COUNTY OF SACRAMENTO
RULES AND REGULATIONS FOR RECYCLED WATER USE AND DISTRIBUTION

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SECTION 1

INTRODUCTION

1.1 GENERAL

The groundwater table in many areas of Sacramento County has been declining for years. In order to slow this decline, to meet the growing water demands of the area and support the increasing population, a conjunctive water use program has been developed to supplement groundwater use. One component of the conjunctive use program is water recycling. The Sacramento Regional County Sanitation District (SRCSD), in partnership with the Sacramento County Water Agency (SCWA) is implementing a water recycling program. The Phase I recycled water system will be used to irrigate publicly owned areas of residential neighborhoods, parks, school sites, commercial areas, and landscaped medians in the Laguna West, Lakeside and Laguna Stonelake developments in the Elk Grove/Laguna area. In the next anticipated phase, the system will be expanded into the East Franklin area.

Using recycled water for non-potable (non-drinkable) uses such as irrigation, has multiple benefits including:

- Conserves groundwater and surface water that would otherwise be used for non-potable irrigation use.
- Provides Sacramento County with a reliable and drought-proof water supply source.
- Provides an alternative to wastewater discharge into the Sacramento River.

The use of water recycled from domestic sewage is regulated by the California Regional Water Quality Control Board (RWQCB). California Water Code Section 13551 establishes a state policy to encourage the use of recycled water. Permission to use recycled water is based on the ability to adequately treat domestic wastewater to the point that the recycled water (effluent) meets the requirements of existing Title 22, Chapter 3 Regulations of the California Administrative Code. Title 22 was promulgated by the State Department of Health Services (DHS) to ensure proper health protection and specify the level of treatment appropriate for the intended applications.

1.2 PURPOSE

In accordance with waste discharge requirements for water recycling projects, the RWQCB requires that Rules and Regulations for facilities using recycled water be established. The purpose of these Rules and Regulations is to establish procedures, specifications, and limitations for the safe and orderly development and operation of recycled water facilities and systems in the Sacramento County area.

1.3 Goals

Recycled water shall be produced and distributed and used in a manner that meets all Federal, State and local requirements for non-potable uses and shall achieve the following:

A. Conservation of potable water supplies by using recycled water for current and future demands. Recycled water uses shall be for the maximum public benefit and may include:

- Agricultural irrigation
- Commercial uses (including flushing toilets and urinals)

- Construction use
- Groundwater recharge
- Industrial processes (including cooling towers)
- Landscape irrigation
- Landscape and/or recreational impoundments
- Wildlife habitat

B. Prevent direct human consumption of the recycled water through:

- Adherence to all applicable rules and regulations.
- Posting of warning signs by the customer.
- Cross-connection/backflow prevention program.
- Education of the public

C. For landscape irrigation, control run-off, ponding, and overspray of recycled water at all times by controlling the installation and operation of the systems using recycled water.

D. Prevent contamination of potable water supplies.

E. Isolate contamination by other sources, such as wastewater, sludge, or other substances which may come into contact with the recycled water.

F. Monitor recycled water quality.

The use of gray water, as defined in **Appendix A,** is expressly excluded from these Rules and Regulations.

1.4 SEVERABILITY

If any section, subsection, sentence, clause, phrase, part or portion of these Rules and Regulations is for any reason held to be invalid, such invalidity shall not affect any of the remaining portions of these Rules and Regulations. The County declares that each section, subsection, sentence, clause, phrase or part of these Rules and Regulations would have been adopted irrespective of the invalidity of any part. These Rules and Regulations shall be interpreted so as to comply with applicable Federal and State laws and regulations.

1.5 Service Area

These Rules and Regulations pertain to recycled water service to lands and/or improvements lying within the legal boundaries of the County unless otherwise stated. The County shall provide recycled water service in accordance with these Rules and Regulations to the Laguna-Vineyard area of Zone 41 as shown on **Figure 1-1**. If the County recycled water service is extended beyond the current boundaries, any additional purveyors will become a party to these Rules and Regulations. Recycled water service shall be provided to the service area when related distribution facilities are completed and recycled water service becomes available.

SECTION 2

RECYCLED WATER SERVICE REQUIREMENTS

2.1 GENERAL

The County shall provide recycled water service in accordance with these Rules and Regulations to all areas identified in the Reclaimed Water Project EIR, *Sacramento Regional Wastewater Treatment Plant Reclaimed Water Project EIR*, prepared in May 1996 and subsequent updates, additions, revisions, or amendments for the use of recycled water, when such recycled water becomes available.

2.2 SERVICE CONDITIONS

The County shall control and schedule recycled water distribution to customers. The provisions of recycled water service and the use of recycled water by any customer shall be subject to all the terms and conditions of these Rules and Regulations.

Responsibilities for the Recycled Water Program is split between several County Agencies, briefly described as follows:

Sacramento Regional County Sanitation District (SRCSD)

SRCSD produces the recycled water at the Sacramento Regional Wastewater Treatment Plant and holds the Master Permit for Water Reclamation Requirements (Order No. 97-146) issued by the Regional Water Quality Control Board (RWQCB). SRCSD is responsible for monitoring recycled water quality to ensure compliance with the Master Permit.

Sacramento County Water Agency (SCWA)

SCWA is responsible for regional water distribution system planning. SCWA is also responsible for operation of the recycled water distribution system and routine interface with the recycled water customers. This includes cross connection control, customer inspections and monitoring for compliance with these Rules and Regulations. SCWA will conduct the plan check reviews for new recycled water installations.

Recycled water service shall be provided only if a permit for such service is obtained in the manner provided in these Rules and Regulations. If any of the following conditions of service are not satisfied at all times, a Permit for Recycled Water Service may be revoked after which all recycled water service shall cease. Connection to a potable water system may not be allowed.

2.3 APPLICATION PROCEDURE FOR RECYCLED WATER

2.3.1 Filing Application for Recycled Water Service

A potential customer meeting the requirements for recycled water service shall file an application for recycled water with SCWA on a standard form provided by the SCWA.

The application form shall contain detailed information concerning the applicant as follows:

A. The name of the property or development that will be irrigated with recycled water.

B. The applicant's relationship to the property for which recycled water service is requested. In cases where the applicant is not the legal owner of the property, the legal owner shall consent to the application on a supplemental notarized form.

C. The address, legal description, and parcel number of the property covered by the application.

D. The current zoning and the purpose for which the property will be used.

E. The proposed use of recycled water within a defined designated use area on the property.

F. The current source of irrigation water (if any).

G. The estimated service requirements for recycled water, i.e. pressure and flow.

H. The designation of a proposed applicant's Recycled Water Supervisor.

I. Any special condition for service pursuant to these Rules and Regulations.

The Application for Recycled Water Service is included as **Appendix D**. Checklist/Action Request Form for Obtaining Recycled Water Service is included as **Appendix E**. Status of Application for Recycled Water Service is included as **Appendix F**. Permit for Recycled Water Service is included as **Appendix G**.

The application form, signed by the applicant or the applicant's agent, shall be accompanied by engineered site plans and specifications per Section 3.5 of these Rules and Regulations clearly delineating the proposed recycled water designated use area, the proposed meter location, size, and type of all recycled water service connections and onsite facilities, and any areas in which recycled water must be specifically excluded.

2.3.2 Compliance of Application with Regulatory Requirements

The applicant for recycled water shall agree to comply with the requirements of these Rules and Regulations and any and all applicable Federal, State and local statutes, ordinances, regulations and other requirements.

2.3.3 Application Fees and Other Charges

Application fees, deposits, and capacity charges shall be paid in accordance with the schedule of rates established by the SCWA and shall be subject to all terms and conditions of these Rules and Regulations.

2.3.4 Review of Application by the SCWA

Upon receipt of an application for recycled water service, the SCWA shall review the application and conduct any necessary investigation in order to determine whether the County shall provide recycled water service. The SCWA may prescribe requirements in writing to the applicant as to the facilities necessary to be constructed including design, manner of construction, method of operation and conditions of service.

2.4 PERMITS

A SCWA Permit for Recycled Water Service must be obtained by the customer to receive recycled water on any property.

Permits to receive recycled water service or any connection for service made as provided in the permit issued under these Rules and Regulations pursuant to receipt of an application for such service shall be subject to the following conditions:

A. The applicant shall adhere to requirements prescribed by these Rules and Regulations and to all additional requirements prescribed by all governing agencies pertaining to recycled water service.

B. The applicant shall pay specified connection fees, service line charges and other applicable charges prior to issuance of the permit. The current fee schedule for these charges are available from the Technical Resources of Sacramento County Building Inspection Department.

C. In order to maintain optimal operating conditions throughout the recycled water system, the SCWA may schedule recycled water use. Such scheduling may involve programming deliveries to different customers and/or to various portions of a single customer's on-site system. Any scheduling shall consider applicable constraints of all involved regulatory agencies, these Rules and Regulations, and the operating constraints of the affected customers.

D. The SCWA may temporarily terminate recycled water service when: (1) at any time recycled water at the terminal point of the SCWA reclamation system does not meet the requirements of the regulatory agencies; (2) maintenance of the system is required; (3) an emergency exists. The SCWA may provide backup water supply from other approved sources. In addition, approved air gap separations may be used to provide potable water to the recycled water system to ensure reliability of water service.

E. The permit shall become effective when the project has been completely constructed, tested and been approved by the appropriate agencies.

F. A copy of the current permit must be available for review at all times, clearly posted at the use site, or on file at the customer's site or business.

A permit shall not require renewal, except that the SCWA reserves the right to suspend or terminate the permit, or to modify its terms and conditions, if any of the following occurs:

A. Change of the owner or user of the property covered by the permit.

B. Change in the use of the property covered by the permit.

C. Change in the qualitative characteristics of recycled water.

D. Violation of these Rules and Regulations and other applicable regulations.

E. Change in regulations.

A new permit application must be submitted to reinstate a permit that has been cancelled.

2.5 ESTABLISHING SERVICE

2.5.1 Request for Service Connection

Following the completion of construction and/or installation of the recycled water facilities, the customer shall request the SCWA to install the service meter.

The request for service connection shall be accompanied by all required fees for installation and connection as appropriate for the size and type of service.

2.5.2 Temporary Use of Potable Water or Untreated Groundwater

The recycled water distribution system may be charged with potable water or untreated groundwater until recycled water is made available. Before the customer receives temporary water service, a recycled water permit must be obtained. Prior to commencement of recycled water service, an inspection of the onsite facilities shall be conducted by the SCWA to verify that the facilities have been maintained and are in compliance with the recycled water permit. Upon verification of compliance, the customer shall receive recycled service.

2.6 CONDITIONS FOR RECYCLED WATER SERVICE

Permits for recycled water service and any connections for service made, as provided in the permit issued under these Rules and Regulations, shall be subject to the following conditions:

2.6.1. Adherence to Permit Conditions

Except as otherwise provided herein, all recycled water will be provided to the customer according to the conditions and quantity specified in the Permit for Recycled Water Service (see Appendix F).

2.6.2. Control of Facilities (Liability)

The SCWA shall have control of and shall maintain and repair recycled water service lines and meters. The customer shall repair and maintain in good working conditions the recycled water system downstream of the meter. The SCWA shall have the right to inspect and test all connections and onsite facilities.

2.6.3 Prohibition of Changes

The customer shall not make any changes to the recycled water system without SCWA approval. Any changes or alterations to existing onsite facilities, whether the result of intentional or unintended damage, shall be reported immediately to SCWA.

2.6.4 Services to Common Areas

The County reserves the right to supply recycled water to contiguous areas of a single ownership through a single recycled water service connection.

Common areas owned or operated by homeowner's associations or similar cooperatives should have only one service connection whenever it is practical, and will be operated as a single ownership.

A recycled water service connection shall not be used to supply property not specified in the permit authorizing the connection.

2.6.5 Subdividing an Approved Service Area

A. When a property provided with a recycled water service connection and water meter is subdivided, such connection and meter shall be considered as serving the lot or parcel of land on which the meter is located. Additional recycled water distribution mains and/or service lines, agreements and associated fees, if applicable, will be required for all subdivided areas in accordance with these Rules and Regulations. Agreements and associated fees, if applicable, will provide easements for recycled water distribution mains and easement locations.

B. All recycled water used on any premise must pass through the meter. Customers shall be charged for all recycled water passing through the meters.

C. Every recycled water service connection and meter assembly shall include a winged angle meter stop with Teflon coated ball or gate valve, as approved by the SCWA, on the inlet side of the meter, which shall be used exclusively by the County for controlling the recycled water supply through the recycled water service line. If the angle stop or gate valve is damaged by the customer's use, repair and/or replacement by the County shall be at the customer's expense.

D. Each customer shall limit the use of recycled water to those uses set forth in the permit for recycled water service approved by the SCWA.

2.6.6 Conditions of Pressure and Service

Pressure and service shall be provided on an "as available" basis, at the location of the customer's meter. All customers shall hold the County harmless from any and all damages and liabilities caused in whole or in part by pressure conditions, water quality variations, or interruptions in service. It shall be the owner's responsibility to install booster pumps to increase pressure if necessary.

2.7 SIZE AND LOCATION OF SERVICE CONNECTIONS

The County reserves the right to approve the size and location of recycled water service lines, the service connections, and the meters and shall also have the right to approve the kind and size of backflow prevention devices if required, and any and all other appurtenances to the service.

The recycled water service lines shall be extended to a curb line, or property line of the customer's property, abutting upon a public street, highway, road, or County's easement in which recycled water distribution mains are installed.

2.8 CROSS-CONNECTION PREVENTION

2.8.1 Purpose

The primary purpose of this Article is to protect the SCWA potable water supply from possible contamination by prohibiting cross-connections between the potable water distribution system and the recycled water distribution system, in accordance with Title 17, Chapter 5 of the California Code of Regulations. The secondary purpose is to protect the recycled water system from other contaminants.

2.8.2 Backflow Prevention

Regulations governing backflow prevention devices are intended to protect the County's potable water supplies and are not intended to protect users from potential hazards of cross-connections in the user's onsite facilities.

A. County approved backflow prevention for the potable water supply shall be provided by the customer in accordance with these Rules and Regulations and as required by SCWA.

B. The backflow prevention devices required shall be in accordance with the requirements specified by the current version of the County of Sacramento Public Works Standard and Construction Specifications.

   Provision, installation, maintenance and inspection of backflow prevention devices shall be the sole responsibility and duty of the customer, and at the customer's expense. Inspection of backflow prevention devices shall be done at least once a year in accordance with Title 17, or more often in those instances where successive inspections indicate repeated failures (see **Appendix B** for details).

2.8.3 Type of Protection

The level of protection required is related to the degree of hazard that the SCWA determines exists on the premises served. Listed in increasing levels of protection, the following protective devices may be required: Reduced Pressure Principle Backflow Prevention Device (RPPD), Double Check Valve Assembly (DC) and Air Gap Separation (AG). The user may choose a higher level or protection than required by the County. Minimum types required, relative to various situations, are listed below. Situations not listed shall be evaluated on a case-by-case basis and the appropriate level of protection required shall be determined by the SCWA in consultation with the County EMD and the State Department of Health Services.

DEGREE OF HAZARD	REQUIRED MINIMUM BACKFLOW PREVENTION
A. Sewage and Hazardous Substances	
Premises where the County potable water system is used to supplement the recycled water supply	AG
Premises where there are wastewater pumping and/or treatment plants and there is no interconnection with the potable water system. This does not include a single-family residence that has a sewage lift pump. A RPPD may be provided in lieu of an AG if approved by the State DHS and the County.	AG
Premises where hazardous substances are handled in any manner in which the substance may enter the potable water system. This does not include a single-family residence that has a sewage lift pump. A RPPD may be provided in lieu of an AG if approved by the State DHS and the County.	AG
Premises where there are irrigation systems into which fertilizers, herbicides, or pesticides are, or can be, injected.	RPPD
B. Premises where entry is restricted so that cross-connection inspections cannot be made with sufficient frequency or at short notice to assure that cross-connections do not exist.	RPPD
C. Premises where there is a repeated history of cross-connections being established or reestablished.	RPPD
D. Auxiliary Water Supplies	
Premises where an approved auxiliary water supply is interconnected with the public water system. A RPPD or DC may be substituted for an AG if approved by the State DHS and the County.	AG
Premises with an approved auxiliary water supply and there are no interconnections with the County water system. A DC may be substituted for a RPPD if approved by the State DHS and the County.	RPPD

DEGREE OF HAZARD (Con't)	REQUIRED MINIMUM BACKFLOW PREVENTION
E. Fire Protection Systems	
Premises where the fire system is supplied from the County water system and there is an unapproved auxiliary water supply on or next to the premises (not interconnected).	DC
Premises where the fire system is supplied from the County water system and interconnected with an unapproved auxiliary water supply. A RPPD may be substituted for an AG if approved by the State DHS and the County.	AG
Premises where the fire system is supplied from the County water system and where either elevated storage tanks or fire pumps that take suction from private reservoirs or tanks are used.	DC
Premises where the fire system is supplied from the County water system and supplemented with chemical fire retardant such as foam.	AG

2.8.4 Color-Coding Dual or Multiple Water Systems:

Any property that is provided recycled water service or contains dual or multiple water systems and piping, all exposed recycled water pipelines, valves, and other fittings shall be purple and marked to distinguish clearly which is used for potable water and which is used for recycled water. All recycled water quick couplers shall be posted with bilingual precautionary tags with the wording "CAUTION: RECYCLED WATER – DO NOT DRINK", and "PELIGRO: AGUA IMPURA – NO BEBER". Main shut-off valves shall be clearly identified to distinguish between recycled water and potable water systems. See Section 3.3 for additional color-coding requirements.

2.8.5 Customer's Designated Recycled Water Supervisor

The customer shall designate a recycled water supervisor who shall be responsible for the prevention of any cross-connections on the property, and in the event of a cross-connection to the potable water system, the customer shall immediately shutoff the main recycled water supply valve and depressurize the recycled water system to prevent further mixing with the potable supply, and shall immediately advise the SCWA of the occurrence of the cross-connection. The local and State health officers shall be immediately advise by the SCWA so that appropriate

measures may be taken to control any contamination or pollution. See **Appendix H** for an example emergency response plan. Also see Section 4.2.2 for additional responsibilities of the on-site supervisor.

2.9 CONVERSION TO RECYCLED WATER SERVICE

When a potential customer proposes the conversion of an existing potable water irrigation system to a recycled water irrigation system, an analysis of the irrigation system will be conducted by the customer for SCWA to identify the measures necessary to ensure compliance with these Rules and Regulations, and separation of the recycled water and potable water systems. The analysis will be conducted at the expense of the customer unless determined otherwise by the SCWA. On a case-by-case basis, the SCWA and the State DHS shall review the record drawings, and investigation reports, and determine the measures necessary to bring the existing system into full compliance with these Rules and Regulations. The SCWA or the State DHS may deny issuance of a recycled water users permit if either determines that the proposed conversion cannot be safely made.

2.10 ADDITIONAL RESTRICTIONS ON THE USES OF RECYCLED WATER

2.10.1 Run-off, Ponding, and Overspray

The on-site facilities shall be designed to meet the peak irrigation demand of all plant materials used within the design area and to apply irrigation water in a manner compatible with the infiltration rates of the soil types within the approved use area.

Conditions that directly or indirectly cause a run-off of recycled water outside of the approved recycled water use areas; cause a ponding or overspray of recycled water; or permit windblown spray to pass outside of the approved use area, whether by design, construction practice, or system operation, shall be eliminated or controlled to the greatest extent possible with the use of the best practicable technology or methodology.

Areas irrigated with recycled water shall be managed to prevent ponding and conditions conducive to the proliferation of mosquitos and other disease vectors, and to avoid creation of a public nuisance or health hazard. The following practices shall be implemented, at a minimum:

A. Ditches receiving irrigation runoff, not serving as wildlife habitat, shall be maintained free of emergent, marginal, and floating vegetation.

B. Low-pressure and unpressurized pipelines and ditches accessible to mosquitos shall not be used to store recycled water.

2.10.2 Protection of Drinking Fountains And Public Facilities

Any and all drinking fountains located within an approved recycled water use area shall be protected by relocation or isolating them from contact with recycled water, whether by windblown spray or by direct application through irrigation or other approved uses. Recycled water irrigation systems shall not be installed near food establishments or public facilities such as picnic tables. The goal is to eliminate as much as possible any potential for overspray of recycled water onto food establishments, picnic tables and drinking fountains in the most economic way. Alternative methods of accomplishing this shall include:

1) eliminating the facility in question,
2) moving the facility out of the irrigated area,
3) modifying the irrigation system to eliminate the potential for overspray (i.e. drip or bubbler systems) or not to irrigate in the area (eliminate landscaping or require hand watering in this area),
4) protect the facility with a hood or screening wall/structure.

Additional methods may also be acceptable and will be evaluated on a case by case basis.

2.10.3 Hose Bibs and Quick Couplers

No customer shall use or install any hose bibs on a recycled water system regardless of style, construction or identifications. The use of quick couplers is at the sole discretion of the SCWA. Their intended use shall require a separate plan review from the SCWA. Only quick couplers with the approved color and identification will be allowed.

2.10.4 Fire Hydrants

No customer or other party shall use or install fire hydrants and other connections for fire services on any onsite system that presently operates or is designed to operate with recycled water, regardless of the construction and identification of the fire hydrant and other connections for fire services.

SECTION 3

FACILITIES DESIGN AND CONSTRUCTION

3.1 DESIGN GUIDELINES

The design of the off-site facilities, including the preparation of plans and specifications shall be under the responsibility of an engineer registered with the State of California. The design of the on-site facilities that will use recycled water and the preparation of plans and specifications, shall be under the responsibility of a landscape architect, civil engineer or mechanical engineer registered with the State of California familiar with the design of such systems. All on-site recycled water facilities shall comply with the Guidelines for Distribution of Non-potable Water developed by the American Water Works Association (AWWA) California-Nevada Section and the State Health Services Department Guidelines for Use of Recycled Water and shall also comply with all the requirements, conditions and standards set forth in the current edition of the Standard Construction Specifications of the County of Sacramento Department of Public Works, and the provisions of these Rules and Regulations, and other related design standards and construction specification guidelines. See **Appendix C** for County Improvement Standards. The recycled water system including both off-site and on-site facilities, shall be separate and independent of any potable water system. All plans and specifications shall be signed and sealed and shall meet the design standards as discussed in Section 3 of the County Improvement Standards.

