER PIPE AND CASING PRESSURE GROUTED WITH SAND-CEMENTED MORTAR PER SECTION 6-06
P	PROHIBITED CONSTRUCTION ZONE

**NOTES:**

A	COMPRESSION JOINTS ARE RUBBER RING OR GASKET JOINTS
B	MECHANICAL JOINTS ARE BOLTED JOINTS
C	DIMENSIONS ARE FROM OUTSIDE OF WATER MAIN TO OUTSIDE OF SEWER
D	CONCRETE SHALL BE CLASS 420-C-2000 (STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION)
E	BACKFILL AROUND POTABLE WATER MAIN PER SECTION 9-02
F	SEE SECTIONS 2-06 AND 2-07 FOR MINIMUM SEPARATION STANDARDS

REVISED: 06-11-04

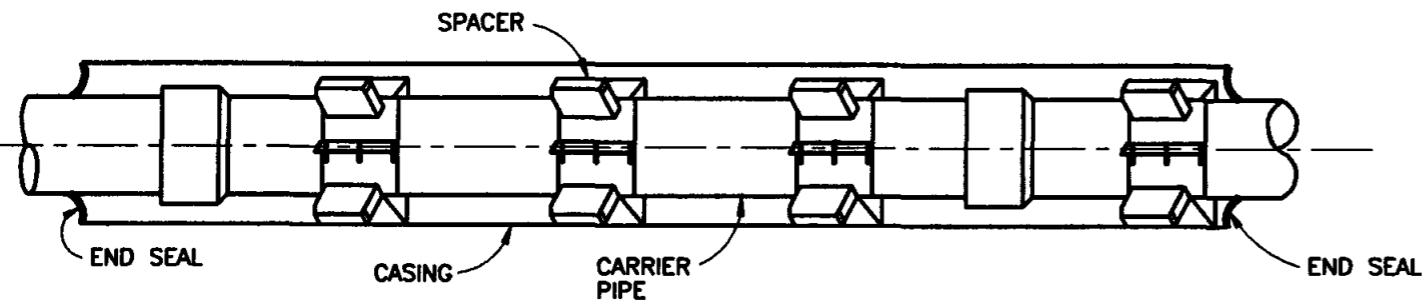
**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

WATER AND SEWER  
LINE SEPARATION  
APP. Joe Holdren  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-3B**  
DATE: OCTOBER 2004





**RECOMMENDED SPACING:**

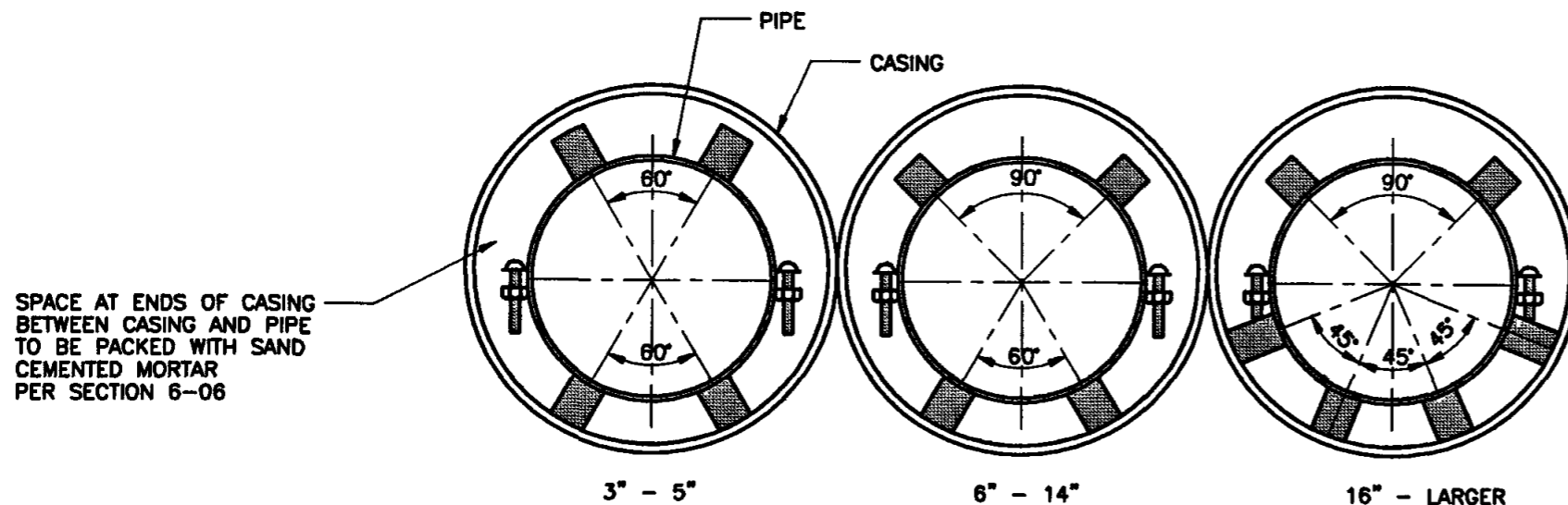
GENERAL - 13' LENGTH OF CARRIER PIPE: 2 SPACERS PER STICK. 18'-20' LENGTH OF CARRIER PIPE: 3 SPACERS PER STICK. NOTE: (PVC WITH A THIN WALL MAY REQUIRE 3 PER 13' OR 4 PER 18'-20') SOME APPLICATIONS, AND LARGE DIAMETER PIPE MAY REQUIRE ADDITIONAL SPACERS. CONSULT MANUFACTURER. SPACERS SHOULD BE INSTALLED 1'-1 1/2' FROM THE END OF EACH JOINT & EVERY 8'-10' THEREAFTER, DEPENDING ON THE APPLICATION.

**NOTES:**

A	PIPE AND CASING DIMENSIONS TO BE AS INDICATED ON THE PLANS. ALL PIPE HANDLING, PULLING AND INSTALLATION TO BE AS RECOMMENDED BY PIPE AND CASING INSULATOR MANUFACTURER
B	ALL CASING JOINTS SHALL BE WELDED
C	CASING SHALL BE 6" TO 8" LARGER THAN WATER LINE UNLESS OTHERWISE INDICATED
D	ALL FERROUS SURFACES ARE TO BE PROTECTED PER SECTION 4-03
E	ALL WATER LINES SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE
G	MINIMUM WALL THICKNESS OF CASING STEEL SHALL BE 1/4 INCH MINIMUM
H	SPACER MATERIAL SHALL BE STEEL
I	PULL ON END SEAL BY PIPELINE SEAL AND INSULATOR (PSI) OR APPROVED EQUAL

**MINIMUM SIZE CASING REQUIRED W/ DUCTILE IRON PIPE (IN INCHES)**

PIPE SIZE	CASING SIZE (I.D.)
4	10
6	12
8	16
10	18
12	20
14	24
16	26



**MODEL M SERIES SPACERS**

REVISED: 06-11-04

**CITY OF CERRITOS**

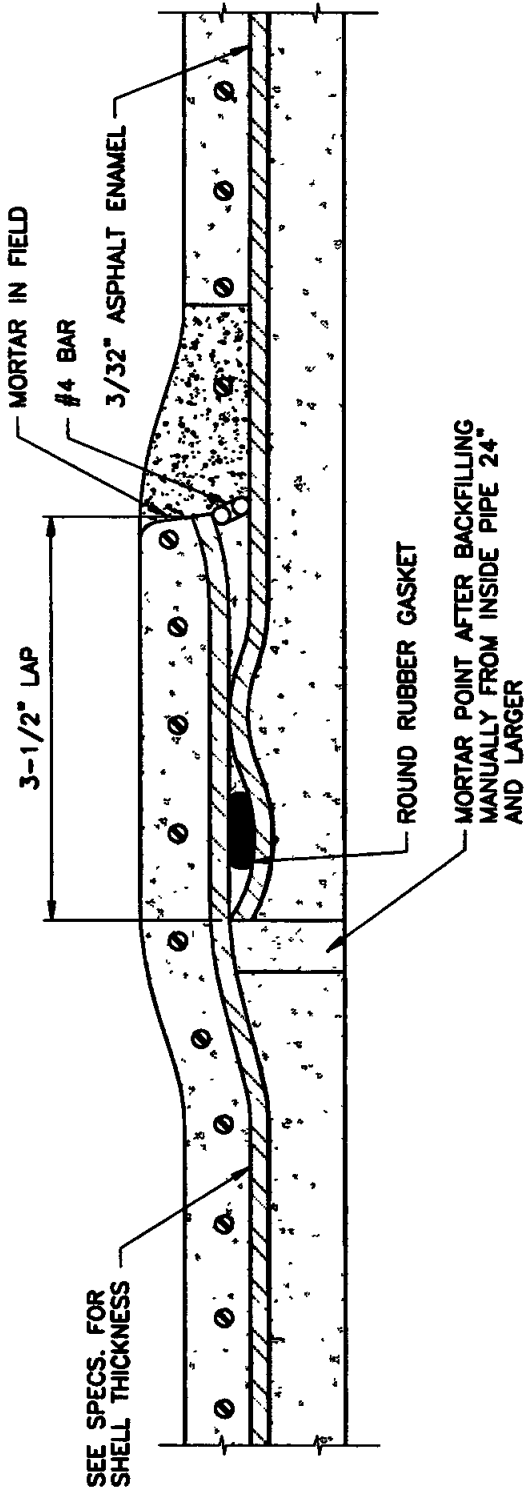
PREPARED BY  
**CERRITOS WATER  
DIVISION**

TYPICAL INSTALLATION  
OF PIPE IN CASING

APP. *Joe Holdre*  
WATER SUPERINTENDENT

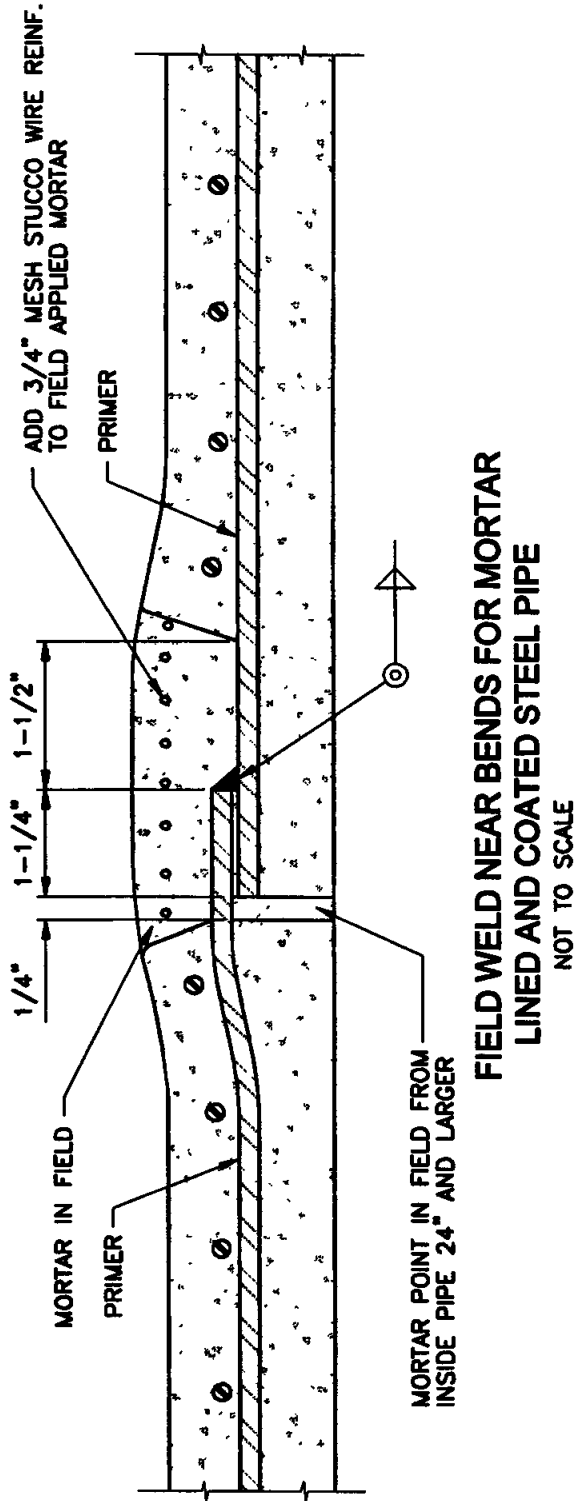
STANDARD  
DRAWING NUMBER  
**W-D-4**

DATE: OCT 2004



**BELL AND SPIGOT JOINT FOR MORTAR LINED AND COATED STEEL PIPE**

NOT TO SCALE



**FIELD WELD NEAR BENDS FOR MORTAR LINED AND COATED STEEL PIPE**

NOT TO SCALE

**NOTE:**

**A** MORTAR PER SECTION 6-06

REVISED: 08-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

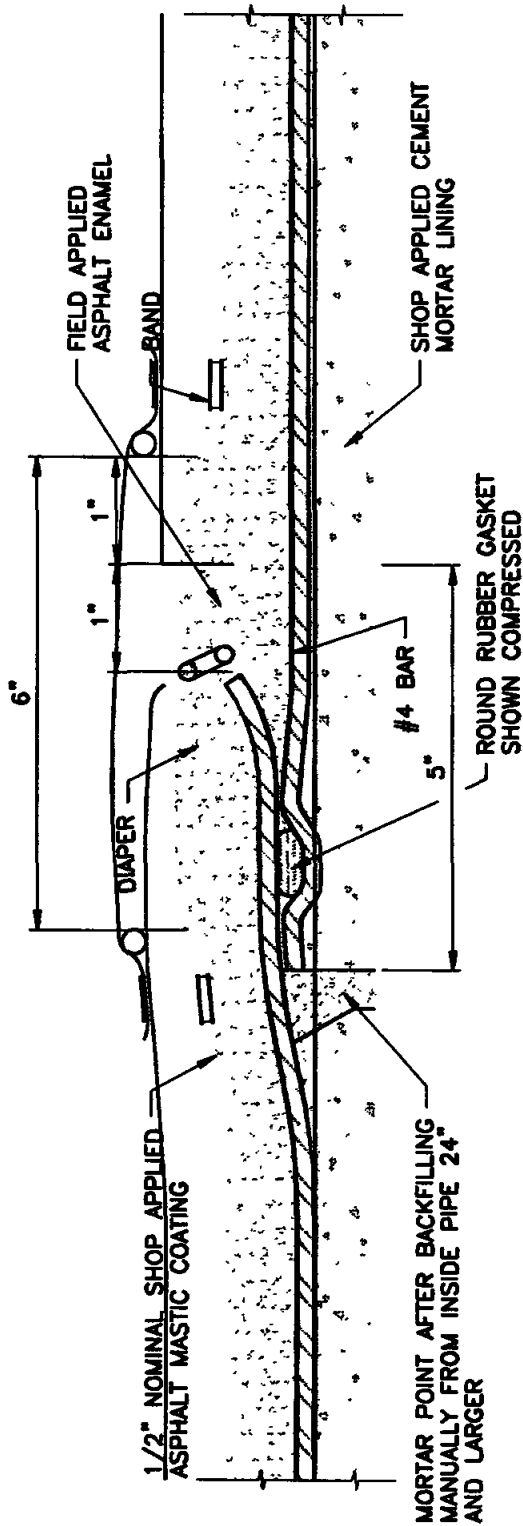
JOINT DETAILS FOR MORTAR  
LINED AND COATED STEEL PIPE

APP. *Joe Holdre*  
WATER SUPERINTENDENT

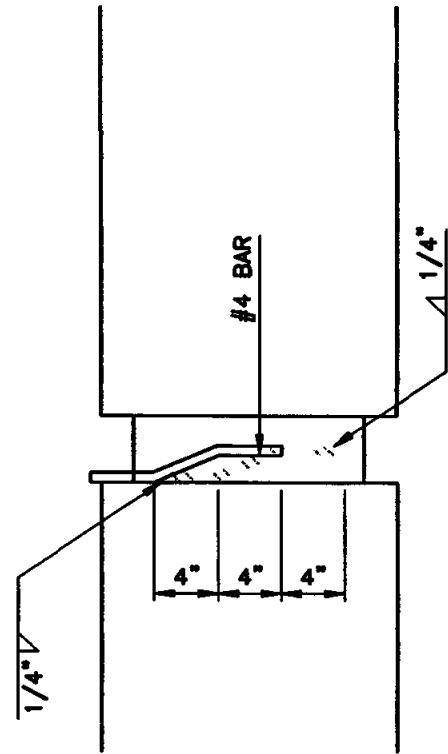
STANDARD  
DRAWING NUMBER

**W-D-5**

DATE: OCTOBER 2004



**BELL AND SPIGOT JOINT FOR MORTAR LINED AND ASPHALT MASTIC COATED STEEL PIPE**  
NOT TO SCALE



**TYPICAL STRAP DETAIL**  
NOT TO SCALE

**NOTES:**

- A MORTAR PER SECTION 6-06

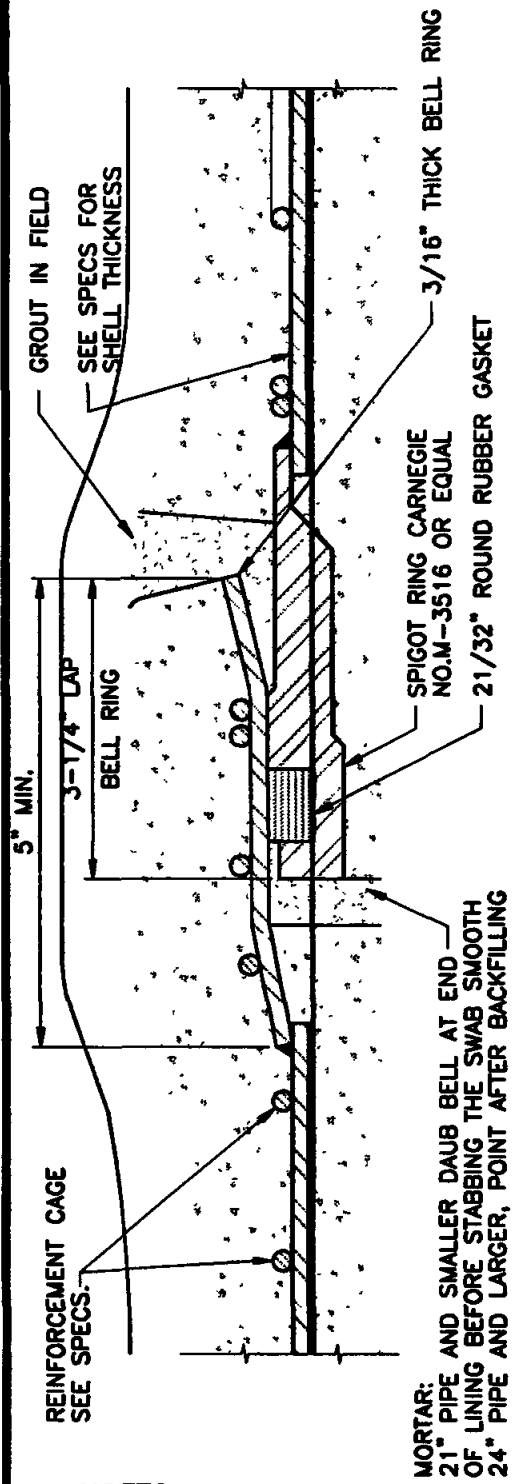
REVISED: 08-11-04

**CITY OF CERRITOS**

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**CERRITOS WATER DIVISION**

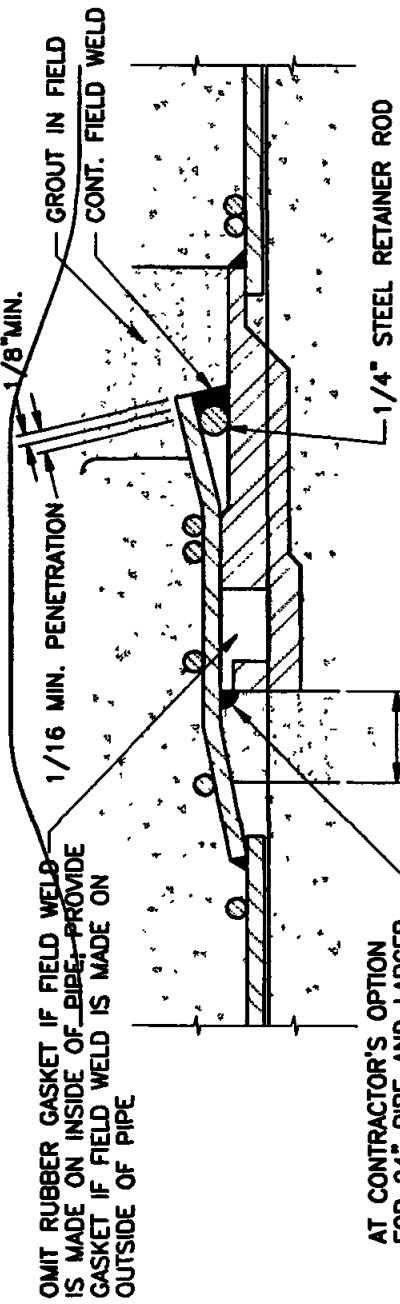
JOINT DETAIL FOR MORTAR LINED AND ASPHALT MASTIC COATED STEEL PIPE  
APP. Joe Holdre  
WATER SUPERINTENDENT

STANDARD DRAWING NUMBER  
**W-D-6**  
DATE: OCTOBER 2004



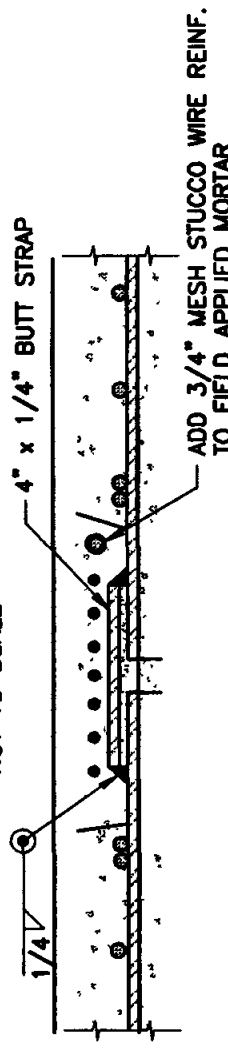
**BELL AND SPIGOT JOINT FOR STEEL CYLINDER CONCRETE PIPE**

NOT TO SCALE



**FIELD WELDS NEAR BENDS FOR STEEL CYLINDER CONCRETE PIPE**

NOT TO SCALE



**ALTERNATE BUTT STRAP JOINT FOR FIELD WELD NEAR BENDS**

NOT TO SCALE

**NOTES:**

- A MORTAR PER SECTION 6-06

MORTAR: 2 1" PIPE AND SMALLER DAUB BELL AT END OF LINING BEFORE STABBING THE SWAB SMOOTH 24" PIPE AND LARGER, POINT AFTER BACKFILLING

OMIT RUBBER GASKET IF FIELD WELD IS MADE ON INSIDE OF PIPE. PROVIDE GASKET IF FIELD WELD IS MADE ON OUTSIDE OF PIPE

AT CONTRACTOR'S OPTION FOR 24" PIPE AND LARGER 1/4"

ADD 3/4" MESH STUCCO WIRE REINF. TO FIELD APPLIED MORTAR

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER DIVISION**

JOINT DETAILS FOR STEEL CYLINDER CONCRETE PIPE

APP. Joe Holdren  
WATER SUPERINTENDENT

STANDARD DRAWING NUMBER

**W-D-7**

DATE: OCTOBER 2004

**ANCHOR FOR M.J. AND R.T. VALVES**

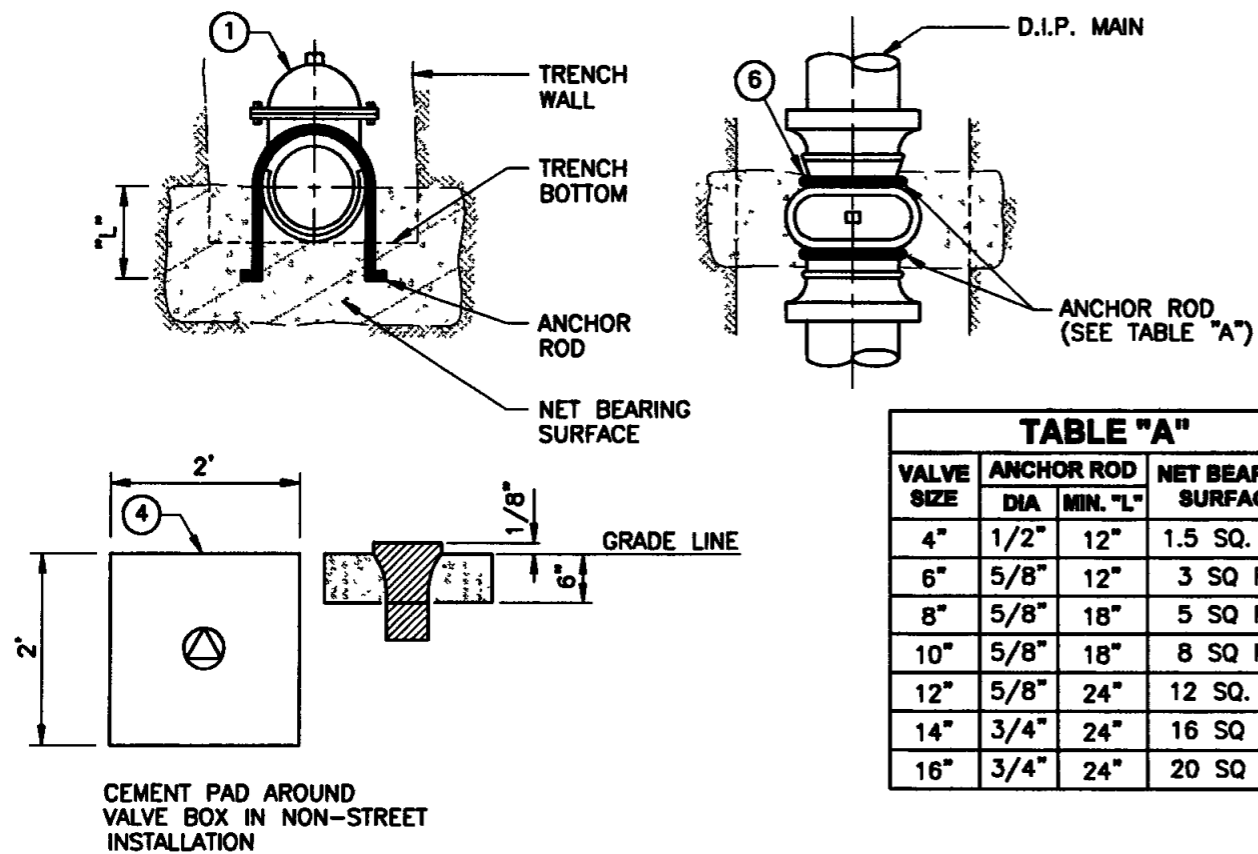
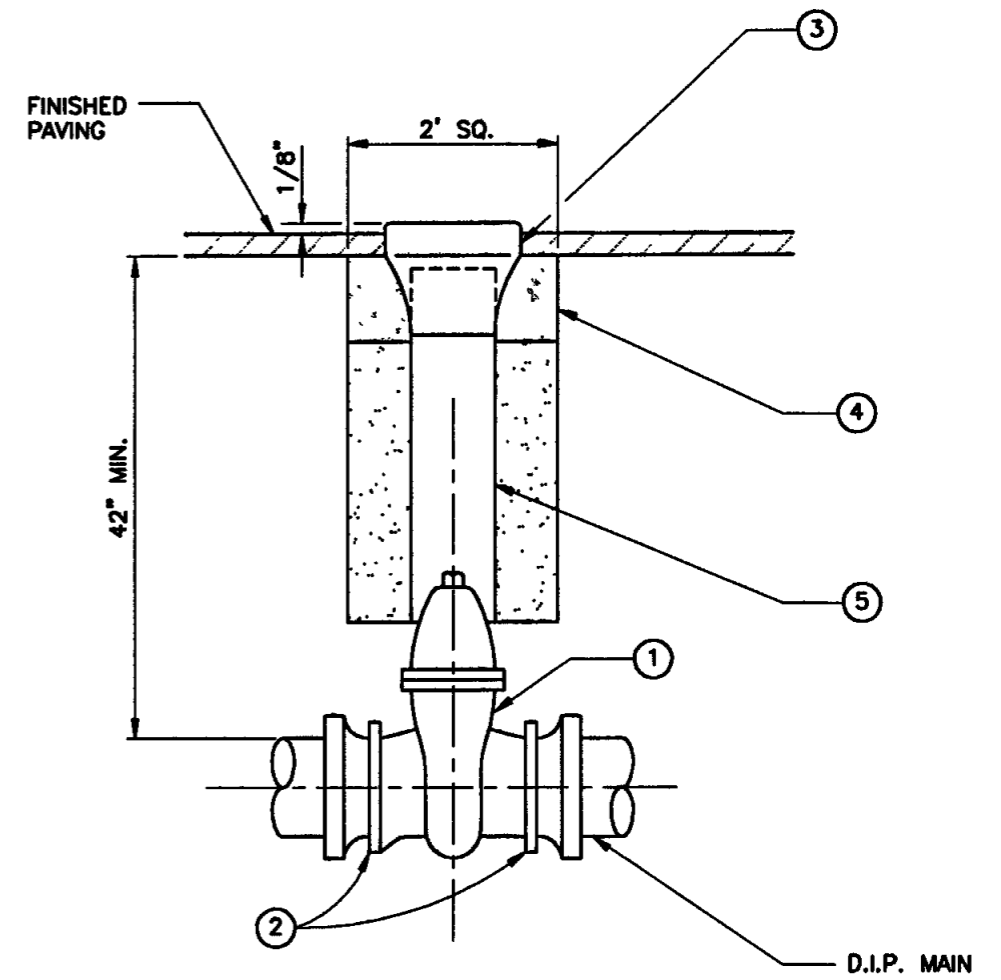


TABLE "A"			
VALVE SIZE	ANCHOR ROD		NET BEARING SURFACE
	DIA	MIN. "L"	
4"	1/2"	12"	1.5 SQ. FT.
6"	5/8"	12"	3 SQ. FT.
8"	5/8"	18"	5 SQ. FT.
10"	5/8"	18"	8 SQ. FT.
12"	5/8"	24"	12 SQ. FT.
14"	3/4"	24"	16 SQ. FT.
16"	3/4"	24"	20 SQ. FT.