3.2 OFF-SITE FACILITIES

Any off-site recycled water distribution facilities, to the extent determined by the SCWA, required to serve developments in the County service area shall be provided by the applicant, owner, or customer at their expense, unless SCWA determines it is appropriate to construct these capital facilities.

Plans and specifications for all recycled water distribution facilities shall be submitted to and approved by the SCWA in advance of construction.

The County will assume responsibility for providing recycled water service to the point of connection of such development upon transfer to the County the title to all off-site recycled water systems and any necessary easements. All easements shall be in a form acceptable to the County and not subject to outstanding obligations to relocate such facilities or any deeds of trust, except as approved by the SCWA.

The property owner, proponent, or developer may request that SCWA enter into a reimbursement agreement for the portions of a system which are required to be oversized with capacity to supply more recycled water than the property owner, proponent or developer requires. The decision to enter into a reimbursement agreement shall be made by the SCWA.

3.3 ON-SITE RECYCLED WATER FACILITIES

All on-site recycled water facilities which benefit the approved use area shall be provided by the applicant, owner or customer at his/her expense. The customer shall make, at his/her expense, any modification to the potable water system on the premises which is required by the County, in order to permit recycled water service, including but not limited to the installation by the customer of approved backflow preventers. On-site recycled water facilities shall be designed to accommodate the use of recycled water in those areas where the County has determined that recycled water will be supplied in the future, even though recycled water service is not immediately available when the design area is ready for construction. Provisions shall be made for connections to the recycled water system when it becomes available.

Plans and specifications for customer recycled water facilities shall be submitted to the SCWA as specified in Section 3.5 of these Rules and Regulations.

3.3.1 Identification of On-site Pipes and Fittings

New on-site pipelines shall be identified as recycled water pipes by using a purple color code differentiating them from potable water piping.

All piping and valves must also be appropriately labeled or continuously taped with appropriate identification.

Approved use areas for recycled water service shall also be posted with precautionary notices to warn the public per Section 4.3.

When converting an existing water service to recycled water usage the affected water pipelines shall be located and tested in coordination with SCWA and the regulatory agencies to ensure isolation from the potable water system. All necessary actions will be taken to bring the water pipelines into compliance with these Rules and Regulations. It is not necessary to provide identification of all existing buried pipelines, unless verification of isolation from the potable water system cannot be confirmed by the cross-connection test. Any existing buried pipelines that are uncovered shall be identified prior to use. The existing water facilities must have the approval of the SCWA and regulatory agencies prior to initiation of recycled water service.

3.3.2 Color-Code for Recycled Water Pipes

The use of purple colored pipe, with the words “CAUTION: RECYCLED WATER – DO NOT DRINK” embossed or integrally stamped/marked on the pipe is the preferred method of identification. Continuous sleeve is an acceptable alternative to the colored pipe mentioned in Section 3.3.3.

The warning should be stamped on opposite sides of the pipe, repeated every three feet.

All connections, temporary and permanent to a recycled water system shall be identified in such a manner as to differentiate them from connections to a potable water system.

When potable water is being supplied to an area which is also being supplied with recycled water, the new potable water main shall also be identified. A color-coded tape, as determined by SCWA, with the words "DRINKING WATER LINE" and "TUBERIA DE AGUA POTABLE" shall be fastened directly to the top of the potable water pipe and run continuously the entire length of the pipe. This tape shall be at least 3 inches in width. The color code for potable water shall be determined by SCWA to differentiate it from recycled water.

3.3.3 Continuous Sleeves

A continuous polyethylene sleeve shall be installed on all new recycled water pressure and/or non-pressure service pipelines if purple colored pipe is not available. A purple sleeve with black lettering stating "CAUTION: RECYCLED WATER – DO NOT DRINK" and "PELIGRO: AGUA IMPURA – NO BEBER" shall run continuously the entire length of the pipe. Each section of sleeve should overlap the next section a minimum of 24 inches and should be secured at each sleeve joint.

3.3.4 Separation

A. Horizontal

A 10-foot separation of the recycled water pipeline shall be maintained at all times between a potable water pipeline and/or a parallel sanitary sewer or sludge pipeline. If a 10-foot separation is not possible, the approval for special construction requirements shall be obtained from the SCWA and the State DHS prior to commencement of construction. Common trench construction shall not be permitted. In any event, a horizontal separation less than 4 feet shall not be allowed.

B. Vertical

On new systems, potable water, recycled water, and sewer lines should be located from the ground surface in order of descending quality. Potable water shall be above recycled water which should be above sewer. Minimum vertical separation should be one foot between top and bottom surfaces of pipes. Exceptions to this general rule are as follows:

- On irrigation systems where intermittently pressurized recycled water lines (laterals) serve sprinkler heads, the potable water line(s) may be placed under the recycled water laterals. No special construction requirements are necessary provided that one-foot vertical separation is maintained.

- On sites using pressurized irrigation laterals with valve-in-head sprinklers, the potable water line(s) may be placed under the recycled water laterals if additional protection is provided for the potable line. Common practices include sleeving or automatic flow control/shut off devices installed and functioning properly on each lateral that crosses a potable line.

No additional special construction requirements are necessary provided that one-foot vertical separation is maintained.

C. Groundwater Wells

Application of recycled water within 50 feet of any well used for domestic water supply is prohibited, unless approved by the Department of Health Services Drinking Water Branch. No impoundment of recycled water shall occur within 100 feet of any domestic water supply well.

3.4 RECYCLED WATER FOR CONSTRUCTION USE

3.4.1 Permits

The use of recycled water for construction purposes requires approval by SCWA. The permit shall be obtained prior to beginning recycled water use.

3.4.2 Uses

Recycled water used for construction purposes may only be used for soil compaction during grading operations, dust control and consolidation and compaction of backfill in trenches for nonpotable water, sanitary sewer, storm drain, gas and electric pipelines. Recycled water shall not be used for water jetting and consolidation or compaction of backfill in trenches for potable water pipelines.

3.4.3 Equipment

Equipment operators shall be instructed about the requirements contained herein and the potential health hazards involved with the use of recycled water. Water trucks, hoses, drop tanks, etc. shall be identified as containing recycled water and not suitable for drinking water.

Recycled water shall not be introduced into any domestic water piping system. No unprotected connection shall be made between equipment containing recycled water and any part of a domestic water system.

3.4.4 Equipment and Facilities Cleaning

Service connections, equipped with recycled water meters and suitable backflow protection, for the construction use of recycled water shall be provided by the County at locations convenient to the user with approval of the County.

3.5 SUBMITTALS

The following information shall be submitted to and approved by the SCWA prior to commencing any construction. The only exception is recycled water for construction use as described in Section 3.4.

3.5.1 Customer's Plans and Specifications

Civil site plans and specifications prepared by a civil engineer, a mechanical engineer or a landscape architect registered with the State of California, for the construction of on-site recycled water facilities shall be submitted to the SCWA for review and approval. The plans shall delineate the proposed recycled water service area, the proposed meter location, size and type of all recycled water service connections and on-site facilities. The plans shall include the layout of existing potable water pipelines and facilities including any areas in which recycled water must be specifically excluded.

3.5.2 Information on Customer's Plans

The following information shall be provided on the plans for every customer applying for any recycled water service meter:

A. Application information specified in Section 2.3.1

B. Meter size (inches).

C. Irrigated area to be served through the recycled water meter (square feet or acres).

D. Peak flow through the meter (gpm).

E. Estimate of the yearly recycled water requirement (acre-feet or HCF).

F. Service pressure at the meter as provided by the County (psi).

G. Topographic contours of the site, or if not available sufficient information to determine elevation differences within the site.

H. Direction of drainage.

I. Location of wells (if applicable).

J. Location of 100 Year Flood Plain (if applicable).

K. Vertical and horizontal location of potable water lines, fire hydrants, drinking fountains and sanitary sewers.

L. Vertical and horizontal location of storm drains.

3.5.3 Information Required for Recycled Water Irrigation Systems

If the on-site facilities include a landscape irrigation system the following data for the materials used in the irrigation system shall be included on the plans:

A. A pipe schedule listing pipe sizes and materials of construction.

B. Valve types/sizes.

C. The following information for each type of sprinkler head:

1. Sprinkler radius (feet).
2. Operating pressure (psi).
3. Flow (gpm or gph).
4. Sprinkler pattern.
5. Manufacturer, model number and all pertinent information

D. Drip irrigation information and all pertinent equipment.

E. Estimates of application rate, acres to be irrigated, soil texture and soil infiltration rate, and information on pressure requirement, hourly delivery rate, and the wetting pattern of sprinklers.

F. All sprinkler valves shall be automatic and operated by a programmable controller with battery backup. Manually operated sprinkler valves are not acceptable.

3.5.4 Information to be Called Out on Customer's Plans

Exterior drinking fountains and potable water hose bibs and other public facilities shall be shown and called out on the plans. If no exterior drinking fountains or other public facilities are present in the design area, then it shall be specifically stated on the plans that none exists.

3.5.5 Standard Notes for Inclusion on Customer's Plans

As a minimum, provide the following notes as applicable, on the recycled water improvement and irrigation plans under the heading "Recycled Water General Notes:"

1. All public facilities such as comfort stations, drinking fountains and outdoor eating areas shall be protected against recycled water spray, mist or runoff.
2. Conditions that directly or indirectly cause a run-off of recycled water outside the approved recycled water use area, or cause a ponding of recycled water or permit windblown spray to pass outside of the approved use areas, whether by design, construction practice, or system operation, shall be eliminated or controlled with the use of the best practicable technology and methodology.

3. Contractor shall adjust heads to prevent over-spraying onto sidewalks, streets and off-site.

4. Hose bibs are strictly prohibited. Only quick couplers with the approved color and identification will be allowed.

5. Identification, by means of purple color coding (Pantone 512 or approved equal), stenciling and warning tapes, as well as coverage of all wiring and irrigation piping shall conform to all applicable requirements of the County Public Works Standards and Construction Specifications and these Rules and Regulations.

6. All potable water and recycled water piping shall be installed with the stenciling oriented toward the top of the trench.

7. A minimum 10 foot out-to-out horizontal separation between new pressurized recycled water and new pressurized potable water pipelines must be maintained at all times as shown on approved plans.

8. Pressurized recycled water lines shall cross at least 12 inches below potable water lines and maintain a minimum 12 inch crossing separation between other utilities.

9. If a pressurized recycled water line must be installed above a potable water line or less than 12 inches below a potable water line, then the recycled water line shall be installed within a protective sleeve. The sleeve shall extend 10 feet from each side of the centerline of the potable line, for a total of 20 feet.

10. Developer/contractor shall conduct a cross-connection test and coverage test as directed by the SCWA and State DHS or designated representative prior to any

use of recycled water. The generally accepted cross connection test method is a pressure differential test involving a 24-hour shut down of the irrigation system followed by a 4-hour minimum shut down of the potable system. The specific test procedures and test method will be determined by the SCWA in conjunction with the Health Departments on a case by case basis.

11. An annual site inspection will be performed by the SCWA and/or regulatory agencies. Annual site inspection may include:
    1) a site inspection and record check to determine if anything has changed system wide since the last inspection and to establish that the site is still in compliance with the R&R,
    2) a system coverage test and functional operational test to determine that the system is being maintained in the proper manner and that overspray, ponding and runoff are being controlled,
    3) verification that the site supervisor certification is current and that backflow device certifications are also current.

12. Prior to the utilization of recycled water, a signage plan showing the locations and design of recycled water "Do Not Drink" signs shall be forwarded to the SCWA for approval.

13. Prior to the utilization of recycled water, an on-site user/supervisor shall be designated in writing. This individual shall be familiar with plumbing systems within the property, with the basic concepts of backflow/cross-connection protection, and the specific requirements of a recycled water system. The User Supervisor shall educate all on-site maintenance personnel that recycled water is not approved for drinking purposes, hand washing or cleaning of tools. Copies of the User Supervisor designation, including telephone numbers for emergency and after-hours contact shall be provided to the SCWA.

14. Hours for irrigation with recycled water shall be from 10:00 p.m. to 6:00 a.m., unless otherwise approved by SCWA. Any irrigation with recycled water between the hours of 6:00 a.m. and 10:00 p.m. must be under the supervision of the designated on-site supervisor.

15. Cross-connections between recycled water lines and potable water lines are strictly prohibited.

16. A physical separation shall be provided between adjacent areas irrigated with recycled water and potable water. Separation shall be provided by distance, concrete mow strips or others approved methods.

3.6 INSPECTION OF WORK

All work is subject to inspection by SCWA to ensure compliance with these Rules and Regulations. Work shall be left open and uncovered until approved by the County. The customer shall cooperate with those making the inspection and assist in the performance of the operational tests as required.

3.7 RECORD (AS-BUILT) DRAWINGS

The applicant, customer, or owner shall submit as-built record drawings to the SCWA before a service start-up is made.

All changes in the work constituting departures from the original design drawing shall be accurately recorded on two sets of drawings and submitted to the SCWA for approval prior to construction.

SECTION 4

FACILITIES OPERATION

4.1 OFF-SITE RECYCLED WATER FACILITIES

Operation, maintenance and monitoring of all of the County's off-site recycled water systems including, but not limited to, recycled water transmission and distribution mains, service lines, valves, connections, storage facilities, and other appurtenances and properties up to and including the County's meter, shall be under the management and control of the SCWA. No other persons except authorized representatives of the County shall have any right to enter any portion of the foregoing. No other persons except authorized representative of the County shall have any right to operate, adjust, repair, change, alter, move or relocate any portion of the off-site recycled water system.

4.2 ON-SITE RECYCLED WATER FACILITIES

4.2.1 Customer's Responsibilities

The customer or owner shall be responsible for the safe and efficient operation, maintenance and upkeep of their on-site facilities. However, the County shall also have the right to monitor and inspect the on-site operation of the customer's facilities. The County or authorized representatives of the County shall monitor and inspect the entire recycled water distribution facility, including customer facilities and for these purposes shall have the right to enter upon the customer's premises during reasonable hours. Reasonable hours shall include hours when irrigation is being performed, which is typically between 10:00 p.m. and 6:00 a.m. Except in emergencies the County and other parties authorized by the County shall be entitled to enter upon the customer's premises with reasonable notice to the customer for onsite inspection during reasonable hours to verify that the customer's facilities are in conformance with the provisions of these Rules and Regulations and all applicable permits.

The customer shall notify the SCWA of any and all updates or proposed changes, modifications of additions to the onsite facilities. Changes shall be approved by the SCWA and shall be designed and constructed according to the requirements, conditions and standards set forth in these Rules and Regulations and other County requirements.

The customer shall comply with any and all applicable Federal, State, and local statutes, ordinances, regulations, contracts and requirements prescribed by the County.

It shall be the responsibility of the customer to notify SCWA of any and all failures of the recycled water system or violations of these Rules and Regulations. Failures

or violations may include but are not limited to cross-connections, runoff conditions, ponding conditions, windblown spray conditions, unapproved uses, unprotected drinking fountains, unprotected public facilities, hose bibbs and fire hydrants.

The customer shall keep a written log of all system failures and violations including corrective action taken. The log shall be reviewed by the SCWA regularly.

4.2.2 Designation/Responsibility of The Recycled Water Supervisor

Each recycled water customer shall designate a Recycled Water Supervisor. The Recycled Water Supervisor shall be a person accepted and approved by the SCWA to operate and maintain the on-site facilities and irrigation systems, and to assume the responsibilities outlined here below. The County shall require that the designated Recycled Water Supervisor obtain instruction in the use of recycled water, such instruction being provided or approved by the SCWA. He/she shall be the contact person for the customer in all matters between the user and the SCWA concerning the operation of the onsite system and the use of recycled water. It shall be the responsibility of the customer to notify the SCWA whenever a change of the Recycled Water Supervisor occurs. Subsequently, the customer shall be responsible to obtain the SCWA's acceptance and approval of any newly designated supervisor. The Recycled Water Supervisor will have the following responsibilities:

a. To oversee recycled water service and maintain onsite facilities.

b. To ensure that all operations personnel are trained and familiarized with the use of recycled water, including all pertinent information contained in these Rules and Regulations and those applicable portions of the California Code of Regulations.

c. To furnish operations personnel with operating instructions, maintenance instructions, controller charts, and record drawings to ensure proper operation in accordance with the facilities design and these Rules and Regulations and all applicable permits.

d. To operate and control the customer recycled water system in order to prevent direct human consumption of recycled water and to control and prevent run-off.

e. To carry out ongoing regular maintenance and upkeep to ensure the continued operation of all system elements within the requirements of these Rules and Regulations.

f. To prevent cross-connections to potable water systems, and also to protect the recycled water system from contamination from cross-connections to other sources.

g. To ensure that maintenance and inspection of backflow prevention assemblies is done regularly on an annual basis as per requirements of regulatory agencies, or more often in those instances where successive inspections indicate repeated failures.

h. To report to the SCWA any and all failures in the onsite facilities whether or not such failures may result in violations.

4.2.3 Operation and Control of On-site Recycled Water System

The goal is to minimize overspray and runoff and confine recycled water to the use area. In addition, to the extent possible, the operation of the irrigation system shall be during periods of minimal public use of the approved area. Such periods of operation shall remain within any general period of recycled water irrigation operation specified by the County.

Operation and control measures of onsite recycled water systems shall include, but not limited to, the following:

a. On-site recycled water facilities shall be operated in such a manner to prevent or control surface flows or windblown sprays of recycled water across boundary lines, or into areas not approved for recycled water use.

b. The system design shall avoid spray patterns that tend to accumulate recycled water to produce ponding and/or run-off on public rights-of-way or adjoining areas not approved for recycled water use.

c. It is not practical to completely eliminate overspray or runoff. Excessive irrigation with recycled water which results in excessive runoff of recycled water, or continued irrigation of recycled water during periods of rain is prohibited.

4.3 WARNING SIGNS

Warning signs are required to inform the public that recycled water is being used. Signs shall be required at site entrances, any customer field office, maintenance building, or yard within the approved use area, except as required by the regulatory agencies on a case-by-case basis. Warning notices and labels shall be posted on designated facilities such as controller panels, quick couplers, or blowoff valves on trucks, and temporary construction facilities. The labels shall indicate that the system contains recycled water that is unsafe to drink or whatever other restrictions may apply. It shall be the responsibility of the Recycled Water Supervisor to ensure the required bilingual postings in English and Spanish are installed and maintained, and so placed that they can be readily seen by all personnel or public utilizing the facilities.

4.4 MONITORING AND INSPECTION

The County, the State DHS, and/or the Regional Water Quality Control Board, or authorized representatives of any of these agencies shall have authority to monitor and inspect the entire recycled water system including both on-site and off-site facilities. The SCWA shall conduct monitoring programs, as it deems necessary, to ensure that customer's recycled water facilities are being operated in accordance with these Rules and Regulations, including the provision that cross-connections between potable water facilities and the recycled water facilities do not exist. In carrying out these functions the County, the State DHS, and/or the Regional Water Quality Control Board, or authorized representatives of any or these agencies shall have the right to enter any customer's premises during reasonable hours upon presentation of proper credentials. Reasonable hours shall include hours when irrigation is being performed to ascertain whether the user is complying with the County's Rules and Regulations for Recycled Water. The customer shall indemnify and hold the County harmless for any damage, loss, or injury alleged to have been caused by County personnel while inspecting on-site facilities, except where the County's sole negligence is duly established.

Each time there is a change of either owner or customer on any commercial or industrial premises, the owner or customer shall notify the SCWA immediately. The SCWA will then reassess the level of protection required. Also, any alterations to existing on-site facilities that may affect required protection levels must be reported immediately to the County.

SECTION 5

RECYCLED WATER SERVICE RATES

5.1 GENERAL

All rates and fees are set by the Board of Directors of the Sacramento County Water Agency. The current rate and fee schedule is available from Consolidated Utility Billing.

Applicants for recycled water service shall pay their fair share for the construction of facilities needed to deliver recycled water to the applicant's property. All fees and estimated construction costs shall be paid prior to construction; however, the County may reimburse the applicant for a portion of the cost of such facilities as set in Section 5.4.

5.2 CHANGE OF RATES OR CHARGES

The County reserves the right to change the schedule of recycled water rates, service charges and any other charges, deposits, or fees at any time. These changes are subject to the terms of any existing recycled water service permits (and/or agreements) and will be made by appropriate action of the County.

5.3 TEMPORARY SERVICE

The charges for recycled water sold through temporary meters shall be billed and paid as specified by the SCWA.

5.4 FINANCIAL PARTICIPATION BY COUNTY

Under certain circumstances, the County may contribute to the cost of constructing the facilities needed to deliver recycled water to an applicant's property. Subject to the availability of funds, the County may:

A. Reimburse an applicant for costs incurred to install oversized facilities.

B. Elect to participate in or construct lateral lines, main lines, reservoirs, pumping stations or other facilities, as it determines necessary, and/or as funds are available.

APPENDIX A

DEFINITIONS

APPENDIX A

DEFINITIONS

AFY	Acre-Feet per Year
Agricultural use	Water used for the production of crops and/or livestock and the preparation of these products for market.
Agricultural user	Any person (as defined herein) engaged in irrigation of food, fodder, fiber, seed, or nursery crops for commercial purposes.
Air-Gap Separation	A physical break between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the top rim of the vessel, and in no case less than one inch.
ANSI	American National Standards Institute.
Applicant	Any persons, firm, corporation, association, or agency that applies for recycled water service.
Application rate	The rate, at which irrigation water is applied to a design or use area, expressed in inches per hour.
Approved backflow preventer	A device installed to protect the potable water supply from contamination by non-potable water, such as treated wastewater. This device shall be approved by the State Department of Health Services and the County.
Approved check valve	A check valve that seats readily and completely. It must be carefully machined to have free moving parts and assure water tightness. The face of the closure element and valve seat must be bronze or other noncorrodible material that will seat tightly under all prevailing conditions of field use. Pins and bushings shall be of bronze or other noncorrodible, nonsticking material. The closure element (e.g., clapper) shall be internally weighted or otherwise internally equipped to promote rapid and positive closure in all sizes where this feature is obtainable.
Approved double check valve assembly	An assembly of as least two independently acting approved check valves including tightly closing shut-off valves on each side of the check valve assembly and suitable leak-detector drains plus connections available for testing the water tightness of each check valve.
Approved use	An application of recycled water in a manner, and for a purpose, designated in a user permit issued by the County and in compliance with all applicable regulatory agency requirements.

Approved use area	A site with well-defined boundaries designated in a Permit for Recycled Water Service issued by the County to receive recycled water for an approved use and acknowledged by all applicable regulatory agencies.
As built drawings	Record drawings that show the completed facilities as constructed or modified.
ASTM	American Society for Testing Materials.
Automatic system	Controllers, valves, and associated equipment used to program and operate irrigation systems for the efficient application of recycled water.
Auxiliary water supply	Any water supply on or available to the premises other than the County potable water or recycled water supplies.
AWWA	American Water Works Association
Commercial use	Water used for toilets, urinals, sewer trap priming, decorative fountains, and other related uses.
Connection fee	A fee imposed by the County for obtaining recycled water service from the County by means of its recycled water facilities.
Construction use	An approved use of non-potable water to support construction activities such as soil compaction and dust control during grading.
Contractor	A person, persons or firm entering into a legal agreement with the agency or applicant for the performance of work on any portion of facilities subject to these guidelines.
County	The collective term used for the Sacramento County agencies jointly responsible for the implementation of the water recycling program. The agencies are: Sacramento Regional County Sanitation District, Sacramento County Water Agency, and County of Sacramento Environmental Management Department.
Cross-connection	Any unapproved and/or unprotected connection between any part of a potable water system and any source or system containing water or other substances not approved as safe and potable for human consumption.
Customer	Any person, group, firm, partnership, corporation, association, or agency that legally receives and accepts recycled water service from the County facilities for use in accordance with these Rules and Regulations. Applicant, owner or users are terms that are to be considered as customers.
Design area	A site with well-defined boundaries, proposed to receive recycled water for an approved use, as delineated in the Application for Recycled Water Service.
DHS	State of California Department of Health Services

Direct beneficial use	The use of recycled water, which has been transported from the point of treatment or production to the point of use without an intervening discharge to waters of the State.
Discharge	Any release or distribution of recycled water to a use area or disposal site/mechanism (e.g. outfall, stream discharge, municipal sewage system, etc.). All discharges of recycled water must be approved by the regulatory agencies.
Dual or Multiple Water Systems	Systems that provide two or more grades of water to the same area – one potable and the others non-potable. The quality, quantity, reliability and pressure available from each system vary with the sources and intended uses for each grade of water.
EMD	County of Sacramento Environmental Management Department.
Effluent	Treated wastewater discharged from a Wastewater Treatment plant.
General public	Any person(s) at large who may come in contact with facilities and/or areas where Nondomestic Water is approved for use.
Gray water	All wastewater generated in the household, excluding toilet wastes and kitchen sinks, and includes wastewater from the bathroom sinks, baths, showers, laundry facilities, and dishwashers.
Greenbelt areas	Areas including, but not limited to, parkways, parks, rights-of-way and landscaping within and/or surrounding a community.
HCF	Hundred Cubic Feet. A common unit of water volume measurement.
Industrial process water	Water used in industrial facilities for rinsing, washing, cooling, circulation, or construction.
Industrial use	Water used for industrial processes such as cooling, flushing, or construction, and other related uses.
Infiltration rate	The rate at which water penetrates the soil surfaces and enters the soil profile.
Inspector	Any person(s) authorized to perform inspection of either onsite or offsite facilities prior to construction, during construction, after construction and during operation.
Installer	A person(s) or firm performing work necessary to construct or install equipment or facilities subject to these Regulations.
Landscape impoundment	A body of water in which recycled water is stored or used for aesthetic enjoyment or landscape irrigation, or which otherwise serves a similar function and is not intended to include public contact.

Landscape irrigation/use	Recycled water used for the propagation and maintenance of trees, shrubs, ground cover and turf. This plant material is intended for erosion control and aesthetic value, not for resale/profit purposes.
Non-potable water	Water that has not been treated for, or is not acceptable for, human consumption in conformance with federal, state and local water standards. Non-potable water includes recycled water.
Off-site facilities	Existing of proposed facilities under the control of the County, from the source of supply to the point of connection with the customer's on-site facilities, normally up to and including the County's meter and meter box.
On-site facilities	Existing or proposed facilities within property under the control of the customer, normally downstream of the County's meter.
On-site recycled water supervisor	A qualified person designated by a recycled water user and approved by the County to be responsible for the safe and efficient operation of the user's recycled water system. This person shall be knowledgeable in the construction and operation of irrigation systems and in the application of federal, state, and local guidelines, criteria, standards and rules and regulations governing the use of recycled water.
Operations personnel	Any employee of a customer, whether permanent or temporary, or any contracted worker whose regular or assigned work involves the supervision, operation for maintenance of equipment on any portion of onsite facilities using nondomestic water.
Operator	Any person(s) or firm, who by entering into an agreement with a user is responsible for operating onsite facilities.
Owner	Any holder of legal title, contract purchaser, or lessee under a lease with an unexpired term of more than on (1) year, of property for which nondomestic water service has been requested.
Permit	A processed and approved application package to, and agreement with, the County for recycled water service.
POC	Point of connection.
Ponding	Retention of piped water on the surface of the ground or man-made surface for a period of time following the cessation of an approved recycled water use activity such that potential hazard to the public health may result.
Potable water	Water which conforms to the latest federal, state, and local drinking water standards
PSI	Pounds per square inch. The most common unit of pressure measurement.
Purveyor	An agency which supplies domestic or non-domestic water. The Sacramento County Water Maintenance District is a purveyor.

Recycled Water	As defined in Title 22, Division 4, of the California Administrative Code, water that, as a result of treatment of wastewater, is suitable for direct beneficial use or a controlled use that otherwise would not occur. The treatment of wastewater is accomplished in accordance with the criteria set for the in the code.
Recycled water facilities	Systems, structures, etc. used in the treatment, storage, pumping, transmission and distribution of recycled water.
Recreational impoundment	A body of recycled water used for recreational activities including, but not limited to, fishing, boating, and/or swimming. Allowable uses will depend on treatment level of the recycled water.
Regulatory agency	The California Regional Water Quality Control Board(s) that heve jurisdiction over the recycling plant and use areas.
RPPD	Reduced Pressure Principle Device. A backflow preventer incorporating not less than two check valves, and automatically operated differential relief valve located between the two check valves, a tightly closing shut-off valve on each side of the check valve assembly, and equipped with necessary test cocks for testing.
Run-off	Unintentional flow of water along either natural or manmade surfaces of the ground off of the designated use area.
RWQCB	Regional Water Quality Control Board.
SCWA	Sacramento County Water Agency
Secondary effluent	Wastewater which has been treated by gravity sedimentation to remove settleable solids remaining after the primary biological treatment process.
Service	The delivery of recycled water to a user.
Service connection	The County facilities between the County recycled water distribution system and the customer's recycled water service valve, including, but not limited to, the meter, meter box, valves, and piping equipment.
SRCSD	Sacramento Regional County Sanitation District
Standard specifications	Specifications adopted by the distributor for construction of water and nondomestic water facilities.
Tertiary effluent	Secondary effluent which has been disinfected and filtered. Full body contact is not allowed unless certain requirements are fully met.
Unauthorized discharge	Any release of recycled water that violates these Rules and Regulations or any applicable federal, state, or local statues, regulations, ordinances, contracts, or other requirements.
URP	User Reclamation Plan

Use area	An area of recycled water use with defined boundaries. A use area may contain one or more facilities.
User	Any person, group, firm, partnership, corporation, association or agency accepting recycled water from the County recycled water facilities for use in accordance with these Rules and Regulations. Applicant, owner, or customers are terms that are to be considered as users.
Violation	Noncompliance with any condition or conditions of these Regulations and/or a user permit by any person, action or occurrence, whether willfully or by accident.
Water Application Devices	Any mechanism or device that applies water at a predetermined rate onto a receiving area. Devices include, but are not limited to: • Impact sprinklers • Pop-up sprinklers • Rotor sprinklers • Drip emitters • Mini-micro-sprayers • Bubblers • Spinners • Portables
Windblown spray	Dispersed, airborne particles of water capable of being transmitted through the air to a location other than that for which the direct application of recycled water is approved.

APPENDIX B

SACRAMENTO COUNTY CODE
CHAPTER 6.30

PROTECTION OF
DRINKING WATER

TITLE 6 HEALTH AND SANITATION

Chapter 6.30 PROTECTION OF DRINKING WATER

6.30.010 Purpose.

The purposes of this chapter are (1) To protect public water systems against actual or potential cross-connections by isolating within premises, contamination or pollution that may occur because of undiscovered or unauthorized cross-connections on premises; (2) To eliminate existing connections between public water systems and other sources of water that are not approved as safe and potable for human consumption; (3) To prevent the making of cross-connections in the future; (4) To encourage the exclusive use of public water systems

as sources of water supply.
It is the intent of this chapter to recognize that there are varying degrees of hazard and to apply the principle that the degree of protection should be commensurate with the degree of hazard. (SCC 676 § 1, 1987.)

6.30.020 Definitions.

The meanings of terms used in this chapter are as follows:
1. “Air-Gap Separation” shall mean a physical separation between the discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An “approved air-gap separation” shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the receiving vessel and in no case shall be less than one inch.
2. “Approved,” as herein used in reference to a public water system, shall mean a water supply that has been approved by the health agency having jurisdiction; or, as herein used in reference to backflow prevention assemblies, shall mean approval by the Department.
3. “Approved Testing Laboratory” shall mean a person or entity that is competent and possesses the necessary facilities, as determined by the Department, to investigate and evaluate backflow prevention assemblies.
4. “Atmospheric Vacuum Breaker (non-pressure)” shall mean a backflow prevention device containing a shut-off valve followed by a valve body containing a float-check, a check seat and an air inlet port.
5. “Auxiliary Water System” shall mean any water supply on or available to a Customer’s premises other than an approved public water system.
6. “Backflow” shall mean the undesirable reversal of the flow of water or any mixture of water and other liquid, gas or other substance into the distribution pipes of a public water system from any source or sources.
7. “Certified Backflow Prevention Assembly Tester” shall mean a person who has been certified by the Health Officer as having the necessary training and competence to test backflow prevention assemblies.
8. “Cross-Connection” shall mean any unprotected actual or potential connection or structural arrangement between any part of a public water system used or intended to supply water for human consumption, and any source or system containing used water, industrial fluid, gas or other substance that is not or cannot be approved as safe, wholesome and potable for human consumption.
9. “Customer” shall mean any person or entity to whom water is furnished or sold from an approved public water system.
10. “Department” shall mean the Department of Health for the County of Sacramento.
11. “Double Check Valve Assembly” shall mean a backflow prevention device incorporating two, single, independently acting check valves, a shut-off valve at each end of the device and necessary appurtenances for testing as required by the Department.
12. “Health Officer” shall mean the Health Officer for the County of Sacramento or a designated representative of the Health Officer.
13. “Hearing Officer” shall mean the Health Officer for the County of Sacramento or a designated representative of the Health Officer.
14. “Pressure Vacuum Breaker Assembly” shall mean a backflow prevention device incorporating one or two independently operating, loaded check valve(s), an independently operating loaded air inlet valve, a shut-off valve at each end of the device and necessary

appurtenances for testing as required by the Department.
15. “Public Water System” shall mean any potable water supply approved by, or under the public health supervision of, a public health agency of the State of California or the County of Sacramento.
16. “Reduced Pressure Principle Assembly” shall mean a backflow prevention device incorporating two independently acting check valves, a hydraulically operating, mechanically independent pressure relief valve, a shut-off valve at each end of the device and necessary appurtenances for testing as require by the Department.
17. “Service Connection” shall mean the point at which the public water system piping ends and the water system piping of the Customer begins. If a meter is installed as part of the public water system, then the term ‘service connection’ shall mean the downstream end of the meter.
18. “Water Purveyor” shall mean any person, corporation, public utility, municipality, district or other agency or institution that operates a public water system. (SCC 676 § 1, 1987.)

6.30.030 Protection of Public Water System at Service Connection.

A. Where Protection is Required:
1. Protection shall be required at each service connection from a public water system that supplies water to premises having an auxiliary water system.
2. Protection shall be required at each service connection from a public water system that supplies water to premises on which any substance is or may be handled in such a manner as to permit entry into a public water system, including water originating from a public water system which is or may be subjected to deterioration in sanitary quality.
3. Protection shall be required at each service connection to any premises that has cross-connections unless such cross-connections are abated to the satisfaction of the Department.
B. Type of Protection: The type of protection required shall be commensurate with the degree of hazard. In determining the degree of hazard and the type of protection required, the following criteria shall be used:
1. At each service connection to any premises where there exists an auxiliary water system with no known cross-connections, the public water system shall be protected by an approved double check valve backflow prevention assembly or an approved reduced pressure principle backflow prevention assembly.
2. At each service connection to any premises on which there is an auxiliary water system where cross-connections are known to exist, the public water system shall be protected by an approved reduced pressure principle backflow prevention assembly.
3. At each service connection to any premises on which an objectionable but non-hazardous substance is, or may be, handled in such a manner as to permit entry into a public water system, the public water system shall be protected by an approved double check valve backflow prevention assembly or an approved reduced pressure principle backflow prevention assembly.
4. At each service connection to any premises on which any hazardous substance is or may be handled in such a manner as to permit entry into a public water system, the public water system shall be protected by an approved air-gap separation. The air-gap shall be located as close as practicable to the service cock and all piping between the service cock and any receiving vessel shall be visible. If these conditions cannot reasonably be met, the public water system shall be protected by an approved reduced pressure principle backflow

prevention assembly, provided that this alternative is acceptable to the Department.
5. At each service connection to any sewage treatment plant or sewage pumping station, the public water system shall be protected by an approved air-gap separation. The air-gap shall be located as close as practicable to the service cock and all piping between the service cock and any receiving vessel shall be visible. If these conditions cannot reasonably be met, the public water system shall be protected by an approved reduced pressure principle backflow prevention assembly, provided that this alternative is acceptable to the Department. (SCC 676 § 1, 1987.)

6.30.040 Customer Responsibility.

It shall be the responsibility of each Customer to furnish, and install in a manner approved by the Department, and keep in good working order and safe condition, any and all backflow prevention assemblies as required by this Chapter. The County of Sacramento shall not be responsible for any loss or damage directly or indirectly resulting from or caused by any improper or negligent installation, operation, use, repair or maintenance of, or interfering with, any backflow prevention assembly, required by this Chapter, by any Customer or any other person. (SCC 676 § 1, 1987.)

6.30.050 Application for Certification.

Any person desiring certification as a backflow prevention assembly tester shall make written application to the Department on a form provided by, and in a manner prescribed by the Department. Each application shall be accompanied by a fee, in an amount to be set by resolution of the Board of Supervisors. Said fee shall not be refundable or transferable. (SCC 676 § 1, 1987.)

6.30.060 Certification of Testers.

The Health Officer may conduct examinations to determine the competency of applicants to test backflow prevention assemblies. Those persons determined to be competent by the Health Officer shall be issued a “Certificate of Competence.” Any conditions or limitations imposed by the Health Officer on the examinee relative to the testing of backflow prevention assemblies shall be stated upon the face of the certificate as issued to the examinee. Every person, after receiving a certificate of competence from the Health Officer shall be issued such identification as the Department shall deem appropriate; and such identification shall be kept in the immediate possession of every person holding a certificate of competence while said person is testing any backflow prevention assembly within the County of Sacramento. Said certificate shall be valid for three (3) years commencing with the year in which it is issued. (SCC 676 § 1, 1987.)

6.30.070 Certification Renewal.

A certificate of competence may be renewed for an additional three (3) year period within

ninety (90) days of the date of expiration. Any person desiring certification renewal shall make written application to the Department on a form provided by, and in a manner prescribed by the Department. The Health Officer may conduct examinations to determine the competency of applicants to test backflow prevention assemblies. Each application shall be accompanied by a fee, in an amount to be set by resolution of the Board of Supervisors. Said fee shall not be refundable or transferable. (SCC 676 § 1, 1987.)

6.30.080 Certification Suspension or Revocation.

1. If the Department determines that a certificate holder has failed to comply with any requirement of this Chapter, the Department shall issue to the certificate holder, a written notice setting forth the acts or omissions with which the certificate holder is charged, and informing the certificate holder of their right to a hearing to show cause why the certificate of competence should not be suspended or revoked. A written request for a hearing shall be made by the certificate holder within 15 calendar days after receipt of the notice. A failure to request a hearing shall be made by the certificate holder within 15 calendar days after receipt of the notice. A failure to request a hearing within 15 calendar days after receipt of the notice shall be deemed a waiver of the right to hearing and the certificate of competence may be suspended or revoked.
2. The hearing shall be conducted within 15 calendar days of the receipt of a request for a hearing. Upon written request of the certificate holder, the Hearing Officer may postpone any hearing date, if circumstances warrant such action.
3. At the conclusion of the hearing, the Hearing Officer shall issue a written notice of decision to the certificate holder within five working days following the hearing. In the event of a suspension or revocation, the notice shall specify the acts or omissions with which the certificate holder is charged, and shall state the terms of the suspension or that the certificate of competence has been revoked.
4. Upon revocation of a certificate of competence, the former certificate holder shall not be allowed to make application for a certificate of competence for a period of three (3) years after the revocation date. (SCC 676 § 1, 1987.)

6.30.090 Authority to Inspect.

The Customer’s premises shall be available for inspection at all reasonable times to authorized representatives of the Health Officer to determine if protection of the public water system is required at the service connection(s). (SCC 676 § 1, 1987.)

6.20.100 Testing and Reports.

1. Any Customer at whose service connection(s) any backflow prevention assemblies are installed, shall have each such assembly tested at the time of installation and annually thereafter or more often as the Health Officer may require. All such tests shall be conducted by a certified backflow prevention assembly tester. Backflow prevention assemblies shall be repaired or replaced at the expense of the Customer whenever they are found to be defective.
2. Reports of tests of backflow prevention assemblies shall be filed with the Department within

twenty (20) days after said tests are conducted. The Department shall accept said reports from only those persons who possess a valid certificate of competence as issued by the Health Officer. (SCC 676 § 1, 1987.)

6.30.110 Existing Backflow Prevention Assemblies.

1. Backflow prevention assemblies in service at the time of adoption of this Chapter which do not comply with the provisions of this Chapter, may continue in use until such time as the assembly is determined to be defective.
2. Any such assembly that is determined to be defective shall be replaced by an assembly that complies with the provisions of this Chapter. (SCC 676 § 1, 1987.)

6.30.120 Enforcement.

The Health Officer, or an authorized representative, shall have the authority to enforce this Chapter.
The Health Officer may require a Water Purveyor to discontinue water service to any premises wherein violations of this Chapter exist. Any Customer who violates any of the provisions of this Chapter, or later bypasses or renders inoperative any backflow prevention assembly installed under the provisions of this Chapter may, in addition to other penalties prescribed, be subject to discontinuance of water service. Water service shall not again be rendered until such violations have been corrected as ascertained by the Department. Any violation of the provisions of this Chapter or rules and regulations promulgated thereof, shall be an infraction, punishable by a fine of not less than twenty-five dollars (25) nor more than five hundred dollars (500). Each day that a violation exists shall constitute a separate and distinct offense. (SCC 676 § 1, 1987.)

6.30.130 Rules and Regulations.

The Health Officer is authorized to make all necessary and reasonable rules and regulations with respect to the enforcement of this Chapter. All such rules and regulations shall be consistent with the provisions of this Chapter and shall be effective thirty (30) days after being filed with the Clerk of the Board of Supervisors. (SCC 676 § 1, 1987.)

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APPENDIX C

COUNTY OF SACRAMENTO
PUBLIC WORKS AGENCY
IMPROVEMENT STANDARDS

County of Sacramento
Public Works Agency

Improvement Standards
June 1, 1999

Warren Harada, Administrator
Public Works Agency

design spec

Sacramento County
Public Works Agency

Improvement Standards
June 1999

Contents

Note: Drawings immediately follow each section

Adopted by the Board of Supervisors, Sacramento County, California

on MARCH 23 1999

MARCH 25, 1999

By D.J. Platt

RESOLUTION No. 99-0326

Resolution of the Board of Supervisors of the County of Sacramento, State of California Adopting Improvements Standards, Repealing Resolution 89-0379

WHEREAS, the Board of Supervisor of the County of Sacramento, State of California deems is necessary and advisable in the public's interest to revise the existing Improvement Standards governing the design and construction of roads, streets, sanitary sewers, storm drainage, concrete structures, water supply, street lighting, land grading, and other facilities within the County of Sacramento to provide for proper development;

NOW, THEREFORE, BE IT RESOLVED AND ORDERED that the attached Improvement Standards dated June 1, 1999, for said improvements are hereby adopted on this date as the Sacramento County Improvement Standards; and

BE IT FURTHER RESOLVED AND ORDERED that any Improvements Standard previously adopted pursuant to Resolution 89-0379 shall not apply to any improvement plans that are received for checking beyond May 31, 1999; and

BE IT FURTHER RESOLVED AND ORDERED that these Improvement Standards shall be in full force and effect for all Improvements Plans received for checking on and after June 1, 1999.

BE IT FURTHER RESOLVED AND ORDERED that the Improvement Standards and Standard Drawings adopted herein, together with the Standard Construction Specifications and the references included therein to the Standard Specifications of the State of California shall govern the design and construction of improvements in Sacramento County.