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	MECHANICAL JOINT GATE VALVE	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTIONS 4-02 AND 10-04
2	2	DUCTILE IRON RESTRAINT GLAND	EBAA IRON MEGALUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
3	1	VALVE BOX	BROOKS 4 TT (POTABLE), BROOKS 1CR (RECYCLED) OR APPROVED EQUAL	SEE SECTION 4-02-D AND STANDARD DRAWING W-D-32 OR SECTION 4-02-E AND STANDARD DRAWING RWD-10 AS APPROPRIATE
4	1	CONCRETE PAD	2000 PSI PER ASTM C-39 OR READY MIX ASTM C-94	SEE SECTION 6-05
5	1	FLU PIPE	8" C-900 CL200 OR SCH 80 PVC	SEE SECTION 4-02-D AND STANDARD DRAWING W-D-32 OR SECTION 4-02-E AND STANDARD DRAWING RWD-10 AS APPROPRIATE
6	2	ANCHOR RODS	STEEL REINFORCING BAR	SEE SECTION 5-01 AND STANDARD DRAWING W-D-17

**NOTES:**

<b>A</b>	VALVE AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03-G AND 4-03-H
<b>B</b>	VALVE BEARING AREAS ARE TO BE DESIGNED AGAINST UNDISTURBED SOIL WITH A SAFE LATERAL BEARING VALUE OF 1500 LBS PER SQUARE FOOT. ADJUSTMENT SHALL BE MADE FOR OTHER SOILS
<b>C</b>	A VALVE STEM EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STANDARD DRAWING W-D-32 OR RWD-10
<b>D</b>	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02
<b>E</b>	VALVE BOXES SHALL BE INSTALLED 1/8" ABOVE FINISHED GRADE
<b>F</b>	FACE OF CURB SHALL BE MARKED WITH A "V" AND MEASUREMENT IN FEET FROM CURB FACE TO VALVE
<b>G</b>	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE
<b>H</b>	INSTALL NO. 14 COPPER TRACER WIRE IF INSTALLING C900 PVC MAIN

REVISED: 06-11-04

**CITY OF CERRITOS**

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**CERRITOS WATER  
DIVISION**

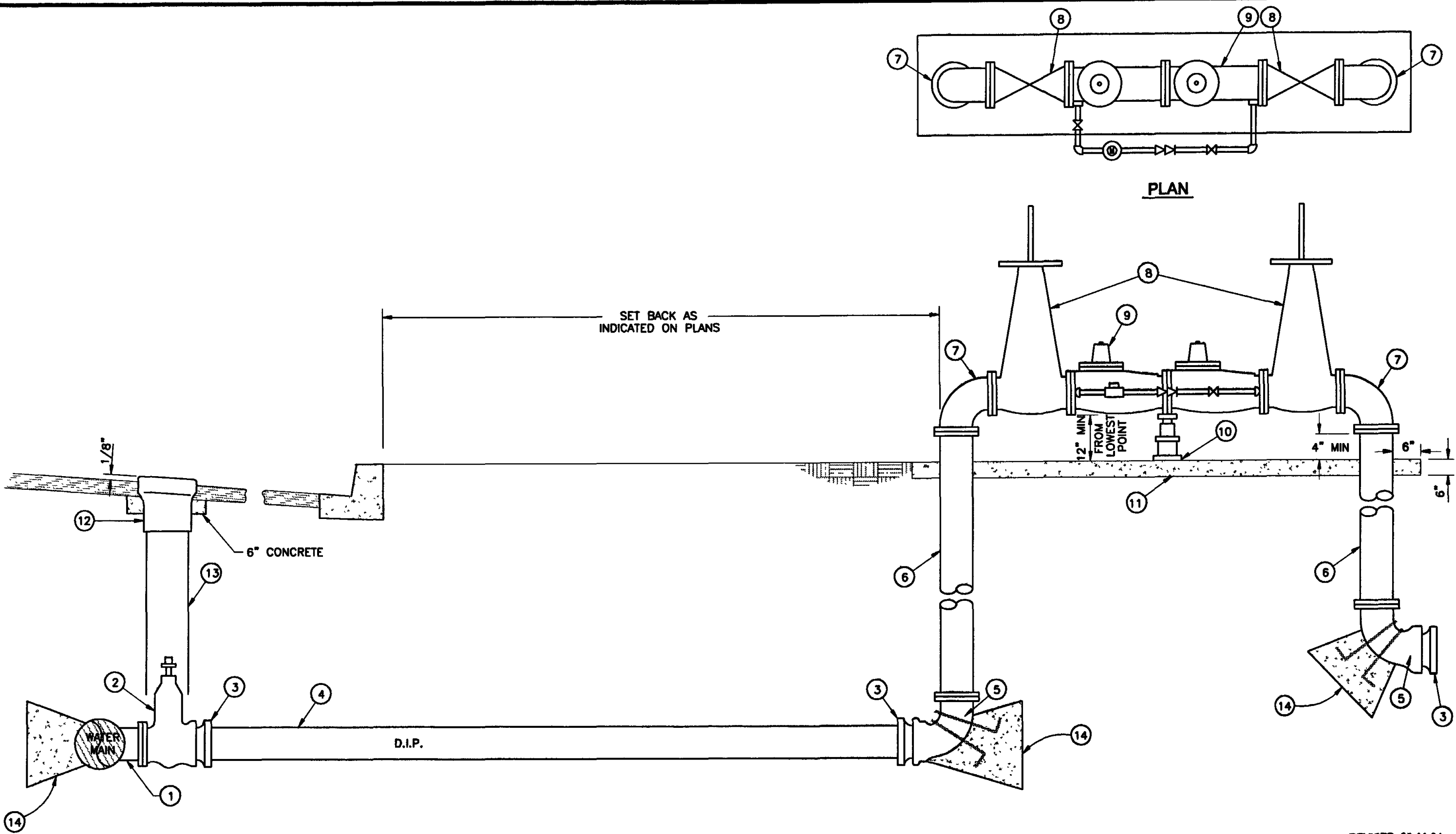
**VALVE AND VALVE  
BOX INSTALLTION**

APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-8**

DATE: OCT 2004



REVISED: 08-11-04

CITY OF CERRITOS

PREPARED BY  
CERRITOS WATER  
DIVISION

FIRE SERVICE  
INSTALLATION  
4" - 6" - 8" - 10"  
APP. *Joe Holden*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-9**

DATE: OCT 2004 SHEET 1 OF 2

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE MJ X MJ X FLANGE OR	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE	MINIMUM 1/4" STEEL	SEE STANDARD DRAWING W-D-22
2	1	RESILIENT WEDGE TAPPING VALVE FLANGE X MJ	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
3	3	DUCTILE IRON RESTRAINT GLAND	EBBA IRON MEGALUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	DUCTILE IRON PIPE	CLASS 350 PER AWWA/ANSI 151/A21-51	SEE SECTION 3-01.1
5	2	DUCTILE IRON 90° BEND MJ X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
6	2	DUCTILE IRON RISER SPOOL FLANGE X FLANGE LENGTH AS REQUIRED	CLASS 53 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
7	2	DUCTILE IRON 90° BEND FLANGE X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
8	2	RESILIENT WEDGE GATE VALVE, OS & Y FLANGE X FLANGE	VALVES AS APPROVED WITH BACKFLOW PREVENTION DEVICE	SEE SECTIONS 4-02, 11 AND 15
9	1	REDUCED PRESSURE DETECTOR ASSEMBLY OR	USC AND L.A. COUNTY APPROVED	SEE SECTIONS 10-14, 11-01 AND SECTION 15
	1	DOUBLE CHECK DETECTOR ASSEMBLY	USC AND L.A. COUNTY APPROVED	SEE SECTIONS 10-14, 11-01 OR 11-02 AND SECTION 15
10	1	ADJUSTABLE PIPE SUPPORT	STAINLESS STEEL	SEE STANDARD DRAWING W-D-33
11	1	CONCRETE PAD	2000 PSI PER ASTM C39 OR READY MIX PER ASTM C94	SEE SECTION 6-05
12	1	VALVE BOX	BROOKS MODEL 4TT OR APPROVED EQUAL	SEE SECTION 4-02-D AND STD DRAWINGS W-D-8 AND W-D-32
13	1	8" FLU PIPE RISER	8" C-900 CL200 OR SCH 80 PVC PIPE	SEE SECTION 4-02-D AND STD DRAWINGS W-D-8 AND W-D-32 LENGTH AS REQUIRED
14	3	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17

**NOTES:**

A	ALL FIRE SERVICES AND BACKFLOW DETECTOR ASSEMBLIES SHALL CONFORM WITH SECTIONS 10-01, 10-14, 11 AND 15
B	ALL BURIED FERROUS SURFACES, PIPES AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
C	ALL NUTS, BOLTS AND WASHERS SHALL BE 316 STAINLESS STEEL PER SECTION 4-03-F
D	MINIMUM SERVICE LATERAL SIZE SHALL BE 4"
E	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02
G	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STD. DRAWING W-D-32 OR RWD-10
H	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

FIRE SERVICE  
INSTALLATION  
4" - 6" - 8" - 10"  
APP. *Joe Holden*  
WATER SUPERINTENDENT

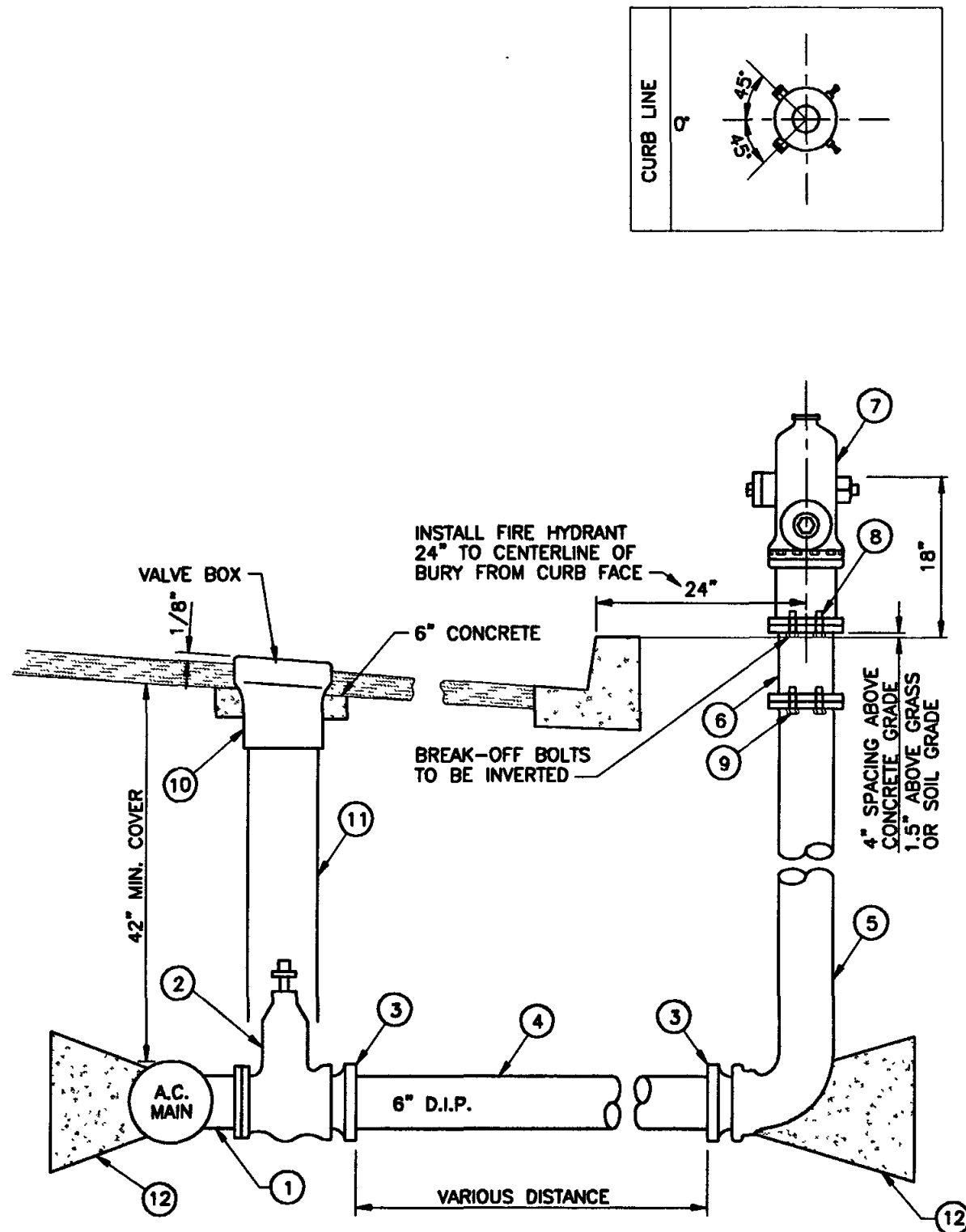
STANDARD  
DRAWING NUMBER

**W-D-9**

DATE: OCT 2004 SHEET 2 OF 2

STANDARD DRAWING MATERIALS

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE M.J. X M.J. X 6" FLANGE OR	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE X 6" FLANGE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE 6" FLANGE	MINIMUM 1/4" STEEL	SEE STANDARD DRAWING W-D-22
2	1	6" RESILIENT WEDGE TAPPING GATE VALVE FLANGE X M.J.	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
3	2	6" DUCTILE IRON RESTRAINT GLAND	EBAA IRON MEGALUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	6" DUCTILE IRON PIPE	CLASS 350, PER AWWA/ANSI 151/A21-51	SEE SECTION 3-01.1
5	2	6" DUCTILE IRON BURY M.J. X 8 HOLE FLANGE LENGTH AS REQUIRED	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTIONS 4-01 AND 13-02
6	1	6" DUCTILE IRON BREAK-OFF SPOOL 8 HOLE FLANGE X FLANGE, 6" MIN LENGTH	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
7	1	BRASS FIRE HYDRANT 6" X 4" X 2 1/2" 8 HOLE FLANGE FOR RESIDENTIAL USE	JONES MODEL 3710	SEE SECTION 13-04 PAINT PER SPECIFICATIONS
	1	BRASS FIRE HYDRANT 6" X 4" X 2 1/2" 8 HOLE FLANGE FOR RESIDENTIAL USE	JONES MODEL 3775	SEE SECTION 13-04 PAINT PER SPECIFICATIONS
8	8	BREAK-OFF BOLTS W/NUTS 5/8" X 3"		SEE SECTION 13-03
9	8	STAINLESS STEEL FLANGE BOLTS W/NUTS 3/4" X 3 1/4"	304 OR 316 STAINLESS STEEL	SEE SECTION 4-03-F
10	1	VALVE BOX	BROOKS 4 TT OR APPROVED EQUAL	SEE SECTION 4-02-D AND STANDARD DRAWINGS W-D-8 AND W-D-32
11	1	8" RISER LENGTH AS REQUIRED	C-900 CL200 OR SCH 80 PVC PIPE	SEE SECTION 4-02-D AND STANDARD DRAWINGS W-D-8, AND W-D-32
12	2	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17



NOTE: WHERE HYDRANT IS EXPOSED TO TRAFFIC OR LOCATED IN UNDEVELOPED AREAS WHERE STREETS ARE WITHOUT CURBS, BARRICADES SHALL BE INSTALLED AS SHOWN ON STANDARD DRAWING W-D-11

NOTES:

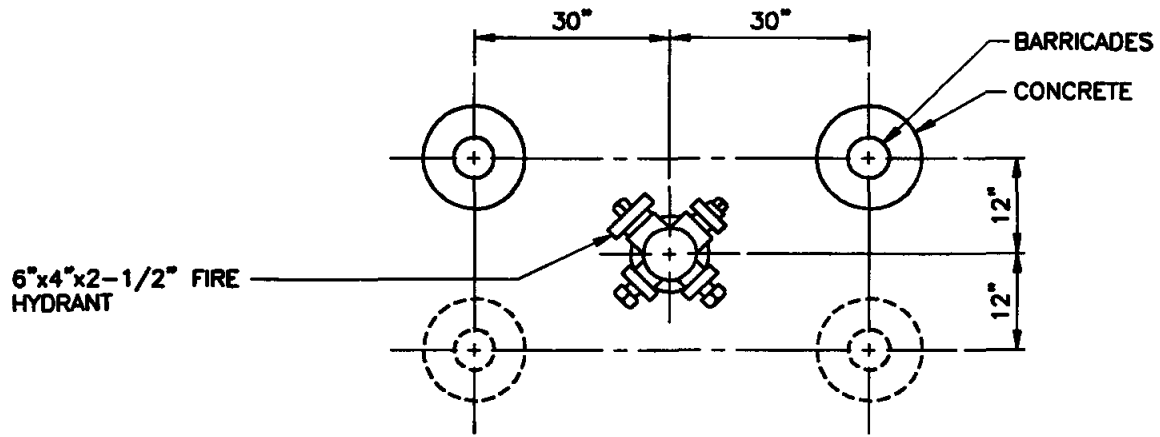
A	ALL FIRE HYDRANT ASSEMBLIES SHALL CONFORM WITH SECTION 13
B	ALL BURIED FERROUS SURFACES, PIPES AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
C	ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
D	FIRE HYDRANT LATERAL SIZE SHALL BE 6"
E	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02
G	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STANDARD DRAWING W-D-32 OR RWD-10
H	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

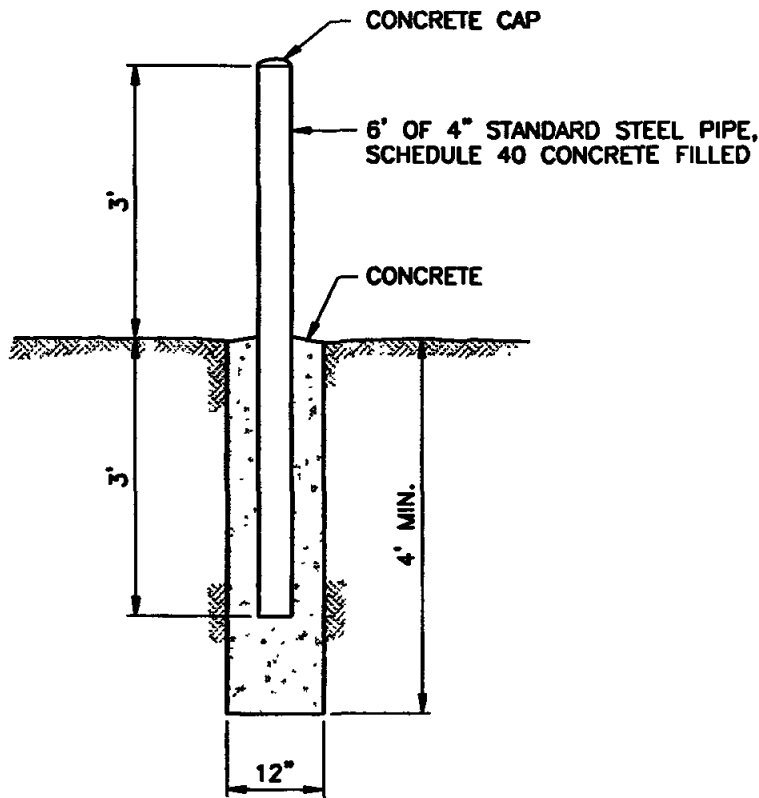
CITY OF CERRITOS

PREPARED BY <b>CERRITOS WATER DIVISION</b>	STANDARD 6" FIRE HYDRANT ASSEMBLY  APP. <i>Joe Holder</i> WATER SUPERINTENDENT	STANDARD DRAWING NUMBER <b>W-D-10</b>  DATE: OCT 2004
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**TYPICAL FIRE HYDRANT BARRICADES FOR STREETS WITHOUT CURBS**



**BARRICADE DETAILS**

**NOTES:**

A	THE EXACT LOCATION OF BARRICADES MAY BE CHANGED BY THE WATER UTILTY ADMINISTRATOR IN THE FIELD
B	PAINT BARRICADES CERRITOS YELLOW

REVISED: 06-11-04

**CITY OF CERRITOS**

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DIVISION**

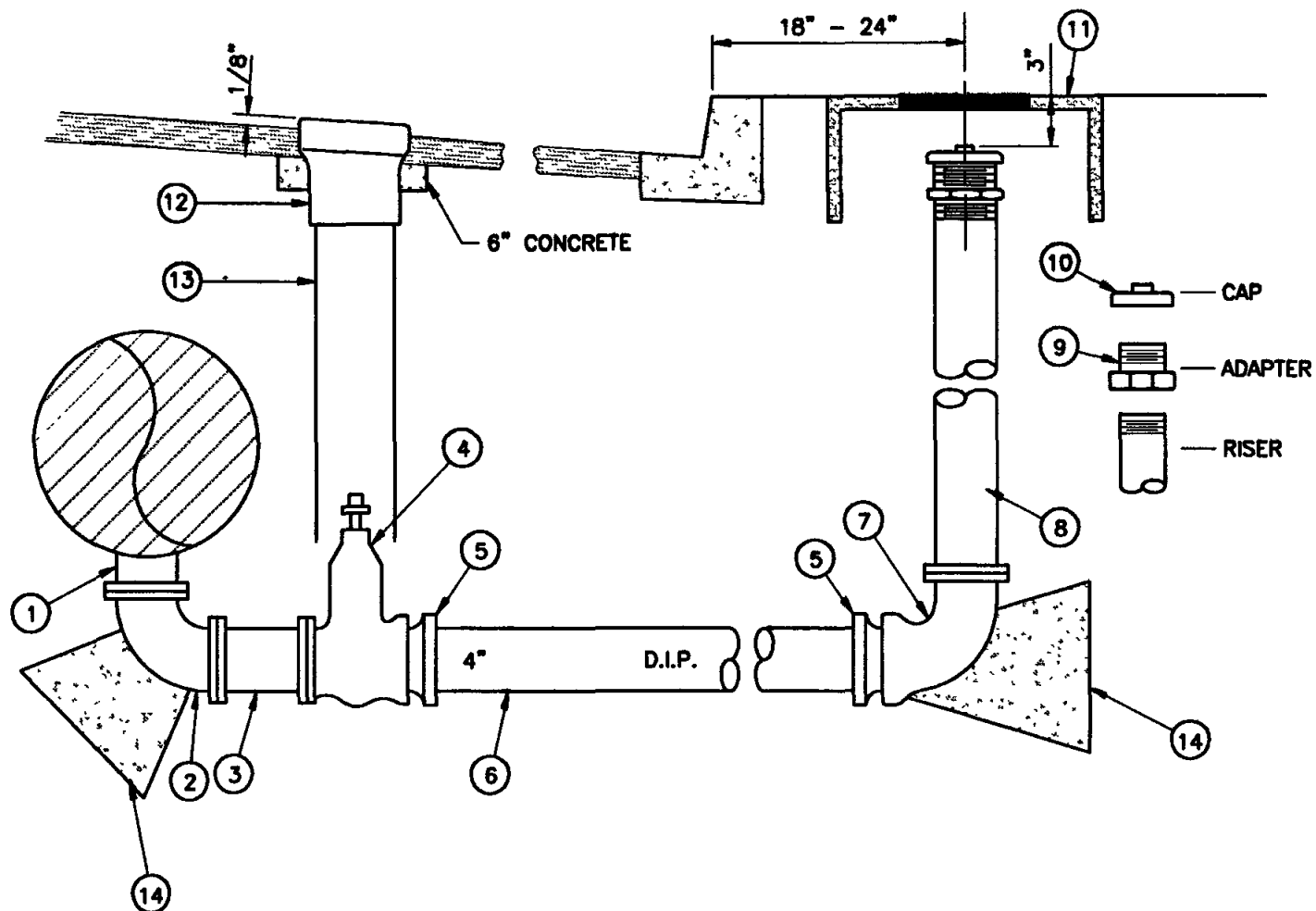
**BARRICADES  
FOR FIRE HYDRANTS**

APP. *Joe Holdren*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-11**

DATE: OCTOBER 2004



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE M.J. X M.J. X 4" FLANGE OR	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE X 4" FLANGE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE 4" FLANGE	MINIMUM 1/4" STEEL	SEE STANDARD DRAWING W-D-22
2	1	DUCTILE IRON 90° BEND FLANGE X FLANGE OR	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
3	1	DUCTILE IRON SPOOL FLANGE X FLANGE LENGTH AS REQUIRED	CLASS 53 DUCTILE IRON PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
4	1	4" RESILIENT WEDGE GATE VALVE FLANGE X M.J.	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
5	2	4" DUCTILE IRON RESTRAINT GLAND	EBAA IRON MEGALUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
6	1	4" DUCTILE IRON PIPE	CLASS 350 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
7	1	4" DUCTILE IRON 90° BEND M.J. X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
8	1	4" DUCTILE IRON PIPE RISER. FLANGE X I.P.T. LENGTH AS REQUIRED	CLASS 53 DUCTILE IRON PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
9	1	4" BRASS ADAPTER 4" I.P.T. X 4" N.S.T.	POTTER-ROEMER 2825 OR APPROVED EQUAL	
10	1	4" PLASTIC HYDRANT CAP N.S.T.		
11	1	CONCRETE METER BOX	BROOKS MODEL #37 WITH CAST IRON TRAFFIC COVER	SEE SECTION 10-10 AND STANDARD DRAWING W-D-26
12	1	VALVE BOX	BROOKS 4 TT OR APPROVED EQUAL	SEE SECTION 4-02-D AND STANDARD DRAWINGS W-D-8, W-D-32 AND RWD-10
13	1	8" FLU PIPE RISER LENGTH AS REQUIRED	8" C-900 CL200 OR SCH 80 PVC	SEE SECTION 4-02-D AND STANDARD DRAWINGS W-D-8, AND W-D-32
14	2	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17

**NOTES:**

A	ALL BLOWOFF ASSEMBLIES SHALL CONFORM WITH SECTION 12-01
B	ALL BURIED FERROUS SURFACES, PIPES AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
C	ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
D	ALL PERMANENT BLOWOFF LATERAL SIZE SHALL BE 4"
E	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02
G	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STANDARD DRAWING W-D-32 OR RWD-10
H	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

**4" BLOW-OFF  
ASSEMBLY**

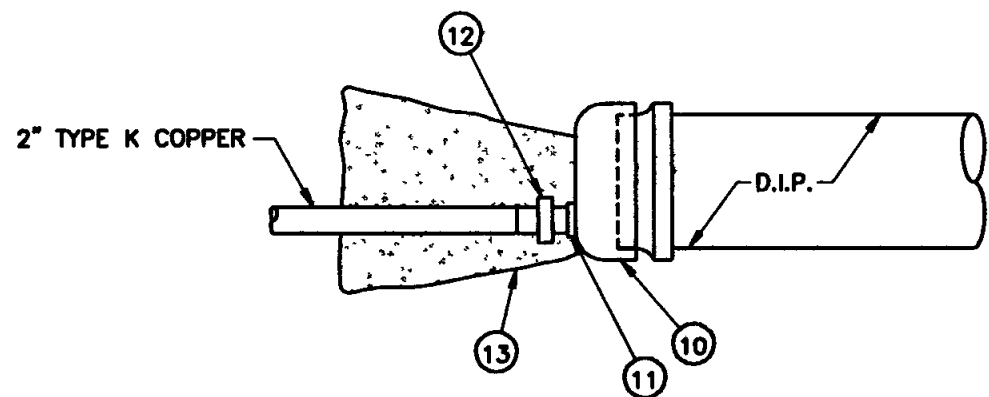
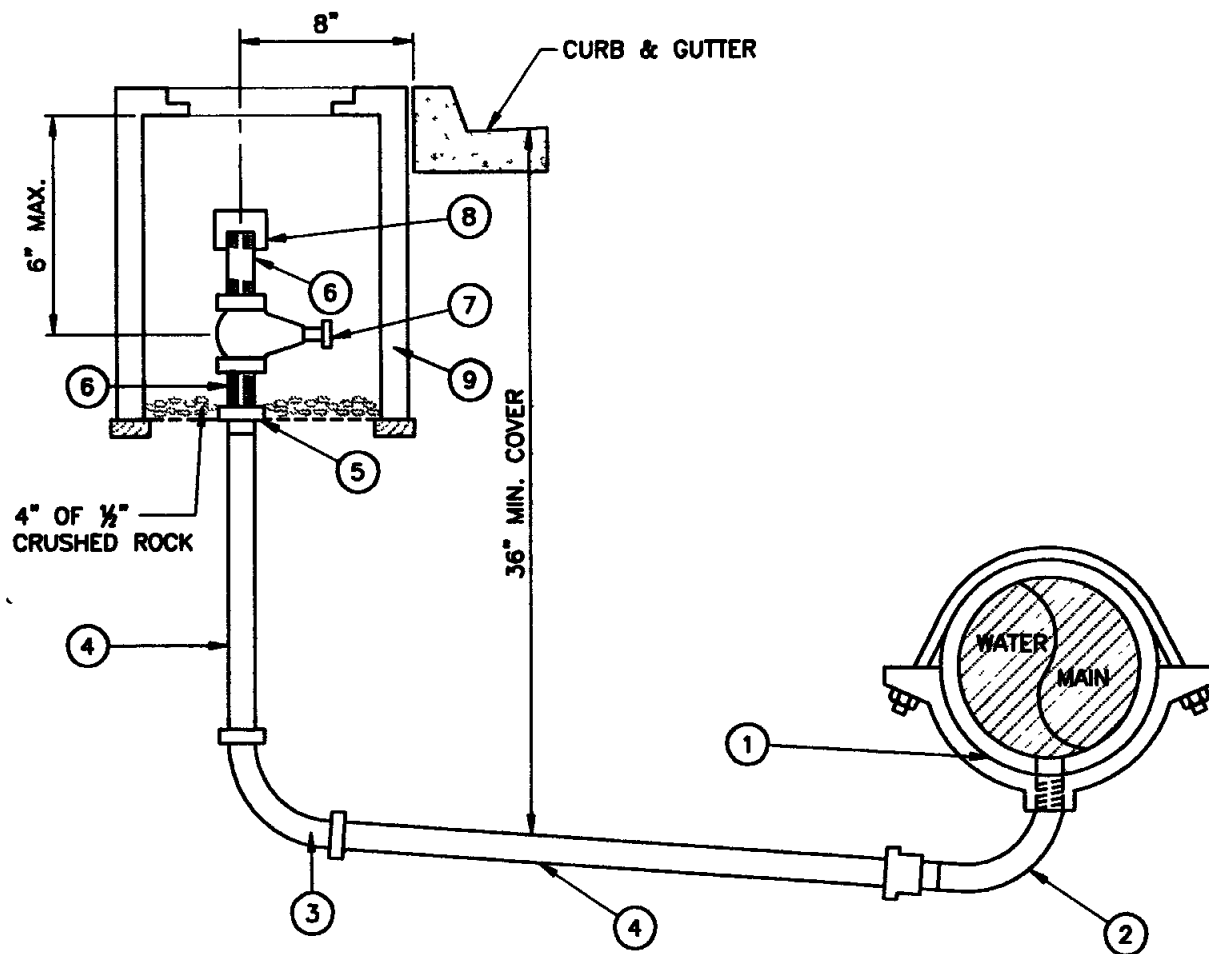
APP. *Joe Holdren*

WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-12**

DATE: OCT 2004



ALTERNATE FOR CONNECTION  
AT END OF MAIN

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	2" BRONZE SADDLE OR	JONES J-979, MUELLER BR 2B, FORD F202B OR APPROVED EQUAL	SEE SECTION 10-03
	1	2" BRONZE AND STAINLESS STEEL SADDLE FOR RECYCLED WATER APPLICATIONS	JONES J-969, MUELLER BR 2BS, FORD 202BS OR APPROVED EQUAL	SEE SECTION 10-03
2	1	2" COMPRESSION 90° CTS X M.I.P. THREAD	MUELLER H-15531 OR APPROVED EQUAL	SEE SECTION 10-07
3	3	2" COMPRESSION 90° CTS X CTS	MUELLER H-15526 OR APPROVED EQUAL	SEE SECTION 10-07
4	1	2" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
5	2	2" STRAIGHT COMPRESSION COUPLING CTS X F.I.P. THREAD	MUELLER H-15451 OR APPROVED EQUAL	SEE SECTION 10-01
6	2	2" BRASS CLOSE NIPPLE I-P THREAD		
7	2	2" BRASS BALL VALVE F.I.P. X F.I.P. THREAD	JONES J-1900W, MUELLER B-20283-3	
8	2	2" ABS PLASTIC PLUG M.I.P. THREAD		
9	4	CONCRETE METER BOX	BROOKS MODEL #37 W/ CAST IRON TRAFFIC COVER	SEE SECTION 10-10 AND STANDARD DRAWING W-D-26
10	1	DUCTILE IRON MECHANICAL JOINT CAP WITH 2.5" F.I.P. THREADED CAP	TYLER UNION CLASS 350 OR APPROVED EQUAL WITH EBBA IRON MEGALUG, FORD UNI-FLANGE GLAND	SEE SECTION 4-01 AND STANDARD DRAWING W-D-16
11	1	2 1/2" X 2" DIELECTRIC NYLON HEX BUSHING	DELTRIN OR APPROVED EQUAL	SEE STANDARD DRAWINGS W-D-16 AND W-D-24
12	1	2" STRAIGHT COMPRESSION COUPLING. CTS X M.I.P.	MUELLER H14528 OR APPROVED EQUAL	SEE SECTION 10-07
13	1	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17

**NOTES:**

A	ALL BLOW-OFF SERVICES AND ASSEMBLIES SHALL CONFORM WITH SECTIONS 10 AND 12-01
B	IF MAIN IS STEEL, WELD COUPLING 1/2 SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING. SEE STANDARD DRAWING W-D-24
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTING SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