SECTION 8

WATER SUPPLY SYSTEMS

Table of Contents

8-1 INTRODUCTION

These improvement standards govern the design of all water systems intended for operation and maintenance by the County of Sacramento. The County of Sacramento provides retail water service through the Sacramento County Water Maintenance District, and wholesales water through zones of the Sacramento County Water Agency.

8-2 INTENT OF WATER SYSTEM IMPROVEMENT STANDARDS

The intent of these water system improvement standards is to provide water systems that reliably and safely conveys water at a reasonable capital cost and to provide water systems that minimize operation and maintenance costs.

8-3 DEFINITIONS

When the following terms or titles are used in these water system improvement standards, or in any document or instrument where these standards govern, the intent and meaning shall be as herein defined:

- **AWWA** – American Water Works Association.
- **LD & SIR** – Land Development and Site Improvement Review Section of the Building Inspection Division of the Department of County Engineering of the County of Sacramento's Public Works Agency.
- **Recycled Water** – Non-potable water for irrigation use only.
- **Water Agency** – Shall mean the Sacramento County Water Agency.
- **Water District** – Shall mean the Sacramento County Water Maintenance District.
- **Water Supply** – Shall mean the Planning and Development Section and Water Maintenance Section of the Water Resources Division of the Department of District Engineering of the County of Sacramento's Public Works Agency.
- **Water System** – Refers to potable, raw water, and recycled (reclaimed) water systems.

8-4 APPLICABLE STANDARDS

Pertinent, and the most current requirements of the following agencies and standards shall apply to design of water systems. In case of conflict between the requirements of these water system improvement standards and the agencies and documents listed below, these improvement standards shall govern. Upon request, Water Supply will advise where these standards may be obtained:

- Environmental Protection Agency Drinking Water Regulations.

- Laws, codes, and Standards of the State of California, Department of Health Services relating to Domestic Water Supply.
- The County of Sacramento Public Works Agency Nonpotable (Recycled) Water Specifications.
- Standard Construction Specifications of the County of Sacramento, Department of Public Works.
- General Order No. 103 of the California Public Utilities Commission.
- Title 17, Chapter V, Sections 7583-7622, California Administrative Code, and County Ordinance No. 676 regarding cross-connections and backflow prevention.
- Uniform Fire Code.
- Ordinance No. 18 of the Sacramento County Water Agency where applicable within zones of the Water Agency.

8-5 IMPROVEMENT PLAN SUBMITTAL

Improvement plans for developments that will be served retail water by the Water District or wholesale water by the Water Agency shall be reviewed by Water Supply. Improvement plans shall meet the requirements of Section 2 – *General Requirements*, of these Improvement Standards. The initial submittal of improvement plans shall be made to LD & SIR in accordance with Section 2-5 *Initial Plan Submittal Requirements*, of these Improvement Standards. Of the sets submitted to LD & SIR, LD & SIR will route two (2) sets to Water Supply.

If improvement plans for commercial, industrial, or apartment developments, or street improvements will have landscaping, two complete sets of landscape plans must be sent to Water Agency for their review and approval. Any landscape project such as a park, or landscape corridor that will be served water by the Water District or wholesaled water by the Water Agency shall have landscape plans reviewed and approved by Water Supply.

Commercial, Industrial, or Apartment developments must also submit a completed Cross Connection Control Questionnaire to Water Supply.

8-6 APPROVAL OF IMPROVEMENT PLANS

All improvement plans and landscape plans to be served by the Water District or the Water Agency must be approved and signed by an authorized representative of the Water Agency or Water District. The following must occur before the plans can be approved:

- All comments made by Water Supply to the improvement plans must be addressed.
- The Fire Department must approve and sign the improvement plans.
- The location of all wells in use and all abandoned wells must be shown on the improvement plans, and properly destroyed in accordance with the requirements of the Sacramento County Environmental Management Department. Copies of well destruction permits for all destroyed wells must be provided to Water Supply before obtaining plan approval from Water Supply.
- If the project is within Zone 40 of the Water Agency, initial Zone 40 Water Development Fees must be paid. Initial development fees shall be in accordance

with Schedule A of Ordinance No. 18 of the Sacramento County Water Agency and are to be paid at LD & SIR.

Five sets of improvement plans and three sets of landscape plans shall be delivered directly to Water Supply after all approvals have been obtained and prior to beginning of construction.

8-7 IMPROVEMENT PLAN REVISION

All plan revisions that affect a water system to be maintained and operated by the Water District shall be approved and signed by an authorized representative of Water Supply prior to being approved by LD & SIR.

8-8 CONNECTION PERMITS AND FEES

A water connection permit shall be obtained for each connection to the water system. Contact Water Supply for information concerning Water Agency and Water District fees.

8-9 WATER SUPPLY QUALITY

The quality of the potable water supplied by the Water Agency will conform to the Environmental Protection Agency Drinking Water Act, and the State Department of Health Services Drinking Water Standards.

8-10 WATER SUPPLY PRESSURE

Water distribution systems shall be designed so that normal operating pressures at service connections to the distribution system are no less than 35 pounds per square inch (psi) and no more than 100 psi. During periods of maximum day domestic demand plus fire demand, the pressure shall not be less than 20 psi at the location of the fire flow and no less than 5 psi anywhere in the distribution system.

8-11 WATER DEMAND

For the design of water distribution systems serving single family residential areas, assume the water demand is one gallon per minute per residential connection (maximum day demand) plus fire flow. For the design of water distribution systems serving commercial areas, water demand shall be determined in consultation with the Water Agency. Water Supply may require that some distribution mains be upsized in accordance with approved Water Agency or Water District Master Water Supply Plans.

8-12 FIRE FLOWS

Required fire flows shall be determined by the Uniform Fire Code, the fire protection district having jurisdiction, and the County of Sacramento. The minimum fire flow for single family residential water systems is 1,500 gpm. The minimum fire flow for commercial/industrial water systems is 3,000 gpm.

8-13 WELLS, TREATMENT PLANT AND STORAGE FACILITY DESIGN

Water Supply will either design or provide design oversight of wells, treatment plants, booster pumping plants, and storage facilities.

In general, all developments must have a minimum of two (2) sources of water. If adequate elevated or ground level storage is provided, a single source of water system may be acceptable upon approval by Water Supply and the local fire district.

Site selection for the above mentioned facilities shall be approved by Water Supply and meet the requirements of the Environmental Health Division of the County Environmental Management Department, and the State Department of Health Services.

8-14 TRANSMISSION MAIN DESIGN

Sizing of transmission mains shall conform to Master Water Supply Plans of the Water Agency or Water District.

Technical specifications and detail drawings for water transmission mains will be prepared by Water Supply and given to the Consultant to be included with the improvement plans.

Under no circumstances shall fire hydrants or water services be directly connected to a transmission main.

A. Transmission System Layout Requirement

The transmission main layout requirements on the Improvement Plans shall be as follows:

1. The transmission mains shall be shown in full in plan and profile views, including valves, air relief/vacuum valve assemblies, blow off assemblies, and all other appurtenances.

2. Elevations shall be listed at all changes in slope.

3. Transmission mains shall maintain a minimum vertical clearance from all other utilities of 12-inches (1 foot).

4. Thrust restraint shall be by means of pipe joint restraining devices only; thrust blocks shall not be used unless authorized by Water Supply.

B. Transmission Main Location

All transmission mains shall be installed within public rights-of-way and easements.

1. The water transmission main shall be located on the north or west side of a street. The water transmission main shall be located at a minimum of four feet from the lip of gutter. The transmission main and valve actuators will be located so that the valve boxes will be located in the center of a traffic lane or on traffic lane lines. A deviation from these criteria may be allowed if approved by Water Supply in consultation with other affected utility providers.

2. Water transmission mains shall not be located within Landscape corridors, unless approved by Water Supply as a result of unresolvable conflicts with other utilities.

3. Ten (10) feet shall be the minimum horizontal separation between water transmission mains and sanitary sewer mains or recycled water mains. Separation may be less if it is accordance with California State Department of Health Services requirements and approved by Water Supply. Every attempt should be made to keep the bottom of the water transmission main at a higher elevation than the sewer main or recycled water main.

4. When crossing a sanitary sewer force main, it shall be specified that the water main be installed a minimum of three (3) feet above the sewer line and be of cast iron or ductile iron.

5. Minimum cover under roadways shall be 36 inches for PVC pipe and AWWA C303 pipe, and 30 inches for ductile iron pipe.

6. Minimum cover in open fields shall be 60 inches for PVC pipe and AWWA C303 pipe, and 48 inches for ductile iron pipe.

8-15 DISTRIBUTION MAIN DESIGN

Sizing of distribution mains shall be such that the normal pressures stated in Section 8-10 and the minimum requirements as stated below for distribution main spacing and sizing are maintained.

The Hazen-Williams formula shall be used in the hydraulic study of the system, using a "C" value of 125 for cement-lined pipe, polyvinyl chloride pipe , and ductile iron pipe.

A Hardy-Cross hydraulic analysis of any proposed distribution system shall be supplied to Water Supply upon request. In design of the system, the maximum assumed delivery from any hydrant of a type conforming to current County Standard Construction Specifications shall be assumed to be limited to 1,500 gallons per minute.

A. Distribution Main Design Plan Requirements

The water distribution main design plan requirements on the Improvement Plans shall be as follows:

1. The distribution main shall be shown in plan and profile. A water plan sheet shall be included as part of the improvement plans, showing locations of valves, fire hydrants, existing water lines, air release/vacuum valves, blow off valves, and water services. The scale of the water plan should be 1"=100', however, the scale of the water plan may be 1"=200' if the 1"=100' scale does not fit on one plan sheet. For commercial and apartment plans, a water plan that fits onto one sheet shall be provided as part of the improvement plans.

2. Details of distribution mains crossing other utilities or unusual alignments will be provided if deemed necessary by Water Supply.

3. This paragraph shall be included on the water plan sheet of improvement plans for developments that will be served retail water by the Water District. Polyvinyl Chloride distribution mains shall have 4 inches of sand bedding material. If existing soil is too porous to hold sand, 4 inches of crushed aggregate or a geotextile fabric placed on the trench bottom and covered with 4 inches of sand may be used. The use, and type of geotextile, and crushed aggregate must be approved by the Water Agency.

4. This paragraph and the following paragraph shall be included on the water plan sheet of improvement plans for developments that will be served retail water by the Water District. Ductile Iron distribution mains shall have six (6) inches of sand bedding. If existing soil is too porous to hold sand, a geotextile fabric placed on the trench bottom and covered with 6 inches of sand may be used. The use, and type of geotextile, must be approved by the Water Agency. Ductile Iron distribution mains shall have sand backfill to six (6) inches above the top of the distribution main. The Ductile Iron distribution main shall be encased in 8 mil polyethylene encasement in accordance with AWWA C105.

   Bedding and backfill for both ductile iron pipe and polyvinyl chloride pipe shall be compacted to 90% relative compaction. Grooves shall be dug in the pipe bedding to accommodate pipe bells, fittings, and joints so that the pipe is continuously supported by the bedding material.

5. Stationing for all fittings, shut off valves, air release/vacuum valves, and in line blow-off valves shall be called-out in the profile view of the improvement plan sheets. Elevations shall be called-out at all changes in pipe elevation.

6. Commercial, industrial, and apartment Improvement Plans with a water easement shall have a note that states, "Utilities may not be located within water easement(s) except if the utility crosses the water easement within 20 degrees of perpendicular to the water main."

B. Distribution Main Location

All water distribution mains shall be installed within public rights-of-way or easements.

1. The centerline of the water distribution main shall be located three (3) feet from the lip of the gutter on the northerly or westerly side of the street. A deviation from this criteria may be allowed if approved by Water Supply in consultation with other affected utility providers.

   If it should be necessary because of existing improvements or possible conflict with other utilities, and with the approval of Water Supply, the distribution mains may be

installed within a 15 foot wide easement immediately adjacent to and behind the property line fronting on the public right-of-way.

2. If it is necessary to install a water distribution main within a private road, the water easement shall be the width of the paving plus one foot each side. Water easements over water distribution mains located on commercial, industrial, or apartment properties shall have a minimum width of 15 feet. The water main shall be centered in the easement.

3. If it is necessary to install a water distribution main within a landscape corridor, then no trees shall be planted within five feet of the water main. The water distribution main shall be centered within a 15 foot wide water easement. The landscape plans for the corridor shall be submitted prior to approval of the improvement plans.

4. If a water distribution main is required to be installed between residential homes, the pipe material shall be Class 350 Ductile Iron Pipe, installed with 6 inches of sand bedding, 8-mils of polyvinyl encasement in accordance with AWWA C105, backfilled with sand to 6 inches above the top of the pipe, and a 6 inch wide warning tape shall be placed on the backfill. The center of the main shall be centered within a 15 foot wide easement.

5. Ten (10) feet shall be the minimum horizontal distance between parallel water distribution and sanitary sewer mains or recycled water mains. The water distribution main shall be higher than the sewer main or recycled water main. Separation may be less if it is accordance with California State Department of Health Services requirements and approved by Water Supply.

6. On all utility crossings, the water distribution main shall maintain a separation at least 12-inches (1 foot) from the utility.

7. When crossing a sanitary sewer force main, it shall be specified that the water distribution main be installed a minimum of three (3) feet above the sewer line and be ductile iron.

8. Water distribution mains to be installed in public right-of-ways or easements not conforming to Items 1 through 5 above shall be approved by Water Supply in consultation with other affected utility providers.

C. Distribution Main Layout and Sizing

The distribution system, whenever possible, shall be in grid form so that pressures throughout the system tend to become equalized under varying rates and locations of maximum demand, and to provide system redundancy. The minimum pressures and

flows as specified shall govern design of the system. The following conditions are to be considered for the distribution system design:

1. In general, the minimum pipe size shall be eight inches inside diameter for looped systems, and six inches for dead end runs that do not have a fire hydrant at the end, or for all dead end runs less than 50 feet.

2. Where distribution mains are installed in a major thoroughfare (84 feet right-of-way or greater), dual mains (one pipeline on each side of the street) may be required.

3. Mains shall maintain a minimum cover of 30-inches (36-inches in rights-of-way 50 feet and greater), and when not avoiding other utilities mains shall have a maximum depth of 60-inches, unless otherwise specified by Water Supply. Both distances shall be measured from gutter flow-line.

D. Distribution Main Pipe Restraint

Pipes shall be restrained from movement as a result of thrust on the fittings and valves of the water system. Thrust restraint for bends and tees may be accomplished with thrust blocks as described in Drawing 8-3A, or by means of pipe joint restraining devices as described in Drawing 8-3B. Thrust blocks must be poured against undisturbed soil.

E. Type of Distribution Main Pipe and Pipe Deflection

Pipe used in the construction of water distribution systems shall be Polyvinyl Chloride or Ductile Iron pipe. Pipe deflection at joints shall not exceed one-half of the manufacturer's recommended deflection. Deflection and bending of Polyvinyl Chloride pipe shall not exceed the limits described in Drawing 8-9.

8-16 WATER SYSTEM APPURTENANCES

Water system appurtenances include fire hydrants, water service lines, water meters, detector check valves, and back-flow devices.

A. Fire Hydrants and Blow-off Assemblies

Fire hydrants and blow-off assemblies shall be located as follows:

1. Fire hydrants shall be connected to distribution mains only. Fire hydrants shall not be connected to transmission mains.

2. Fire hydrants shall be placed at street intersections wherever possible, and located to minimize the hazard of damage by traffic. They shall have a maximum normal spacing of 500 feet measured along the street frontage in residential developments, 300 feet in commercial developments, or closer if deemed necessary by the local Fire District. Hydrants located at intersections shall be installed at the curb return. Within residential areas, all other hydrants shall be located on property lines between lots. See Drawings 8-2A and 8-2B for specifications and typical installation details.

3. The minimum size main serving a fire hydrant shall be six inches in diameter, however in this situation, the distance from the nearest intersecting main to the hydrant shall not be greater than 50 feet if fire flow requirements are 1500 gpm, or 10 feet if fire flow requirements are greater then 1500 gpm. Not more than one hydrant shall be placed on a six-inch main between intersecting water mains. The pipeline connecting the hydrant and the main shall be a minimum of six-inch in diameter, with a gate valve flange connected to the main.

4. A fire hydrant or four (4)-inch blow-off assembly shall be installed on all permanent dead-end runs including cul-de-sacs. If the local Fire District requires a hydrant at the end of a dead-end run, then a 4-inch Blow-off assembly will not be allowed. Two-inch Blow-off valves shall be used if dead-end runs are temporary. Wherever possible, the blow-off assemblies shall be installed in the street right-of-way, a minimum distance of three (3) feet from the lip of gutter. In no case shall the location be such that there is a possibility of back-siphonage into the distribution system. See Drawings 8-12, and 8-13 for specifications and typical installation details.

B. Water Service Lines

Service lines from the water distribution main to the property line or edge of easement shall normally be installed at the time the main is constructed. Services from mains installed in private roads shall extend one foot beyond the edge of the pavement. Service line criteria shall be as follows:

1. In all new subdivisions, the service line shall be located between 9 inches and 30 inches from the side property line.

2. Normal size of a residential service line shall be one inch. Schools, commercial, industrial, or multiple-family units with higher water demand shall be provided with larger service lines, subject to approval of Water Supply. All services shall be installed with a corporation stop at the main and a curb stop or gate valve at the property line. The curb stop shall be used only when the service is less then 4 inches. A gate valve shall be used if the service size is 4 inches or larger. Installation of a valve box is required over all gate valves.

3. The Water Quality Division Maintenance Section shall make all water service taps into existing mains upon application for a permit and payment of the required fees. A note to this effect shall be placed on the plan sheet which details the area that requires such tapping. Application should be made to Sacramento County of Public Works Agency and the required fees paid at least five (5) days in advance of the time the tap is desired. The Contractor shall do all excavation and backfill, and the installation of the remainder of the water service. (Note: The above applies only when the service is constructed as a part of an improvement contract. For rules regarding the installation of an individual water service, contact Water District at 875-7014.)

C. Water Meters

Water meters shall be installed on all residential, commercial, industrial, multi-family, and irrigation water services. Residential meters and meter boxes will be installed by the builder after building permits are issued, not when water service lines are installed. Size of water meter shall not be less than the size of the service line unless approved by Water Supply. See Drawings 8-6A, 8-6B, and 8-6C for specifications and typical installation details.

D. Detector-Check Valves

A detector-check valve and bypass meter is required on each fire service line into a building. See Drawing 8-7 for specifications and typical installation details.

E. Back-Flow Devices

Back-flow devices are required in accordance with Title 17, Chapter V, and Sections 7583-7622 of the California Administrative Code. See Drawings 8-8A and 8-8B for specifications and typical installation details.

F. Air Release/Vacuum Valve Assemblies

Air release/vacuum valve assemblies are requires at high points in a distribution system as determined by Water Supply. See Drawing 8-14 for specifications and typical installation details.

8-17 RECYCLED WATER AND NON-POTABLE WATER TRANSMISSION MAINS AND DISTRIBUTION MAINS

Recycled water and non-potable water facilities may be required by the Water Agency or Water District for use in specified areas as determined by Water Supply. Design flows and demands for recycled and non-potable water systems shall be determined by the Water Agency. Design requirements for recycled water and non-potable water transmission mains and distribution mains are similar to potable water; however, there are special provisions described as follows:

1. To avoid cross connection of the potable and non-potable water systems, recycled water and non-potable facilities shall be clearly marked through appropriate coloring of pipe materials and above ground appurtenances.

2. All materials and work shall be in accordance with the latest edition of the Sacramento County Standard Construction Specifications for the construction of potable water systems. Because recycled water and non-potable facilities are not specifically addressed in the Standard Construction Specifications, special construction requirements shall be obtained from Water Supply.

3. Coloring of pipes shall be colored purple and embossed or integrally stamped/marked "CAUTION: NONPOTABLE WATER – DO NOT DRINK", or "CAUTION: NONPOTABLE WATER – DO NOT DRINK". Valve and meter

boxes shall be colored purple and have the words "NONPOTABLE WATER" stamped into the face.

4. All above ground facilities shall be marked with a sign to caution against drinking water from the recycled water system. All signs shall be made and placed in such a manner as to become a permanent part of the facility or appurtenance. Park sites, large turf areas, and other publicly used areas may require warning signs of the appropriate size as determined by Water Supply or other regulatory agency.

5. The recycled water system shall maintain a minimum pressure of 40 psi.

6. The recycled and non-potable water mains shall be located on the south and east side of a street. The recycled and non-potable water mains shall be located at a minimum of four feet from the lip of gutter. The recycled and non-potable water mains and valve actuators will be located in the center of traffic lanes or on traffic lane lines. A deviation from these criteria may be allowed if approved by Water Supply in consultation with other affected utility providers.