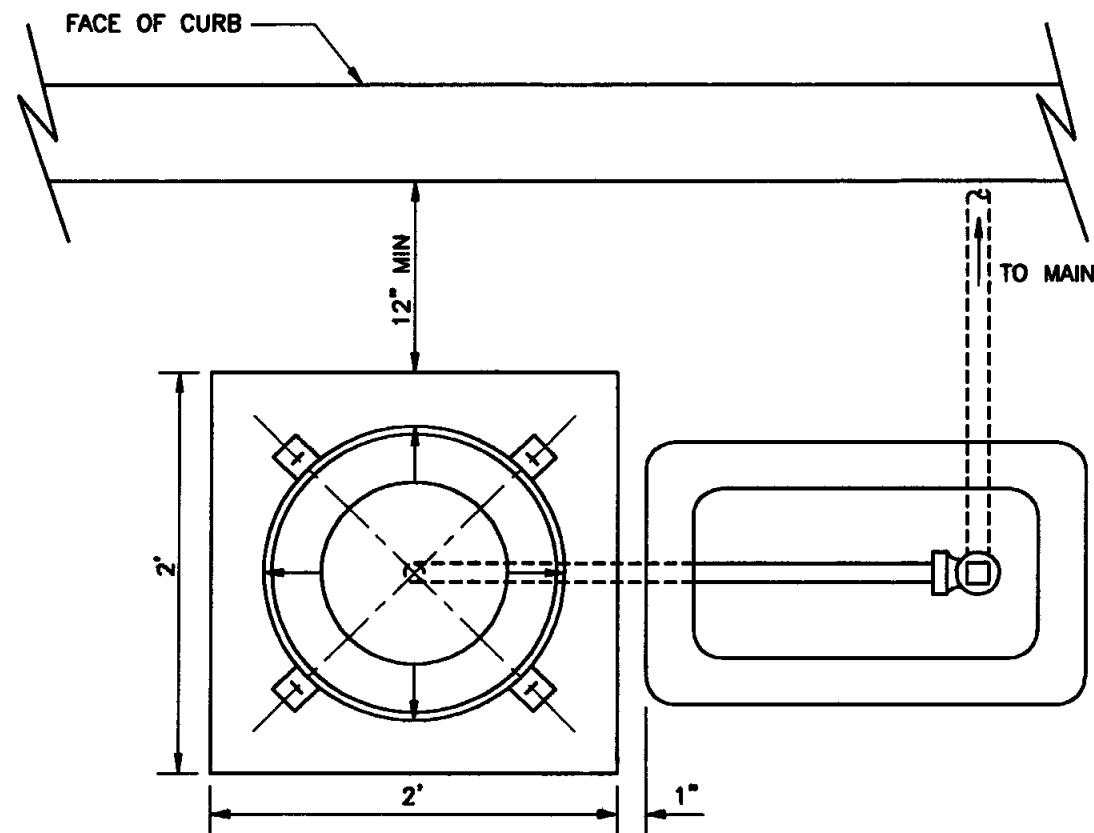
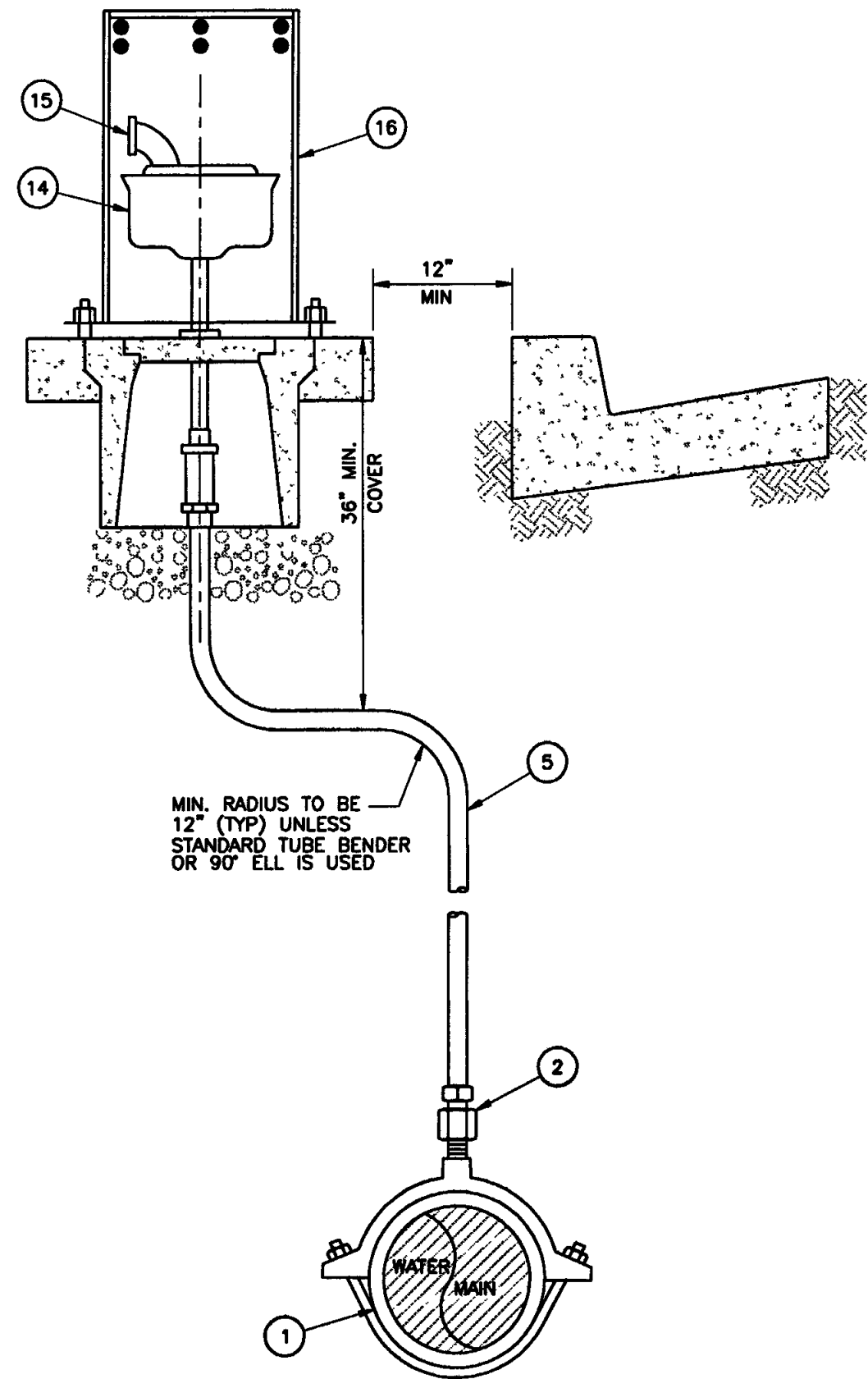
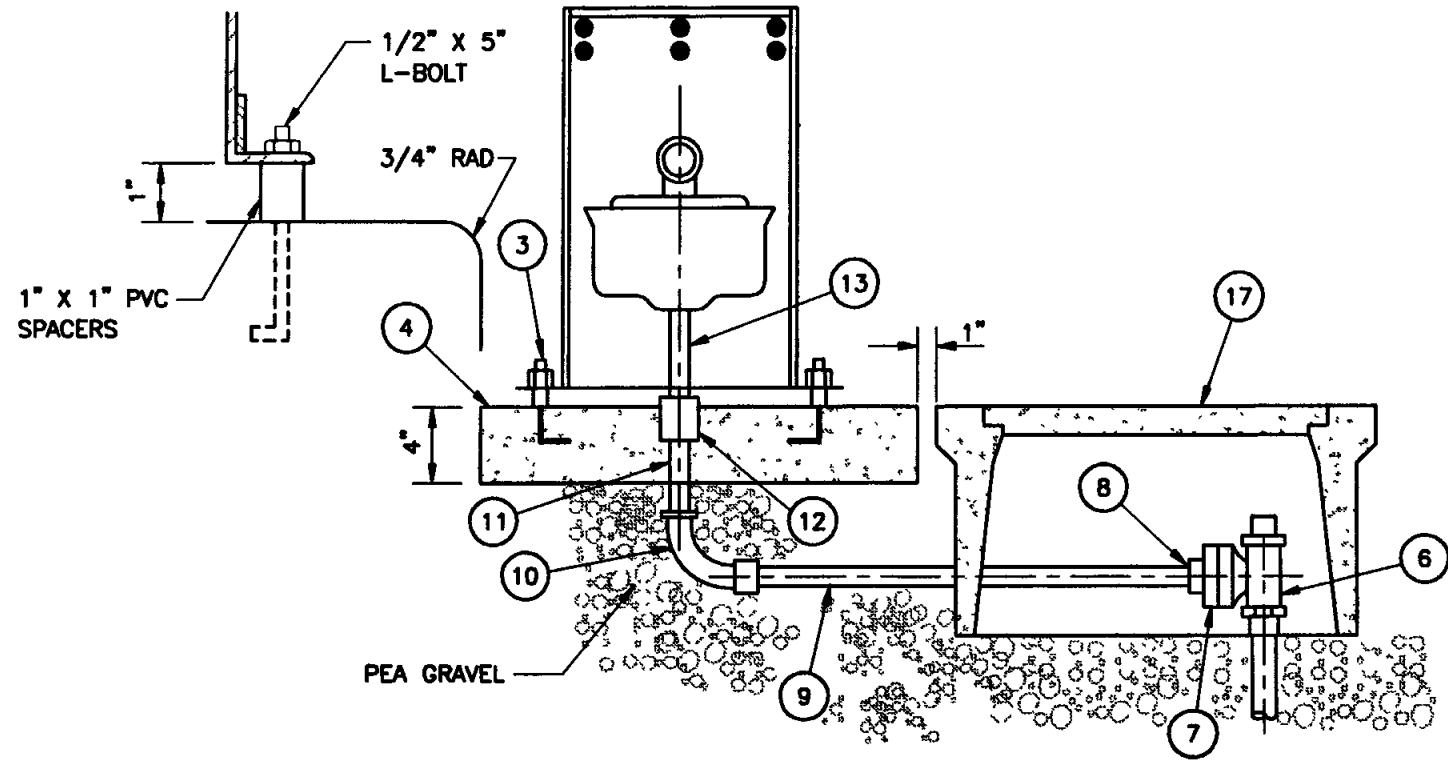
REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

2" BLOW-OFF  
ASSEMBLY  
APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-13**  
DATE: OCT 2004



REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
CERRITOS WATER  
DIVISION

AIR/VACUUM RELEASE  
ASSEMBLY

APP. *Joe Holdrege*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

W-D-14

DATE: OCT 2004 SHEET 1 OF 2

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	1" OR 2" BRONZE SADDLE, SIZE AS REQUIRED OR	JONES J-979, MUELLER, BR2B, FORD F202B OR APPROVED EQUAL	SEE SECTION 10-03
	1	1" OR 2" BRONZE AND STAINLESS STEEL SADDLE FOR RECYCLED WATER APPLICATIONS	JONES J-969, MUELLER BR 2S	SEE SECTION 10-03
2	1	1" OR 2" BRONZE COMPRESSION CORPORATION STOP	MUELLER 110 H-15013, FORD 202BS OR APPROVED EQUAL	SEE SECTION 10-05
3	1	½" X 5" STAINLESS STEEL ANCHOR BOLTS WITH NUTS AND WASHERS SET IN PAD		SEE SECTION 4-03-F
4	1	2' X 2' X 4" CONCRETE PAD	2000 PSI PER ASTM C39 OR READY MIX PER C94	SEE SECTION 6-05
5	1	1" OR 2" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
6	1	1" X 1" OR 2" X 2" BRONZE COMPRESSION ANGLE METER STOP. SIZE AS REQUIRED	1"-MUELLER 110 H-14258, FORD KV43-444WQ OR APPROVED EQUAL. 2"-MUELLER 110H-14277, FORD FV43-777WQ OR APPROVED EQUAL	SEE SECTION 10-06
7	1	1" X 3/4" METER BUSHING (1" SERVICE LINE) OR	MUELLER H-10889, FORD BBIM-34 OR APPROVED EQUAL	
	1	2" BRONZE METER COMPANION FLANGE (2" SERVICE LINE)	JONES J-129, FORD CF31-77 OR APPROVED EQUAL	
8	1	1" M.I.P. X 1" CTS BRONZE COMPRESSION ADAPTER (1" SERVICE LINE) OR	MUELLER H-15428, FORD C84-44Q OR APPROVED EQUAL	SEE SECTION 10-07
	1	2" M.I.P. X 2" CTS COMPRESSION ADAPTER (2" SERVICE LINE)	MUELLER H-15428, FORD C84-77Q OR APPROVED EQUAL	SEE SECTION 10-07
9		1" OR 2" TYPE K COPPER TUBING, SIZE AS REQUIRED		SEE SECTION 10-01
10	1	1" OR 2" BRONZE COMPRESSION 90° F.I.P. X C.T.S.	MUELLER 110 H-15533 OR APPROVED EQUAL	SEE SECTION 10-06
11	1	1" OR 2" BRASS NIPPLE, SIZE AND LENGTH AS REQUIRED		LENGTH AS REQUIRED
12	1	1" OR 2" BRASS COUPLING F.I.P. SIZE AS REQUIRED		
13	1	1" OR 2" BRASS NIPPLE, SIZE AND LENGTH AS REQUIRED		LENGTH AS REQUIRED
14	1	1" OR 2" COMBINATION AIR/VAC AND AIR RELEASE VALVE, SIZE AS REQUIRED	APCO COMBINATION AIR VALVE SERIES 143C OR 145C	
15	1	1" OR 2" STREET ELL 90° WITH SCREEN FITTING - 1" OR 2" M.I.P.	NORTH TOWN COMPANY HYTECH AIR VAC SCREENS OR APPROVED EQUAL	
16	1	1" AIR VAC ENCLOSURE WITH EPOXY POWDER COATING AS REQUIRED OR	PIPELINE PRODUCTS CERR-1224 OR APPROVED EQUAL	ENCLOSURE SIZE 12" DIA X 24" TALL, COLOR AS REQUIRED
	1	2" AIR VAC ENCLOSURE WITH EPOXY POWDER COATING AS REQUIRED	PIPELINE PRODUCTS CERR-1624 OR APPROVED EQUAL	ENCLOSURE SIZE 16" DIA X 24" TALL, COLOR AS REQUIRED
17	1	CONCRETE METER BOX WITH CONCRETE COVER	BROOKS MODEL #37 OR APPROVED EQUAL	SEE SECTION 10-10 AND STANDARD DRAWING W-D-26

**NOTES:**

A	ALL SERVICES AND AIR/VACUUM RELEASE ASSEMBLIES SHALL CONFORM WITH SECTIONS 10 AND 11-03
B	IF MAIN IS STEEL, WELD COUPLING ½ SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING. SEE STANDARD DRAWING W-D-24
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

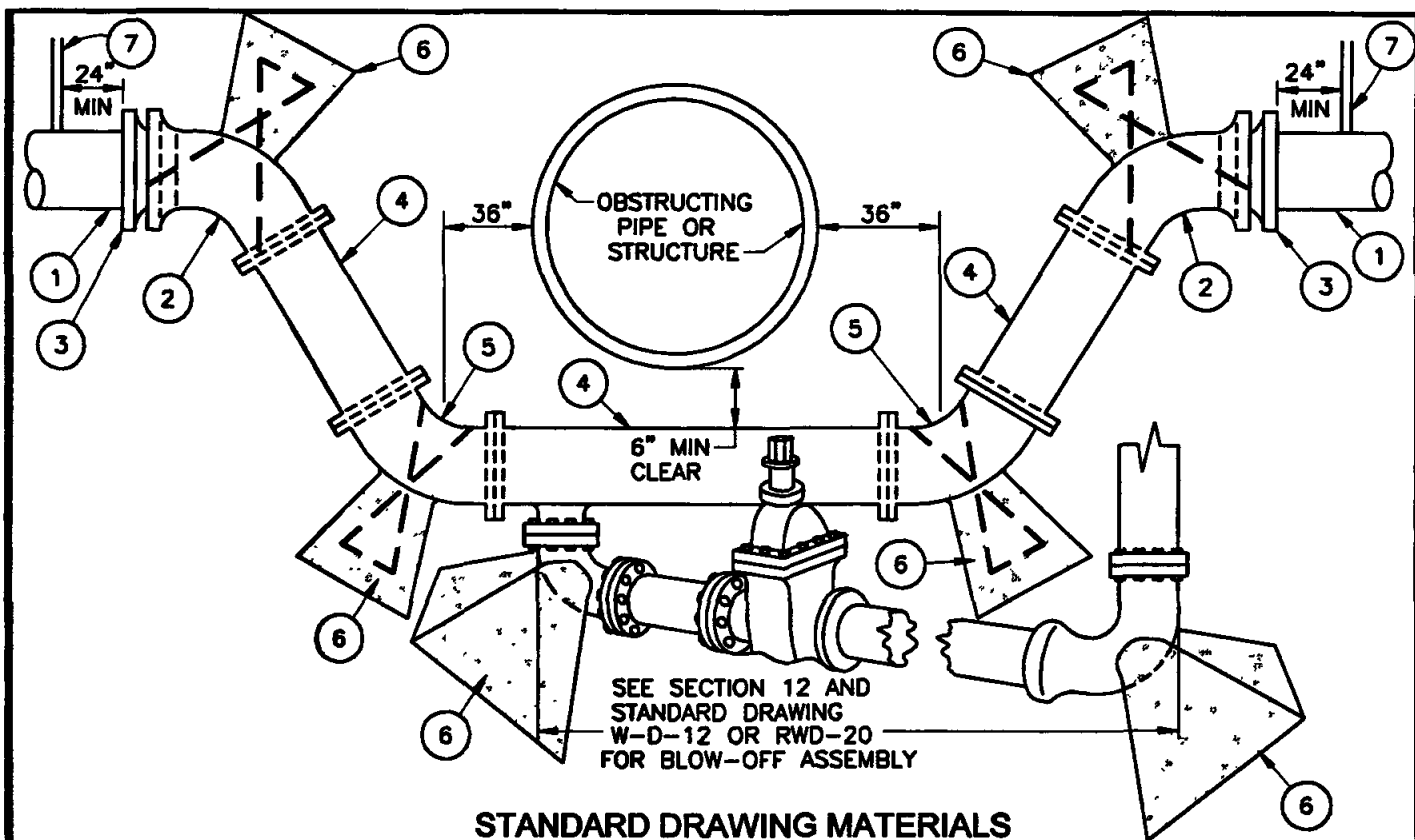
AIR/VACUUM RELEASE  
ASSEMBLY

APP. Joe Holdren  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-14**

DATE: OCT 2004 SHEET 2 OF 2



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON PIPE	CLASS 350 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
2	1	DUCTILE IRON 90° BEND M.J. X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
3	1	DUCTILE IRON RESTRAINT GLAND	EBAA IRON MEGALUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	DUCTILE IRON SPOOL FLANGE X FLANGE LENGTH AS REQUIRED	CLASS 53 DUCTILE IRON PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
5	1	DUCTILE IRON 90° BEND FLANGE X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
6	6	CONCRETE THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17
7	1	AIR AND VACUUM RELEASE VALVE ASSEMBLY	1" COMBINATION AIR AND VACUUM RELEASE VALVE ASSEMBLY IF HIGH POINT IS CREATED IN MAIN. TO BE DETERMINED BY THE WATER SUPERINTENDENT	SEE SECTION 11-03 AND STANDARD DRAWING W-D-14

**NOTES:**

A	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
B	ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
C	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
D	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
E	THESE MATERIALS SHALL APPLY TO ALL POTABLE AND RECYCLED WATER SYSTEMS
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE
G	THRUST BLOCK CAN BE INSTALLED ON OPPOSITE END OF ELBOW IF REQUIRED DUE TO LACK OF COVER UPON CITY APPROVAL

REVISED: 06-11-04

# CITY OF CERRITOS

**PREPARED BY  
CERRITOS WATER  
DIVISION**

**TYPICAL INVERTED  
SIPHON CONSTRUCTION**

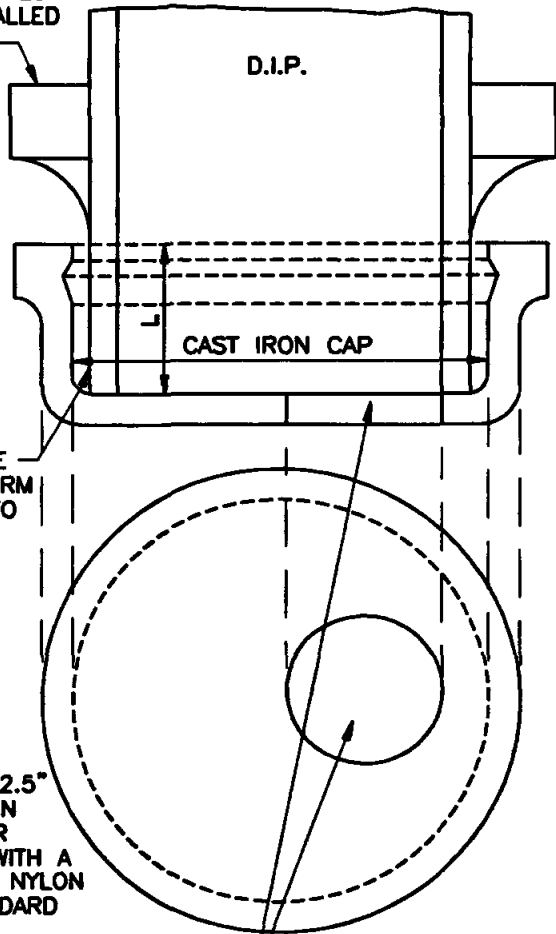
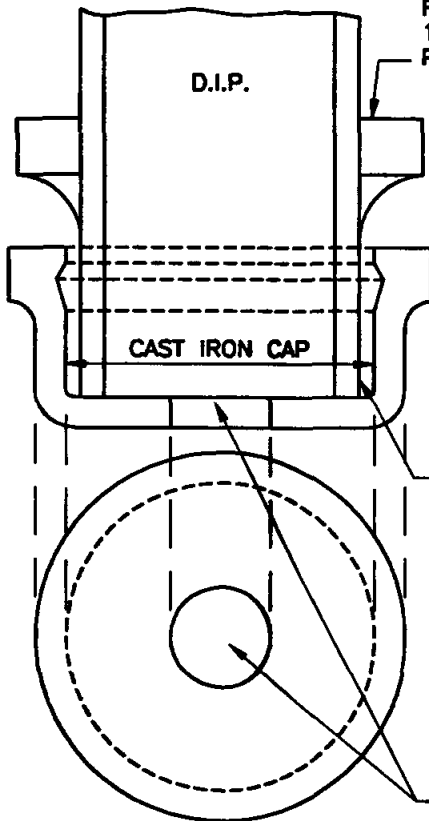
APP. *Joe Holdren*  
WATER SUPERINTENDENT

**STANDARD  
DRAWING NUMBER**

**W-D-15**

DATE: OCTOBER 2004

M.J. GLAND SHALL BE EBAA IRON MEGALUG OR FORD UNI-FLANGE SERIES 1400 AND CAPS INSTALLED PER SECTION 4-01



THE ANNULAR SPACE SHALL BE OF UNIFORM WIDTH AND DEPTH TO ALLOW FOR PROPER PLACING OF GASKET

DRILL AND TAP TO 2.5" STANDARD THREAD IN 4" AND 6" CAP FOR 2" PIPE OR PLUG WITH A 2.5"x2" DIELECTRIC NYLON BUSHING PER STANDARD DRAWING W-D-24

DRILL AND TAP TO 3" STANDARD THREAD IN 8", 10" AND 12" PLUG FOR A 2" PIPE OR PLUG WITH A 2.5"x2" DIELECTRIC NYLON BUSHING PER STANDARD DRAWING W-D-24

UNLESS OTHERWISE SHOWN ON THE PLANS, A 2" OR 3" CAST IRON PLUG SHALL BE FURNISHED WITH EACH TAPPED AND THREADED CAP

TAPPED CAPS			
SIZE INCHES	TAP INCHES	L INCHES	WEIGHT POUNDS
4	2.5	4.60	27
6	2	4.65	40
8	3	4.75	59
10	3	4.75	84
12	3	4.75	108

**NOTES:**

A	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
B	THRUST BLOCKS WILL BE REQUIRED ON ALL CAPS PER SECTION 5 AND STANDARD DRAWING W-D-17
C	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
D	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
E	THESE MATERIALS SHALL APPLY TO ALL POTABLE AND RECYCLED WATER SYSTEMS
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

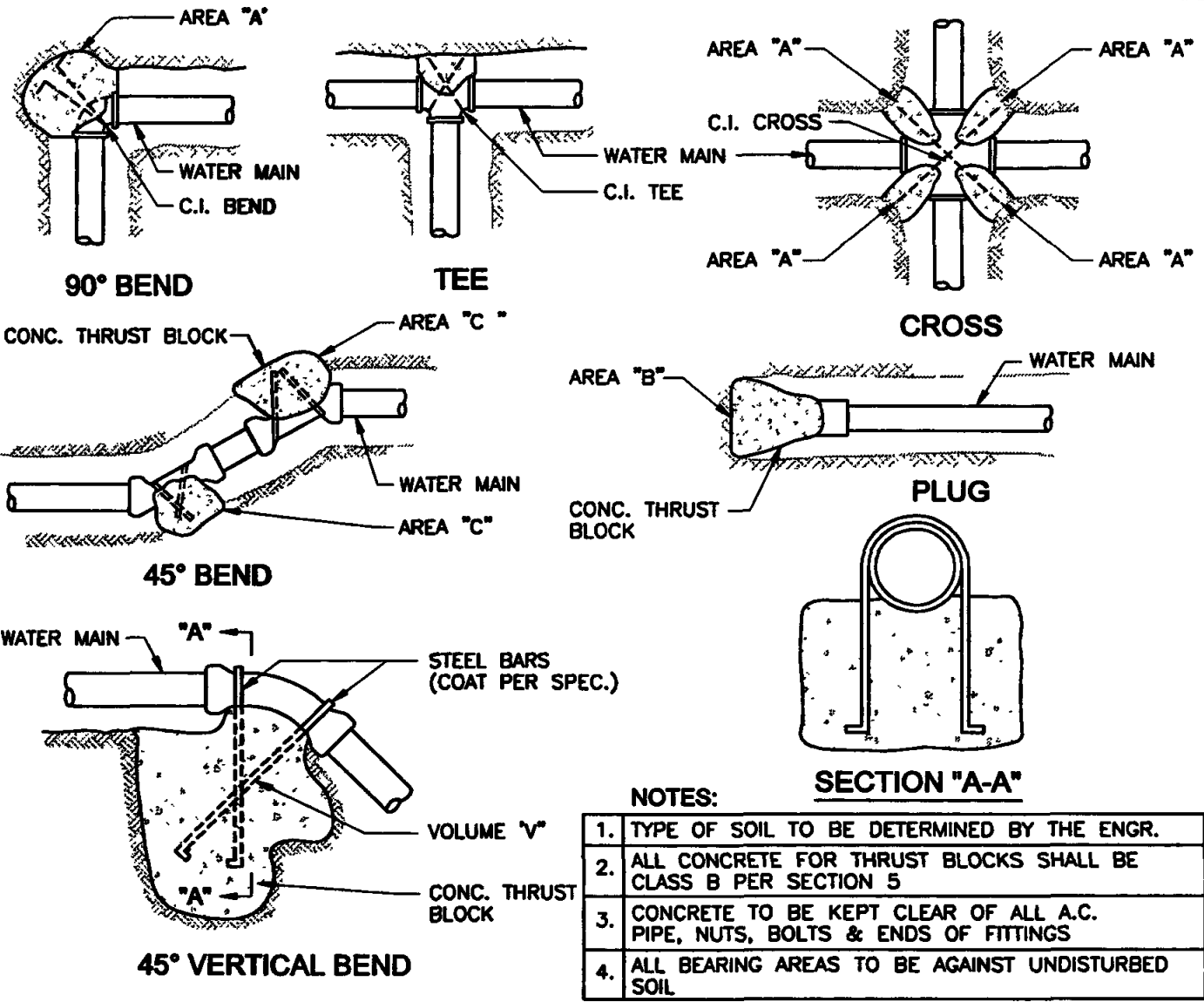
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# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
DIVISION**

CAST IRON CAPS  
FOR D.I. PIPE  
APP. Joe Holdre  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-16**  
DATE: OCTOBER 2004



SIZE	MINIMUM BEARING AREA (SQ.FT.)									45° VERTICAL BENDS		NOTE: BEARING AREAS ARE BASED ON A TEST PRESSURE OF 225 P.S.I. THRUST BLOCKS FOR FITTINGS THAT ARE TO BE TESTED AT HIGHER PRESSURE SHALL BE INCREASED ACCORDINGLY AS APPROVED BY THE ENGINEER.
	SOFT CLAY 1,000#/SF.			MEDIUM CLAY & SAND 1900#/SF.			SAND & GRAVEL 2,000#/SF.			CONCRETE VOLUME V (CU.VDS)	STEEL BAR SIZE	
TOP OF SOIL	A	B	C	A	B	C	A	B	C			
6" MAIN	9	7	5	6	4	4	5	3	3	1.2	#3	
8" MAIN	16	11	9	11	8	6	8	6	4	2.2	#4	
10" MAIN	25	18	14	17	12	9	13	9	7	3.4	#5	
12" MAIN	36	26	20	24	17	13	18	13	10	4.8	#5	
16" MAIN	64	46	36	43	30	23	32	23	18	8.5	#6	
18" MAIN	81	58	46	55	36	30	40	29	23	10.8	#7	

**NOTES:**

A LARGER STEEL MAINS USE WELDED STEEL JOINTS AS SHOWN ON THE PLANS

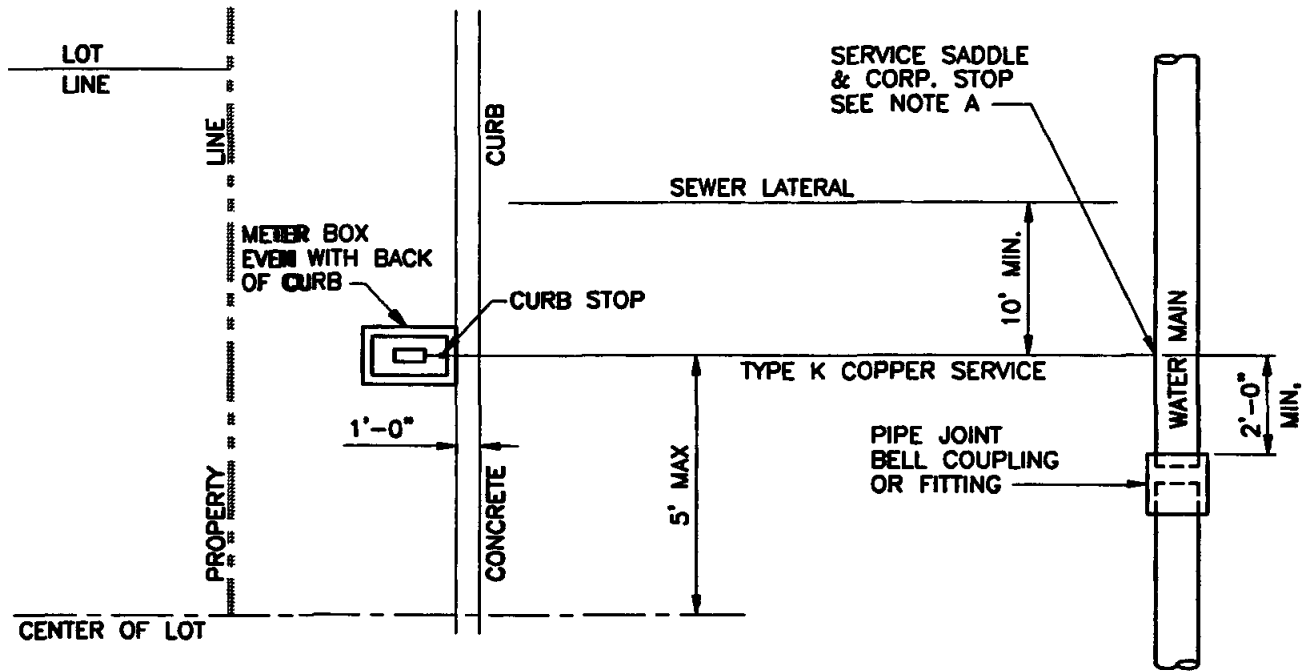
B ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02

REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY <b>CERRITOS WATER DIVISION</b>	TYPICAL THRUST BLOCKS  APP. <i>Joe Holden</i> WATER SUPERINTENDENT	STANDARD DRAWING NUMBER <b>W-D-17</b>  DATE: OCTOBER 2004
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**NOTE:**

**A** FOR TYP WATER SERVICE INSTALLATION REFER TO DWG NOS. W-D-19 OR W-D-20A

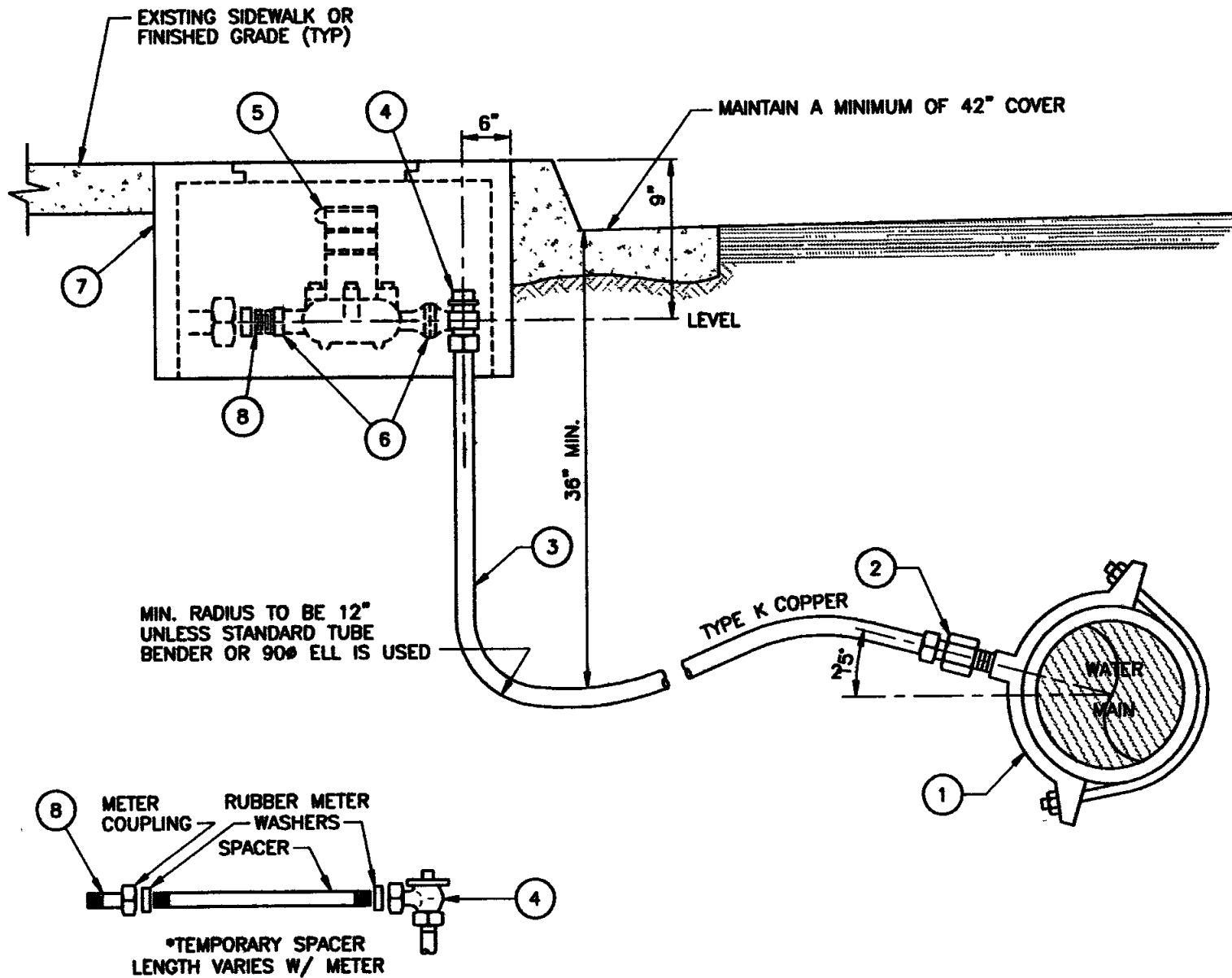
REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
DIVISION**

DETAIL OF SERVICE AND  
METER INSTALLATION  
APP. Joe Holdren  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-18**  
DATE: OCTOBER 2004



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	1" BRONZE SADDLE	JONES J-979, MUELLER BR 2B, FORD F202B OR APPROVED EQUAL	SEE SECTION 10-03
	1	1" BRONZE AND STAINLESS STEEL SADDLE FOR RECYCLED WATER APPLICATIONS	JONES J-969, MUELLER BR 2S, FORD 202BS OR APPROVED EQUAL	SEE SECTION 10-03
2	1	1" BRONZE COMPRESSION CORPORATION STOP	MUELLER 110 H-15013, FORD FB1100-4Q OR APPROVED EQUAL	SEE SECTION 10-05
3	-	1" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
4	1	1" X 1" BRONZE COMPRESSION ANGLE METER STOP WITH LOCK WING	MUELLER 110 H-14258, FORD KV43-444WQ OR APPROVED EQUAL	SEE SECTION 10-06
5	1	5/8" X 3/4", OR 1" WATER METER	TYPE AND MODEL TO BE DETERMINED BY THE WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY SEE SECTION 10-09
6	2	3/4" X 1" BRONZE METER BUSHING. NEEDED FOR 3/4" AND 5/8" X 3/4" INSTALLATIONS	MUELLER H-10889, FORD BBIM-34 OR APPROVED EQUAL	
7	1	CONCRETE METER BOX W/CONCRETE COVER	BROOKS MODEL #3 OR APPROVED EQUAL	SEE SECTION 10-10 AND STD DRAWING W-D-25
8	1	1" BRONZE SWIVEL METER COUPLING	JONES J-134, FORD C38-44-2.625 OR APPROVED EQUAL	SEE SECTION 10-09

**NOTES:**

A	ALL SERVICES SHALL CONFORM WITH SECTION 10
B	IF MAIN IS STEEL, WELD COUPLING 1/2 SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING. SEE STANDARD DRAWING W-D-24
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

**\*5/8" x 3/4", 3/4" & 1" METER SPACERS AND METER LAY LENGTHS**

5/8" x 3/4" DISK	1" DISC
7 1/2" W/BUSHINGS	10 3/4"

REVISED: 08-11-04

**CITY OF CERRITOS**

DETAIL OF SERVICE INSTALLATION  
5/8" x 3/4" - OR 1"

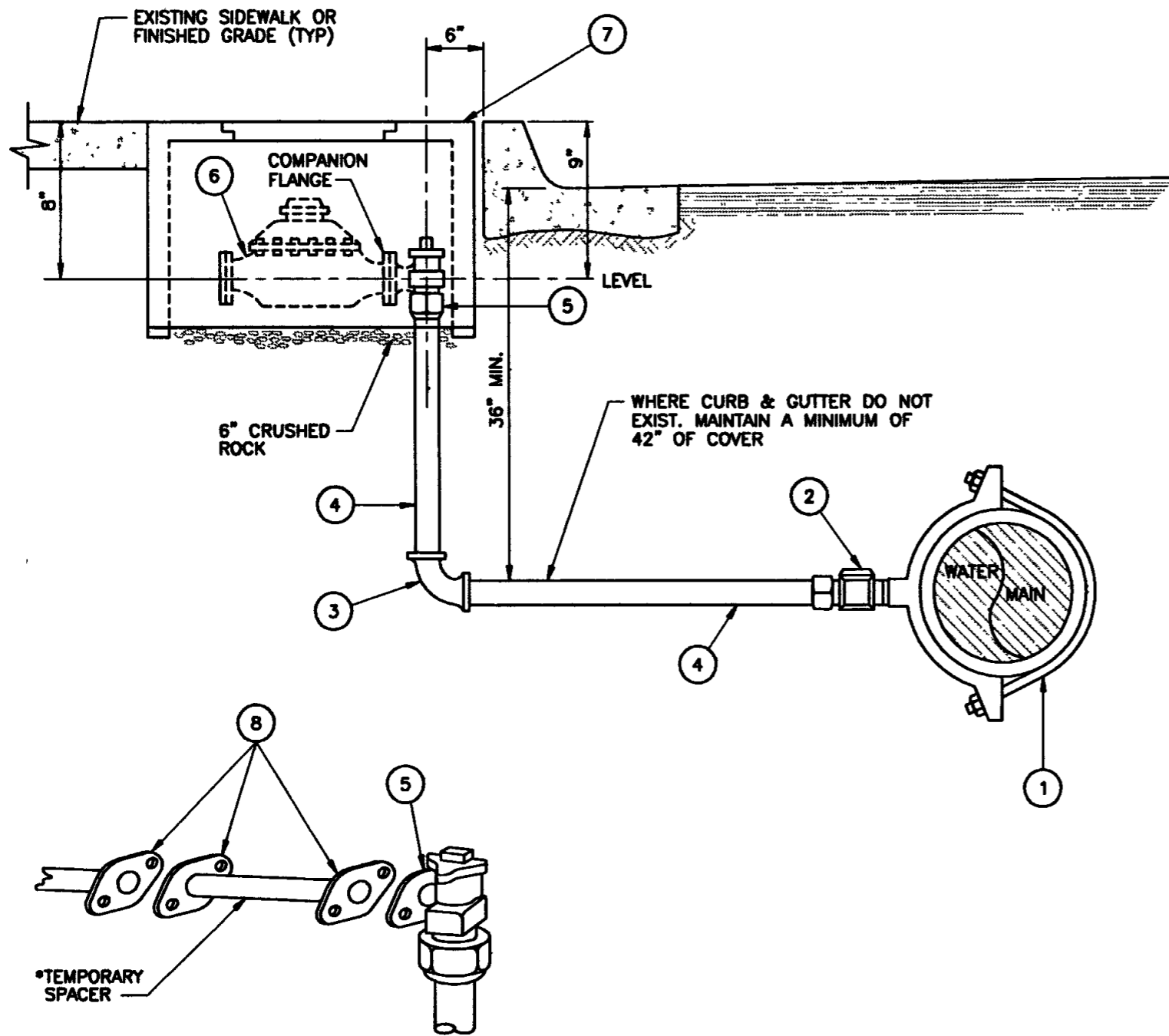
APP. Joe Holdre  
WATER SUPERINTENDENT

PREPARED BY  
**CERRITOS WATER DIVISION**

STANDARD DRAWING NUMBER

**W-D-19**

DATE: OCT 2004



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	2" BRONZE SADDLE OR	JONES J-979, MUELLER BR 2B, FORD F202B OR APPROVED EQUAL	SEE SECTION 10-03
	1	2" BRONZE AND STAINLESS STEEL SADDLE FOR RECYCLED WATER APPLICATIONS	JONES J-969, MUELLER BR 2S, FORD 202BS OR APPROVED EQUAL	SEE SECTION 10-03
2	1	2" BRONZE COMPRESSION CORPORATION STOP	MUELLER 110 H-15013, FORD FB110-7Q OR EQUAL	SEE SECTION 10-05
3	3	2" COMPRESSION 90° CTS X CTS	MUELLER H-15526 OR APPROVED EQUAL	SEE SECTION 10-07
4	-	2" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
5	2	2" BRONZE COMPRESSION ANGLE METER STOP WITH LOCK WING	MUELLER 110 H-14277, FORD FV43-77 WQ OR APPROVED EQUAL	SEE SECTION 10-06
6	2	1½" OR 2" METER	METER TYPE AND CONFIGURATION TO BE DETERMINED BY THE WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY SEE SECTION 10-09
7	2	CONCRETE METER BOX WITH CONCRETE COVER AND READING LID	2" BROOKS MODEL #T66 OR #67* OR APPROVED EQUAL. *FOR COMPOUND OR DISK METERS	SEE SECTION 10-10 AND STD DRAWINGS W-D-28, W-D-29 OR W-D-30
8	2	1½" OR 2" BRONZE METER COMPANION FLANGES	1½" - FORD CF 31-66, 2" - FORD CF 31-77, 1½" AND 2" - JONES J-129 OR APPROVED EQUAL	SEE SECTION 10-11
9	4	STAINLESS STEEL METER BOLTS W/NUTS 5/8" X 2 3/4"	304 OR 316 STAINLESS STEEL	SEE SECTION 4-03-F

**NOTES:**

A	ALL SERVICES SHALL CONFORM WITH SECTION 10
B	IF MAIN IS STEEL, WELD COUPLING ½ SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING. SEE STANDARD DRAWING W-D-24
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

**\*1 1/2"-2" METAL SPACERS AND METER LAY LENGTH**

1 1/2" DISC & TURBINE	2" DISK	2" TURBINE W/INTEGRAL STRAINER	2" COMPOUND W/STRAINER
13"	17"	17"	22 3/8"

REVISED: 08-11-04

**CITY OF CERRITOS**

**2" TYPICAL WATER SERVICE INSTALLATION**

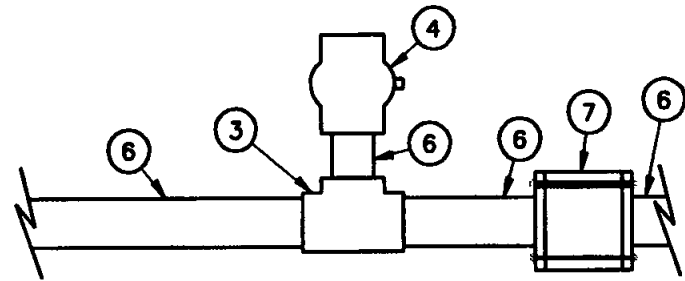
APP. *Joel Holdre*  
WATER SUPERINTENDENT

PREPARED BY  
**CERRITOS WATER DIVISION**

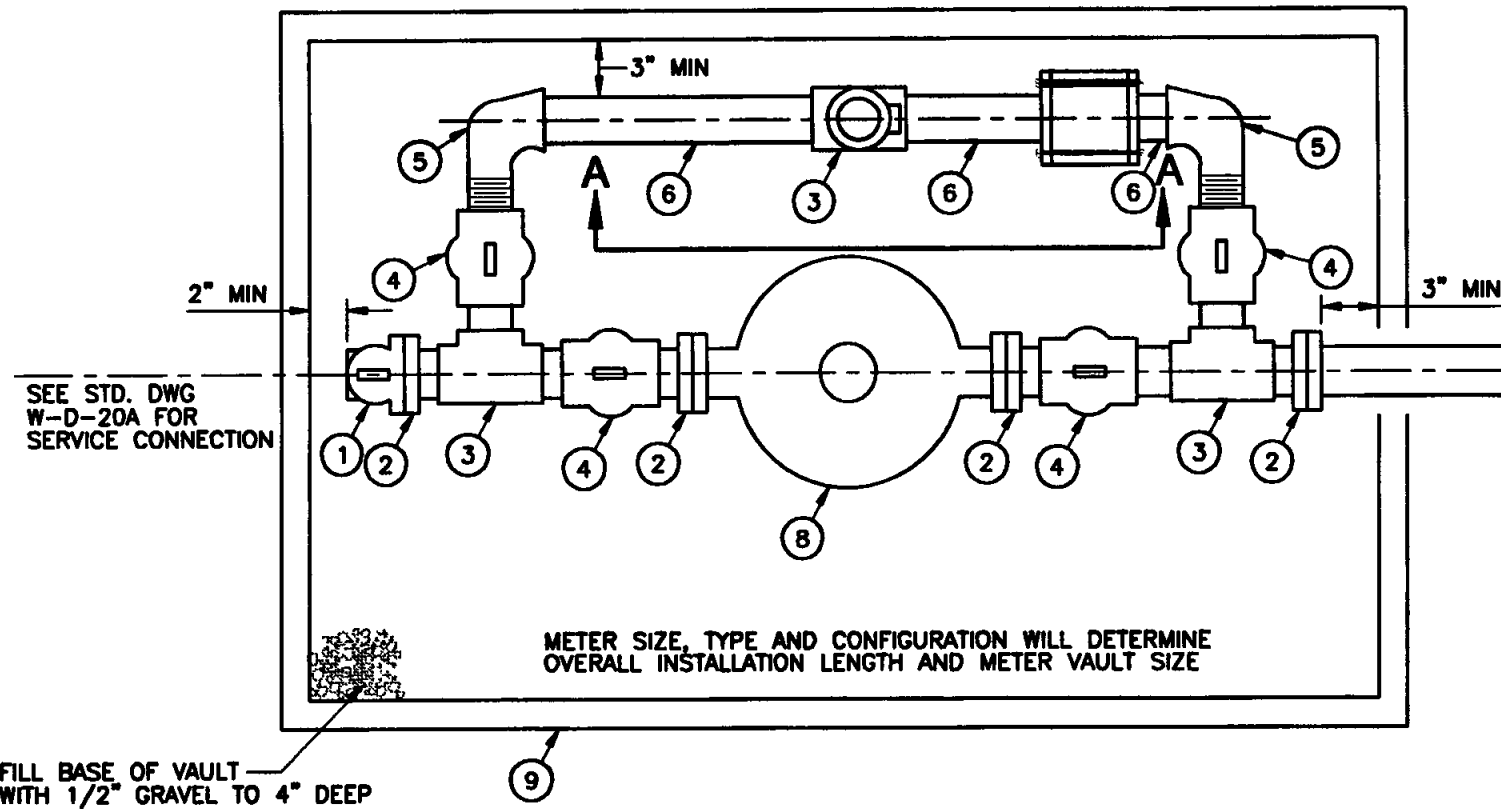
STANDARD DRAWING NUMBER

**W-D-20A**

DATE: OCT 2004



**SECTION A-A**



METER SIZE, TYPE AND CONFIGURATION WILL DETERMINE OVERALL INSTALLATION LENGTH AND METER VAULT SIZE

FILL BASE OF VAULT WITH 1/2" GRAVEL TO 4" DEEP

\*1 1/2"-2" METER SPACERS AND METER LAY LENGTHS

2"  
COMPOUND  
W/STRAINER  
22 3/8"

METER TYPE AND CONFIGURATION TO BE DETERMINED BY THE WATER UTILITY ADMINISTRATOR

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	2" BRONZE COMPRESSION ANGLE METER STOP WITH LOCK WING	MUELLER 101 H-14277, FORD FV43-77 WQ OR APPROVED EQUAL	SEE SECTION 10-06
2	4	2" BRONZE METER COMPANION FLANGE X M.I.P.	JONES J-129 M, FORD CF 38-77-2.125 OR APPROVED EQUAL	SEE SECTION 10-05
3	3	2" BRASS TEE F.I.P.		
4	5	2" BALL METER VALVE W/LOCK WING M.I.P. X F.I.P.	FORD B11-777W OR APPROVED EQUAL	
5	2	2" BRASS STREET ELL 90° M.I.P. X F.I.P.		
6	1	2" BRASS PIPE, LENGTH AS REQUIRED, THREADED AS REQUIRED		
7	1	2" DUCTILE IRON PIPE COUPLING	SMITH BLAIR MODEL 441 OR APPROVED EQUAL	SEE SECTION 10-13
8	1	2" METER	METER TYPE AND CONFIGURATION TO BE DETERMINED BY THE WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY SEE SECTION 10-09
9	1	CONCRETE METER VAULT WITH 2 PIECE COVER AND READING LIDS	BROOKS MODEL 700 SERIES OR APPROVED EQUAL. SIZE DETERMINED BY METER CONFIGURATION	SEE SECTION 10-10 AND STANDARD DRAWING W-D-31

**NOTES:**

A	ENTIRE METER AND BYPASS ASSEMBLY SHALL BE INSIDE OF METER VAULT
B	ALL SERVICES SHALL CONFORM WITH SECTION 10
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

**2" METER INSTALLATION  
WITH BYPASS**

APP. *Joe Holdren*  
WATER SUPERINTENDENT

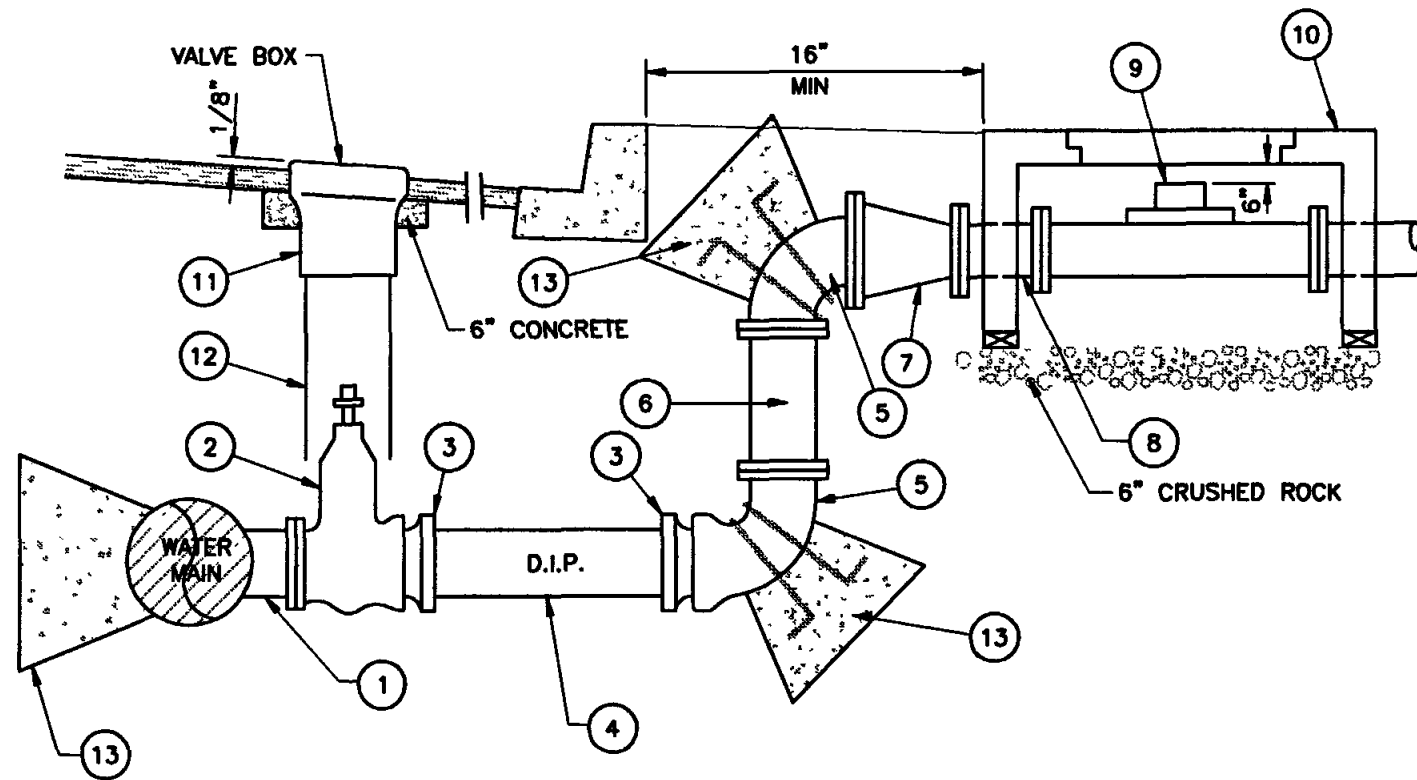
STANDARD  
DRAWING NUMBER

**W-D-20B**

DATE: OCT 2004

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE MJ X MJ X FLANGE OR	TYLER UNION OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE	MINIMUM 1/4" STEEL	SEE STANDARD DRAWING W-D-22
2	1	RESILIENT WEDGE TAPPING VALVE FLANGE X MJ	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
3	3	DUCTILE IRON RESTRAINT GLAND	EBBA IRON MEGA WG. FORD UNI-FLANGE SERIES 140 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	DUCTILE IRON PIPE	CLASS 350 PER AWWA/ANSI 151/A21-51	SEE SECTION 3-01.1
5	2	DUCTILE IRON 90° BEND MJ X FLANGE	TYLER UNION OR APPROVED EQUAL	SEE SECTION 4-01
6	1	DUCTILE IRON PIPE RISER FLANGE X PE LENGTH AS REQUIRED	CLASS 53 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
7	1	DUCTILE IRON REDUCER 4" X 3" FLANGE X FLANGE (AS REQUIRED)	TYLER UNION OR APPROVED EQUAL	SEE SECTION 4-01
8	1	DUCTILE IRON SPOOL FLANGE X FLANGE. LENGTH 5 TIMES DIAMETER OF METER. EX: 4" METER=20" SPOOL	CLASS 53 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
9	1	3", 4", OR 6" METER W/STRAINER	METER TYPE AND CONFIGURATION TO BE DETERMINED BY THE WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY. SEE SECTION 10-09
10	1	CONCRETE METER VAULT WITH STEEL 2 PIECE COVER WITH READING LIDS	BROOKS MODEL #68, 700 SERIES OR APPROVED EQUAL. SIZE DETERMINED BY METER CONFIGURATION	SEE SECTION 10-10 AND STD DRAWINGS W-D-30 AND W-D-31
11	1	VALVE BOX	BROOKS MODEL 4TT OR APPROVED EQUAL	SEE SECTION 4-02-D AND STD DRAWINGS W-D-8 AND W-D-32
12	1	8" FLU PIPE RISER	C-900 CL200 OR SCH 80 PVC PIPE	SEE SECTION 4-02-D AND STD DRAWINGS W-D-8 AND W-D-32
13	3	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY-MIX PER ASTM C-94	SEE STD DRAWING W-D-17



**3", 4", & 6" METER LAY LENGTHS**

3" TURBINE W/STRAINER	4" TURBINE W/STRAINER	4" COMPOUND W/STRAINER	6" TURBINE W/STRAINER	6" COMPOUND W/STRAINER
19 1/8"	23 1/8"	29 1/8"	27 1/8"	24 1/8"

**NOTES:**

A	ALL 3", 4", AND 6" OR LARGER SERVICES SHALL CONFORM WITH SECTION 10
B	ALL BURIED FERROUS SURFACES, PIPES, AND FITTING SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTION 4-03 AND 4-03-G
C	ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
D	MINIMUM SERVICE LATERAL SIZE SHALL BE 4"
E	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
G	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STD. DRAWING W-D-32 OR RWD-10
H	FOR METER RUNS PARALLEL TO CURB, EXTEND SERVICE AS NEEDED AND ROTATE UPPER 90° BEND 1/4 TURN. SEE STD DRAWING W-D-21B
I	METER SPACERS OR SPOOLS OF VARIOUS LENGTHS MAY BE REQUIRED FOR VARIOUS METER TYPE AND CONFIGURATIONS. THESE SHALL BE MADE UP UNDER DIRECTION OF THE WATER UTILITY ADMINISTRATOR
J	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 08-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER DIVISION**

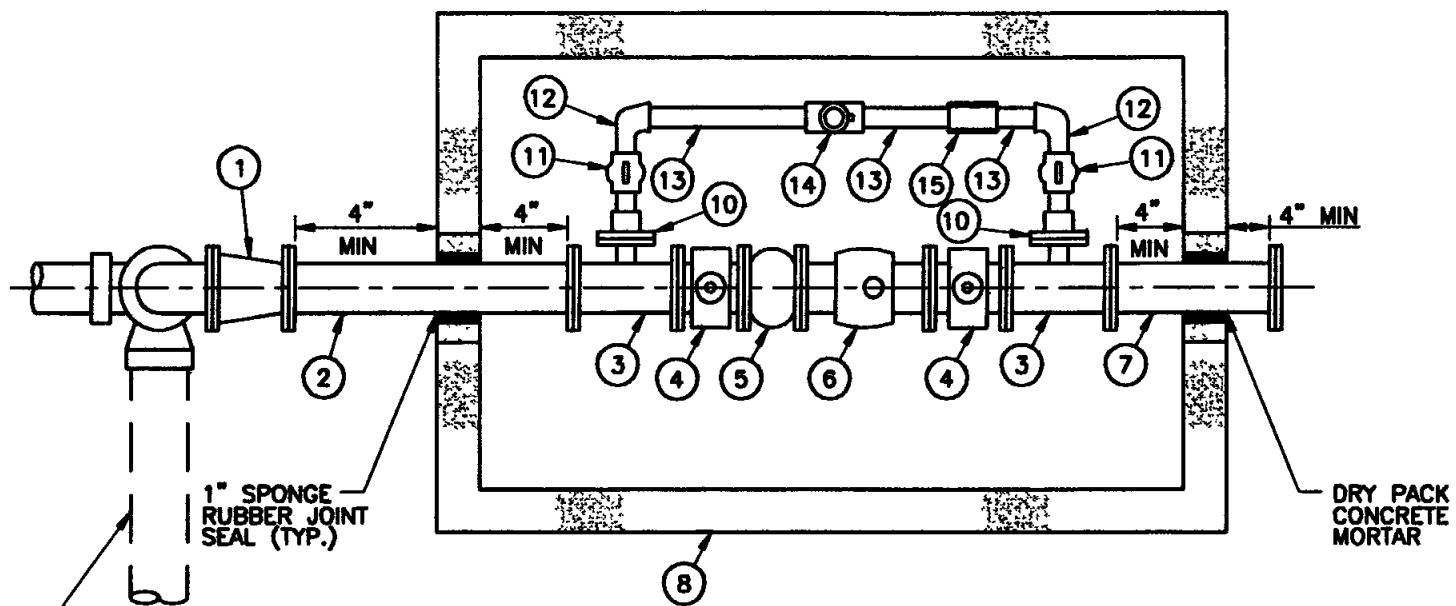
WATER SERVICE  
INSTALLATION

3" - 4" - 6"  
APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-21A**

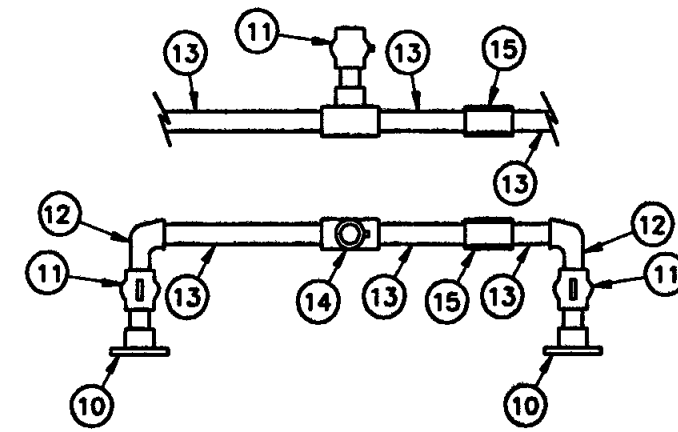
DATE: OCT 2004



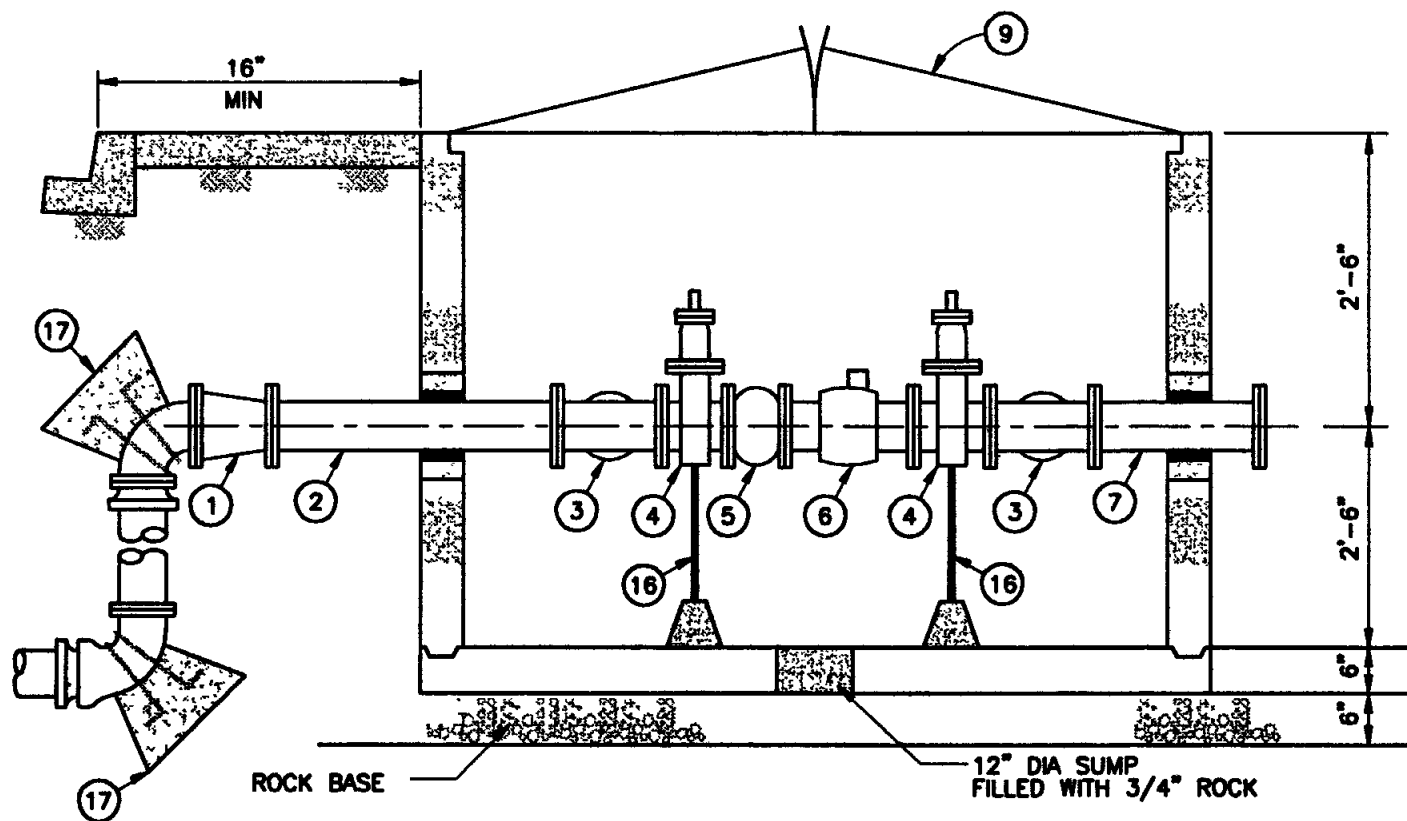
**PLAN**

METER SIZE, TYPE AND CONFIGURATION WILL DETERMINE OVERALL INSTALLATION LENGTH AND METER VAULT SIZE

FOR METER RUN PARALLEL TO CURB EXTEND SERVICE LATERAL AND ROTATE TOP 90° BEND 1/4 TURN



**BYPASS DETAIL**



**ELEVATION**

REVISED: 08-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER DIVISION**

3" - 4" - 6"  
WATER METER  
INSTALLATION  
WITH BYPASS  
APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-21B**

DATE: OCT 2004 SHEET 1 OF 2

**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON REDUCER 4" X 3" FLANGE X FLANGE (AS REQUIRED)	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
2	1	DUCTILE IRON SPOOL FLANGE X FLANGE LENGTH 5 TIMES DIAMETER OF PIPE. EX: 4" METER=20" SPOOL; LENGTH AS REQUIRED	CLASS 53 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-.01.1
3	1	DUCTILE IRON TEE FL X FL X FL W/3" BRANCH, SIZE AS REQUIRED	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	RESILIENT WEDGE GATE VALVE FLANGE X FLANGE	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STD DRAWING W-D-8
5	2	METER STRAINER	SUPPLIED WITH METER	SEE SECTION 4-01
6	1	3", 4", OR 6" METER	METER TYPE AND CONFIGURATION TO BE DETERMINED BY WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY. SEE SECTION 10-09
7	1	DUCTILE IRON SPOOL FLANGE X FLANGE LENGTH AS REQUIRED	CLASS 53 PER AWWA/ANSI 151/A21-51	SEE SECTION 3-01.1
8	1	CONCRETE METER BOX WITH STEEL 2 PIECE COVER WITH READING LIDS	BROOKS MODEL 700 SERIES OR APPROVED EQUAL. EQUAL SIZE DETERMINED BY METER CONFIGURATION	SEE SECTION 10-10 AND STD DRAWING W-D-31
9	1	SPRING ASSISTED DOUBLE VAULT DOORS	U.S.F. FABRICATION APD 300 OR APPROVED EQUAL	SEE SECTION 10-10 AND STD DRAWING W-D-31B
10	2	3" TAPPED FLANGE X 2" MIP	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
11	3	2" BALL METER VALVE WITH LOCK WING MIP X FIP	FORD B11-777W	
12	2	2" BRASS STREET, ELL 90°, MIP X FIP		
13	1	2" BRASS PIPE		LENGTH AS REQUIRED THREADED AS REQUIRED
14	1	2" BRASS TEE FIP		
15	1	2" DUCTILE IRON PIPE COUPLING	SMITH BLAIR MODEL 441 OR APPROVED EQUAL	SEE SECTION 10-13
16	2	PIPE SUPPORTS	PIPELINE PRODUCTS STAINLESS STEEL SUPPORT OR APPROVED EQUAL	SEE STANDARD DRAWING W-D-33
17	2	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17

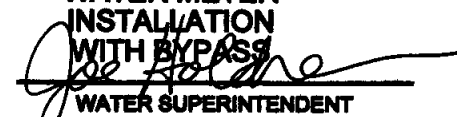
**NOTES:**

A	ENTIRE METER AND BYPASS ASSEMBLY SHALL BE INSIDE OF METER VAULT
B	ALL SERVICES SHALL CONFORM WITH SECTION 10
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 18
E	6" METER INSTALLATIONS MAY REQUIRE A LARGER DIAMETER BYPASS. REFER TO HYDRAULIC ENGINEERING SPECIFICATIONS FOR FLOW REQUIREMENTS. 3" AND LARGER BYPASS ASSEMBLIES SHALL BE FLANGED DUCTILE IRON DESIGN WITH RW STYLE GATE VALVES. FINAL DESIGN SHALL BE APPROVED BY THE WATER UTILITY ADMINISTRATOR
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