8-18 RECORD PLANS

Record Drawings shall be in accordance with Section 2-11 *Record Plans* of these improvement standards and shall also include the following:

1. Each sheet of the improvement plan shall be labeled or stamped "As-Built" or "Record Drawing".

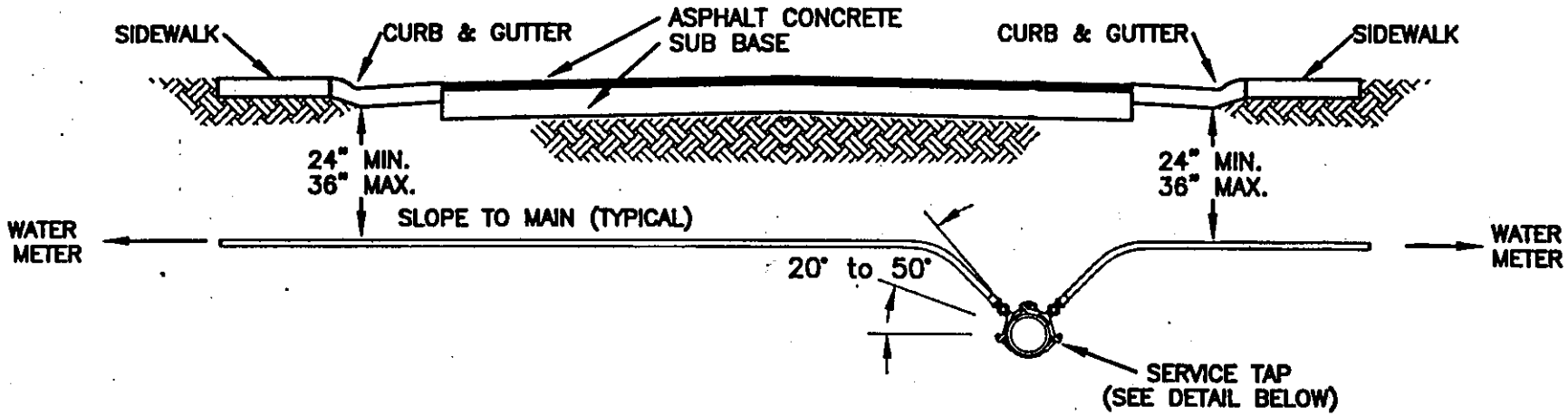
2. Elevations of the top of the end of distribution mains and transmission mains.

3. The type of water distribution main and transmission main pipe installed shall be clearly marked on each sheet.

4. The type of end fitting and pipe at the end of the distribution mains and transmission mains shall be described.

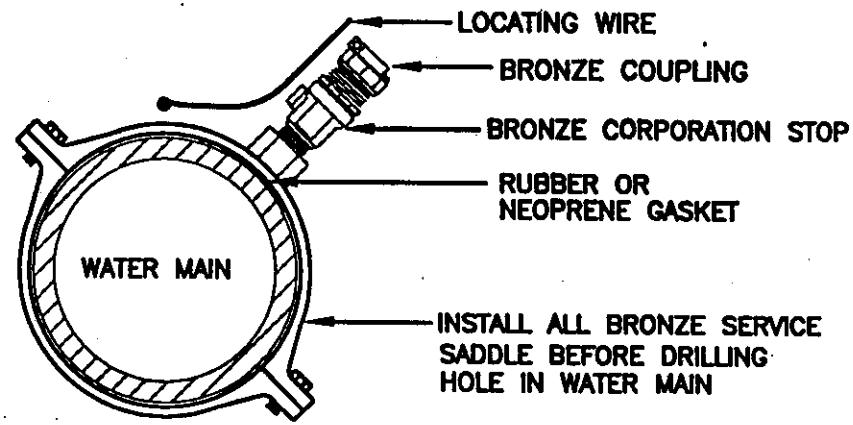
5. Changes of location of shut-off valves, fittings, air release/vacuum valves, blow-off assemblies, hydrants, and water services for which an improvement plan revision was not obtained.

Record Drawings shall be approved by Water Supply prior to acceptance of the project.



NOTES:

1. CORPORATION STOP, METER CURB STOP AND WATER SERVICE LINE ARE TO BE THE SAME SIZES.
2. SERVICE SADDLES SHALL HAVE A SINGLE WIDE BRONZE STRAP FOR 1" AND 2" SERVICES. DOUBLE STRAPS, FLATTENED TO PROVIDE A WIDE BEARING SURFACE AGAINST THE PIPE, SHALL BE USED FOR SERVICE SADDLE SIZES LARGER THAN 2 INCHES, EXCEPT WHERE SIZE OF TAP EXCEEDS MANUFACTURER'S RECOMMENDED LIMIT FOR SIZE OF WATER MAIN. FOR THIS SITUATION, A SPECIAL FITTING SHALL BE SPECIFIED. BRONZE 'U' BOLTS (NOT FLATTENED) MAY BE PLACED ON CAST IRON AND DUCTILE IRON WATER MAINS.
3. SERVICE SADDLES, CORPORATION STOPS, COUPLING NUTS, BOLTS, AND ALL APPURTENANCES SHALL BE BRONZE.
4. SERVICE TAP MUST BE MADE BETWEEN 20 DEGREES TO 50 DEGREES ABOVE THE SPRINGLINE OF THE PIPE.
5. SERVICE TAPS SHALL BE A MINIMUM OF 18" APART ALONG THE WATER MAIN.
6. INSULATED LOCATING WIRE REQUIRED ON ALL SERVICE LINES, SEE DRAWING 8-4. WIRE SHALL BE CONNECTED TO LOCATING WIRE ALONG WATER MAIN FOR CONTINUITY.



SERVICE TAP
DETAIL

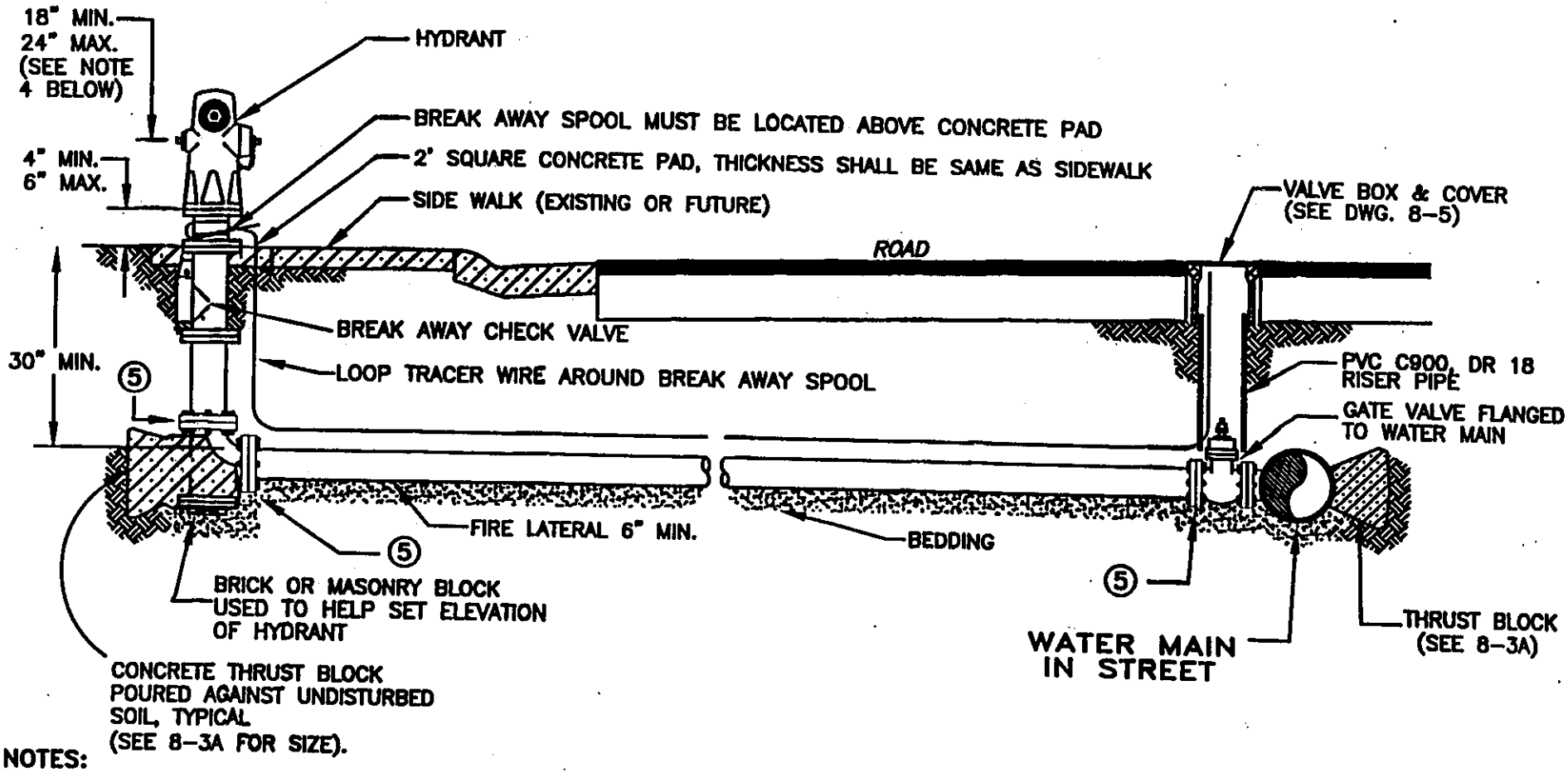
Robert A. Ghirardi
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

WATER SERVICE INSTALLATION

SCALE: NONE
DATE: 3/99

8-1



NOTES:

1. IN COMMERCIAL AREAS, FIRE HYDRANTS SHALL BE PROTECTED FROM VEHICULAR DAMAGE BY BOLLARDS AND ACCESSIBLE TO FIRE PROTECTION EQUIPMENT.
2. TYPE OF FIRE HYDRANT SHOWN IS FOR ILLUSTRATIONS ONLY.
3. GATE VALVE SHALL BE FLANGED TO THE WATER MAIN.
4. LOWEST CAP NUT ON HYDRANT SHALL BE 18" MIN. TO 24" MAX. ABOVE TOP OF CONCRETE PAD.
5. THESE JOINTS MAY BE FLANGE, OR RESTRAINED MECHANICAL JOINTS WITH SCWMD APPROVED RESTRAINING DEVICE.

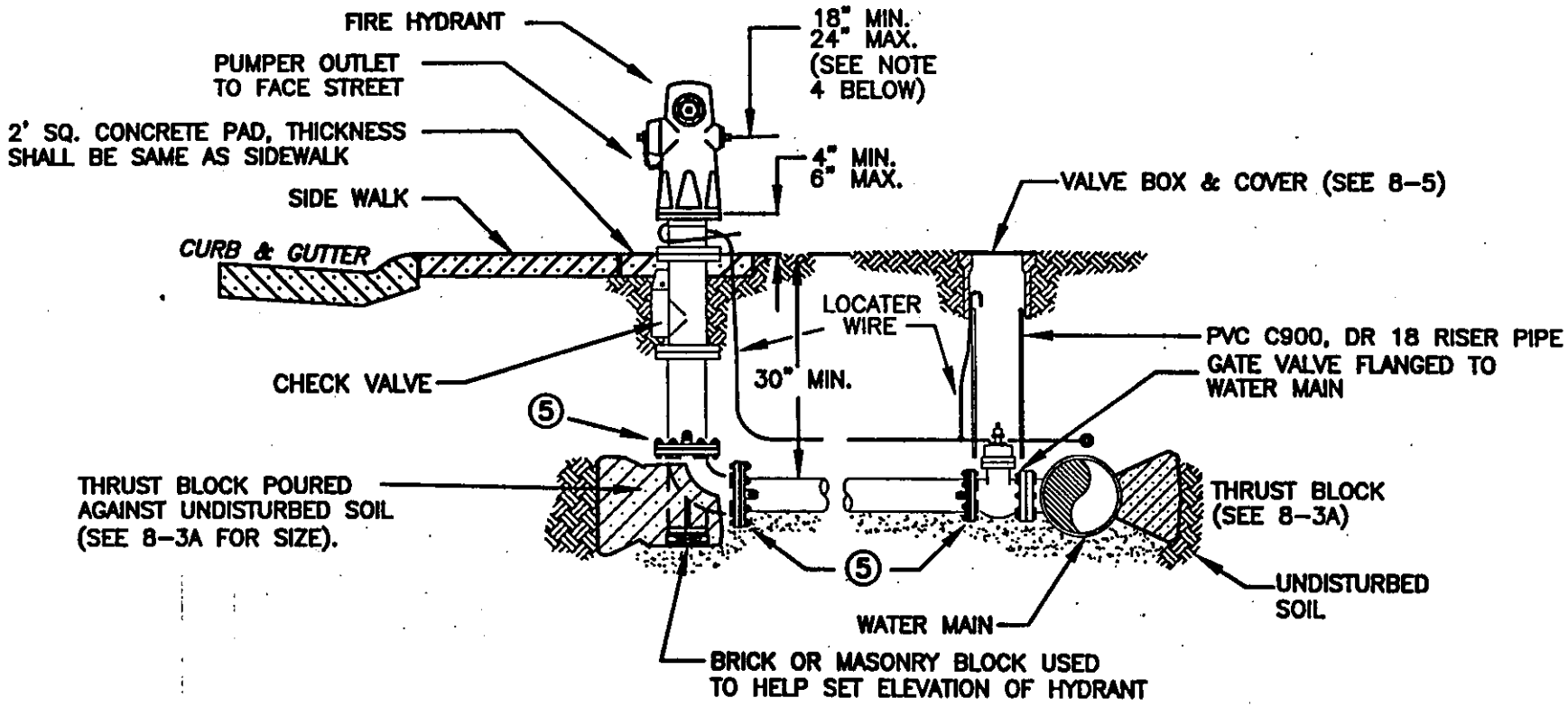
Robert A. Ghirelli
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

FIRE HYDRANT INSTALLATION
WATER MAIN IN STREET

SCALE: NONE
DATE: - - -

8-2A



NOTES:

1. IN COMMERCIAL AREAS, FIRE HYDRANTS SHALL BE PROTECTED FROM VEHICULAR DAMAGE BY BOLLARDS AND BE ACCESSIBLE TO FIRE PROTECTION EQUIPMENT.
2. TYPE OF HYDRANT SHOWN IS FOR ILLUSTRATIONS ONLY.
3. GATE VALVE SHALL BE FLANGED TO THE WATER MAIN.
4. LOWEST CAP NUT ON HYDRANT SHALL BE 18" MIN. TO 24" MAX. ABOVE TOP OF CONCREETE PAD.
5. THESE JOINTS MAY BE FLANGED, OR RESTRAINED MECHANICAL JOINTS WITH SCWMD APPROVED RESTRAINING DEVICE.

Robert A. Ahern
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

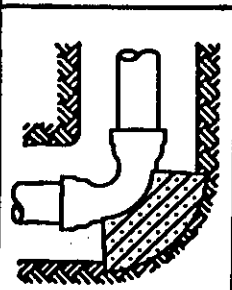
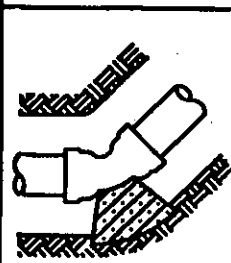
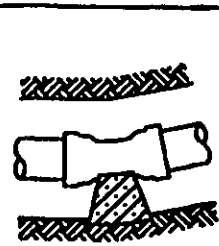
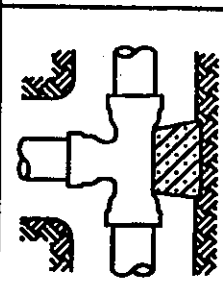
FIRE HYDRANT INSTALLATION

WATER MAIN NOT IN ROADWAY

SCALE: NONE
DATE: 3/00

8-2B

REQUIRED BEARING AREA IN TOTAL SQUARE FEET

TYPE OF FITTING		90° BEND	45° BEND	11-1/4° BEND 22-1/2° BEND	TEE OR DEAD END	TEE WITH PLUG	CROSS WITH PLUG	CROSS WITH PLUGS
TYPICAL INSTALLATION								
SIZE OF PIPE	4"	2	1	1	2	THRUST BLOCKS NOT ALLOWED, SEE 8-3B		
	6"	4	2	1	3			
	8"	7	4	2	5			
	10"	12	6	3	8			
	12"	16	10	5	12			

NOTES:

1. THRUST BLOCKS ARE TO BE CONSTRUCTED OF CLASS "B" CONCRETE.
2. BEARING AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 150 PSI IN SOIL WITH 2,000 PSF BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, SOIL TYPES SHOULD ADJUST AREAS ACCORDINGLY, SUBJECT TO THE APPROVAL OF SCWMD.
3. THRUST BLOCKS ARE TO BE POURED AGAINST UNDISTURBED SOIL.
4. PIPE JOINTS ARE TO BE KEPT CLEAR OF CONCRETE.

Robert J. Ohlson
DIRECTOR

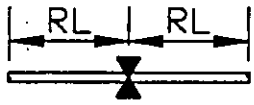
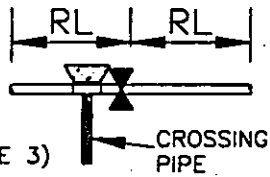
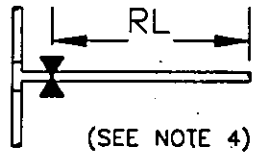
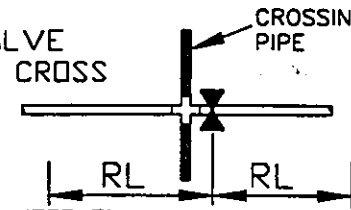
SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

THRUST BLOCK BEARING AREA

SCALE: NONE
DATE: 3/88

8-3A

RESTRAIN LENGTH IN FEET

PIPE CONFIGURATION	CROSSING PIPE SIZE	DEPTH OF 30"								DEPTH OF 60"							
		6"		8"		10"		12"		6"		8"		10"		12"	
		DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC	DIP	PVC
IN LINE VALVE 		38	24	45	31	58	38	70	46	17	17	26	24	32	30	41	38
VALVE AT TEE  (SEE NOTE 3) CROSSING PIPE	6"	3	2	17	13	37	24	48	33	3	2	12	10	20	19	30	26
	8"	2	2	12	8	27	19	43	30	2	2	6	5	17	15	27	24
	10"	2	2	4	3	19	15	39	28	2	2	2	2	12	11	24	21
	12"	2	2	2	2	14	10	32	24	2	2	2	2	10	8	20	19
 (SEE NOTE 4) (SEE NOTE 5)		37	21	42	27	56	32	68	38	16	15	23	21	30	24	38	30
	6"	2	2	18	15	41	26	50	34	2	2	14	12	22	20	32	28
VALVE AT CROSS  (SEE NOTE 5)	8"	2	2	16	12	32	20	44	32	2	2	6	4	18	16	29	26
	10"	2	2	4	4	20	17	40	32	2	2	2	2	14	12	26	24
	12"	2	2	3	2	18	14	34	26	2	2	2	2	12	10	22	20

RL = RESTRAINED LENGTH

NOTES:

1) ALL JOINTS WITHIN THE RESTRAIN LENGTH MUST BE RESTRAINED.
2) IF RESTRAIN LENGTH IS GREATER THAN 20', DUCTILE IRON PIPE WITH INSIDE THE BELL RESTRAINING DEVICES MUST BE USED FOR THE ENTIRE RESTRAINED LENGTH.
3) RESTRAIN LENGTH FOR THE TEE DESCRIBED, ASSUMES A THRUST BLOCK IS INSTALLED AT LOCATIONS SHOWN ABOVE. IF THRUST BLOCK IS NOT INSTALLED RESTRAIN LENGTH MUST BE APPROVED BY WATER SUPPLY.
4) THIS CONFIGURATION IS ONLY TO BE USED IF A THRUST BLOCK CAN NOT BE POURED BEHIND THE TEE AND AGAINST UNDISTURBED SOIL.
5) JOINTS ON PIPES PERPENDICULAR (CROSSING PIPES) TO RESTRAIN LENGTH RUN, MUST BE RESTRAINED FOR A MIN. OF 4 FEET.
6) THE RESTRAIN LENGTHS ARE BASED ON A WATER PRESSURE OF 150 PSI. IF HIGHER PRESSURE OR HIGHER SURGE PRESSURES ARE ANTICIPATED, THEN THIS TABLE DOES NOT APPLY AND RESTRAIN LENGTH MUST BE APPROVED BY SCWMD.

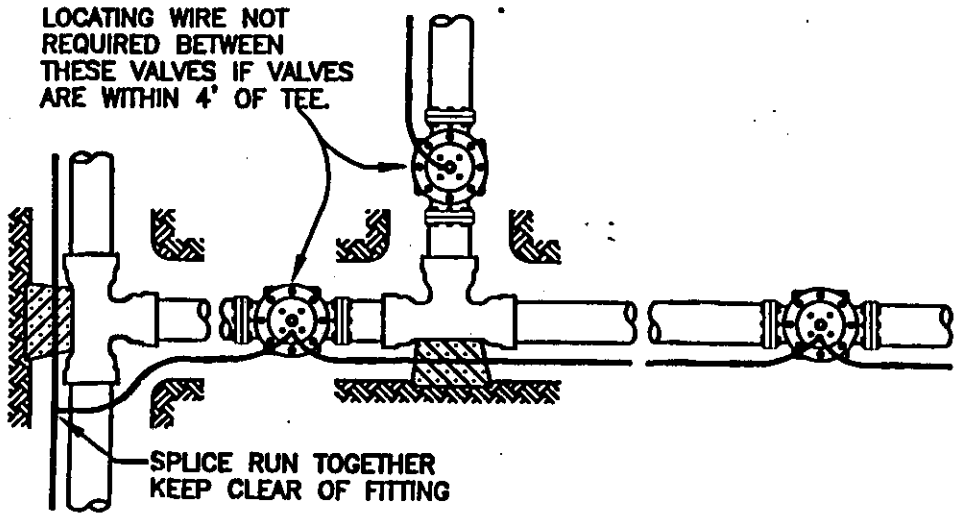
Robert J. Shenk
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

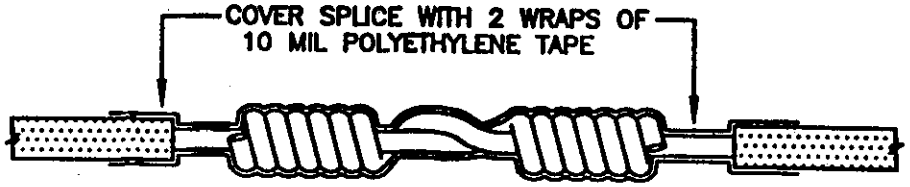
PIPE RESTRAINED LENGTH

SCALE: NONE
DATE: 3/99

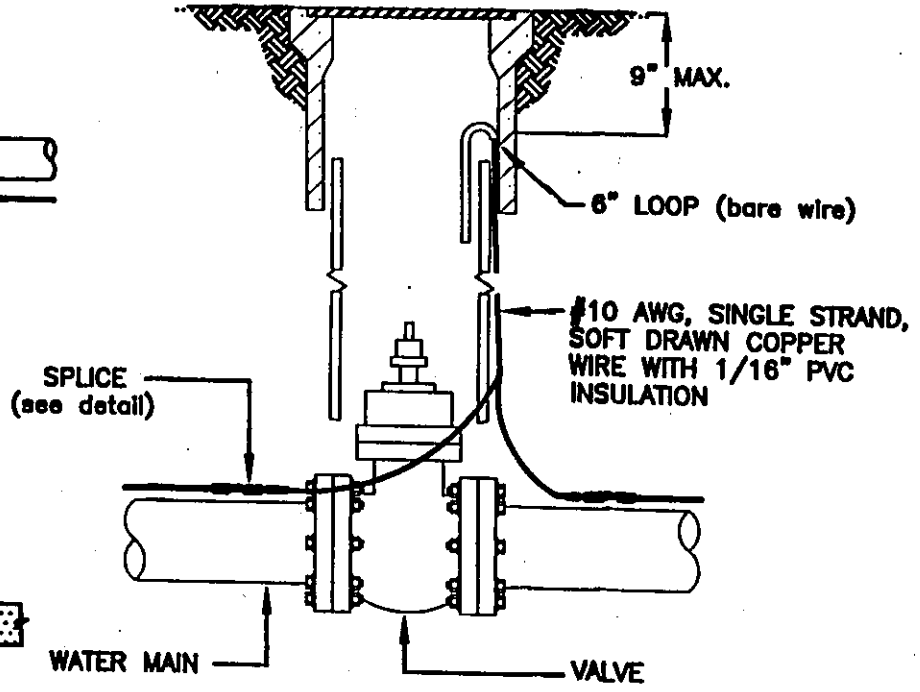
8-3B



TYPICAL LAYOUT



SPLICE DETAIL



VALVE DETAIL

NOTES:

1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT AS NOTED.
2. LOCATING WIRE SHALL BE LAID ON TOP OF THE WATER MAIN, AND SHALL BE TAPED TO IT OR THE POLYETHYLENE ENCASEMENT (IF THE PIPE IS DUCTILE IRON) AT 10' INTERVALS AND TAPED AT ALL FITTINGS. TAPE SHALL BE 10 MIL POLYETHYLENE.
3. CONTRACTOR SHALL CONDUCT A CONTINUITY TEST ON ALL LOCATING WIRE SPLICES.
4. ALL SPLICES SHALL BE SOLDERED.

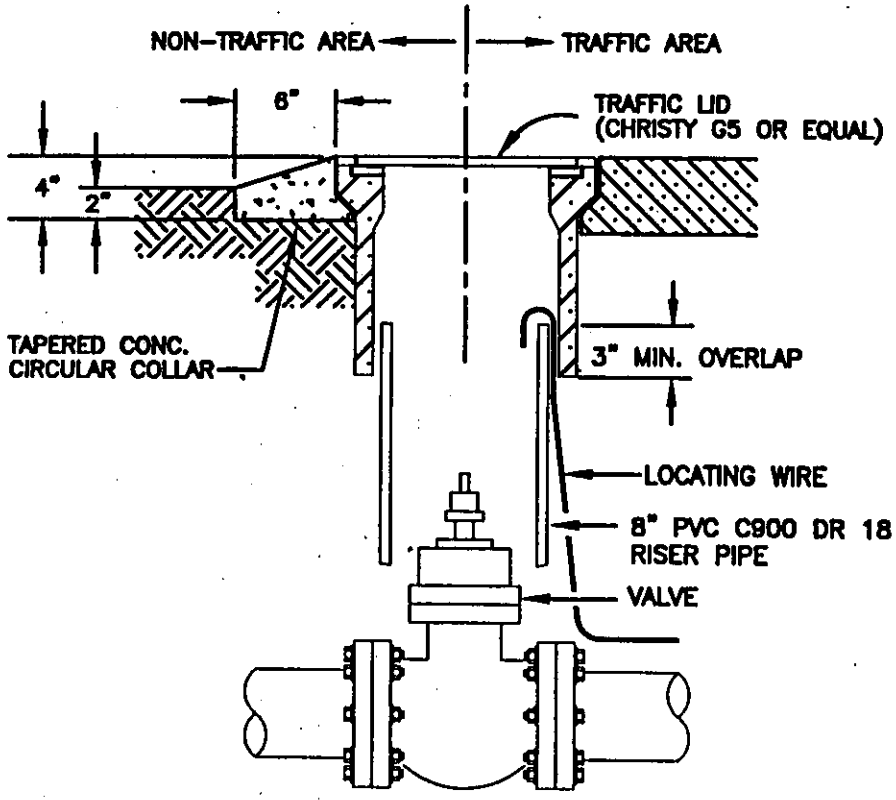
Robert J. Shaw
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

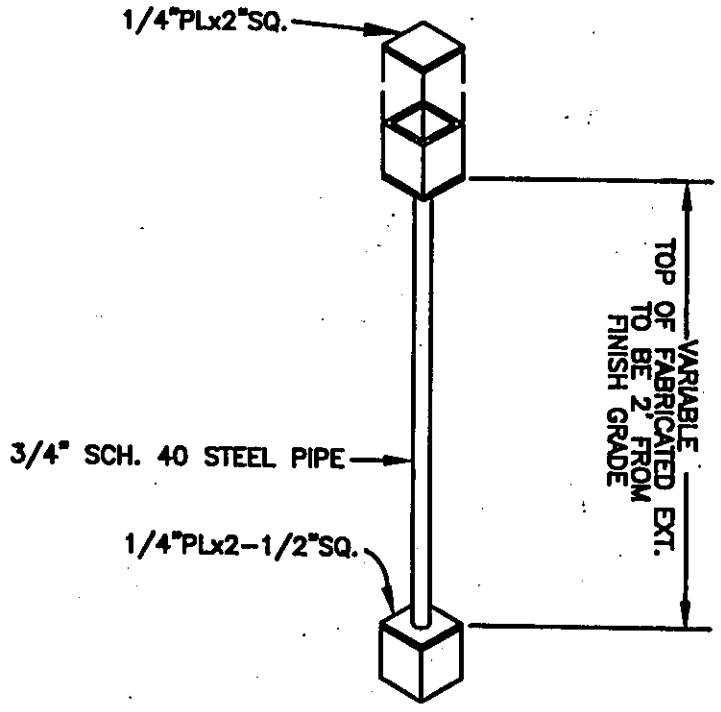
LOCATING WIRE FOR WATER MAINS AND SERVICES

SCALE: NONE
DATE: 3/98

8-4



TRAFFIC VALVE BOX



VALVE OPERATING NUT EXTENSION

REQUIRED WHERE VALVE NUT IS IN EXCESS OF 10 FEET BELOW FINISH GRADE.

NOTES:

1. VALVE BOX AND RISER SHALL BE SET PLUMB AND CENTERED OVER WATER VALVE NUT.
2. SET VALVE BOX TO FINAL FINISH GRADE. IN AREAS WHERE THE FINISH GRADE HAS NOT BEEN DEFINED, PLACE 4"X4" LOCATING POST PAINTED BLUE WITHIN 1 FOOT OF VALVE BOX. POST SHALL BE 6 FEET IN LENGTH AND BURIED 3 FEET.

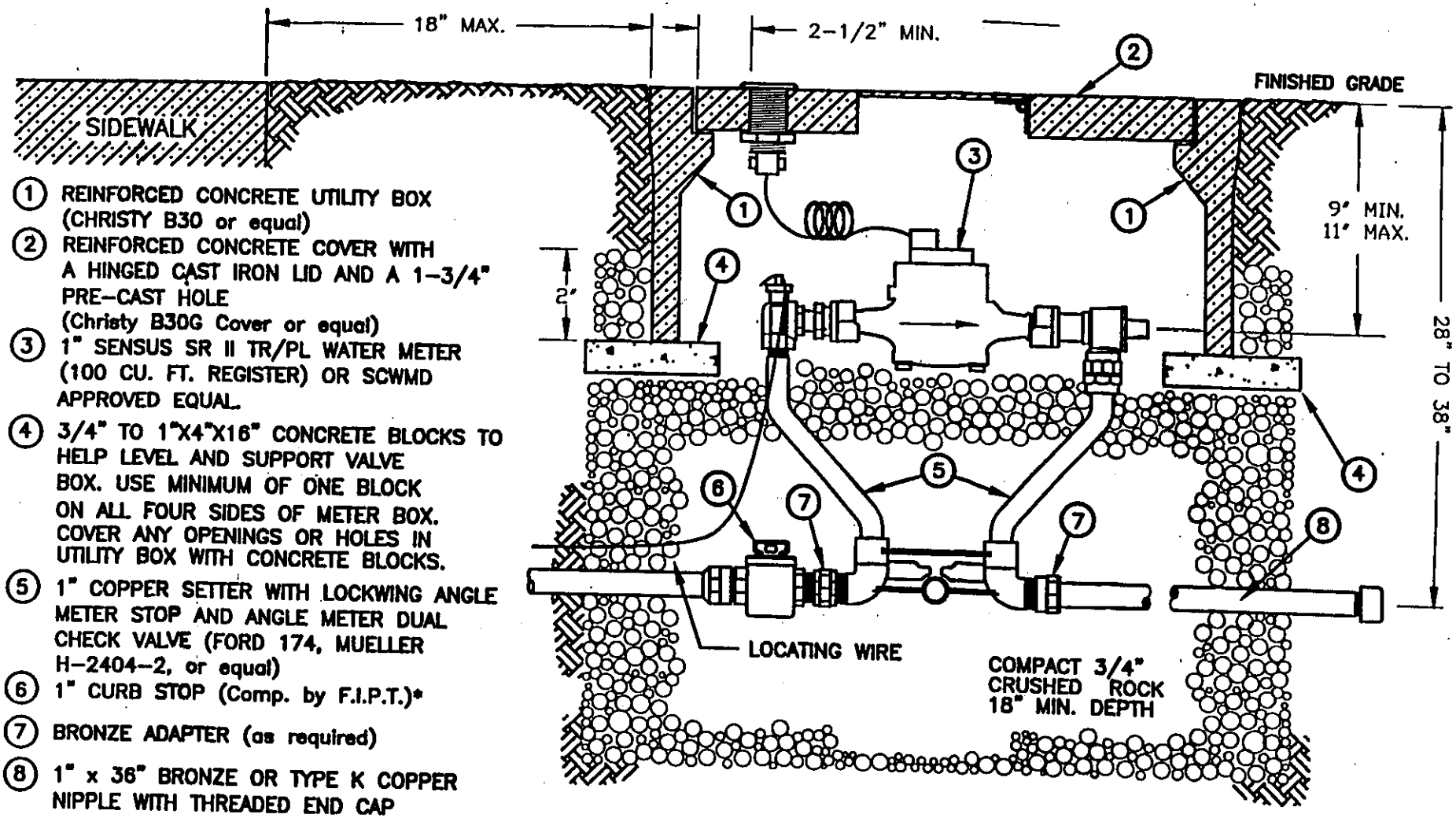
Robert J. Shaw
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

VALVE BOX INSTALLATION AND OPERATING NUT EXTENSION

SCALE: NONE
DATE: 3/98

8-5



1. REINFORCED CONCRETE UTILITY BOX (CHRISTY B30 or equal)
2. REINFORCED CONCRETE COVER WITH A HINGED CAST IRON LID AND A 1-3/4" PRE-CAST HOLE (Christy B30G Cover or equal)
3. 1" SENSUS SR II TR/PL WATER METER (100 CU. FT. REGISTER) OR SCWMD APPROVED EQUAL.
4. 3/4" TO 1"X4"X16" CONCRETE BLOCKS TO HELP LEVEL AND SUPPORT VALVE BOX. USE MINIMUM OF ONE BLOCK ON ALL FOUR SIDES OF METER BOX. COVER ANY OPENINGS OR HOLES IN UTILITY BOX WITH CONCRETE BLOCKS.
5. 1" COPPER SETTER WITH LOCKWING ANGLE METER STOP AND ANGLE METER DUAL CHECK VALVE (FORD 174, MUELLER H-2404-2, or equal)
6. 1" CURB STOP (Comp. by F.I.P.T.)*
7. BRONZE ADAPTER (as required)
8. 1" x 36" BRONZE OR TYPE K COPPER NIPPLE WITH THREADED END CAP

NOTE:

ALL METALLIC PIPES AND FITTINGS SHALL BE ENCASED WITH 6 MIL PLASTIC SO THAT NO SOIL IS IN CONTACT WITH THE PIPES AND FITTINGS

* Compression by female iron pipe threads

Robert J. Sherry
DIRECTOR

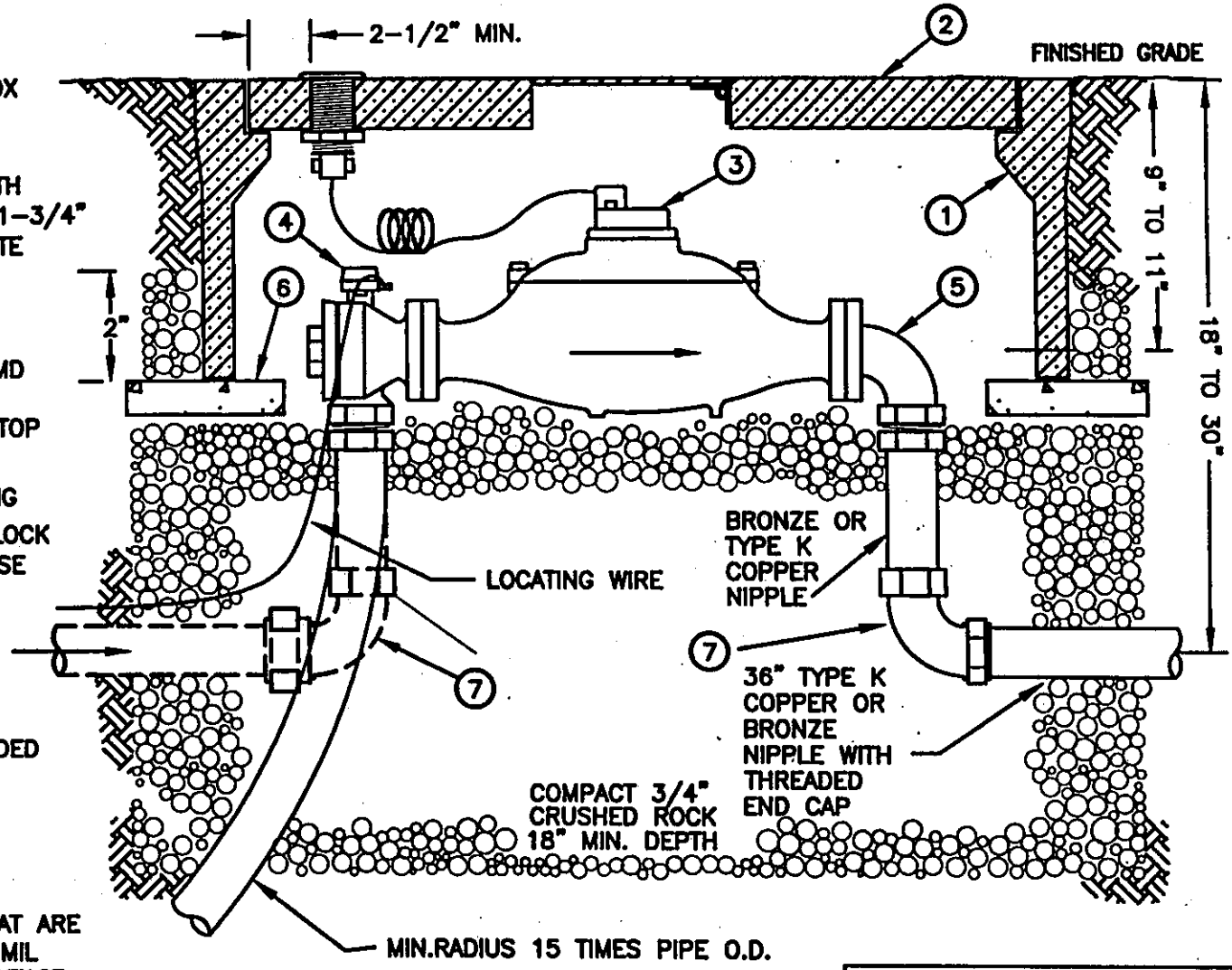
SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

1" RESIDENTIAL METERED WATER SERVICE

SCALE: NONE
DATE: 3/98

8-6A

1. REINFORCED CONCRETE UTILITY BOX (CHRISTY B36 FOR 1-1/2" & 2", B30 FOR 1", OR EQUAL)
2. REINFORCED CONCRETE COVER WITH A HINGED CAST IRON LID AND A 1-3/4" PRE-CAST HOLE LOCATED OPPOSITE WATER LABEL(Christy B36G cover or equal).
3. SENSUS SR TR/PL WATER METER (100 CU. FT. REGISTER) OR SCWMD APPROVED EQUAL.
4. FLANGED WINGED ANGLE METER STOP WITH TEFLON COATED BALL
5. OVAL FLANGED 90° BRONZE FITTING
6. 3/4" TO 1"X4"X16" CONCRETE BLOCK TO HELP SUPPORT VALVE BOX, USE ONE BLOCK ON ALL FOUR SIDES OF METER BOX. COVER ANY OPENINGS OR HOLES IN THE SIDE OF THE UTILITY BOX WITH CONCRETE BLOCK.
7. BRONZE COMPRESSION BY THREADED 90° FITTING.



NOTE:
ALL METALLIC PIPES AND FITTING THAT ARE BURIED SHALL BE ENCASED WITH 6 MIL PLASTIC SO THAT NO SOIL IS IN CONTACT WITH THE PIPES AND FITTINGS.

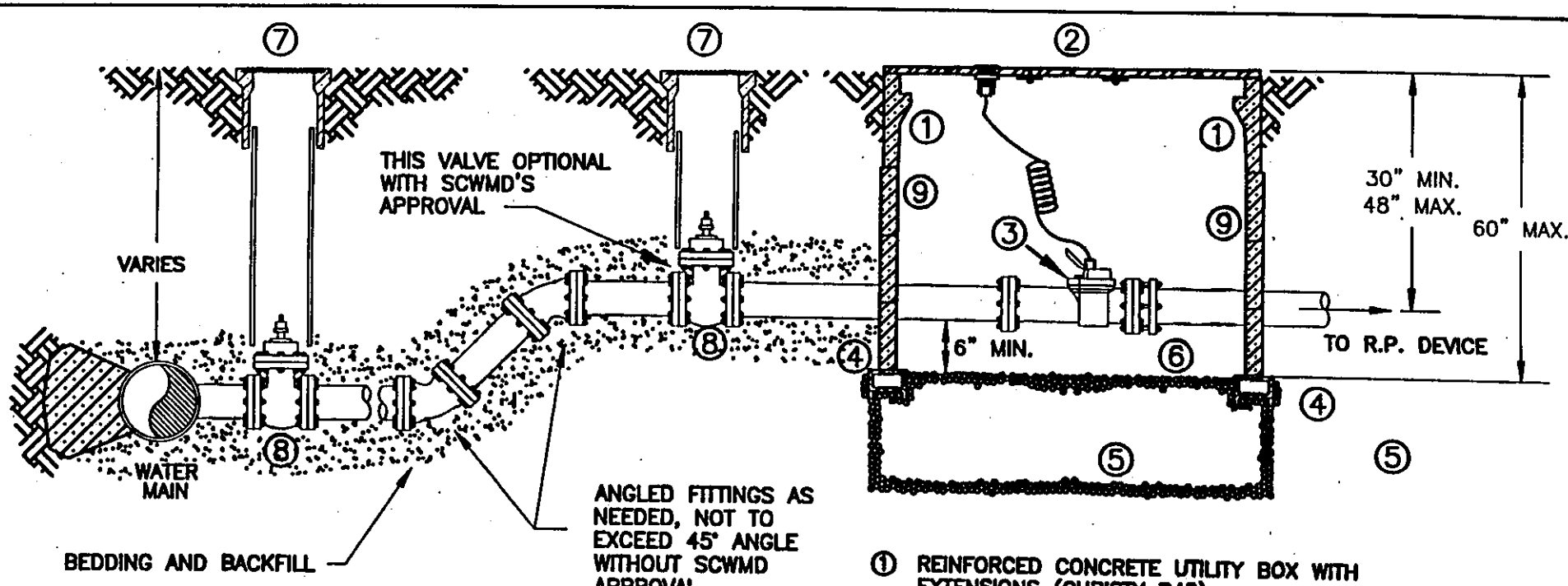
Robert J. Shaw
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

1-1/2" OR 2"
COMMERCIAL METERED
WATER SERVICE

SCALE: NONE
DATE: 3/90

8-6B



NOTES:

WHEN NEEDED CONCRETE BLOCKS SHALL BE USED TO BLOCK ANY OPENING OR CUT OUT PORTIONS OF THE METER BOX NOT UTILIZED (MINIMUM OF 1" THICK BLOCK ARE REQUIRED).

ALL 4" TO 6" DIA. PIPE BETWEEN THE WATER MAIN AND THE METER SHALL BE DUCTILE IRON WITH POLYETHYLENE ENCASEMENT AND 6 –INCHES OF SAND BACKFILL AND 6–INCHES OF SAND BEDDING. JOINTS BETWEEN MAIN AND METER SHALL BE RESTRAINED.

3" PIPE SHALL BE TYPE K COPPER OR BRONZE WRAPPED WITH 6 MIL PLASTIC AND HAVE SAND BEDDING AND BACKFILL. VALVES ON 3 INCH DIAMETER PIPE SHALL HAVE BRONZE CORPORATION AND CURB VALVES WITH TEFLON COATED BALLS.

VALVES ATTACHED TO THE MAIN MUST HAVE FLANGED ENDS.

INSTALL LOCATING WIRE PER 8–4.