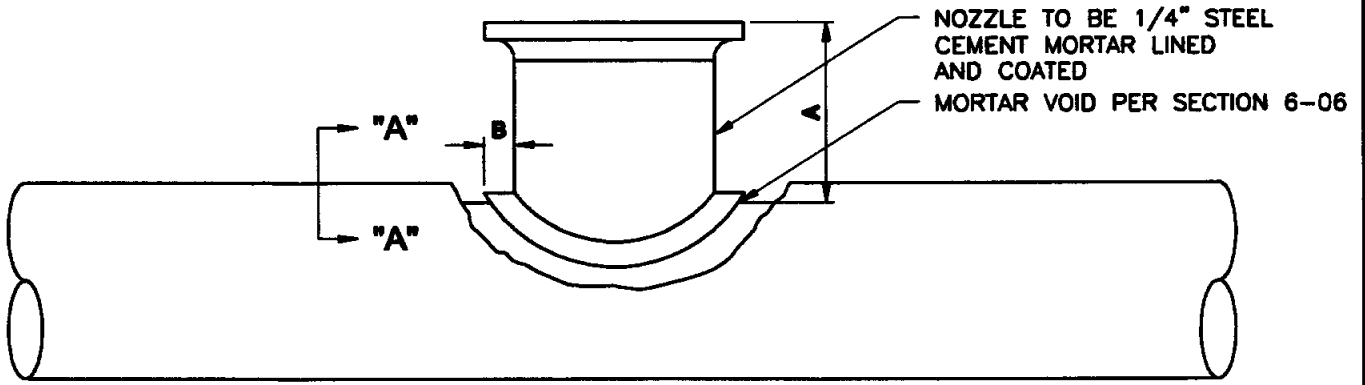
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**CERRITOS WATER  
DIVISION**

3" - 4" - 6"  
WATER METER  
INSTALLATION  
WITH BYPASS  
APP.   
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-21B**

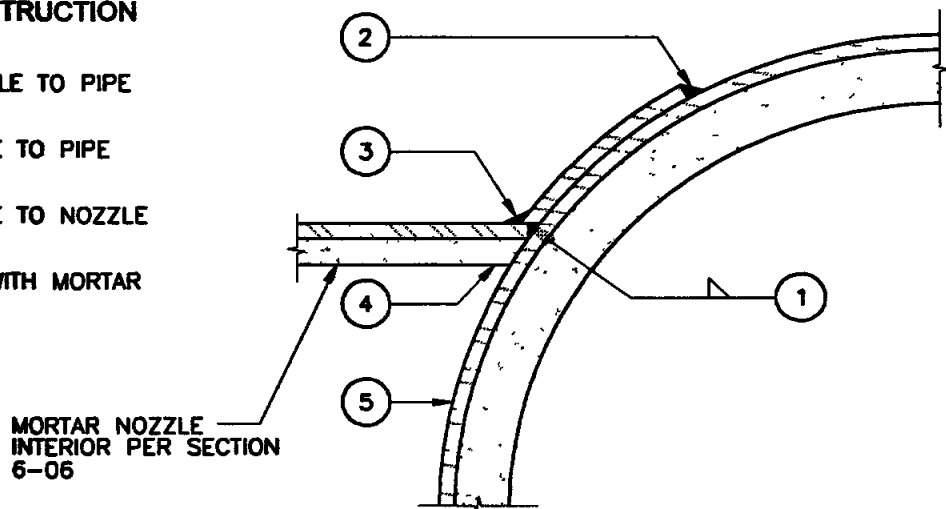
DATE: OCT 2004 SHEET 2 OF 2



PLAN VIEW

ORDER OF CONSTRUCTION

- ① WELD NOZZLE TO PIPE
- ② WELD PLATE TO PIPE
- ③ WELD PLATE TO NOZZLE
- ④ FILL VOID WITH MORTAR
- ⑤ TAP PIPE



SECTION "A-A"

TAP SIZE	A	B
4	5"	3"
6	6"	3"
8	6-3/4"	3-1/2"
10	7"	4"
12	7-1/2"	5"

REVISED: 06-11-04

CITY OF CERRITOS

PREPARED BY  
CERRITOS WATER  
DIVISION

TYPICAL TAP OF STEEL  
MAIN UNDER PRESSURE

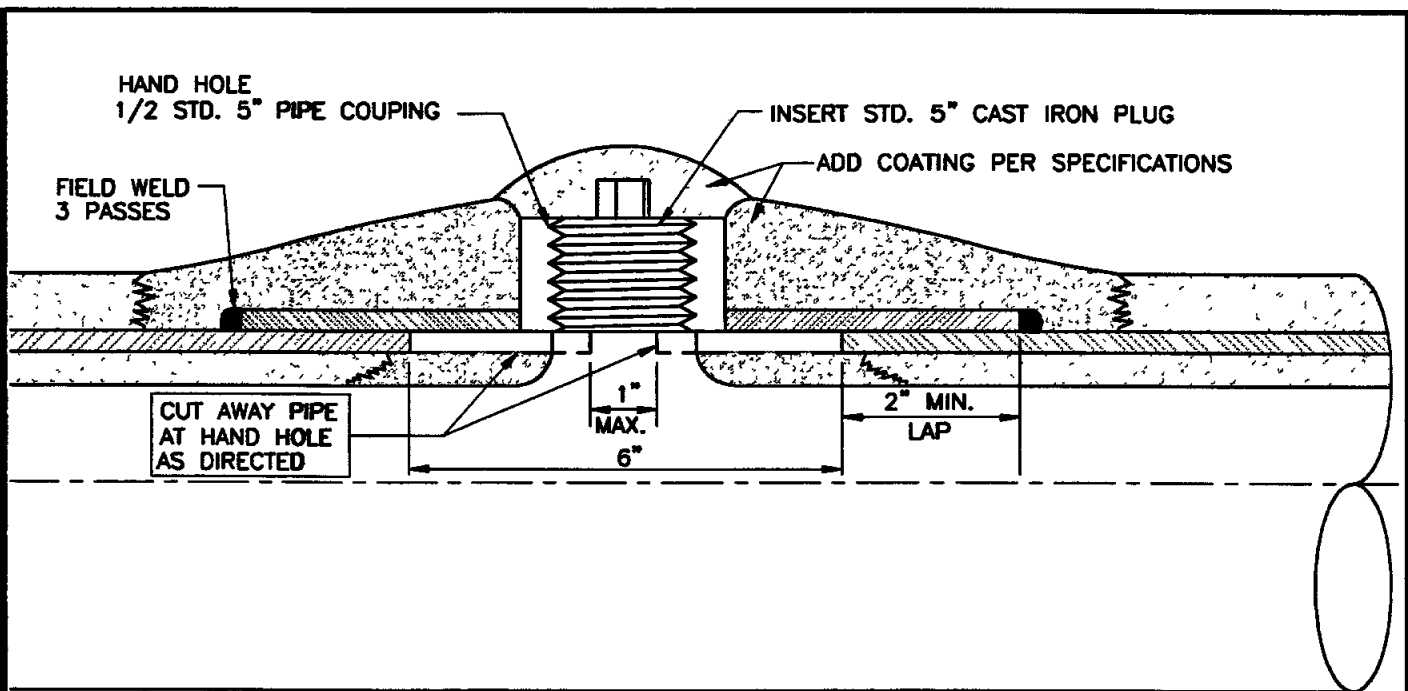
APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

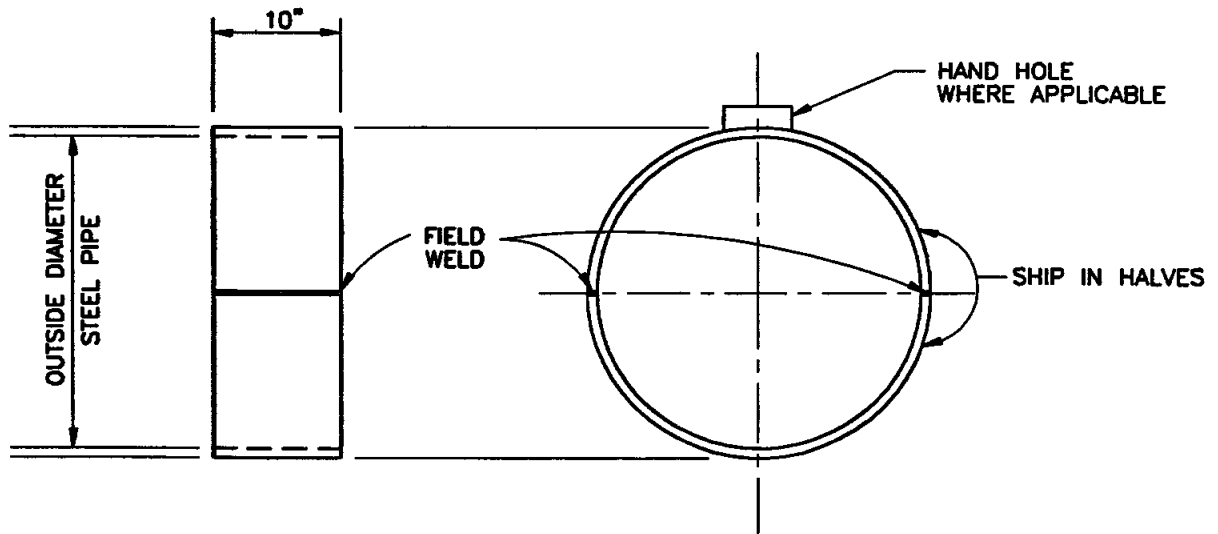
W-D-22

DATE: OCTOBER 2004





HAND HOLE SECTION



NOTES:

A MORTAR PER SECTION 6-06

REVISED: 08-11-04

**CITY OF CERRITOS**

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**CERRITOS WATER  
DIVISION**

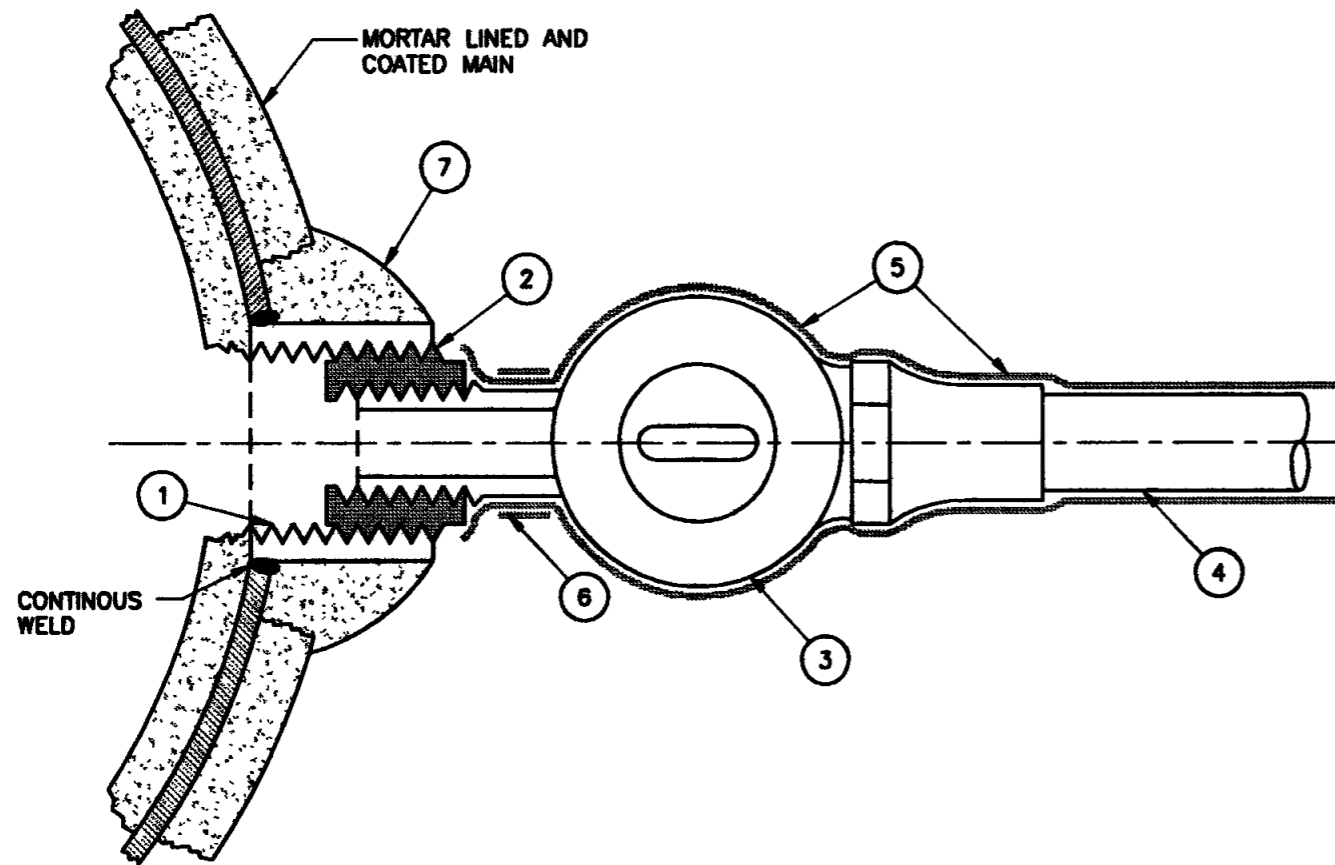
HAND HOLE SECTION

APP. *Joe Holdre*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-23**

DATE: OCTOBER 2004



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	1½" OR 2½" PIPE COUPLING WELDED TO MAIN	EXTRA HEAVY HIGH CARBON STEEL. 3000 LB ½ WELD	
2	1	1" X 1½" OR 2" X 2½" DIELECTRIC NYLON BUSHING	DELRIN OR EQUAL	
3	1	1" OR 2" BRONZE CORPORATION STOP MIP X COMPRESSION	1" & 2" MUELLER 110 COMPRESSION B-25028, 1" FORD QUICK JOINT FB1100-40, 2" FORD QUICK JOINT FB1100-70 OR APPROVED EQUAL	SEE SECTION 10-05
4	-	1" OR 2" TYPE K SOFT COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
5	-	POLYETHYLENE ENCASEMENT	8 MIL SHEET OR SLEEVE STYLE	SEE SECTION 4-03-G
6	-	PIPE WRAP TAPE	10 MIL WINMORE UPC, POLYKEN 900 SCOTCHWRAP 5 OR APPROVED EQUAL	SEE SECTION 4-03-H
7	-	GROUT OUTLET AFTER COMPLETION OF ENCASEMENT AND TAPING	MORTAR SHALL BE 3000 PSI PER ASTM C39	
8	-	ATTACH WARNING/IDENTIFICATION TAPE - POTABLE OR RECYCLED AS APPROPRIATE	4 MIL MINIMUM	SEE SECTIONS 16-02-A AND 16-03-A

**NOTES:**

A	ALL SERVICES SHALL CONFORM WITH SECTION 10
B	DIELECTRIC COUPLINGS ARE REQUIRED ON ALL ASSEMBLIES WHERE COPPER OR BRASS IS TIED INTO A STEEL MAIN. IF MAIN IS STEEL, WELD COUPLING ½ SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 08-11-04

**CITY OF CERRITOS**

DIELECTRIC CONNECTION TO  
STEEL MAIN

APP. *Joe Holdre*  
WATER SUPERINTENDENT

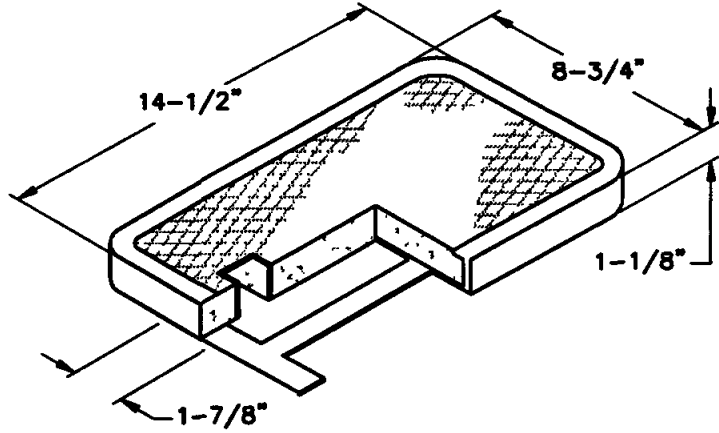
PREPARED BY  
CERRITOS WATER  
DIVISION

STANDARD  
DRAWING NUMBER

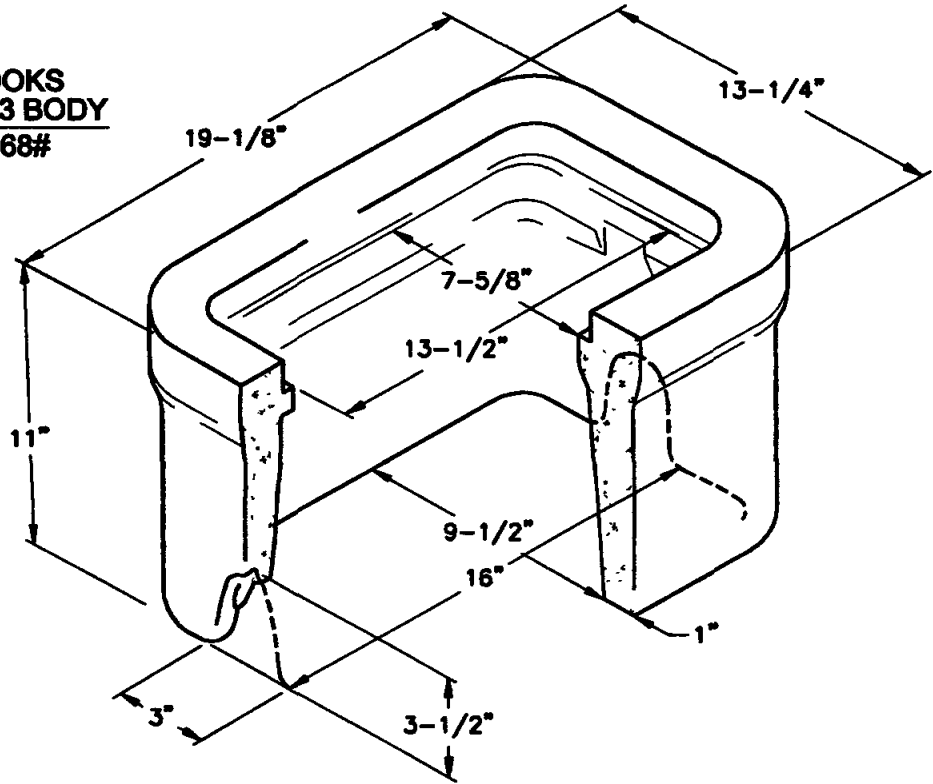
**W-D-24**

DATE: OCT 2004

**NO. 3-1 PC COVER**  
**WT.-16#**



**BROOKS**  
**NO. 3 BODY**  
**WT. 68#**



REVISED: 06-11-04

# CITY OF CERRITOS

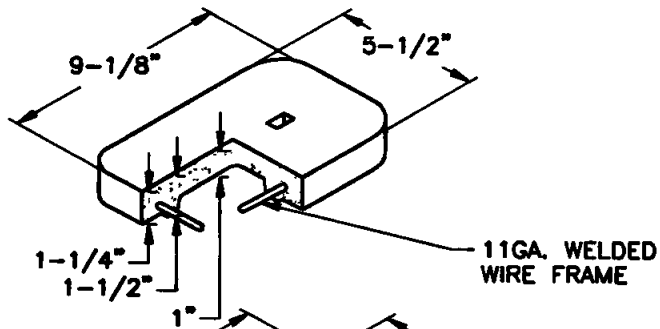
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**DIVISION**

5/8" x 3/4" AND 3/4"  
**METER BOX, BROOKS OR EQUAL**

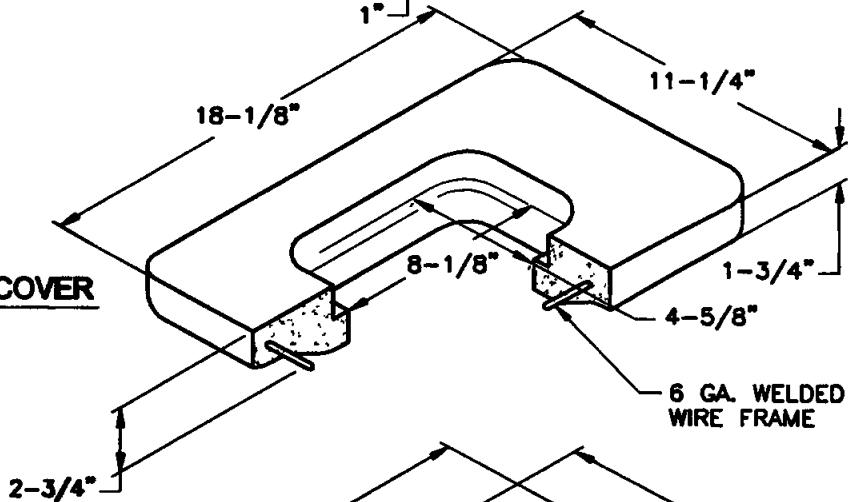
APP. *Joe Holden*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-25**  
DATE: OCTOBER 2004

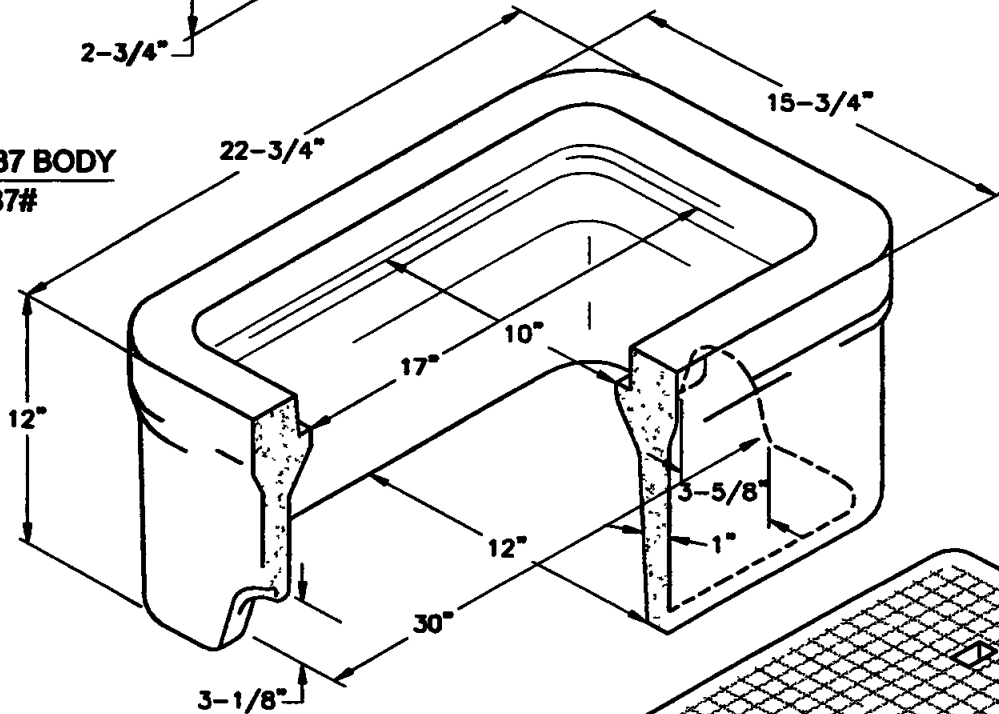
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**WT-5#**



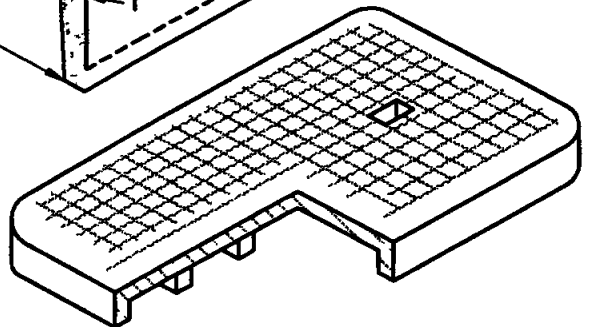
**NO. 37-S-COVER**  
**WT-28#**



**NO. 37 BODY**  
**WT-87#**



**NO. 37-T-CAST IRON**  
**TRAFFIC COVER**  
**WT-27#**



REVISED: 06-11-04

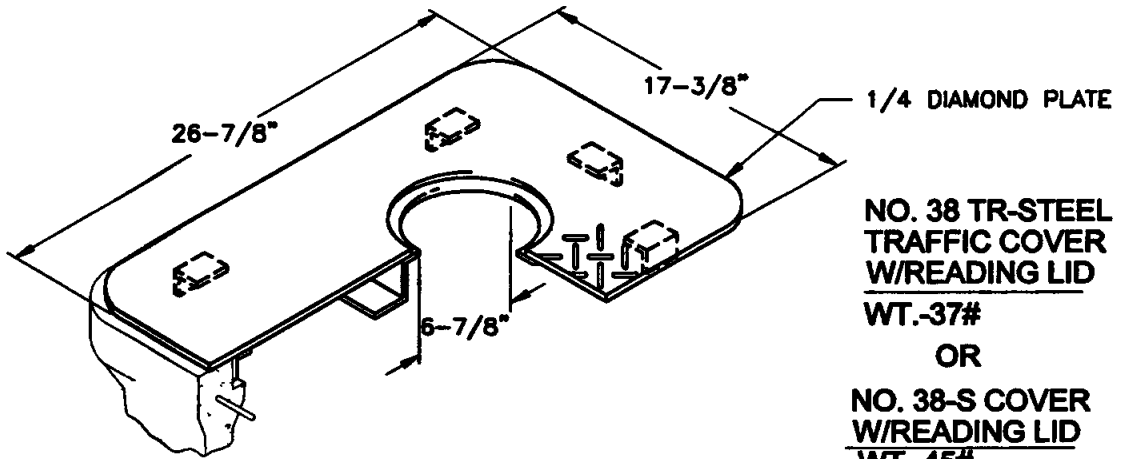
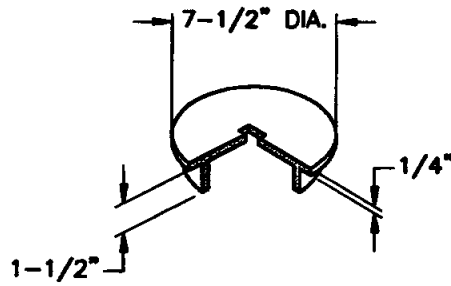
# CITY OF CERRITOS

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**CERRITOS WATER**  
**DIVISION**

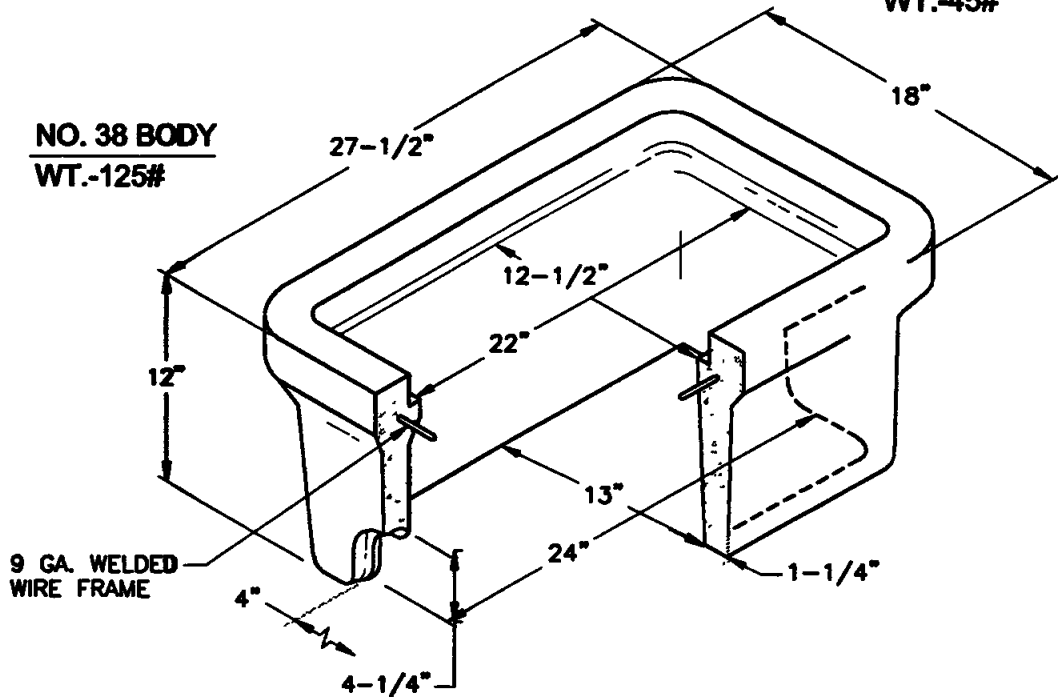
1" METER BOX, BROOKS  
OR EQUAL  
APP. *Joe Holdren*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-26**

DATE: OCTOBER 2004



**NO. 38 BODY**  
WT.-125#



**NO. 65.S BODY**  
W/ COVER & LID

REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
DIVISION**

1 1/2" METER BOX, BROOKS  
OR EQUAL

APP. *Joe Holdner*  
WATER SUPERINTENDENT

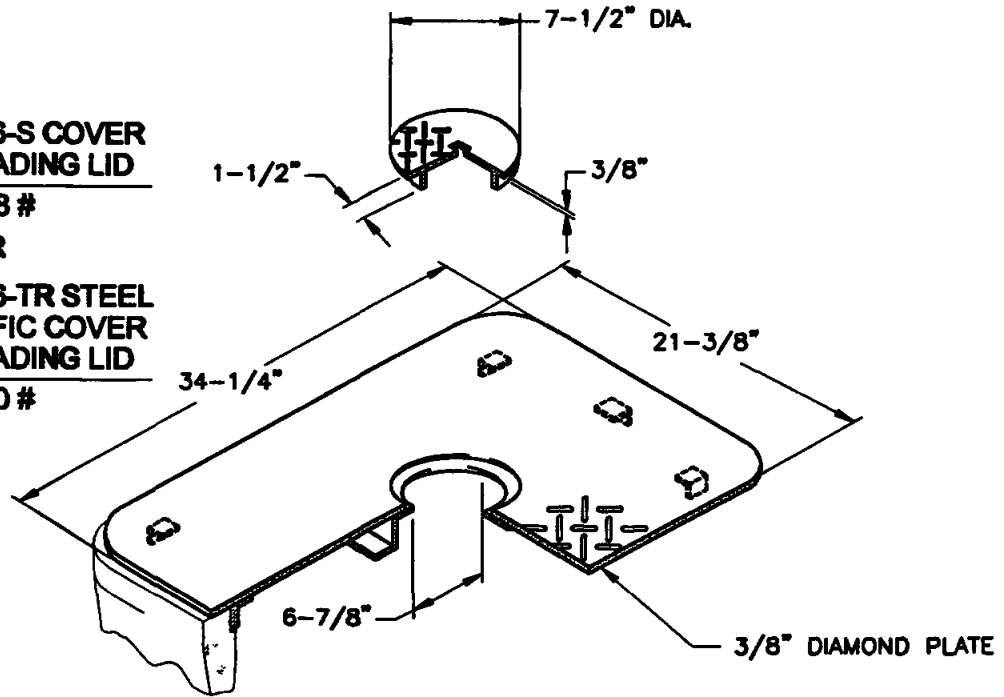
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DRAWING NUMBER

**W-D-27**

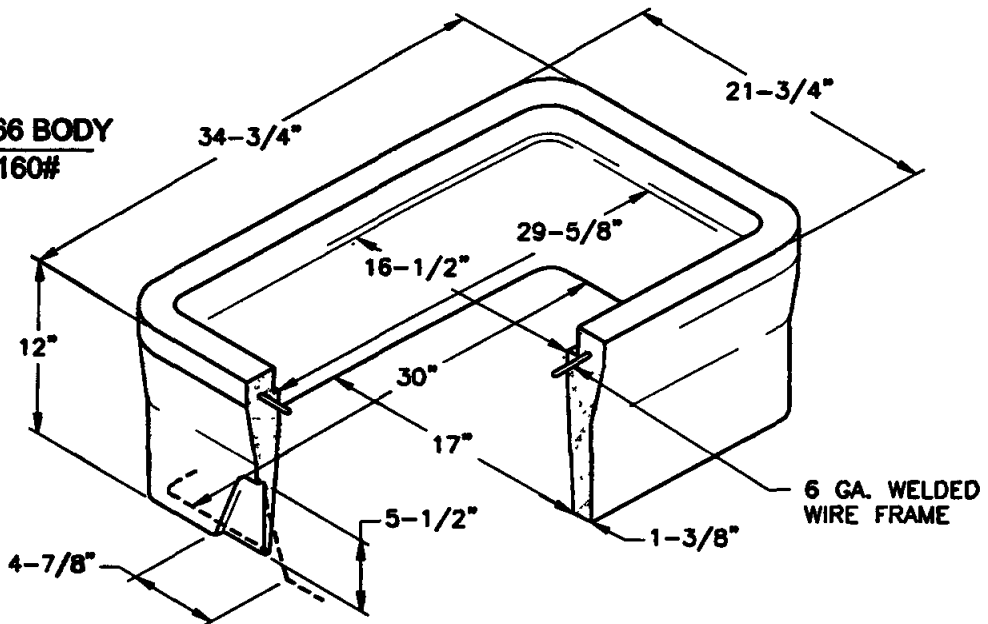
DATE: OCTOBER 2004

**NO. 66-S COVER  
W/READING LID  
WT.-88 #  
OR**

**NO. 66-TR STEEL  
TRAFFIC COVER  
W/READING LID  
WT.-70 #**



**NO. 66 BODY  
WT.-160#**



**NO. 65.S BODY  
W/ COVER LID**

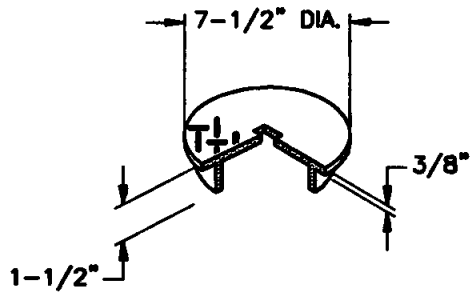
REVISED: 06-11-04

# CITY OF CERRITOS

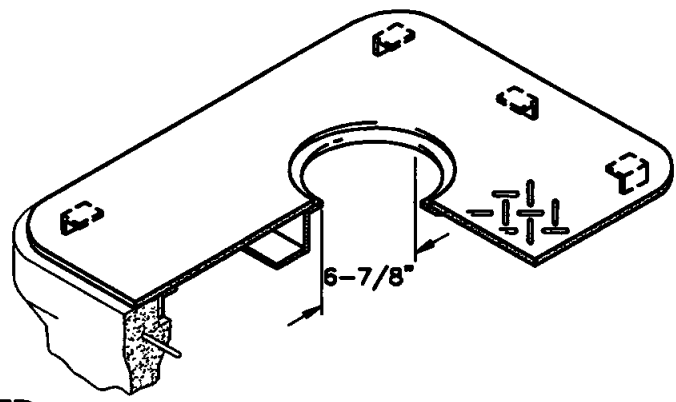
PREPARED BY  
**CERRITOS WATER  
DIVISION**

2" METER BOX, BROOKS  
OR EQUAL  
APP. *Joe Holdren*  
WATER SUPERINTENDENT

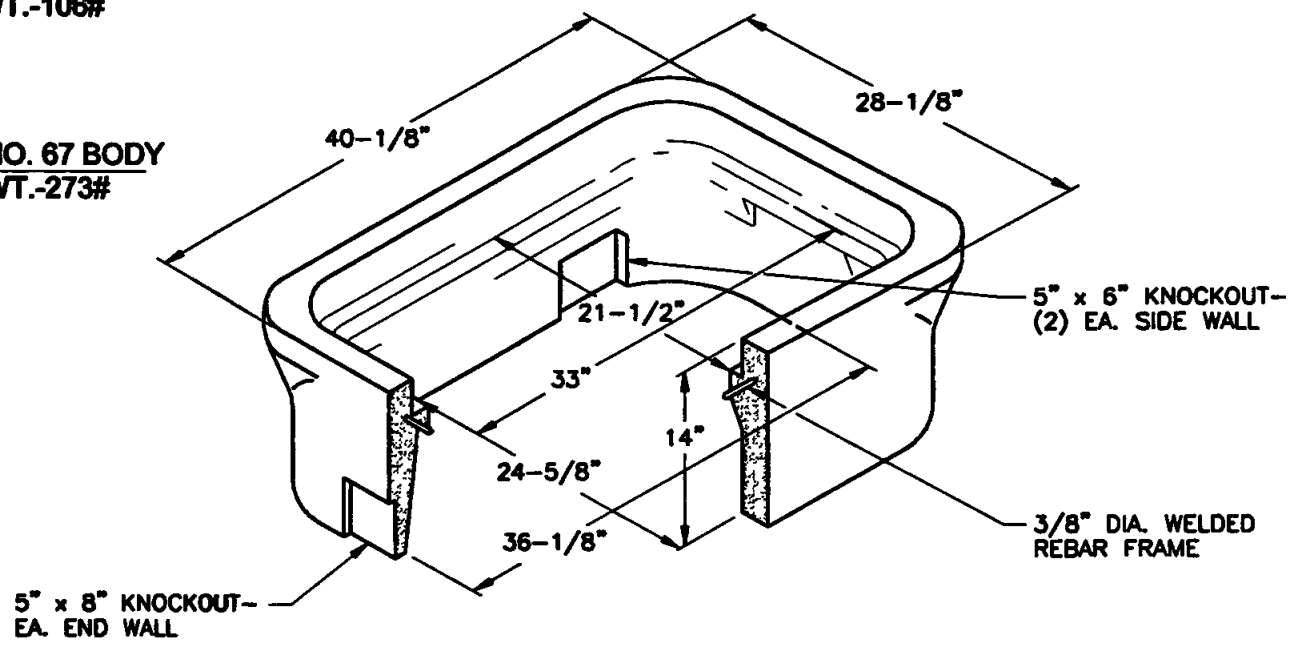
STANDARD  
DRAWING NUMBER  
**W-D-28**  
DATE: OCTOBER 2004



NO. 67-S COVER  
W/READING LID  
WT.-214#  
OR  
NO. 67 TR  
STEEL TRAFFIC COVER  
W/READING LIDS  
WT.-106#



NO. 67 BODY  
WT.-273#



NO. 67 TR-BODY & ONE PIECE  
STEEL TRAFFIC COVER W/  
READING LID

REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
DIVISION**

2" COMPOUND METER BOX  
BROOKS OR EQUAL  
APP. Joe Holder  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-29**  
DATE: OCTOBER 2004

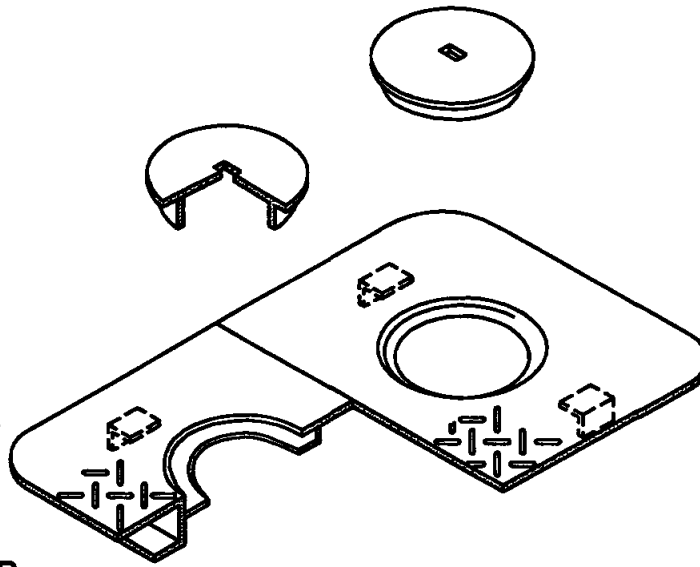
**NO. 68 2 PIECE COVER  
W/READING LID**

**WT.-270#**

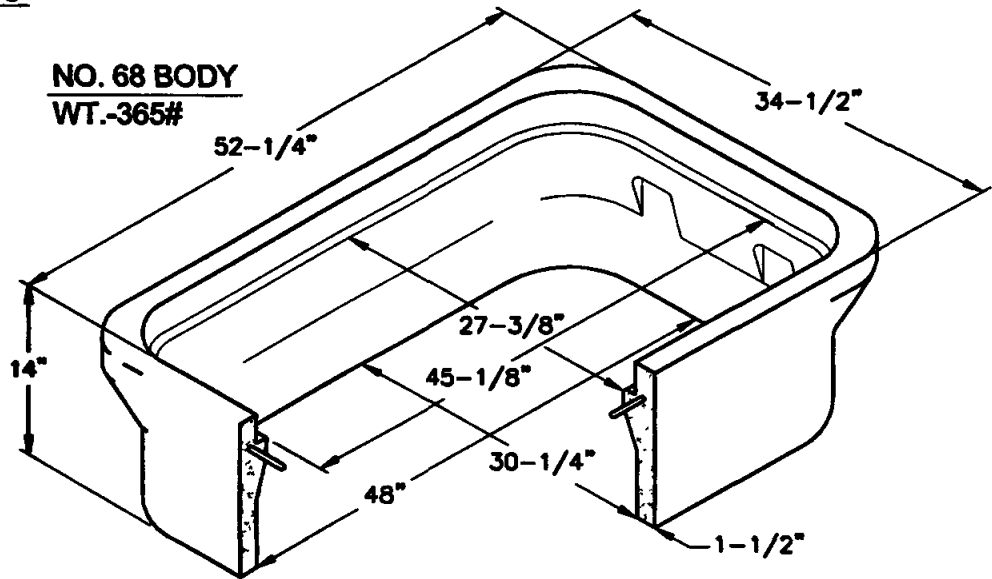
**OR**

**NO. 68T 2 PIECE  
STEEL TRAFFIC COVER  
W/READING LIDS**

**WT.-201#**



**NO. 68 BODY  
WT.-365#**



**NOTE:**

**EXTENSION(S) AS REQ.**

REVISED: 06-11-04

## CITY OF CERRITOS

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**CERRITOS WATER  
DIVISION**

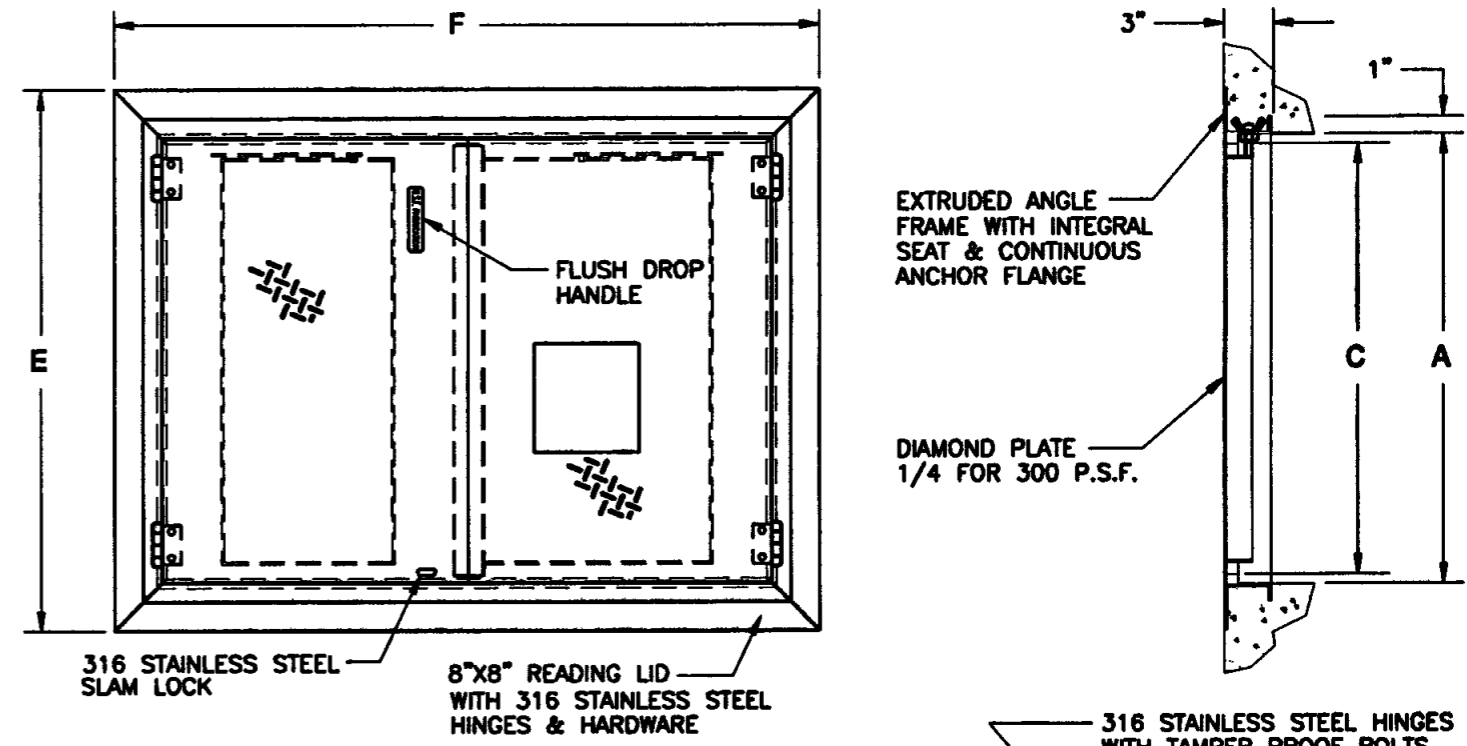
3", 4" & 6" COMPOUND METER  
BOX, BROOKS OR EQUAL  
WITHOUT BYPASS  
APP. *Joe Holden*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-30**

DATE: OCTOBER 2004



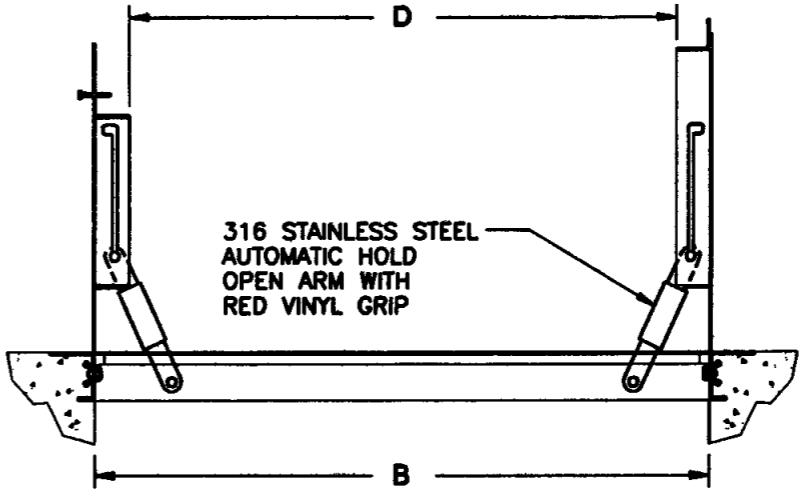


316 STAINLESS STEEL SLAM LOCK  
 8"X8" READING LID WITH 316 STAINLESS STEEL HINGES & HARDWARE

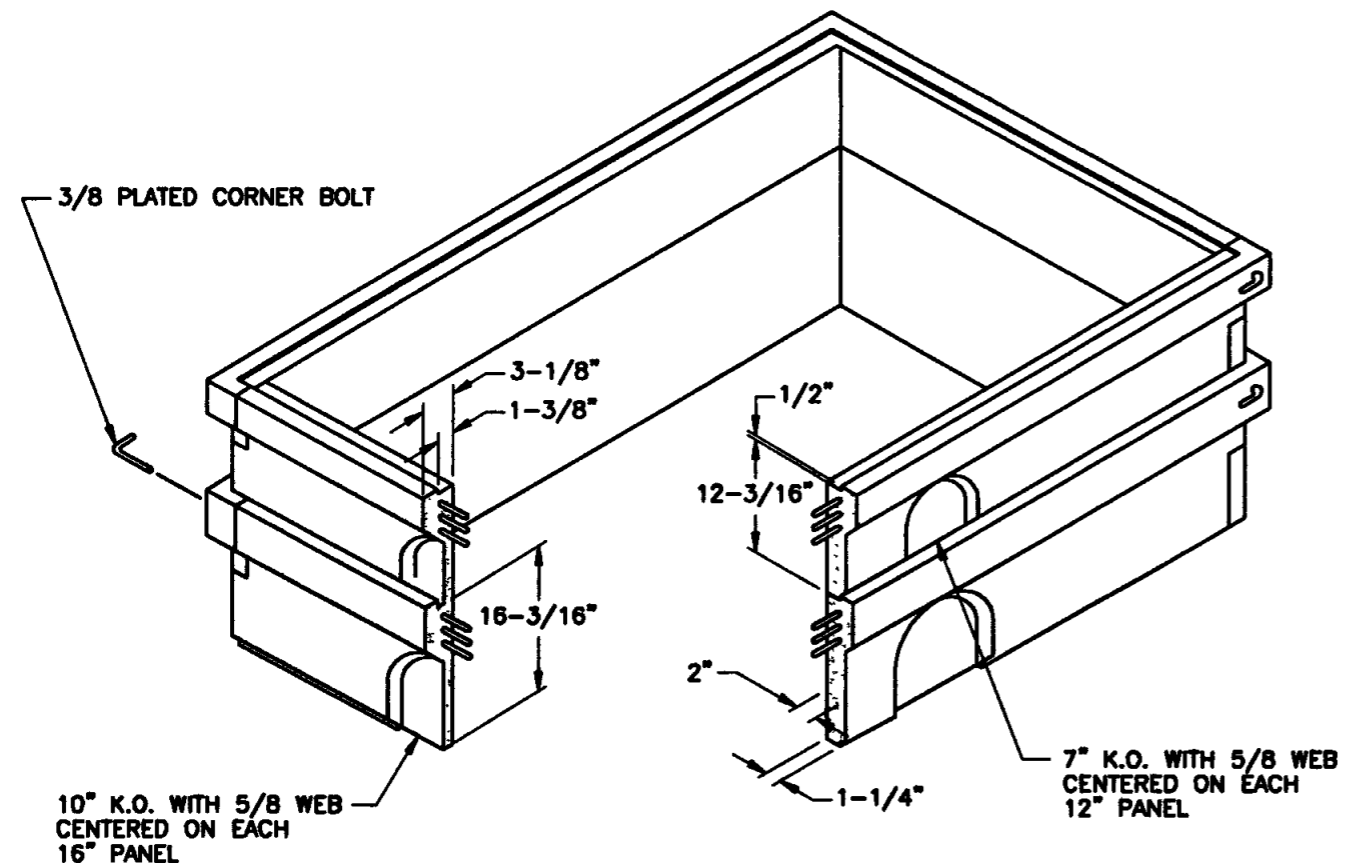
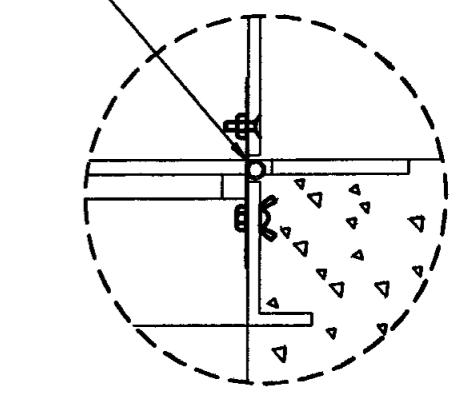
EXTRUDED ANGLE FRAME WITH INTEGRAL SEAT & CONTINUOUS ANCHOR FLANGE

DIAMOND PLATE 1/4 FOR 300 P.S.F.

316 STAINLESS STEEL HINGES WITH TAMPER PROOF BOLTS



316 STAINLESS STEEL AUTOMATIC HOLD OPEN ARM WITH RED VINYL GRIP



3/8 PLATED CORNER BOLT

3-1/8"  
1-3/8"

1/2"

12-3/16"

16-3/16"

2"

1-1/4"

7" K.O. WITH 5/8 WEB CENTERED ON EACH 12" PANEL

10" K.O. WITH 5/8 WEB CENTERED ON EACH 16" PANEL

**NOTES:**

A	ALL VAULTS FOR 3", 4" 6" AND LARGER METER INSTALLATIONS WITH BYPASS ASSEMBLIES SHALL HAVE DOUBLE VAULT DOORS THAT ARE SPRING OR PNEUMATIC ASSIST WITH READING LIDS
B	VAULT DOORS SHALL BE APPROPRIATELY SIZED TO THE VAULT TYPE AND SIZE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE WATER SUPERINTENDENT OR HIS AUTHORIZED REPRESENTATIVE
C	THE VAULT DOORS SHALL CONSIST OF 1/4" THICK ALUMINUM DIAMOND PLATE REINFORCED FOR 300 P.S.F. LIVE LOAD. THE FRAME SHALL CONSIST OF AN EXTRUDED ALUMINUM WITH INTEGRAL ANCHOR FLANGE AND DOOR SEAT ON ALL FOUR SIDES
D	THE FLOOR ACCESS DOOR SHALL BE EQUIPPED WITH A DROP HANDLE THAT DOES NOT PROTRUDE ABOVE THE COVER AND 316 STAINLESS STEEL HOLD OPEN ARMS WITH RED VINYL COVERS THAT AUTOMATICALLY LOCK THE DOORS IN THE 90 DEGREE UPRIGHT POSITION. THE DOORS SHALL HAVE 316 STAINLESS STEEL HINGES, ASSIST SPRINGS AND TAMPER RESISTANT BOLTS/LOCKNUTS. THE VAULT DOORS SHALL ALSO BE EQUIPPED WITH 316 STAINLESS STEEL SLAM LOCK AND REMOVABLE HANDLE KEY
E	ONE DOOR SHALL HAVE A HINGED 6"X6" SQUARE ALUMINUM READING INSERT LID LOCATED IN THE CENTER OF THE DOOR. THE HINGE AND HARDWARE SHALL BE 316 STAINLESS STEEL
F	THE VAULT DOOR AND FRAME ASSEMBLY SHALL BE AN APD 300 MANUFACTURED BY U.S.F. FABRICATION, INC OR AN APPROVAL EQUAL. MANUFACTURER SHALL GUARANTEE THE DOOR AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF TEN YEARS

REVISED: 08-11-04

**CITY OF CERRITOS**

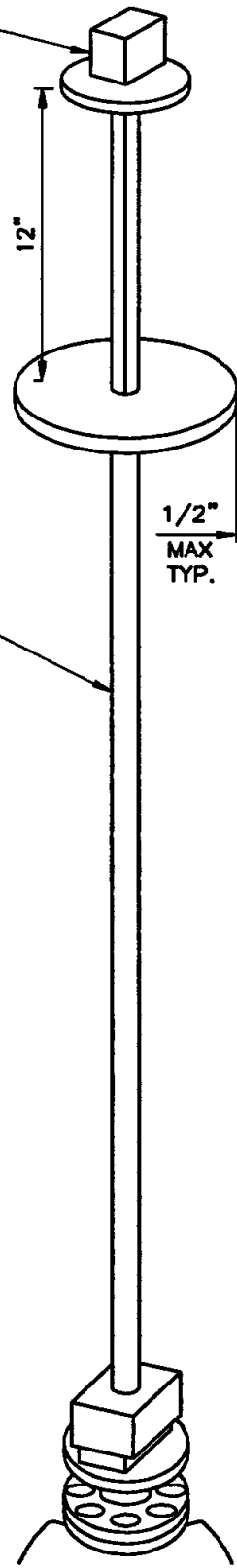
3", 4" & 6" COMPOUND (WITH BY PASS)  
 VAULT; 700 SERIES BROOKS OR EQUAL

APP. *Joe Holdre*  
 WATER SUPERINTENDENT

PREPARED BY  
**CERRITOS WATER DIVISION**

STANDARD DRAWING NUMBER  
**W-D-31**  
 DATE: OCT 2004

2" SQ OPERATING NUT

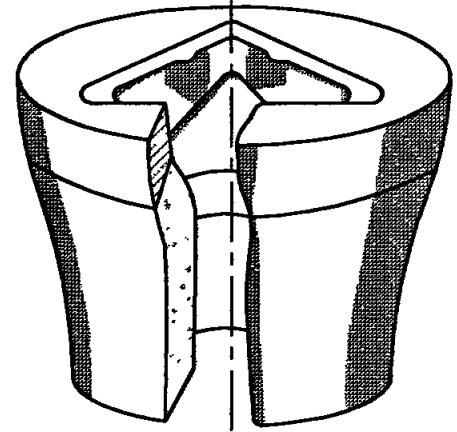
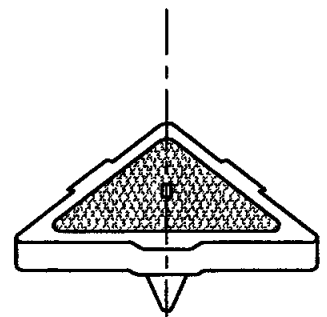


12"

1/2"  
MAX  
TYP.

VALVE STEM  
EXTENSION  
PER SECTION  
4-02-C

VALVE FLU  
PIPE RISER  
SCH 80 PVC OR  
C-900 CL200



BROOKS MODEL  
4TT OR APPROVED  
EQUAL VALVE BOX  
WITH LID  
PER SECTION  
4-02-D

TYPICAL VALVE BOX WITH LID  
FOR USE ON DOMESTIC WATER SYSTEM

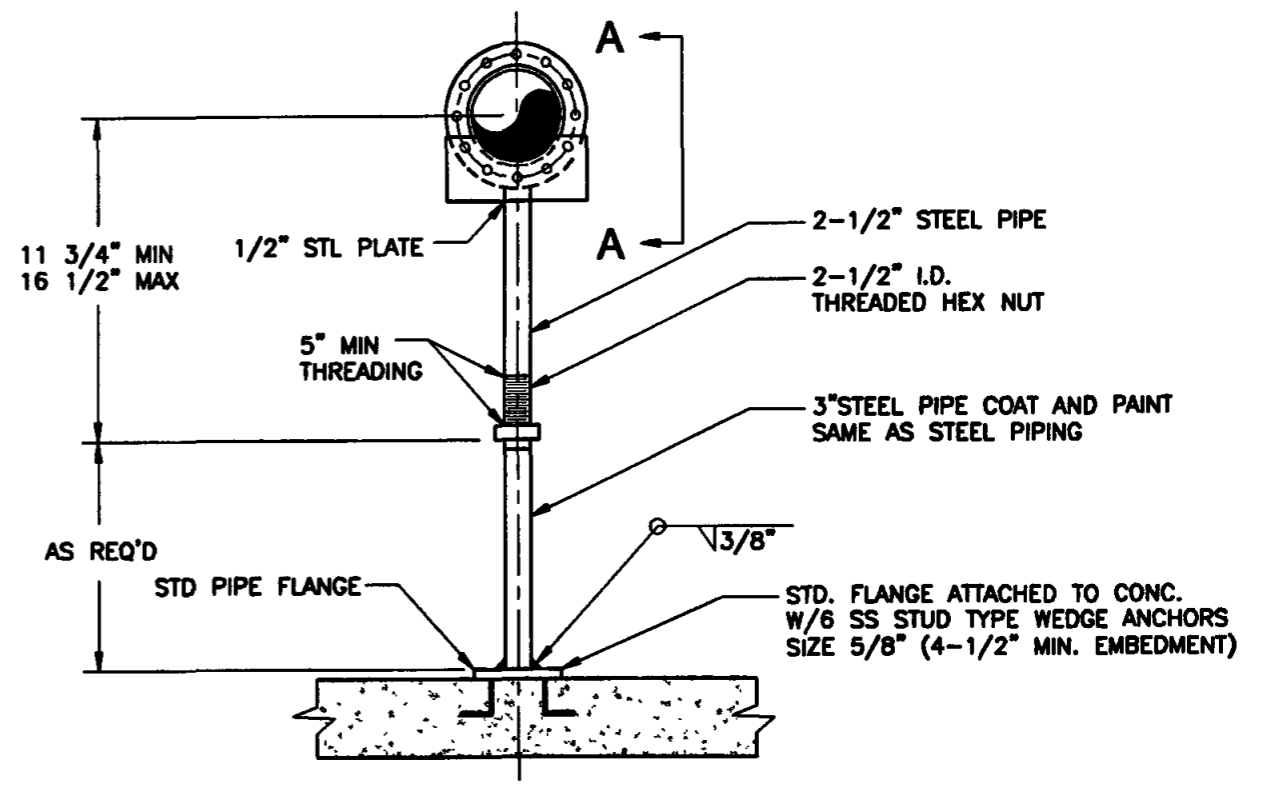
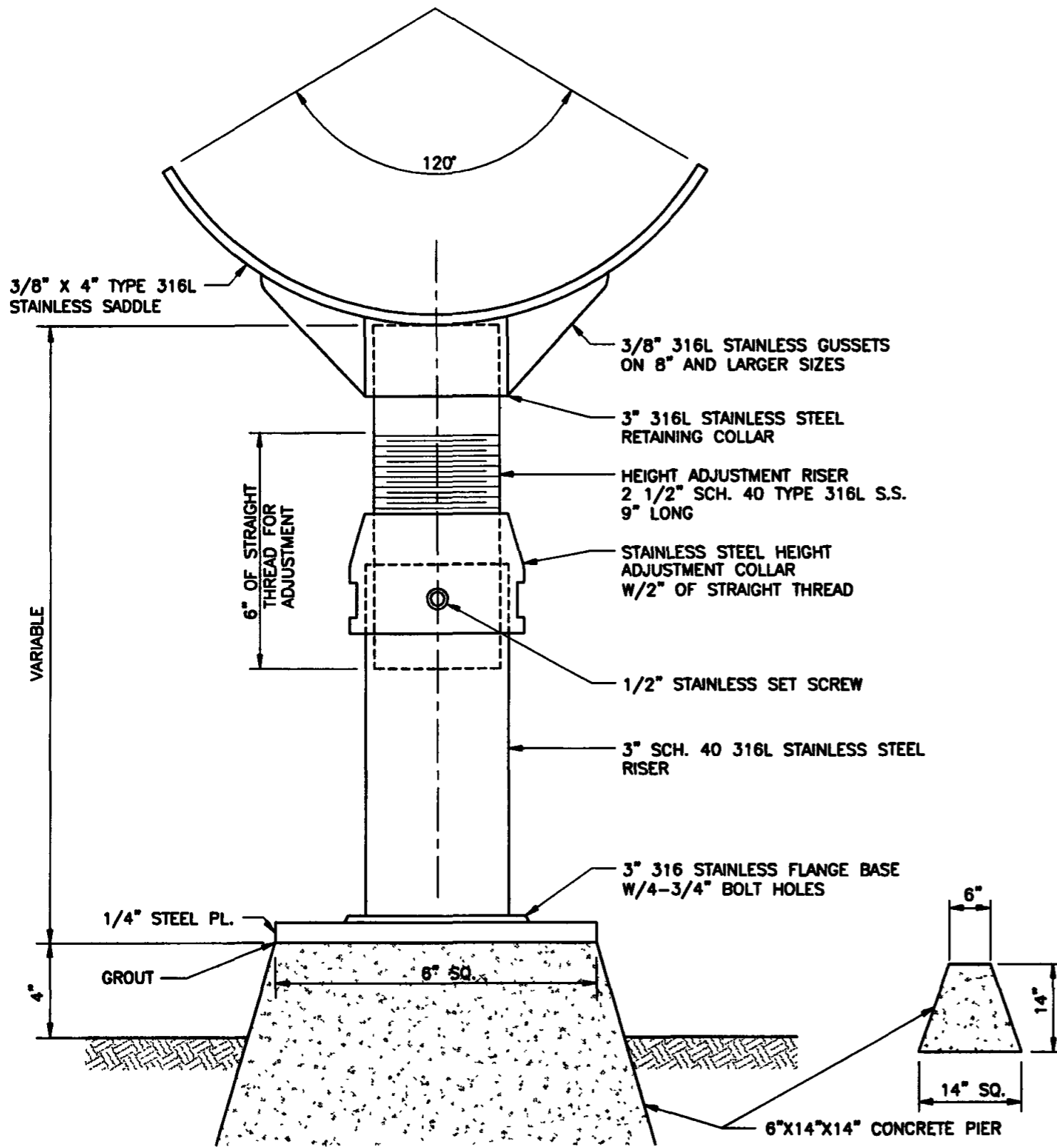
REVISED: 06-11-04

# CITY OF CERRITOS

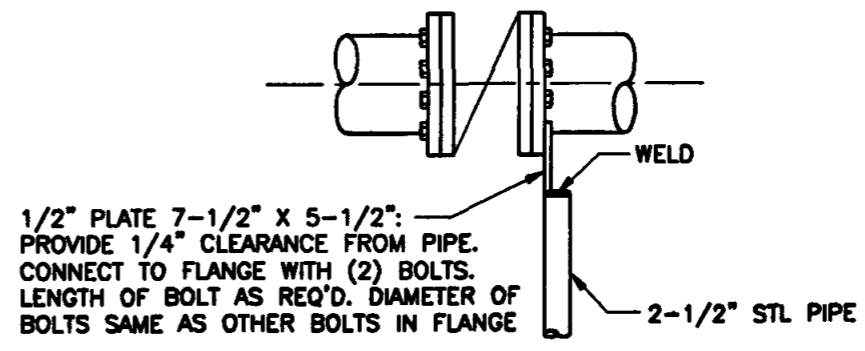
PREPARED BY  
**CERRITOS WATER  
DIVISION**

TYPICAL VALVE BOX &  
VALVE STEM EXTENSION  
APP. *Joe Holdren*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-32**  
DATE: OCTOBER 2004



**PIPE FLANGE SUPPORT**  
(IF REQUIRED)



**SECTION A-A**

**NOTES:**

A	ALL MATERIALS ARE STAINLESS STEEL PER FEDERAL SPECIFICATION AND ASME B31.1 PER 15020-2.1
B	PIPE SUPPORT SHALL BE SUPPLIED BY PIPELINE PRODUCTS OR APPROVED EQUAL
C	IN EVENT SUPPORT IS MOUNTED ON CONCRETE SLAB OR FLOOR, PIER NOT REQUIRED