① REINFORCED CONCRETE UTILITY BOX WITH EXTENSIONS (CHRISTY B48)
② 2 PIECE STEEL CHECKER PLATE W/ TWO 10" ROUND SELF–CLOSING READING LIDS AND 1–3/4" HOLE FOR TOUCH READ MODULE IN ONE READING LID. (CHRISTY B48–62G COVER)
③ SENSUS DR TR/PL TURBO OR COMPOUND METER (CUBIC FEET REGISTER). TYPE OF METER SHALL BE CALLED OUT ON PLANS
④ CONCRETE BLOCKS SHALL BE PLACED ALONG THE ENTIRE PERIMETER TO SUPPORT BOX
⑤ 3/4" CHRUSHED ROCK SUB–BASE, 12" TO 18" DEEP, COMPACT TO 90% COMPACTION.
⑥ FLANGED COUPLING ADAPTER.
⑦ VALVE BOX AND LID(SEE 8–5).
⑧ GATE VALVE, WITH BOTH ENDS FLANGED
⑨ METER BOX EXTENSION (TYPICAL)

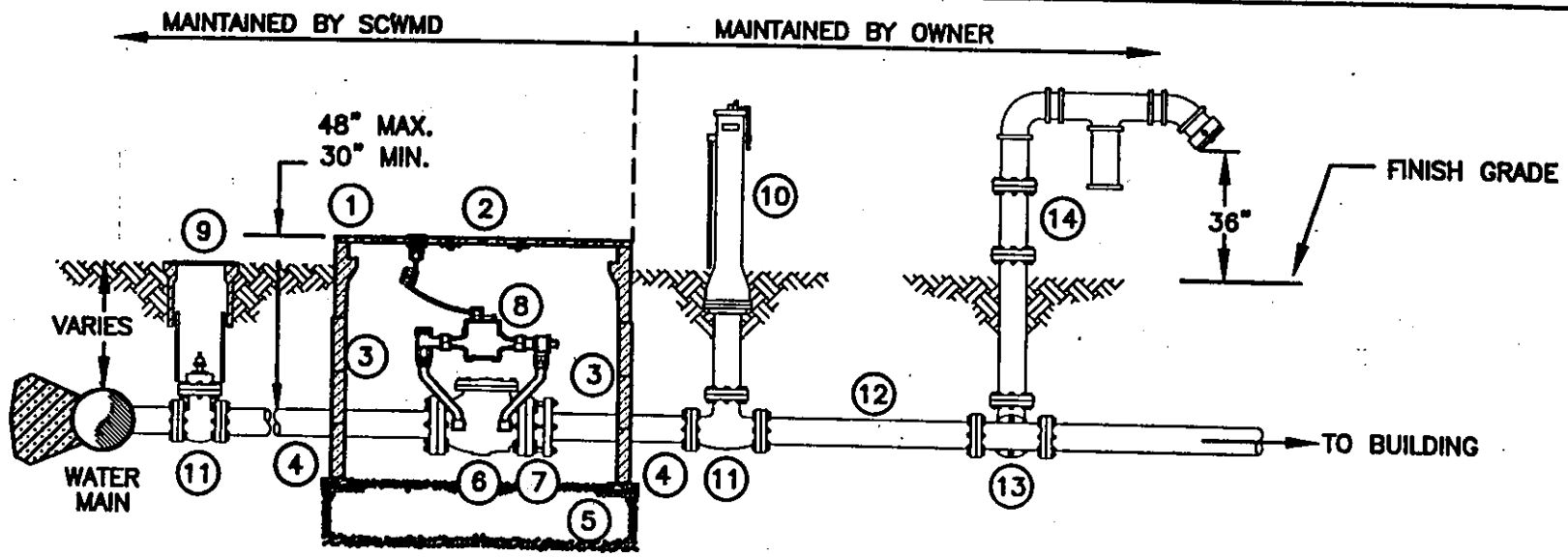
Robert J. Shanks
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

3" TO 6" METER INSTALLATION

SCALE: NONE
DATE: 3/98

8-6C



1. REINFORCED CONCRETE UTILITY BOX (CHRISTY B48)
2. 2 PIECE STEEL CHECKER PLATE W/ TWO 10" ROUND SELF-CLOSING READING LIDS AND 1-3/4" HOLE FOR TOUCH READ MODULE IN ONE READING LID. (CHRISTY B48-62G COVER)
3. REINFORCED CONCRETE UTILITY BOX EXTENSIONS.
4. CONCRETE BLOCKS SHALL BE PLACED ALONG THE ENTIRE PERIMETER TO SUPPORT BOX.
5. 3/4" CRUSHED ROCK SUB-BASE, 12" TO 18" DEEP. COMPACT TO 90% RELATIVE COMPACTION.
6. DETECTOR CHECK VALVE-TYPE AND MODEL TO BE APPROVED BY THE FIRE DEPARTMENT AND THE SACRAMENTO COUNTY WATER MAINTENANCE DISTRICT.
7. FLANGED COUPLING ADAPTOR.
8. 5/8" X 3/4" BYPASS METER SHALL BE SENSUS SRII TR/PL CU. FT. REG..
9. VALVE BOX AND LID.(SEE 8-5)
10. FLANGED POST INDICATOR VALVE WITH BREAKAWAY LOCK.
11. GATE VALVE, WITH BOTH ENDS FLANGED.
12. DUCTILE IRON SPOOL.
13. FLANGED TEE.
14. WAFER CHECK.

NOTES:

CHECK VALVE AND PIPE SHALL BE U.L.-F.M. APPROVED.

INSTALLATION MAY VARY WITH FIELD CONDITIONS AND FIRE DEPARTMENT REQUIREMENTS.

INSTALL LOCATING WIRE PER 8-4.

ALL JOINTS BETWEEN MAIN AND DETECTOR CHECK SHALL BE FLANGED.

BURIED DUCTILE IRON PIPE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE ENCASEMENT INSTALLED PER AWWA C105 AND INSTALLED WITH 6 INCHES SAND BEDDING AND BACKFILLED WITH SAND TO 6 INCHES ABOVE TOP OF PIPE.

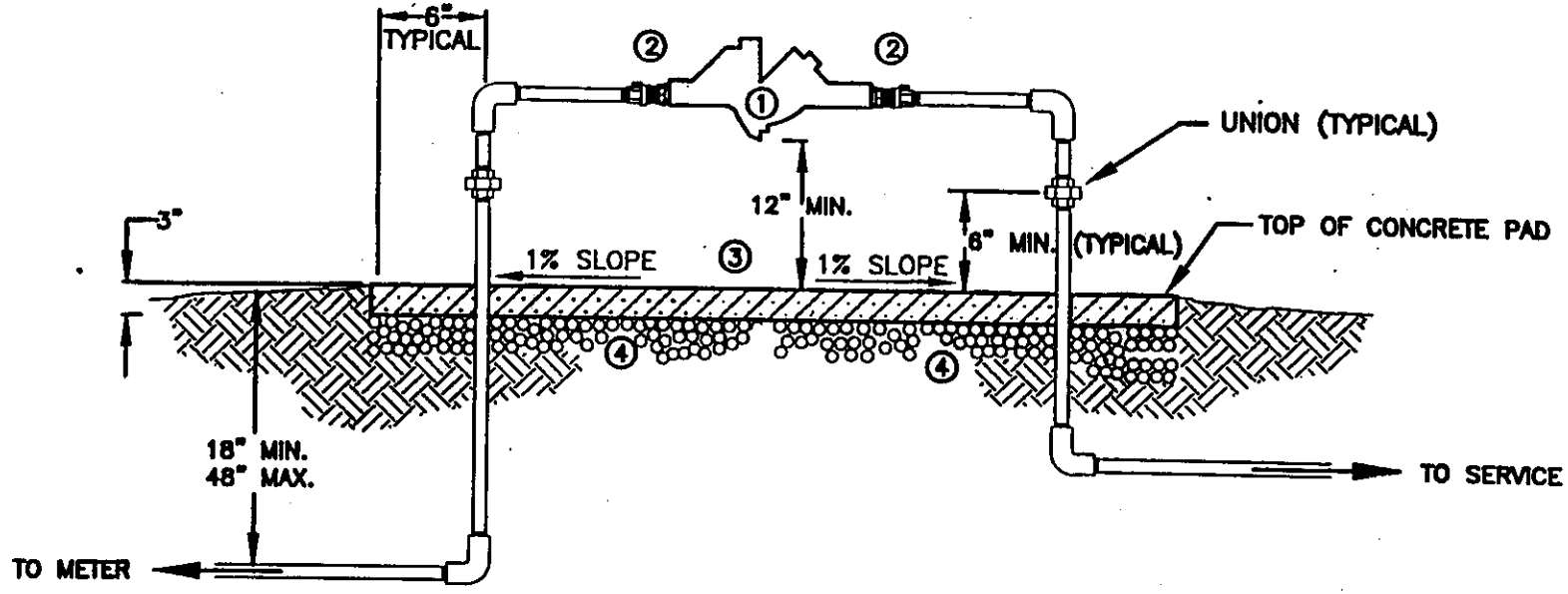
Robert J. Shank
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

FIRE PROTECTION DETAIL

SCALE: NONE
DATE: 3/98

8-7



NOTES:

REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE LISTED ON THE STATE OF CALIFORNIA'S DEPT. OF HEALTH SERVICES MOST RECENT LIST OF APPROVED REDUCED PRESSURE BACKFLOW PREVENTERS.

ALL PIPES SHALL BE GALVANIZED SCHEDULE 40 STEEL, TYPE K COPPER, OR BRONZE. ALL BURIED PIPES SHALL BE WRAPPED WITH 6 MIL. POLYETHYLENE ENCASEMENT OR 10 MIL POLYETHYLENE TAPE.

GALVANIZED PIPE SHALL HAVE ANODE BAG PER COUNTY BUILDING INSPECTION REQUIREMENTS CODE.

① REDUCED PRESSURE BACKFLOW PREVENTER.

② BRONZE BODY, RESILIENT SEATED BALL VALVE MINIMUM WORKING PRESSURE OF 175 PSI.

③ 3" SLAB – 18" WIDE WITH VARYING LENGTH

④ 1/2" OR 3/4" CRUSHED ROCK, 4" MINIMUM THICKNESS, MECHANICALLY COMPACTED TO 95% COMPACTION.

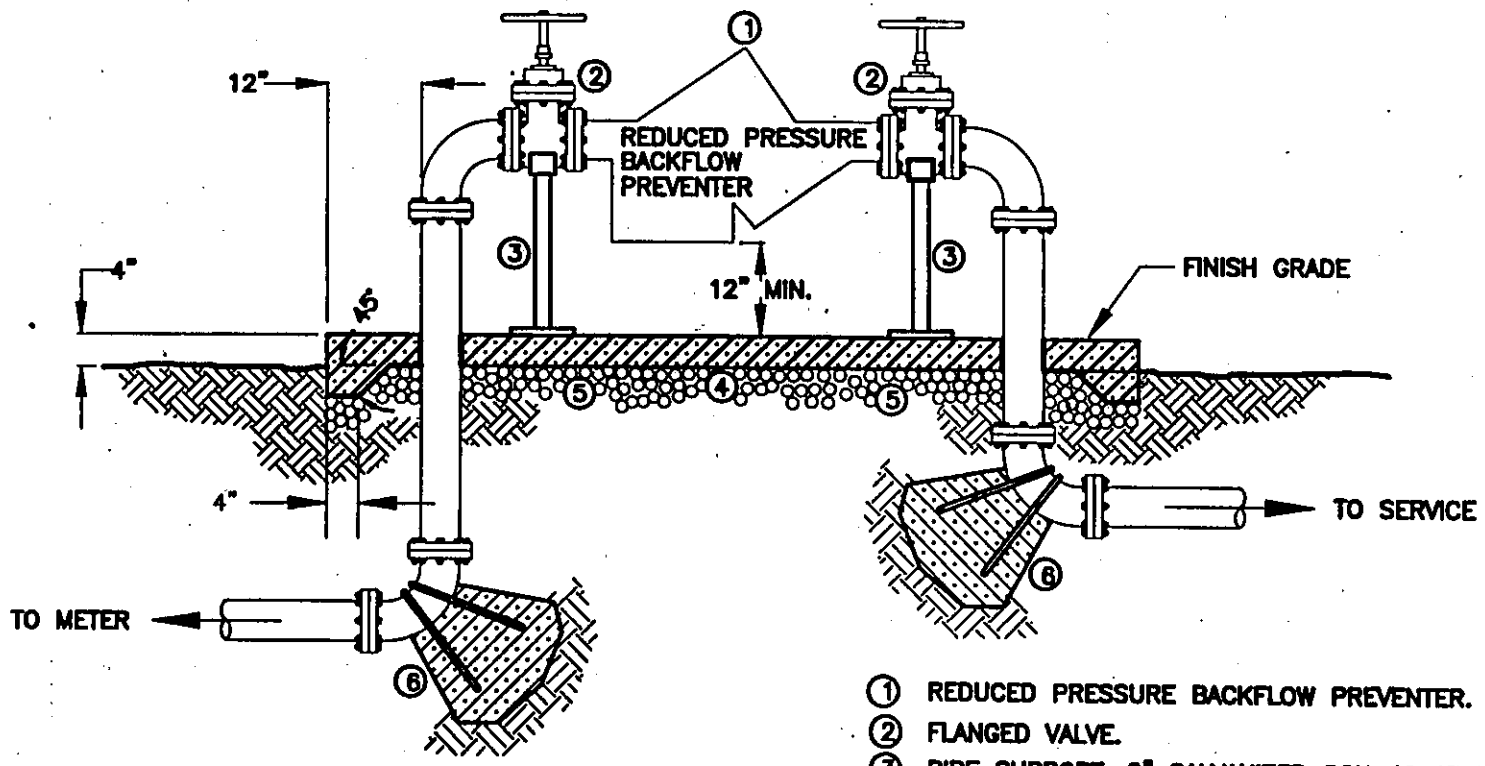
Robert F. Shanks
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

REDUCED PRESSURE BACKFLOW PREVENTER 1" TO 3"

SCALE: NONE
DATE: 3/00

8-8A



NOTES:

REDUCED PRESSURE BACKFLOW PREVENTER SHALL BE LISTED ON THE STATE OF CALIFORNIA'S DEPT. OF HEALTH SERVICES MOST RECENT LIST OF APPROVED REDUCED PRESSURE BACKFLOW PREVENTERS.

INSTALL LOCATING WIRE PER 8-4.

ALL PIPE SHALL BE CEMENT LINED DUCTILE IRON, CLASS 350 MEETING THE REQUIREMENTS OF AWWA C151 AND C115 ALL JOINTS SHALL BE FLANGED. FLANGES SHALL CONFORM TO AWWA C207, CLASS D REQUIREMENTS.

BURIED PIPE SHALL BE WRAPPED WITH 8 MILS OF POLYETHYLENE ENCASEMENT WITH SAND BEDDING AND BACKFILL.

1. REDUCED PRESSURE BACKFLOW PREVENTER.
2. FLANGED VALVE.
3. PIPE SUPPORT, 2" GALVANIZED SCH 40 AT MINIMUM.
4. 4" CONCRETE SLAB – 24" WIDE WITH VARYING LENGTH.
5. 6" OF CRUSHED AGGREGATE COMPACTED TO 95% COMPACTION
6. THRUST BLOCK WITH #5 REBARS. WRAP THE PORTION OF THE REBAR THAT IS NOT EMBEDDED IN THE CONCRETE WITH 20 MIL POLYETHELYNE TAPE.

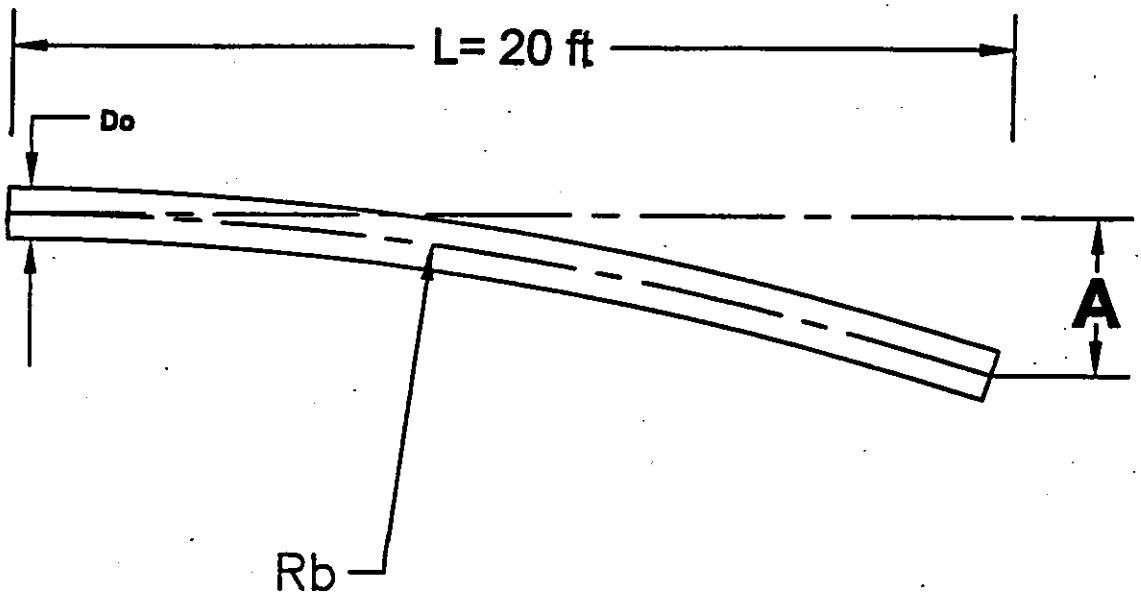
Robert J. Shenk
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

REDUCED PRESSURE BACKFLOW PREVENTER 4" AND LARGER

SCALE: NONE
DATE: 3/98

8-8B



Do=Average outside pipe diameter (inches)
A=Offset at the end of the pipe (inches)
Rb=Minimum bending radius (feet)

MAX. DEFLECTION FOR PVC PIPE, AWWA C900 CLASS 150 DR 18

Nominal Pipe Diameter	Average Outside Pipe Diameter,Do	Minimum Wall Thickness	Minimum Bending Radius, Rb	Offset at Free End "A"
(Inches)	(Inches)	(Inches)	(feet)	(Inches)
4	4.800	0.267	121	20
6	6.900	0.383	185	13
8	9.050	0.503	240	10
10	11.100	0.617	400	6
12	13.200	0.733	800	4

Joint Deflection of AWWA C900 PVC Pipe is prohibited.

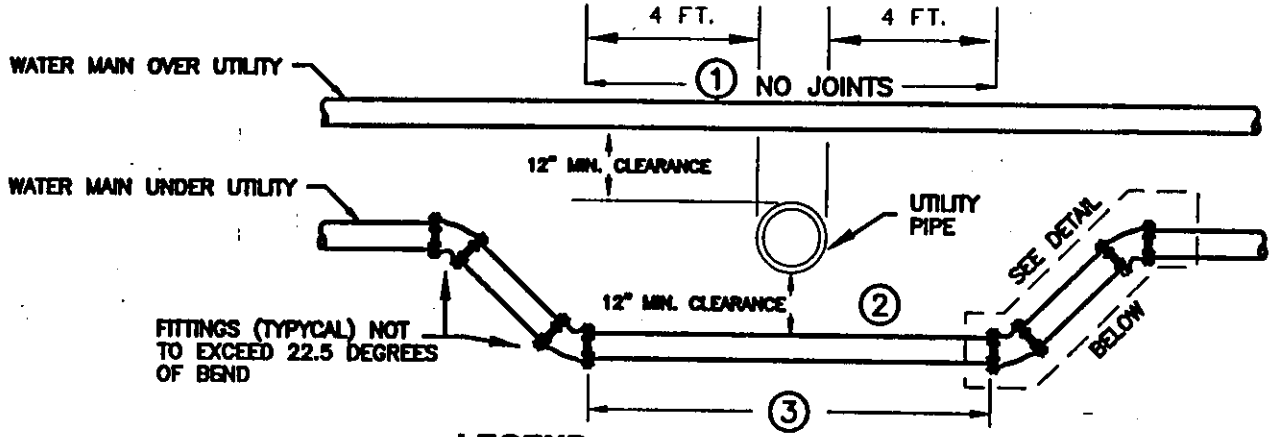
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

MAXIMUM DEFLECTION FOR PVC PIPE

SCALE: NONE
DATE: 3/98.

8-9



① IF UTILITY BEING CROSSED IS NOT A STORM DRAIN, SEWER, OR OTHER WATER LINE, THEN THE "NO JOINT" REQUIREMENT DOES NOT APPLY

② IF THE UTILITY BEING CROSSED IS A SEWER, STORM DRAIN OR OTHER WATER LINE, THE TYPE OF PIPE MUST BE DUCTILE IRON OR AWWA C900 DR 14 PVC PIPE

③ NO JOINTS ALLOWED IF LESS THAN 18 FEET. ALL JOINTS BETWEEN FITTINGS MUST BE RESTRAINED WITH EITHER OF THE METHODS DESCRIBED FOR DIP. BELL RESTRAINTS FOR PVC PIPE ARE NOT ALLOWED.

LEGEND

DIP= DUCTILE IRON PIPE
AWWA= AMERICAN WATER WORKS ASSOC.
PVC= POLYVINYL CHLORIDE PIPE
POJ= PUSH ON JOINTS
SCWMD= SACRAMENTO COUNTY WATER MAINTENANCE DISTRICT

NOTES

A. IF DIP IS USED, FITTINGS MAY HAVE BELL ENDS WITH U.S. PIPE FIELD LOK GASKETS FOR RESTRAINING DEVICESS OR APPROVED EQUAL BY SCWMD.. BELL RESTAINTS FOR PVC PIPE ARE NOT ALLOWED.