REVISED: 08-11-04

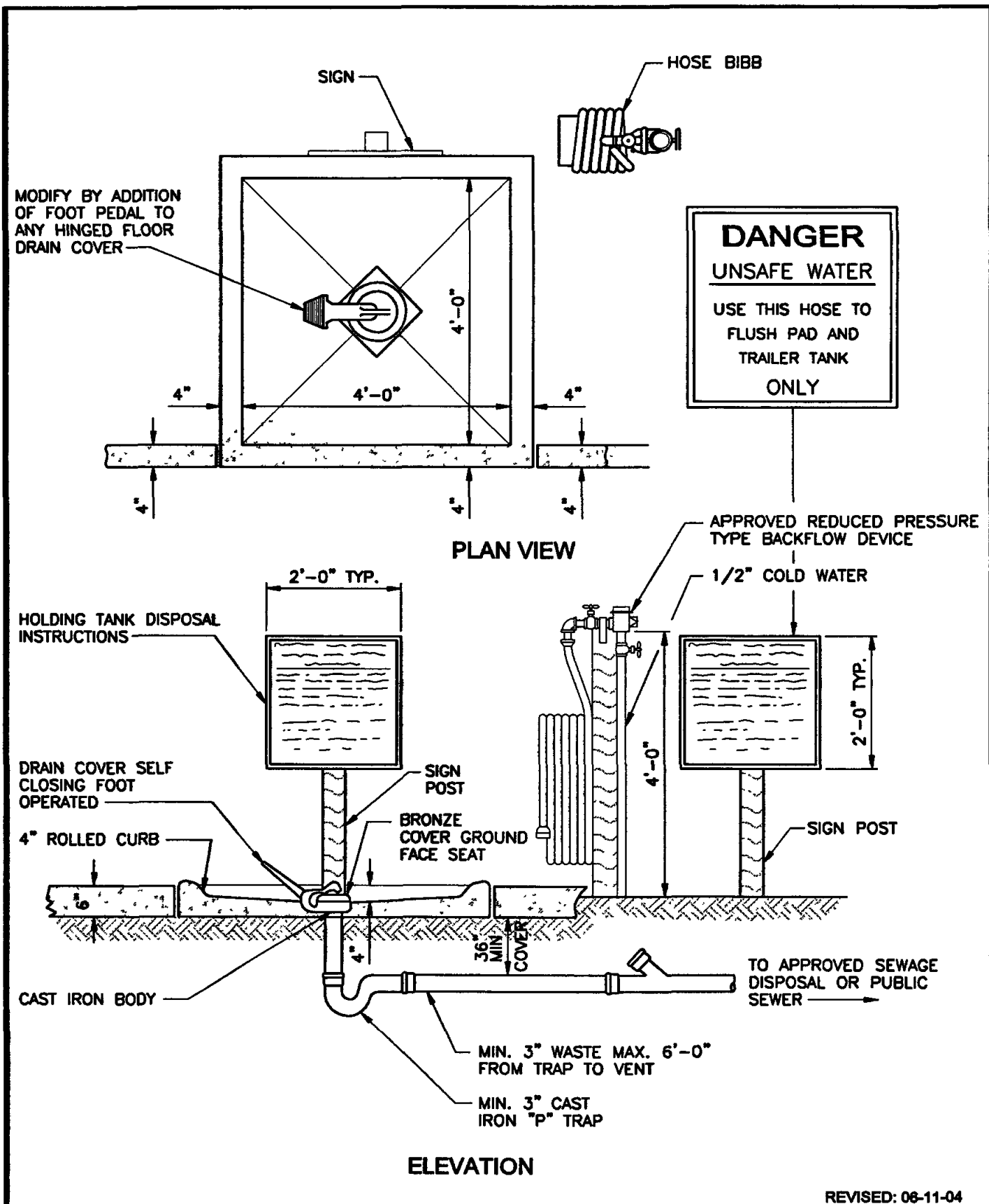
**CITY OF CERRITOS**

**ADJUSTABLE PIPE SUPPORT**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

APP. *Joe Holder*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-33**  
DATE: OCT 2004



REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
 DIVISION**

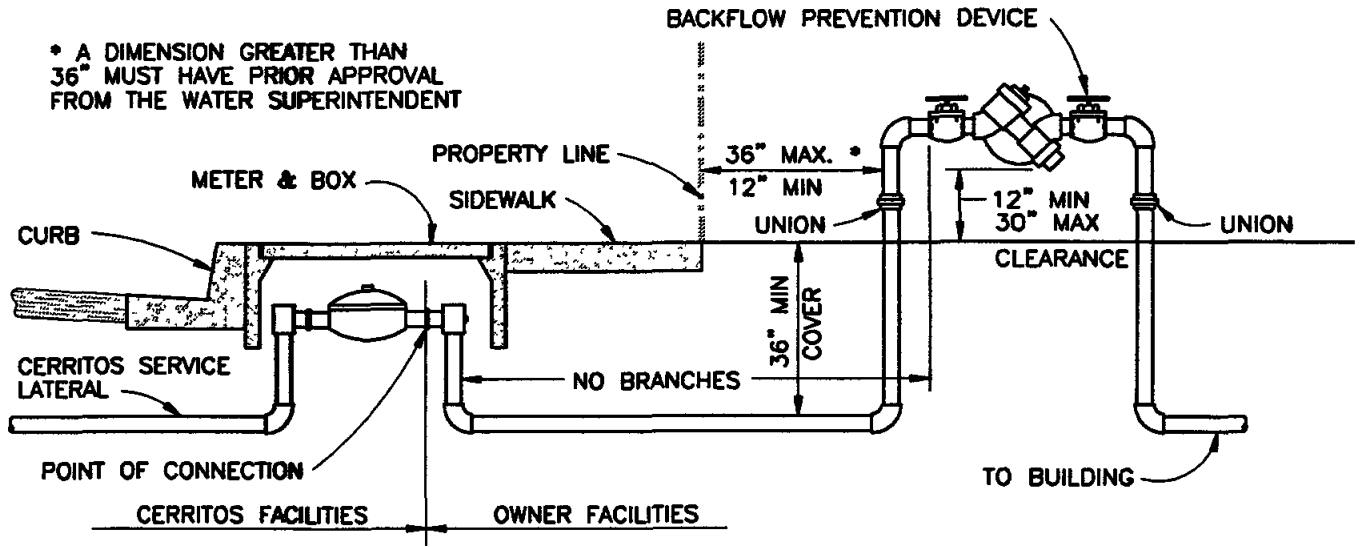
APPROVED TRAILER SEWAGE  
 DISPOSAL STATION

APP. Joe Holden  
 WATER SUPERINTENDENT

STANDARD  
 DRAWING NUMBER  
**W-D-34**

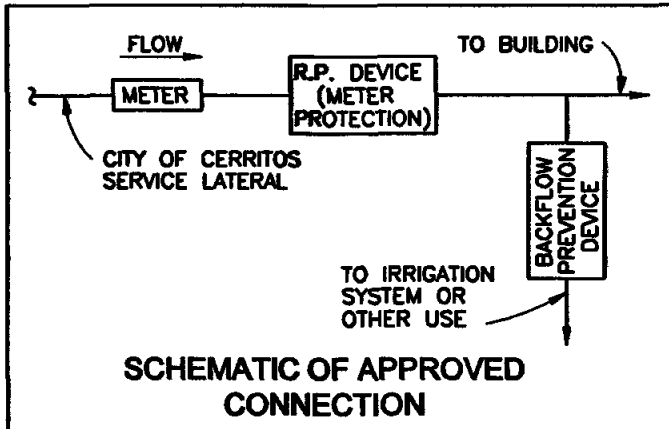
DATE: OCTOBER 2004

\* A DIMENSION GREATER THAN 36" MUST HAVE PRIOR APPROVAL FROM THE WATER SUPERINTENDENT

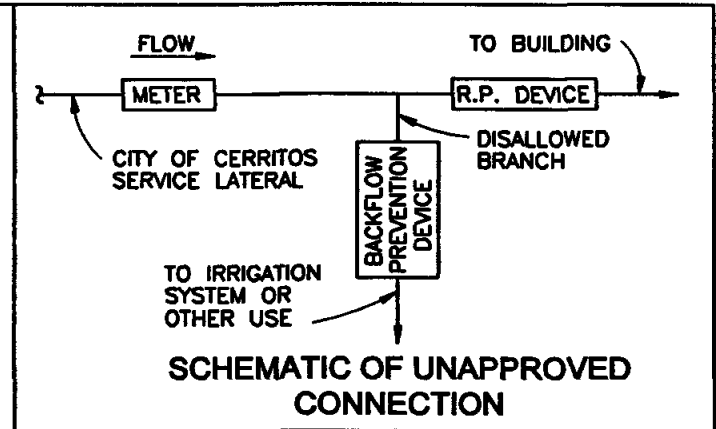


**BACKFLOW PREVENTION DEVICE  
TYPICAL INSTALLATION**

N.T.S.



**SCHEMATIC OF APPROVED CONNECTION**



**SCHEMATIC OF UNAPPROVED CONNECTION**

**GENERAL PROVISIONS:**

1. ALL COMMERCIAL/INDUSTRIAL/INSTITUTIONAL METERED SERVICES SHALL BE PROTECTED BY A REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION DEVICE (R.P. DEVICE).
2. R.P. DEVICES MUST BE PLACED ON PRIVATE PROPERTY AS CLOSE AS POSSIBLE TO THE METERED SERVICE.
3. NO BRANCHES (i.e., TEES, CROSSES ETC.) SHALL BE ALLOWED BETWEEN THE DEVICE AND THE METER.
4. R.P. DEVICE MUST BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH, UNIVERSITY OF SOUTHERN CALIFORNIA.
5. R.P. DEVICE MUST BE THE SAME SIZE AS THE SERVICE LINE, UNLESS APPROVED BY THE WATER UTILITY ADMINISTRATOR.
6. R.P. DEVICE MUST BE INSTALLED ABOVE GROUND PREFERABLY IN A LANDSCAPED AREA WITH 12" MINIMUM TO 30" MAXIMUM VERTICAL CLEARANCE FROM GRADE.
7. ONLY ONE R.P. DEVICE WILL BE ALLOWED PER METER TO SERVE AS METER PROTECTION, UNLESS APPROVED BY CERRITOS WATER DIVISION.
8. METER PROTECTION DEVICE MUST BE INSPECTED AND TESTED ANNUALLY BY LICENSED, LOS ANGELES COUNTY HEALTH DEPARTMENT CERTIFIED BACKFLOW DEVICE TESTER, AND RESULTS SUBMITTED TO THE CERRITOS WATER DIVISION.
9. FAILURE TO PROPERLY INSTALL AND MAINTAIN METER PROTECTION MAY RESULT IN TERMINATION OF WATER SERVICE.
10. A LIST OF APPROVED BACKFLOW PREVENTION DEVICES IS AVAILABLE AT THE CERRITOS WATER DIVISION.
11. IN SOME CASES WHERE AN UNINTERRUPTED WATER SUPPLY IS REQUIRED, DUAL PARALLEL BACKFLOW DEVICES WILL BE REQUIRED.

REVISED: 08-11-04

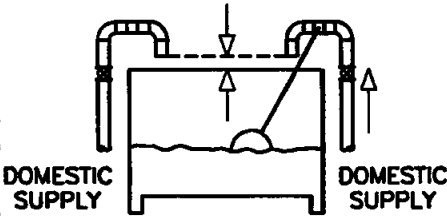
**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

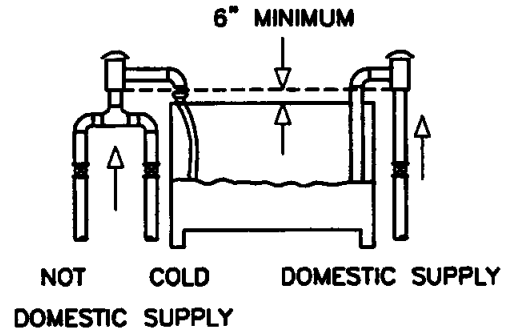
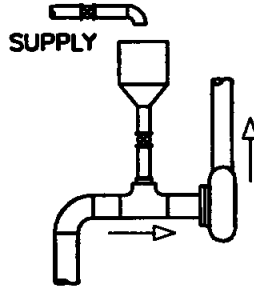
**BACKFLOW PREVENTION  
DEVICE INSTALLATION**  
  
APP. *[Signature]*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-35**  
DATE: OCTOBER 2004

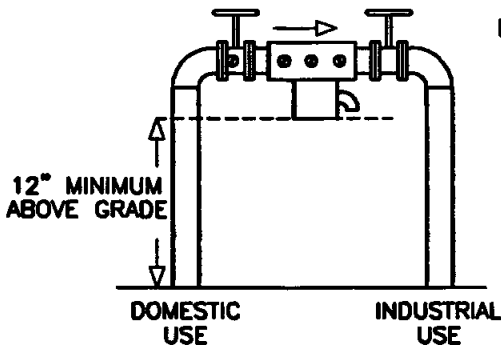
1" MINIMUM OR TWO PIPE DIAMETERS



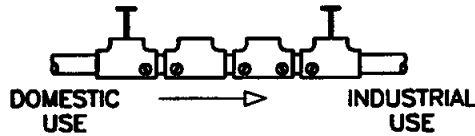
AIR GAP SEPARATION



ATMOSPHERIC VACUUM BREAKER INSTALLATION

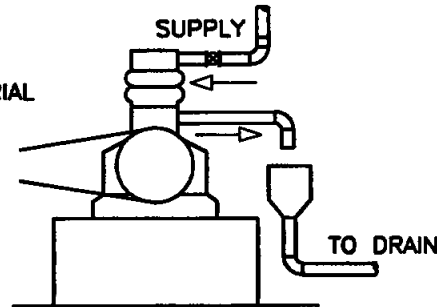


REDUCED PRESSURE PRINCIPLE BACK FLOW PREVENTER

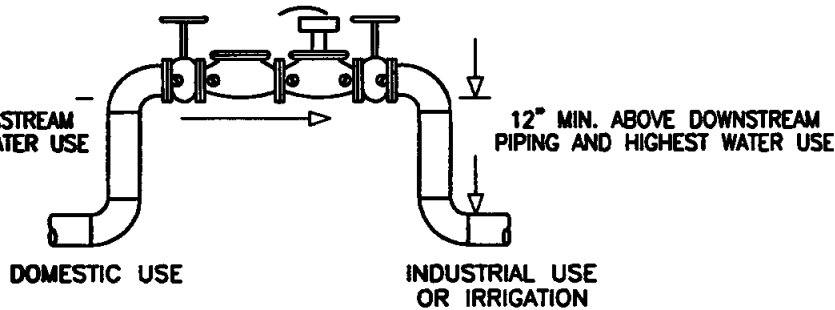
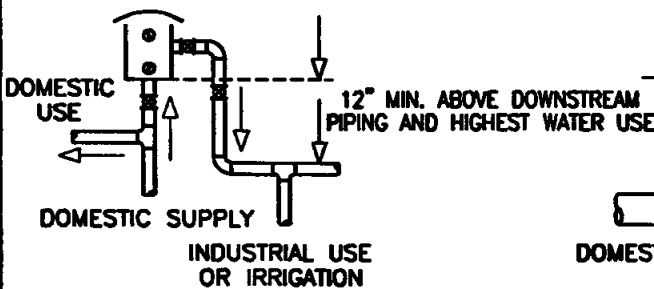


FOR DIRECT CONNECTIONS TO NON-COMPOUNDED BOILERS AND CHILLED WATER SYSTEMS

DOUBLE CHECK VALVE ASSEMBLY



INDIRECT CONNECTION TO WASTE



PRESSURE TYPE VACUUM BREAKER INSTALLATION

NOTE:

A REFER TO UNIFORM PLUMBING CODE LATEST EDITION

REVISED: 06-11-04

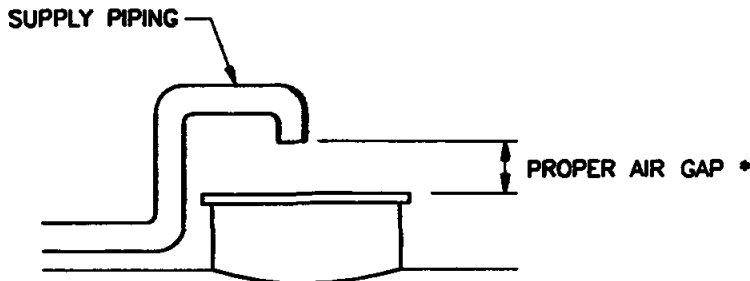
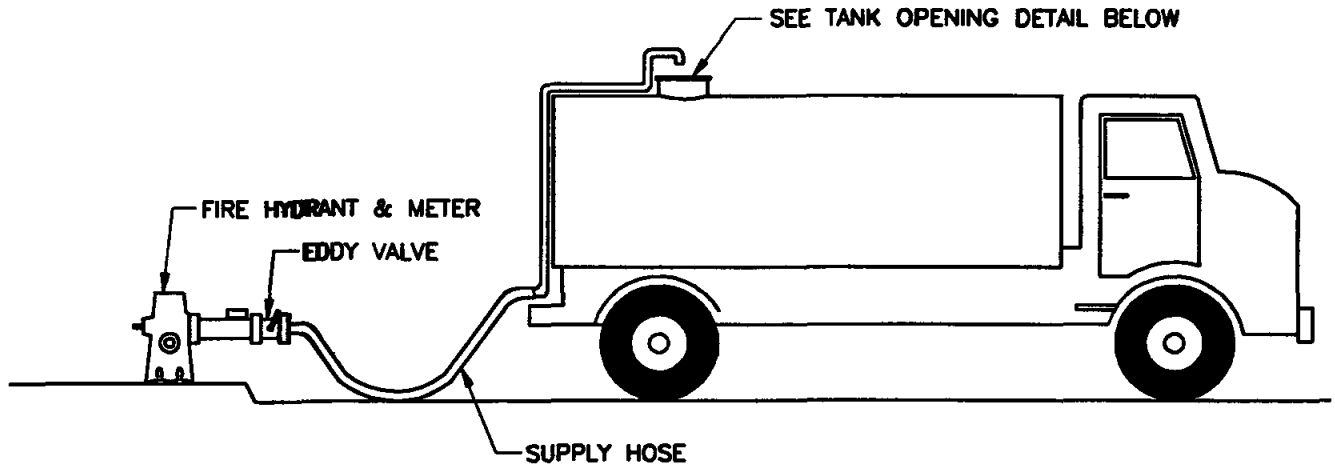
# CITY OF CERRITOS

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**CERRITOS WATER  
DIVISION**

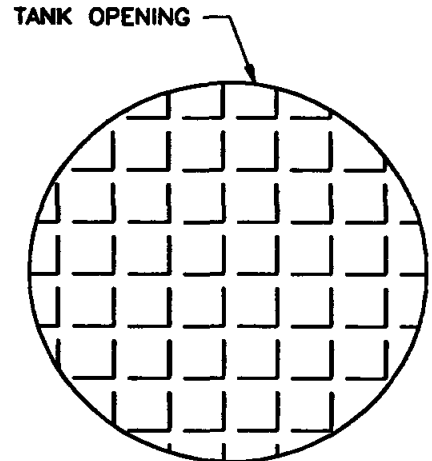
SAFE PLUMBING  
PRACTICE  
APP. *Joe Holder*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**W-D-36**  
DATE: OCTOBER 2004

**FOR USE WITH ALL POTABLE WATER TANKS USING WATER FROM DOMESTIC WATER SUPPLY WITHIN THE SERVICE AREA OF THE CITY OF CERRITOS**



**AIR GAP DETAIL**



**2" X 2" X 1/4" WELDED WIRE MESH TO BE WELDED TO TANK OPENING TO PREVENT HOSE FROM BEING DROPPED INTO TANK**

**GENERAL NOTES:**

1. \*PROPER AIR GAP IS ~~THICE~~ **THREE** TIMES THE DIAMETER OF THE SUPPLY PIPING, E.G. A 2" SUPPLY PIPE REQUIRES A 4" AIR GAP, ETC. SUPPLY PIPING **CAN** BE BRACED BUT NOT ENCLOSED, PER TITLE 17 OF THE CALIFORNIA ADMISTRATIVE CODE
2. ON-SITE STORAGE TANKS OR ANY WATER USAGE MORE THAN 50' FROM THE FIRE HYDRANT METER SHALL REQUIRE INSTALLATION OF A BACKFLOW PREVENTION DEVICE. TYPE OF DEVICE SHALL BE DETERMINED BY THE CITY OF CERRITOS

**NOTES:**

1. FAILURE TO COMPLY WITH THESE REGULATIONS MAY RESULT IN REVOCATION OF HYDRANT METER USE
2. HYDRANT WRENCH IS THE ONLY WRENCH ACCEPTABLE TO OPEN OR CLOSE THE FIRE HYDRANT
3. AN EDDY VALVE IS REQUIRED AT THE HOSE INLET

REVISED: 08-11-04

**CITY OF CERRITOS**

**PREPARED BY  
CERRITOS WATER  
DIVISION**

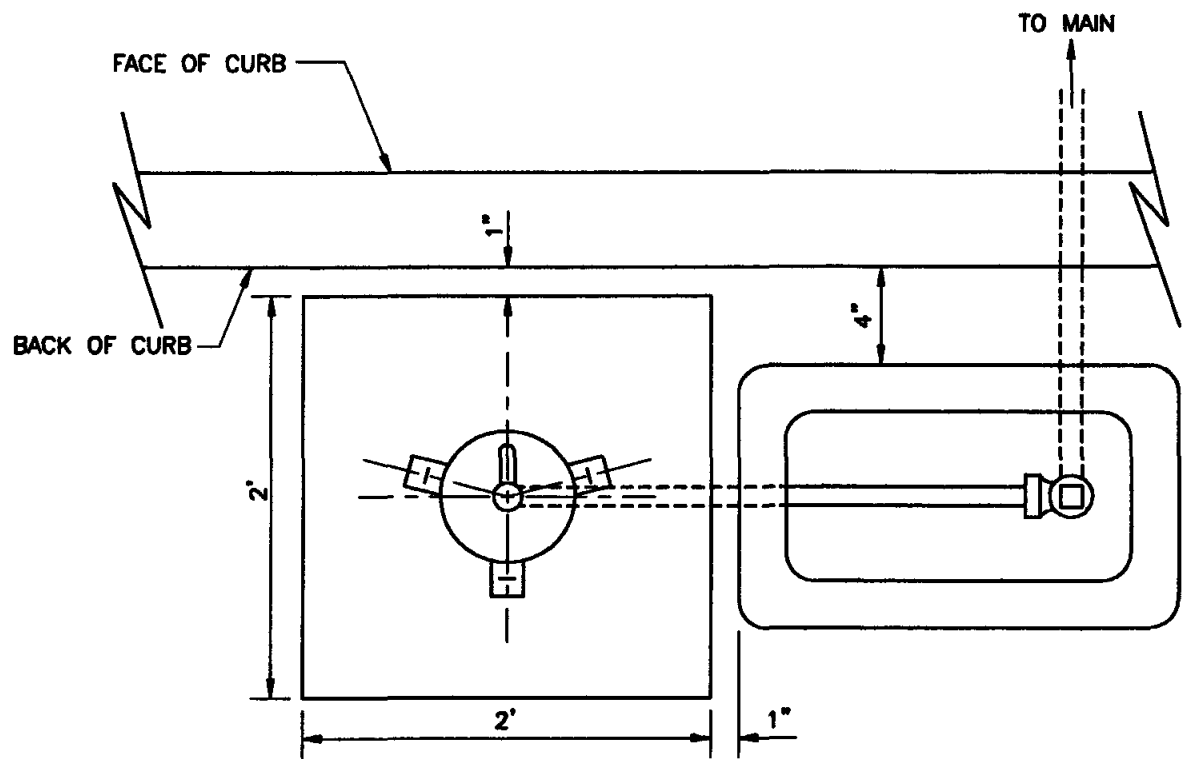
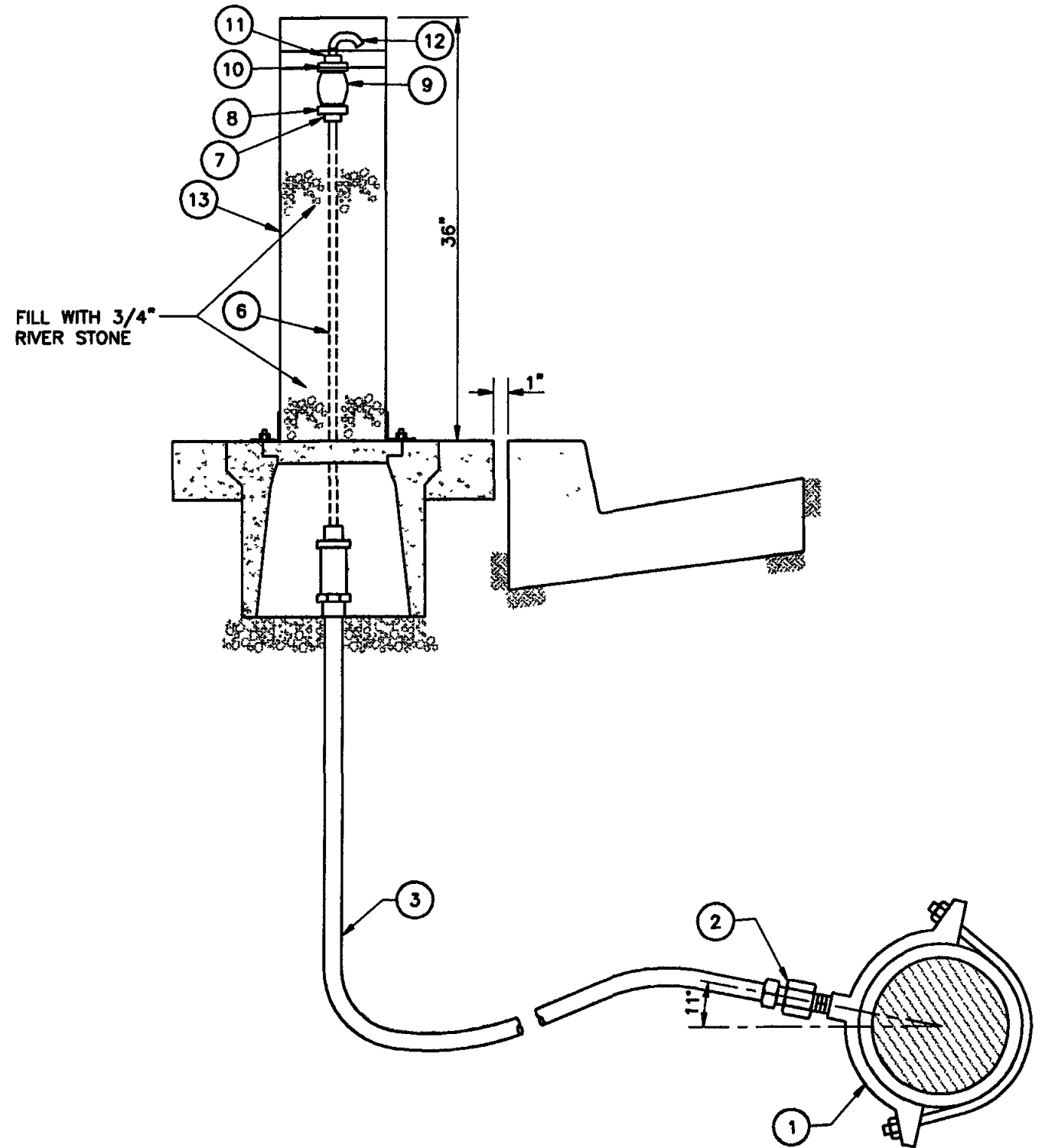
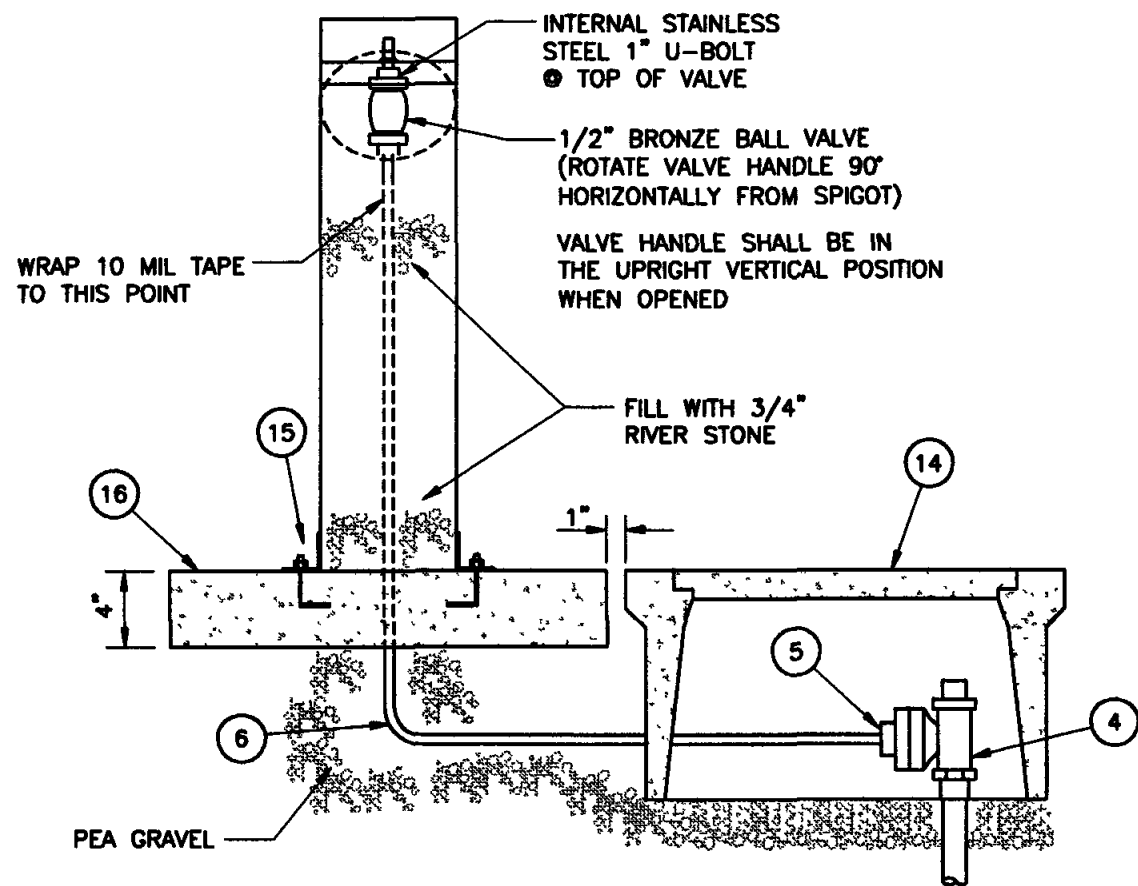
**WATER TRUCK  
AIR GAP REQUIREMENTS**

APP. Joe Holden  
WATER SUPERINTENDENT

**STANDARD  
DRAWING NUMBER**

**W-D-39**

DATE: OCTOBER 2004



REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
 DIVISION**

WATER QUALITY  
 NEW SAMPLING STATION

APP. *Joe Holdren*  
 WATER SUPERINTENDENT

STANDARD  
 DRAWING NUMBER

**W-D-40**

DATE: OCT 2004 SHEET 1 OF 2



**STANDARD DRAWING MATERIALS**

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	1" BRONZE SADDLE	JONES J-979, MUELLER BR 2B, FORD F202B OR APPROVED EQUAL	SEE SECTION 10-03
2	1	1" BRONZE COMPRESSION CORPORATION STOP	MUELLER 110 H-15013, FORD FB1100-4Q OR APPROVED EQUAL	SEE SECTION 10-05
3	3	1" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
4	1	1" X 3/4" BRONZE COMPRESSION ANGLE METER STOP W/LOCK WING	MUELLER 110 H-14258, FORD KV43-342WQ OR APPROVED EQUAL	SEE SECTION 10-06
5	1	3/4" CTS X 1" MIP BRONZE COMPRESSION ADAPTOR	MUELLER 110 H-15428, FORD C84-43Q OR APPROVED EQUAL	SEE SECTION 10-07
6	1	3/4" TYPE K COPPER TUBING	ANSI/AWWA C-800	SEE SECTION 10-01
7	1	3/4" FIP X 3/4" SLIP COPPER SOLDERED FITTING	USE ONLY LEAD-FREE SOLDER	
8	1	3/4" MIP X 1/2" MIP BRASS REDUCER		
9	1	1/2" STAINLESS STEEL BALL VALVE W/TEFLON SEATS. FIP ENDS	PARKER V500SS OR APPROVED EQUAL	
10	1	1/2" MIP X 3/8" MALE FLARE BRASS ADAPTOR		
11	1	3/8" FEMALE BRASS FLARE NVT		
12	1	3/8" STAINLESS STEEL TUBING		
13	1	WATER SAMPLE STATION WITH EPOXY POWDER COATING	PIPELINE PRODUCTS WTS - 858E OR APPROVED EQUAL	POWDER COATING SHALL BE BAY FOG GREY
14	1	CONCRETE METER BOX W/CONCRETE COVER	BROOKS MODEL #37 OR APPROVED EQUAL	SEE SECTION 10-10 AND STANDARD DRAWING W-D-26
15	1	3/8" X 4" STAINLESS STEEL ANCHOR BOLDS W/NUTS AND WASHERS SET IN PAD		SEE SECTION 4-03-F
16	1	2'X2'X4" CONCRETE PAD	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05

**NOTES:**

A	ALL SERVICES SHALL CONFORM WITH SECTIONS 10 AND 11-03
B	IF MAIN IS STEEL, WELD COUPLING 1/2" SIZE LARGER THAN SERVICE AND USE AN INSULATED DIELECTRIC BUSHING. SEE STANDARD DRAWING W-D-24
C	ALL BURIED FERROUS SURFACES, PIPES, AND FITTING SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
D	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
E	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

WATER QUALITY  
NEW SAMPLING STATION

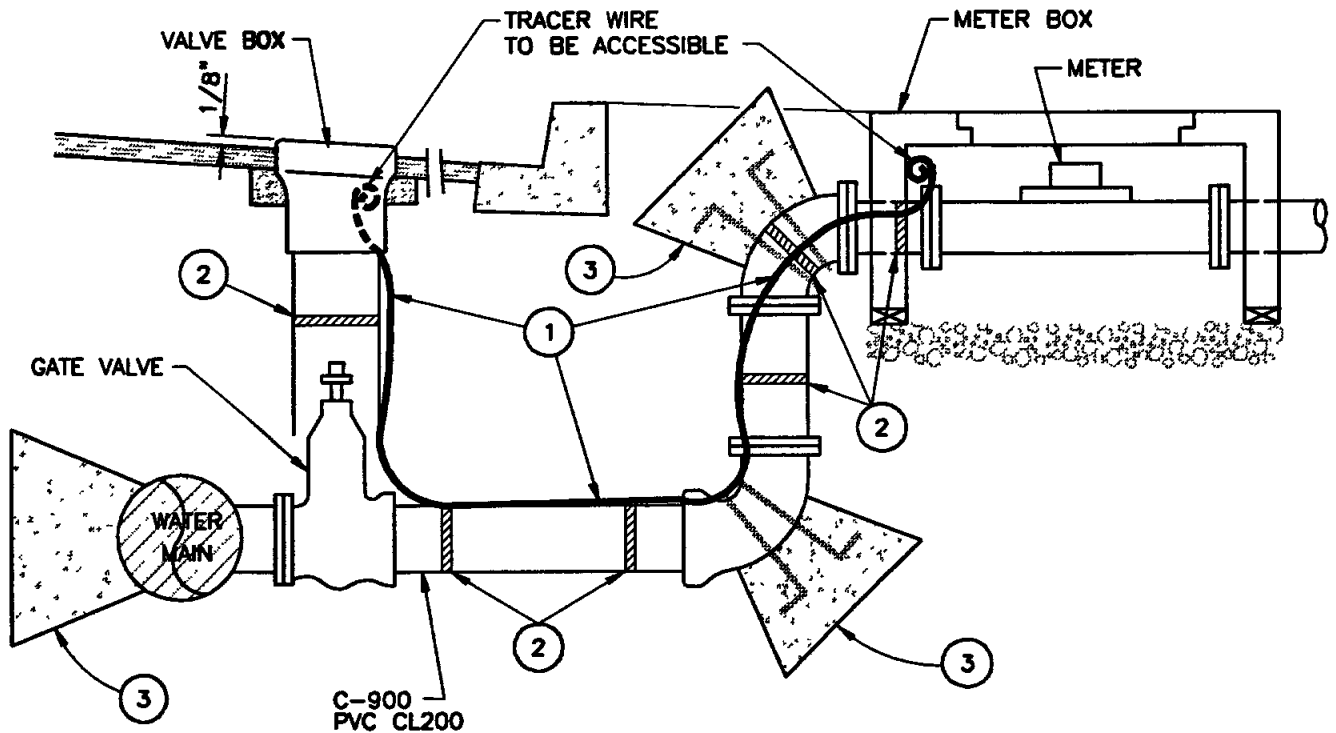
APP. Joe Holden  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

**W-D-40**

DATE: OCT 2004 SHEET 2 OF 2

## RECYCLED WATER



### STANDARD DRAWING MATERIALS

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	TRACER WIRE	NO. 14 COPPER WITH HMWPE INSULATION	SEE SECTION 3-03
2	1	PIPE WRAP TAPE	10 MIL WINMORE UPC, POLYKEN 900, SCOTCHWRAP 5 OR APPROVED EQUAL	SEE SECTION 4-03-H
3	3	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17

#### NOTES:

A	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
B	ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
C	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
D	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
E	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STD. DRAWINGS W-D-32 OR RWD-10
F	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE
G	THRUST BLOCK CAN BE INSTALLED ON OPPOSITE END OF ELBOW IF REQUIRED DUE TO LACK OF COVER UPON CITY APPROVAL

REVISED: 06-11-04

## CITY OF CERRITOS

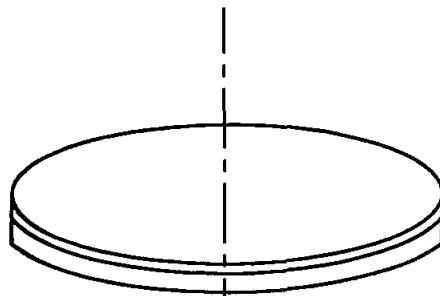
PREPARED BY  
**CERRITOS WATER  
DIVISION**

TYPICAL TRACER WIRE  
INSTALLATION  
APP. *Joe Holder*  
WATER SUPERINTENDENT

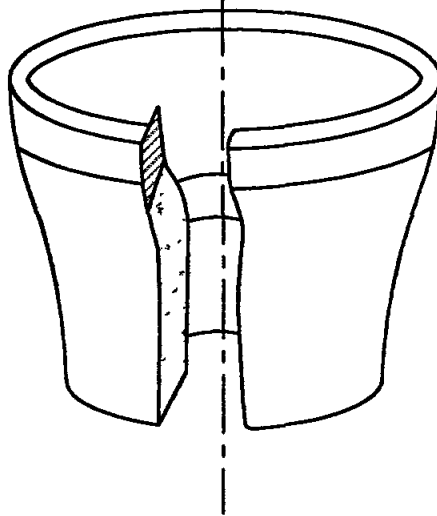
STANDARD  
DRAWING NUMBER  
**RWD-5**  
DATE: OCTOBER 2004

**NOTE:** VALVE BOX COVER  
TO BE ROUND WITH RAISED  
WORDS "RECLAIMED WATER",  
PAINTED PLUMB

2" SQ OPERATING  
NUT



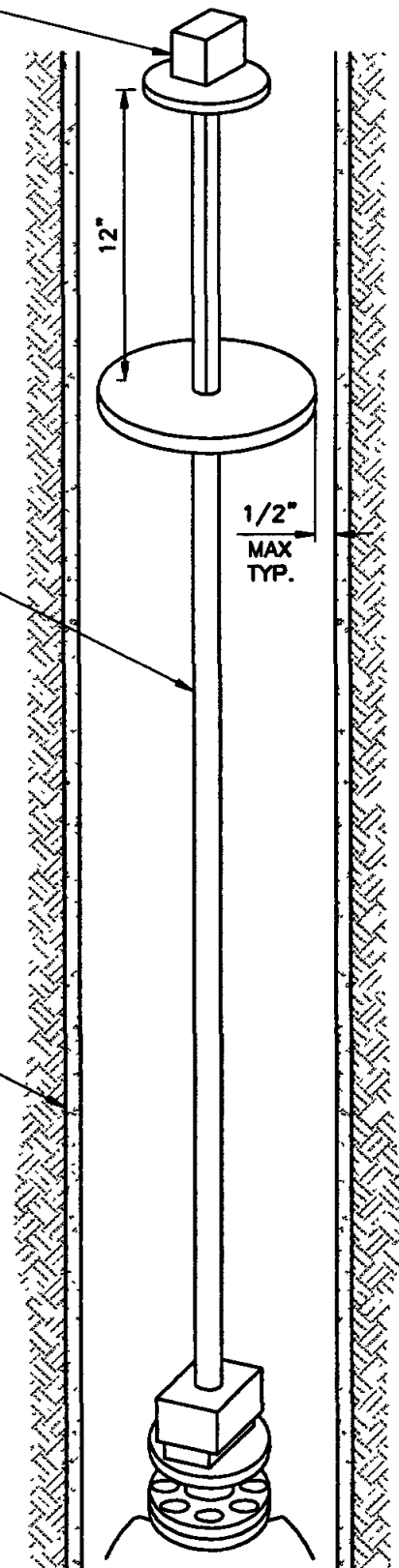
BROOKS MODEL  
1CR OR APPROVED  
EQUAL VALVE BOX  
WITH LID  
PER SECTION  
4-02-E



VALVE STEM  
EXTENSION  
PER SECTION  
4-02-C

VALVE BOX FLU  
PIPE RISER  
SCH 80 PVC OR  
C-900 CL200

TYPICAL VALVE BOX WITH LID  
FOR USE ON RECLAIMED WATER SYSTEM



REVISED: 06-11-04

# CITY OF CERRITOS

PREPARED BY  
**CERRITOS WATER  
DIVISION**

TYPICAL VALVE BOX AND  
EXTENDED VALVE OPERATING NUT

APP. *Joe Holdre*  
WATER SUPERINTENDENT

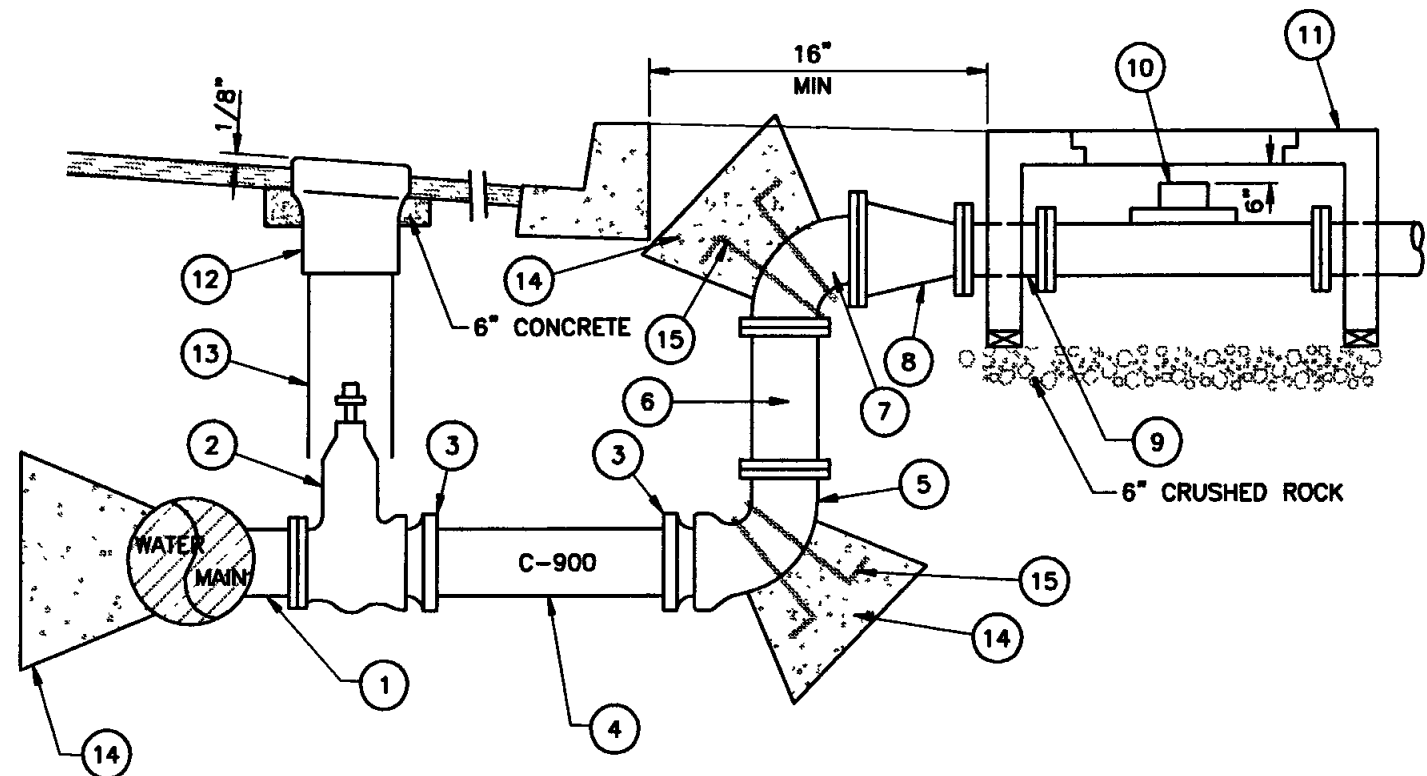
STANDARD  
DRAWING NUMBER

**RWD-10**

DATE: OCTOBER 2004

**RECYCLED WATER**

**STANDARD DRAWING MATERIALS**



**3", 4" & 6" METER LAY LENGTHS**

3" TURBINE W/STRAINER	4" TURBINE W/STRAINER	6" TURBINE W/STRAINER
19 1/8"	23 1/8"	27 1/8"

**NOTES:**

<b>A</b>	ALL 3", 4", AND 6" OR LARGER SERVICES SHALL CONFORM WITH SECTION 10
<b>B</b>	ALL BURIED FERROUS SURFACES, PIPES, AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
<b>C</b>	ALL NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
<b>D</b>	MINIMUM SERVICE LATERAL SIZE SHALL BE 4"
<b>E</b>	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
<b>F</b>	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY-MIX TRUCK PER SECTION 9-02
<b>G</b>	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STD. DRAWING W-D-32 OR RWD-10
<b>H</b>	FOR METER RUNS PARALLEL TO CURB, EXTEND SERVICE AS NEEDED AND ROTATE UPPER 90° BEND ¼ TURN. SEE STD DRAWING W-D-21B
<b>I</b>	METER SPACERS OR SPOOLS OF VARIOUS LENGTHS MAY BE REQUIRED FOR VARIOUS METER TYPE AND CONFIGURATIONS. THESE SHALL BE MADE UP UNDER DIRECTION OF THE WATER UTILITY ADMINISTRATOR
<b>J</b>	TRACER WIRE SHALL BE REQUIRED ON ANY C-900 PIPELINE INSTALLATION PER SECTION 3-03 AND STANDARD DRAWING RWD-1
<b>K</b>	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE MJ X MJ X FLANGE OR	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE	MINIMUM ¼" STEEL	SEE STANDARD DRAWING W-D-22
2	1	RESILIENT WEDGE TAPPING VALVE FLANGE X MJ	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
3	1	DUCTILE IRON RESTRAINT GLAND	EBBA IRON MEGA LUG, FORD UNI-FLANGE SERIES 1400 OR APPROVED EQUAL	SEE SECTION 4-01
4	1	C-900 PVC PIPE	PER AWWA C-900	SEE SECTIONS 3-01.2 AND 16-02-C
5	2	DUCTILE IRON 90° BEND MJ X MJ	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
6	1	C-900 PVC PIPE LENGTH AS REQUIRED	PER AWWA C-900	SEE SECTIONS 3-01.2 AND 16-02-C
7	1	DUCTILE IRON 90° BEND MJ X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
8	1	DUCTILE IRON REDUCER 4" X 3" FLANGE X FLANGE (AS REQUIRED)	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
9	1	DUCTILE IRON SPOOL FLANGE X FLANGE. LENGTH 5 TIMES DIAMETER OF METER. EX: 4" METER=20" SPOOL	CLASS 53 PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
10	1	3", 4" OR 6" METER W/STRAINER	METER TYPE AND CONFIGURATION TO BE DETERMINED BY THE WATER SUPERINTENDENT	METER TO BE PURCHASED FROM AND FURNISHED BY THE CITY. SEE SECTION 10-09
11	1	CONCRETE METER BOX WITH STEEL 2 PIECE COVER WITH READING LIDS	BROOKS MODEL #68, 700 SERIES OR APPROVED EQUAL. SIZE DETERMINED BY METER CONFIGURATION	SEE SECTION 10-10 AND STANDARD DRAWINGS W-D-30 AND W-D-31
12	1	VALVE BOX	BROOKS 1CR OR APPROVED EQUAL	SEE SECTION 4-02-E AND STD DRAWINGS W-D-8 AND RWD-10
13	1	8" FLU PIPE RISER	C-900 CL200 OR SCH 80 PVC PIPE	SEE SECTION 4-02-D AND STD DRAWINGS W-D-8 AND W-D-32
14	3	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE STD DRAWING W-D-17
15	4	ANCHOR RODS	STEEL REINFORCING BAR	SEE SECTION 5-01 AND STANDARD DRAWING W-D-17

REVISED: 06-11-04

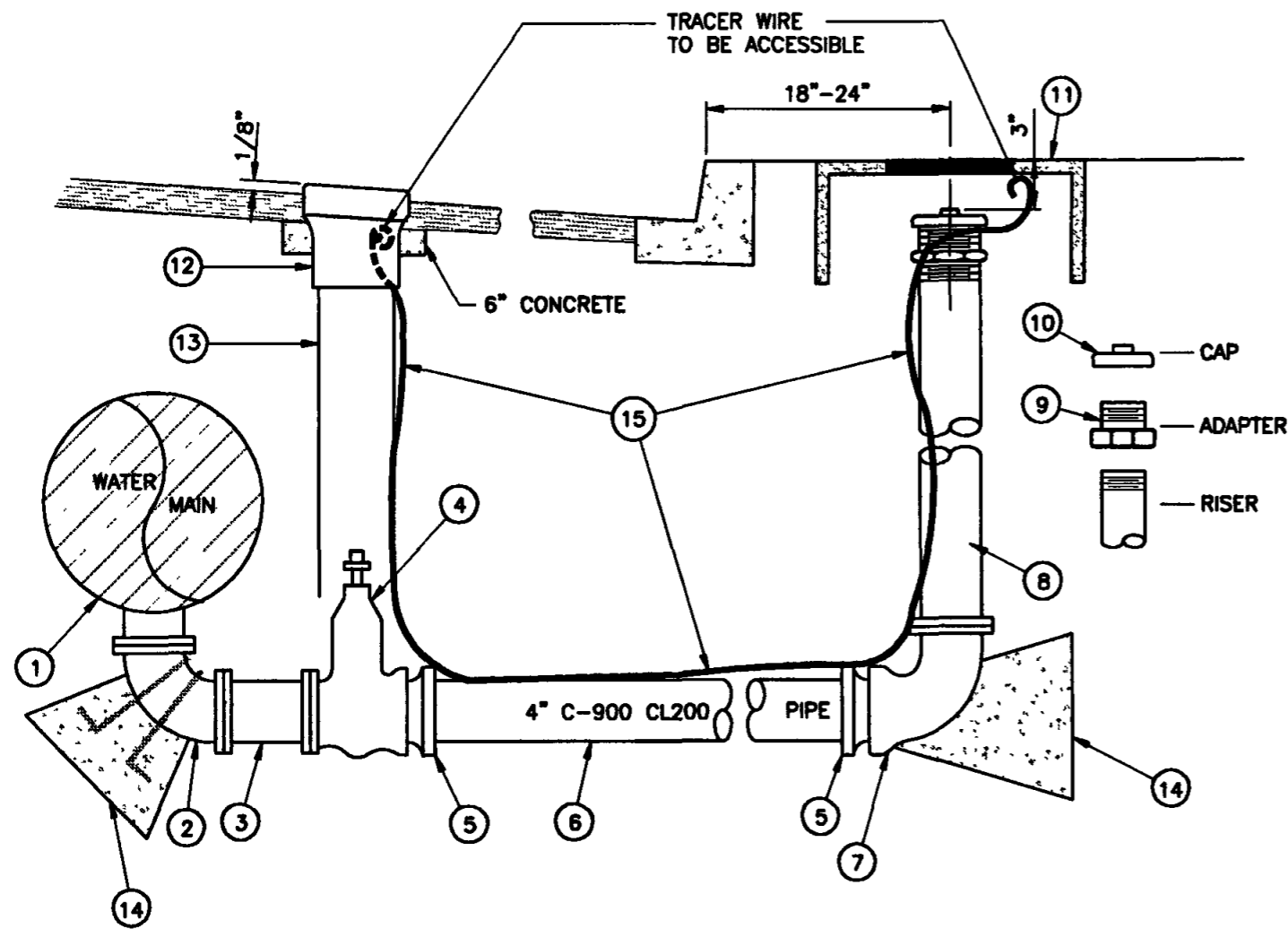
**CITY OF CERRITOS**

PREPARED BY  
**CERRITOS WATER  
DIVISION**

WATER SERVICE  
INSTALLATION  
3" - 4" - 8"  
APP. *Joe Holdren*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER  
**RWD-15**  
DATE: OCT 2004

STANDARD DRAWING MATERIALS



ITEM	QTY	SIZE / DESCRIPTION	MATERIAL SPECIFICATIONS	REMARKS
1	1	DUCTILE IRON TEE MJ X MJ X 4" FLANGE OR	TYLER UNION OR CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
	1	STAINLESS STEEL TAPPING SLEEVE X 4" FLANGE OR	SMITH BLAIR CC-662, MUELLER H-304 OR APPROVED EQUAL	SEE SECTION 10-04
	1	WELDED STEEL NOZZLE 4" FLANGE	MINIMUM 1/4" STEEL	SEE STANDARD DRAWING W-D-22
2	1	DUCTILE IRON 90° BEND FLANGE X FLANGE	TYLER UNION OR CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
3	1	DUCTILE IRON SPOOL FLANGE X FLANGE	CLASS 53 DUCTILE IRON PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
4	1	4" RESILIENT WEDGE GATE VALVE FLANGE X M.J.	MUELLER RS, CLOW RW, MH VALVES RS OR APPROVED EQUAL	SEE SECTION 10-04 AND STANDARD DRAWING W-D-8
5	2	4" DUCTILE IRON RESTRAINT GLAND	EBBA IRON MEGA LUG, FORD UNI-FLANGE OR APPROVED EQUAL	SEE SECTION 4-01
6	1	4" C-900 PVC PIPE	PER AWWA C-900	SEE SECTIONS 3-01.2 AND 16-02-C
7	1	4" DUCTILE IRON 90° BEND M.J. X FLANGE	TYLER UNION CLASS 250 OR APPROVED EQUAL	SEE SECTION 4-01
8	1	4" DUCTILE IRON PIPE RISER FLANGE X I.P.T. LENGTH AS REQUIRED	CLASS 53 DUCTILE IRON PER AWWA/ANSI 151/A21.51	SEE SECTION 3-01.1
9	1	4" BRASS ADAPTER 4" I.P.T X 4" N.S.T.	POTTER-ROEMER 2825 OR APPROVED EQUAL	
10	1	4" PLASTIC HYDRANT CAP N.S.T.		
11	1	CONCRETE METER BOX	BROOKS MODEL #37 W/CAST IRON TRAFFIC COVER	SEE SECTION 10-10 AND STANDARD DRAWING W-D-26
12	1	VALVE BOX	BROOKS 1CR OR APPROVED EQUAL	SEE SECTION 4-02-E AND STD DRAWINGS W-D-8 AND RWD-10
13	1	8" FLU PIPE RISER	8" C-900 CL200 OR SCH 80 PVC PIPE	SEE SECTION 4-02-E AND STD DRAWINGS W-D-8 AND RWD-10
14	2	CONC. THRUST BLOCK	2000 PSI PER ASTM C-39 OR READY MIX PER ASTM C-94	SEE SECTION 6-05 AND STANDARD DRAWING W-D-17
15	1	TRACER WIRE	NO. 14 COPPER WITH HMWPE INSULATION	SEE SECTION 3-03

NOTES:

A	ALL BLOWOFF ASSEMBLIES SHALL CONFORM WITH SECTION 12-01
B	ALL BURIED FERROUS SURFACES, PIPES AND FITTINGS SHALL BE PROTECTED AND POLYETHYLENE ENCASED PER SECTIONS 4-03 AND 4-03-G
C	ALL NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL PER SECTION 4-03-F
D	ALL PERMANENT BLOWOFF LATERAL SIZE SHALL BE 4"
E	ALL PIPES AND FITTINGS SHALL BE IDENTIFIED WITH BURIED PIPE WARNING/IDENTIFICATION TAPE PER SECTION 16
F	ALL BACKFILL SHALL CONSIST OF "ZERO SACK" WET SAND DELIVERED FROM A READY MIX TRUCK PER SECTION 9-02
G	A VALVE EXTENSION MAY BE REQUIRED. INSTALL PER SECTION 4-02-C AND STANDARD DRAWING W-D-32 OR RWD-10
H	TRACER WIRE SHALL BE REQUIRED ON ANY PVC C-900 PIPELINE INSTALLATION PER SECTION 3-03 AND STANDARD DRAWING RWD-1
I	ALL INSTALLATIONS TO CONFORM WITH SECTION 3 AS APPROPRIATE

REVISED: 06-11-04

CITY OF CERRITOS

PREPARED BY  
CERRITOS WATER  
DIVISION

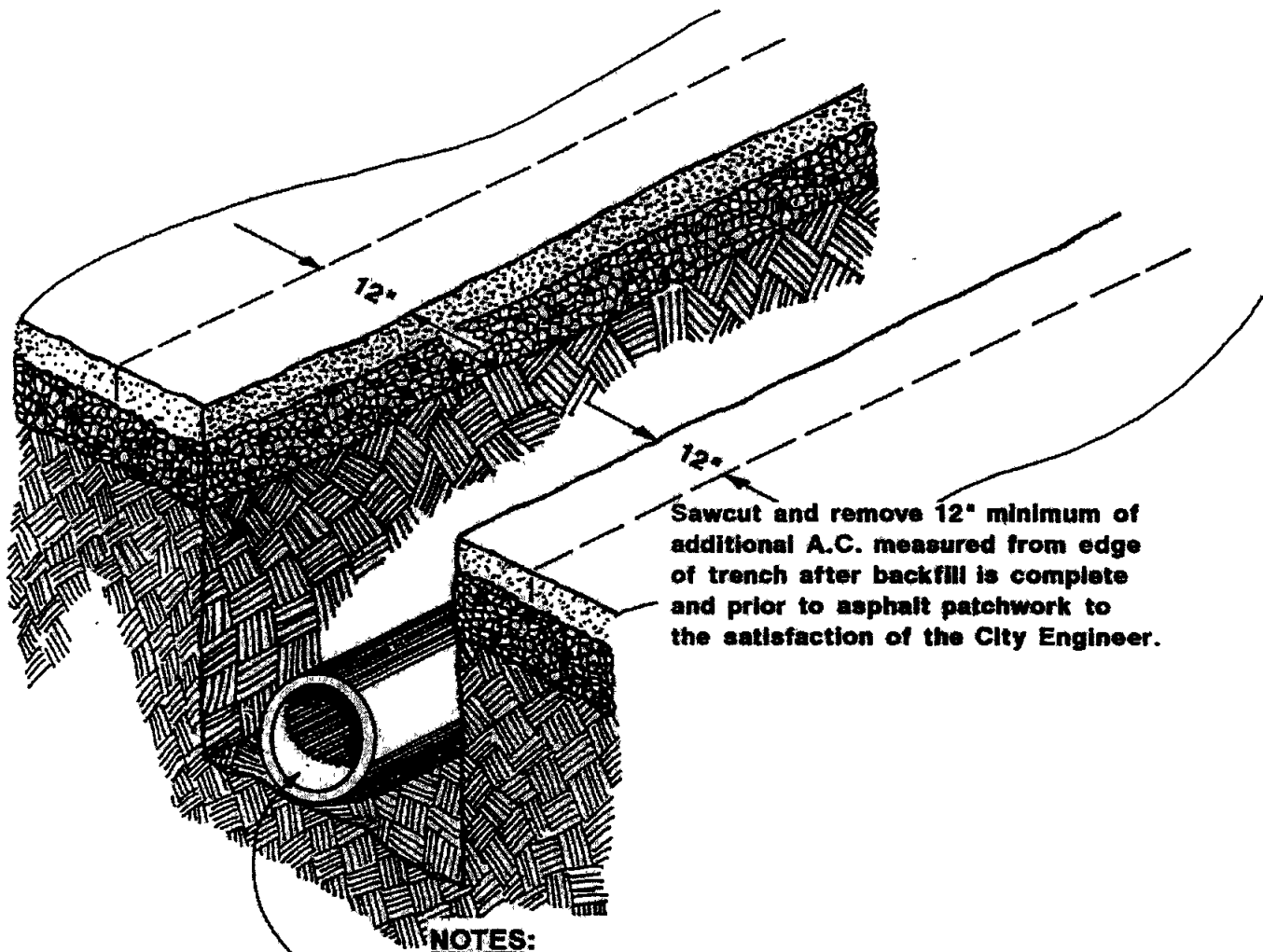
PERMANENT 4" BLOWOFF  
ASSEMBLY

APP. *Joe Holder*  
WATER SUPERINTENDENT

STANDARD  
DRAWING NUMBER

RWD-20

DATE: OCT 2004



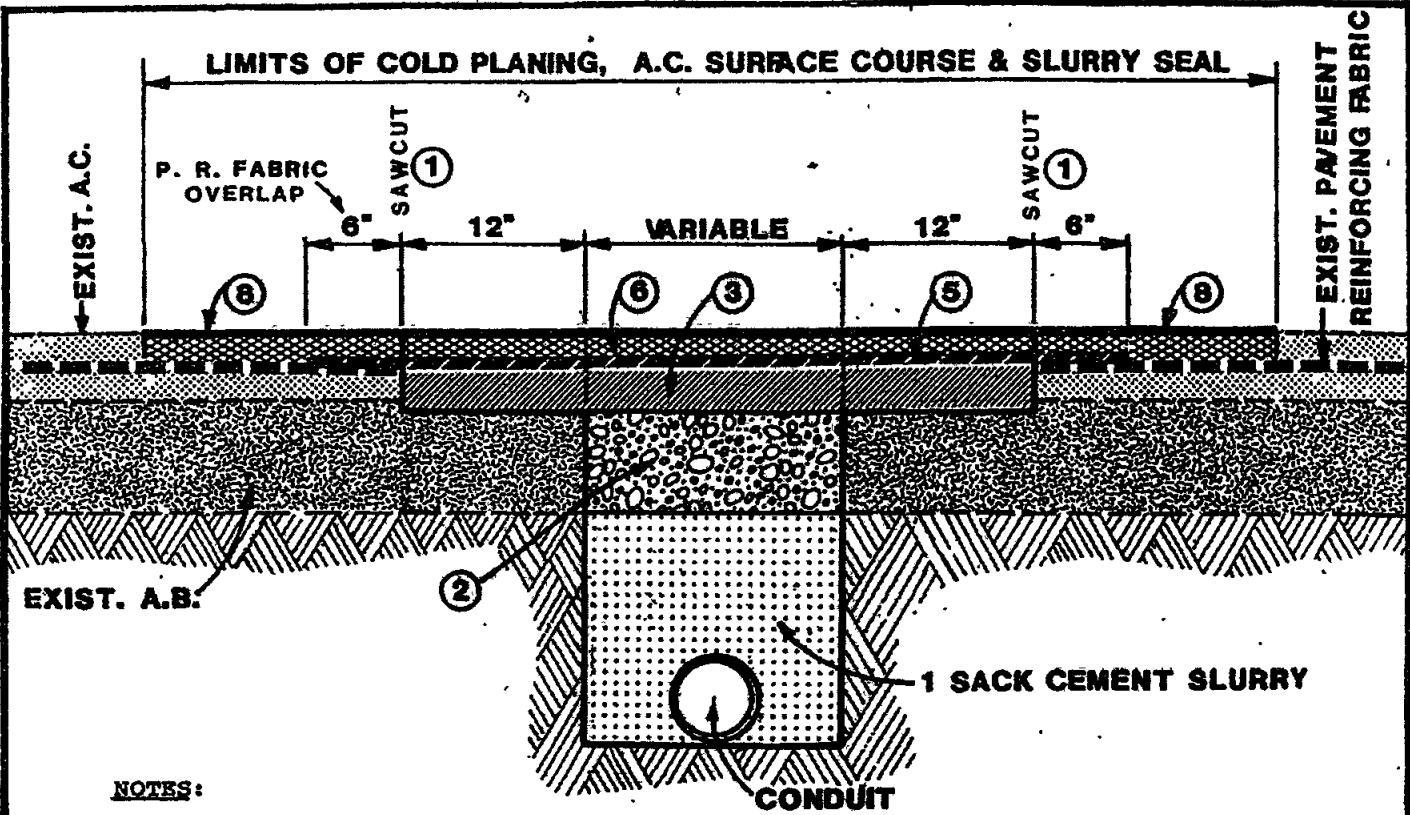
Sawcut and remove 12" minimum of additional A.C. measured from edge of trench after backfill is complete and prior to asphalt patchwork to the satisfaction of the City Engineer.

**NOTES:**

Conduit

1. Backfill shall be placed as specified in Subsections 306-1.3.1, 306-1.3.2, and 306-1.3.4 of the Standard Specifications for Public Works Construction, Latest Edition.
2. Asphalt patch shall be per City standards and shall be a minimum of one (1") inch thicker than existing pavement.
3. On arterial streets where open trench is allowed, a minimum of 8' wide shall be grinded to 1½" thick, cold planed and replaced with the same material using machine, then to be slurried after 30 days and restripe as necessary.

REVISIONS	<b>CITY OF CERRITOS</b>	
ADDED SHEET 2 12/1/88 REV. NOTE 1 2/5/92	<b>REPAIR OF OPEN TRENCH DETAIL</b>	
	APPROVED FOR USE IN THE CITY OF CERRITOS	
	<i>William J. Morris, Jr.</i> CITY ENGINEER	12/1/81 DATE
		<b>PLAN NO. S-D-25 1 of 2</b>



**NOTES:**

- ① Sawcut a minimum of one foot from edge of trench after backfill is completed and remove existing A.C.
- ② Construct crushed aggregate base - thickness to match existing.
- ③ Construct base course of new A.C., C2-AR-4000 unless otherwise specified.
- ④ Cold plane a minimum of 8 ft. wide area or a full traffic lane width (appropriate alternate to be determined by the City Engineer) to a depth of 1 1/4" minimum. Where existing reinforcing fabric is 1 1/4" below finish surface, cold plane depth may be 1 1/4" minimum.
- ⑤ Install pavement reinforcing fabric with a minimum of 6 inches overlap over existing pavement reinforcing fabric on either side in accordance with the manufacturer's recommendation. A tack coat shall be applied to provide adequate bonding between existing pavement, pavement reinforcing fabric and new asphalt concrete overlay.
- ⑥ Construct surface course of asphalt concrete.
- ⑦ If existing pavement reinforcing fabric is damaged during the cold planing operation, new pavement reinforcing fabric shall be installed to the full width of the cold planed area with required overlap.
- ⑧ In areas where the existing pavement has been slurry sealed within the last 18 months, slurry the repaired width after 30 days from repaving.
- ⑨ Restripe as necessary.

**GENERAL NOTES:**

- 1. Pavement reinforcing fabric shall be Petromat, Petrotac, or approved equal.
- 2. New A.C. pavement section shall be 1" thicker than existing pavement.

REVISIONS

<b>CITY OF CERRITOS</b>	
<b>REPAIR OF OPEN TRENCH WITH EXIST. PAVEMENT REINFORCING FABRIC</b>	
<b>APPROVED FOR USE IN THE CITY OF CERRITOS</b>	
<i>William J. Moran, Jr.</i> CITY ENGINEER	12/5/88 DATE
<b>PLAN NO. S-D-25</b> 2 of 2	