B. IF BEND IS TO EXCEED 22.5 DEGREES, THE BEND AND THE RESTRAIN LENGTH MUST BE APPROVED BY SCWMD.

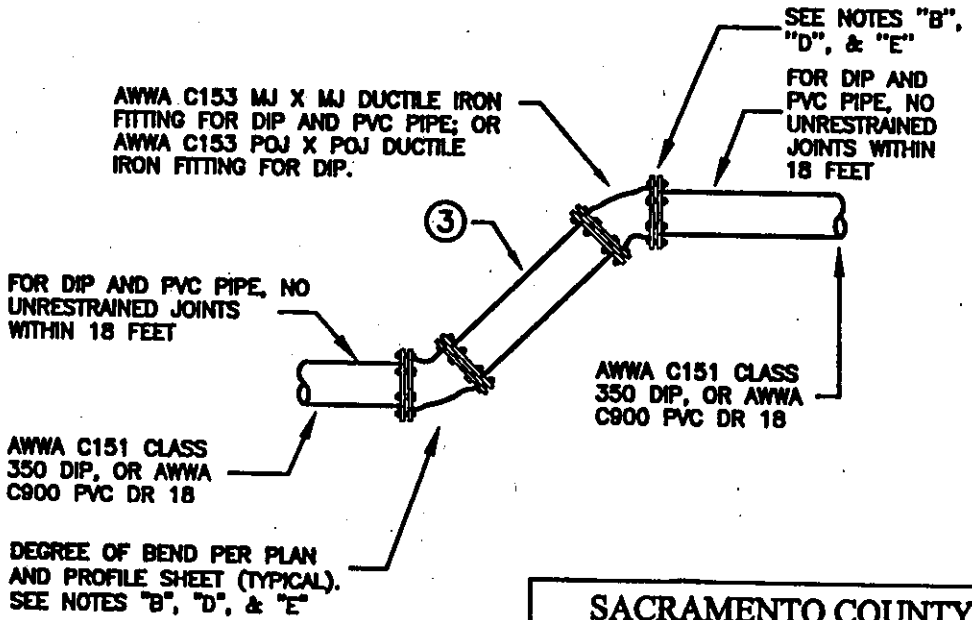
C. WRAP ALL DIP AND FITTINGS WITH 8 MIL. POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA C105.

D. RESTRAINING DEVICE FOR DIP: FOR POJs, USE U.S. PIPE FIELD LOK GASKETS OR APPROVED EQUAL; FOR MJ JOINTS USE STAR PIPE PRODUCTS STARGRIP 3000, STAR PIPE PRODUCTS ALLGRIP 3600, EBAA MEGALUG 2000PV SERIES, OR APPROVED EQUAL BY SCWMD.

E. RESTRAINING DEVICE FOR PVC PIPE: USE MJ FITTINGS WITH STAR PIPE PRODUCTS ALLGRIP 3600, EBAA MEGALUG 2000PV SERIES, OR APPROVED EQUAL BY SCWMD.

F. SEE PLAN & PROFILE FOR RESTRAINED LENGTH AND DEGREE OF BEND.

G. THIS DETAIL IS FOR WATER PIPES 12" IN DIAMETER & SMALLER.



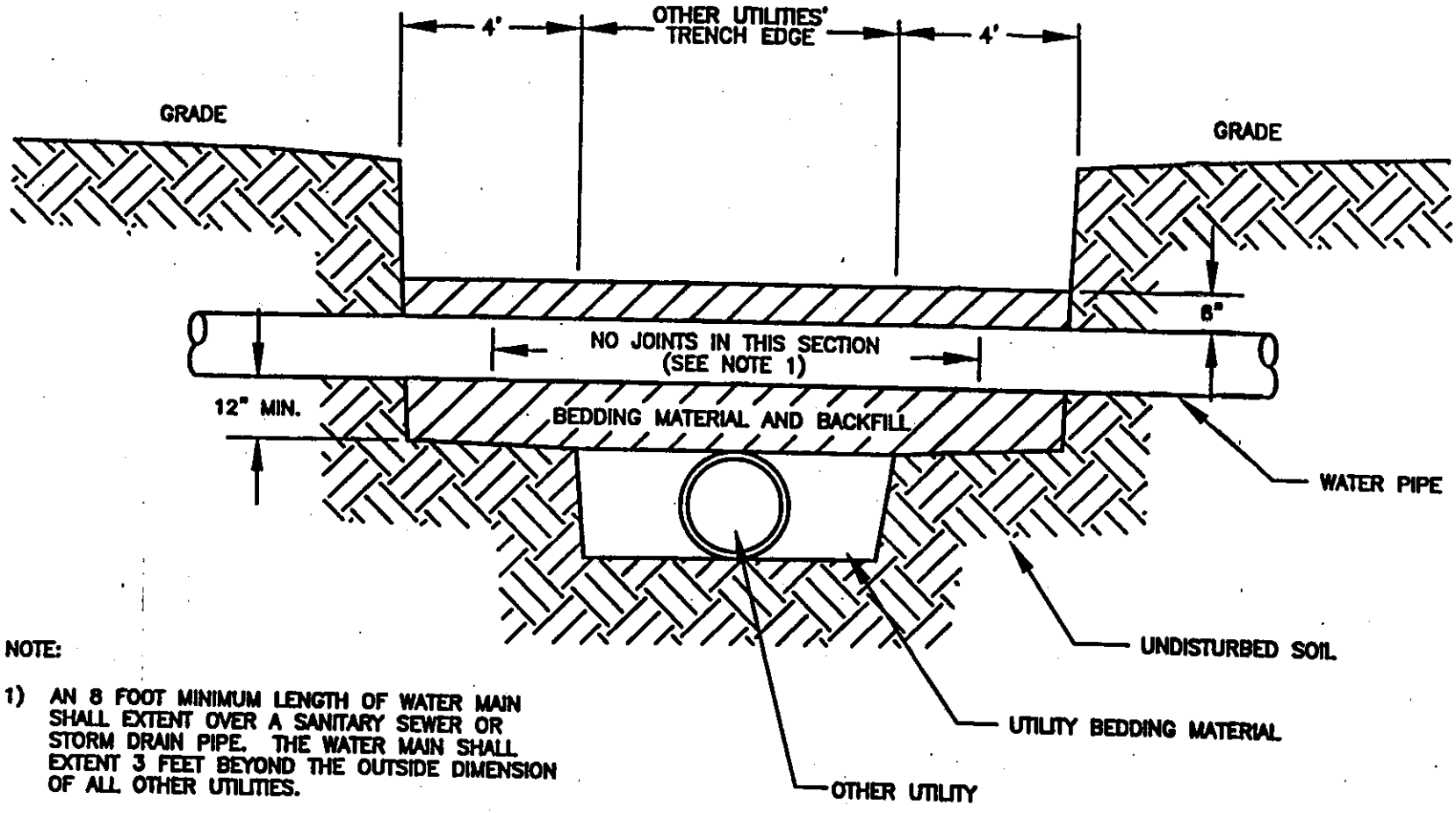
Robert F. Shanks
DIRECTOR

SACRAMENTO COUNTY PUBLIC WORKS AGENCY

UTILITY CROSSING

SCALE: NONE
DATE: 3/00

8-10



NOTE:

1) AN 8 FOOT MINIMUM LENGTH OF WATER MAIN SHALL EXTENT OVER A SANITARY SEWER OR STORM DRAIN PIPE. THE WATER MAIN SHALL EXTENT 3 FEET BEYOND THE OUTSIDE DIMENSION OF ALL OTHER UTILITIES.

BEDDING AND BACKFILL MATERIAL

USE 1/2" CRUSHED AGGREGATE FOR PVC WATER PIPE
USE SAND FOR DUCTILE IRON WATER PIPE
COMPACT BEDDING AND BACKFILL MATERIAL TO 90% RELATIVE COMPACTION

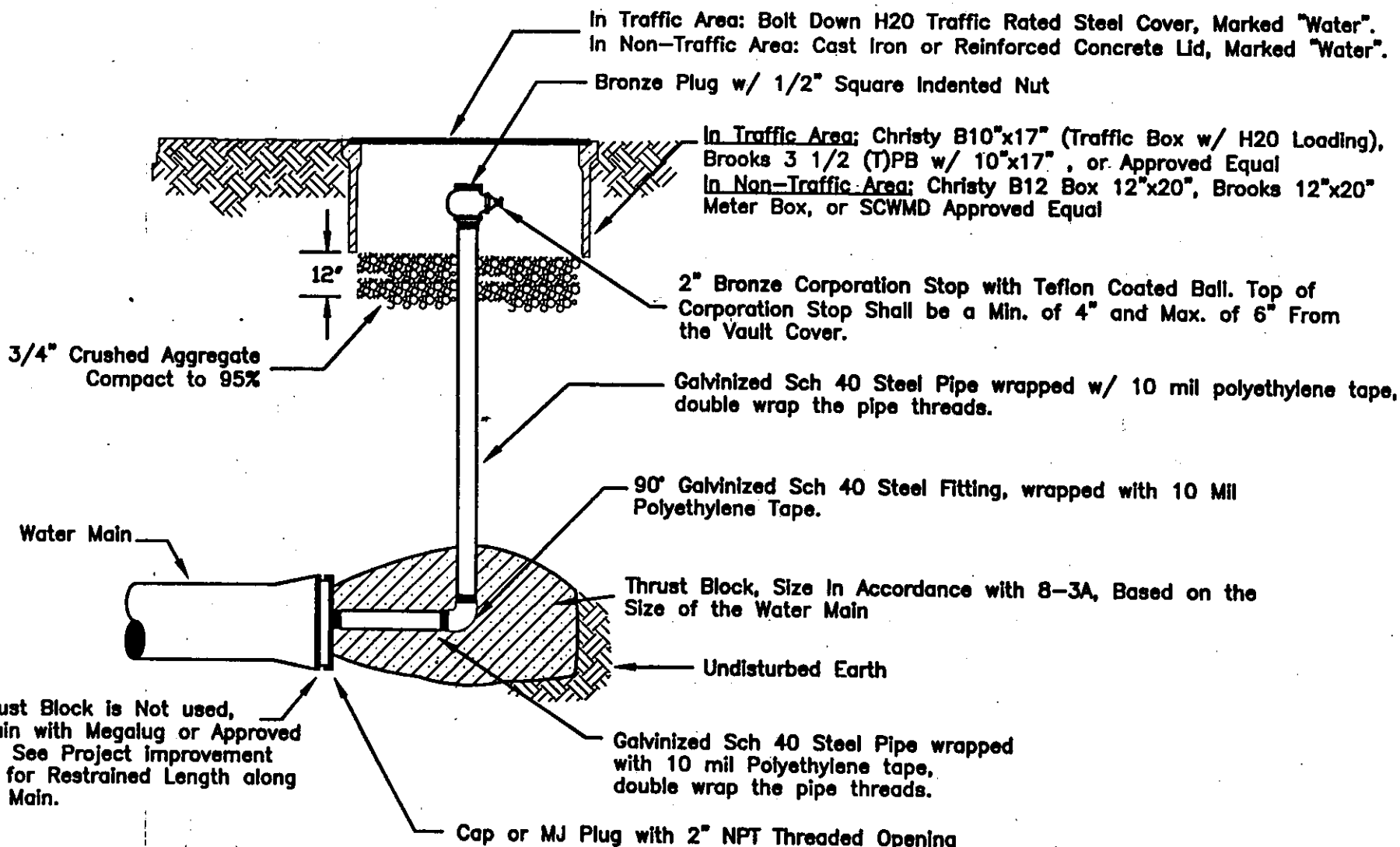
Robert J. Shaw
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

UTILITY CROSSING UNDER EXISTING WATER MAIN

SCALE: NONE
DATE: 3/99

8-11



NOTE:
Backfill with Native Material and Compact to 80% Compaction. In traffic areas the backfill and compaction requirements for the road shall govern.

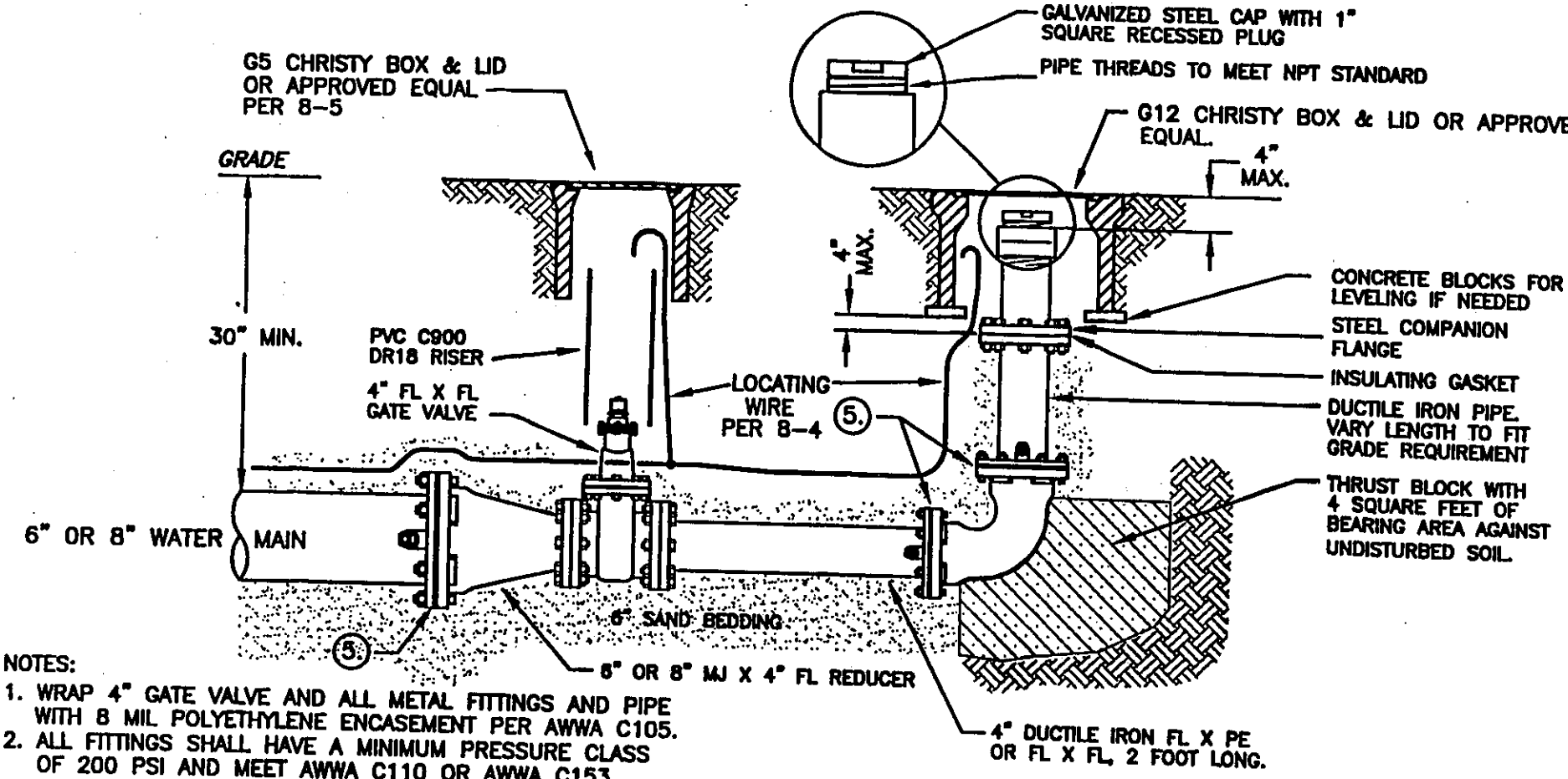
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

2" TEMPORARY BLOW OFF ASSEMBLY

SCALE: NONE
DATE: 3/98

8-12



NOTES:

1. WRAP 4" GATE VALVE AND ALL METAL FITTINGS AND PIPE WITH 8 MIL POLYETHYLENE ENCASEMENT PER AWWA C105.
2. ALL FITTINGS SHALL HAVE A MINIMUM PRESSURE CLASS OF 200 PSI AND MEET AWWA C110 OR AWWA C153 STANDARDS.
3. PROVIDE 6 INCHES OF SAND BEDDING AND BACKFILL WITH SAND TO 6 INCHES ABOVE THE TOP OF PIPE AND FITTINGS, COMPACT TO 90% RELATIVE COMPACTION.
4. WRAP ALL GALVANIZED STEEL PIPE WITH 20 MIL OF POLYETHYLENE TAPE; DOUBLE WRAP PIPE THREADS.
5. THESE JOINTS MUST BE RESTAINED. TYPES OF RESTRAINED JOINTS MAY BE: (1) FLANGE, (2) MJ WITH SCWMD APPROVED RESTAINING DEVICES (EBAA OR STAR PIPE PRODUCTS), OR (3) FOR D.I.P., PUSH ON JOINTS WITH U.S. PIPE FIELD-LOK GASKET OR SCWMD APPROVED EQUAL.

Robert J. Shenk
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

4" BLOW OFF ASSEMBLY AT END OF MAIN

SCALE: NONE
DATE: 3/98

8-13

3/16" steel, 6" x 6" rectangular tube 18" high with an 8–1/2" cap, spot welded at the top. Clean interior and exterior of steel with a water based cleaner, Devprep 88 or equal. Factory apply 1 coat, at 2.0 mils, of Tnemec series 135 epoxy primer, then 1 coat, at 2.0 mils of Tnemec series 28 acrylic to the cap, tube, & top of the lid of the utility box. Color to be Hunter Green or approved equal by SCWMD.

2–3/8" Bolts, Grade 3 with washer.

1/4" thick steel lid. Tack weld 1/4" thick by 1" wide steel plate around perimeter of lid so top of lid is flush w/ top of box. Cut 5"x5" square hole in top of lid. Square hole to be centered relative to width of lid. Lid & tube assembly shall be PWAE118M by Placer Waterworks or approved equal by SCWMD. Lid shall be bolted to box.

Weld 2 locking nuts to lid to accept bolts.

1" schedule 40 Galvanized steel pipe w/steel threaded coupling and 1" to 3/4" PVC adapter. Operator must be able to unscrew PVC Riser from coupling.

1" Crispin UL–10 Combination Air Release/Vacuum Valve or SCWMD Approved Equal

1"– 90° bronze fitting (Typ)

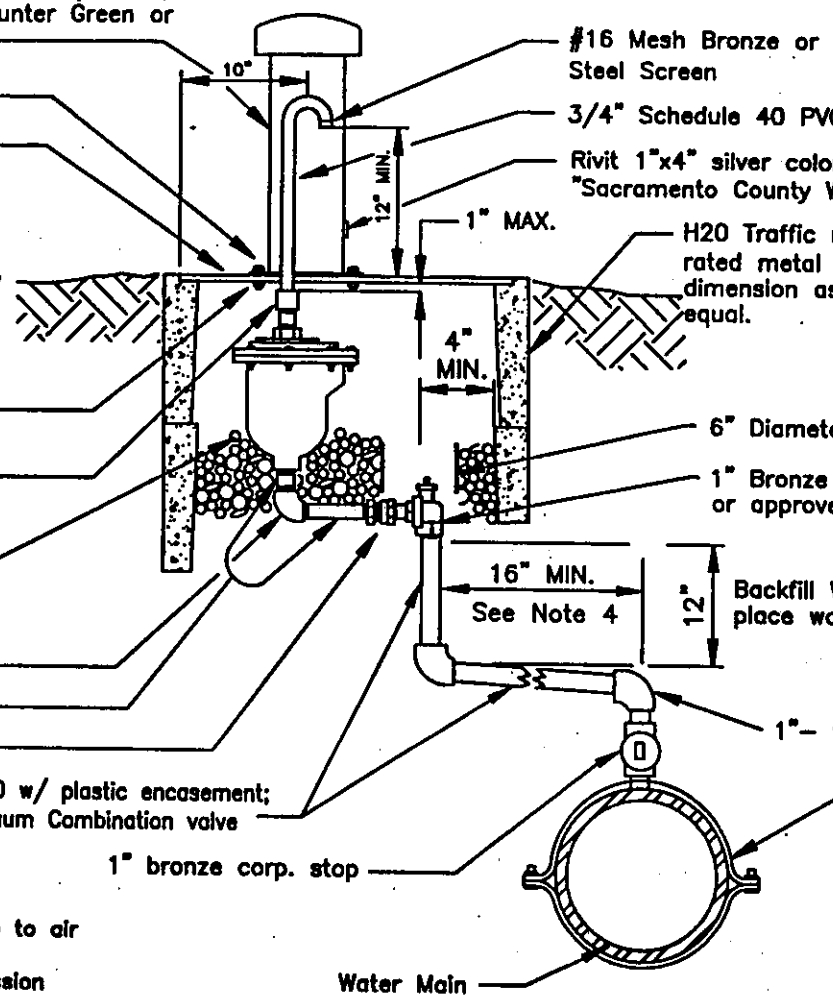
1"– bronze nipple (Typ)

1 1/4" x 1" Bronze threaded union

Copper pipe (0.182" wall thickness) per AWWA C800 w/ plastic encasement; maintain upward grade from corp. stop to Air/Vacuum Combination valve

1" bronze corp. stop

Water Main



#16 Mesh Bronze or Stainless Steel Screen

3/4" Schedule 40 PVC

Rivit 1"x4" silver colored name plate that reads "Sacramento County Water" to tubing.

H20 Traffic rated box to accept bolt down H20 rated metal lid. Box shall have a 13" x 24" inside dimension as made by Christy, Brooks or approved equal.

6" Diameter PVC Sleeve

1" Bronze angled curb stop ball valve type: Jones or approved equal by SCWMD.

Backfill W/ sand to 12 inches above pipe and place warning tape 12 inches above pipe

1"– 90° copper fitting (typical)

Bronze service saddle and bolts, wrap w/ 8 mil polyethylene encasement

Notes:

1. Maintain a grade upward from corp. stop to air valve.
2. Flare or solder joint fittings and compression fittings are acceptable.
3. Provide 3'x3'x3' of 1/2" crushed aggregate for drainage and support under valve, compact to 95%.
4. See plan and profile sheets for location of valve box and air vent
5. Detail not for use in roadways.

Robert J. Shank
DIRECTOR

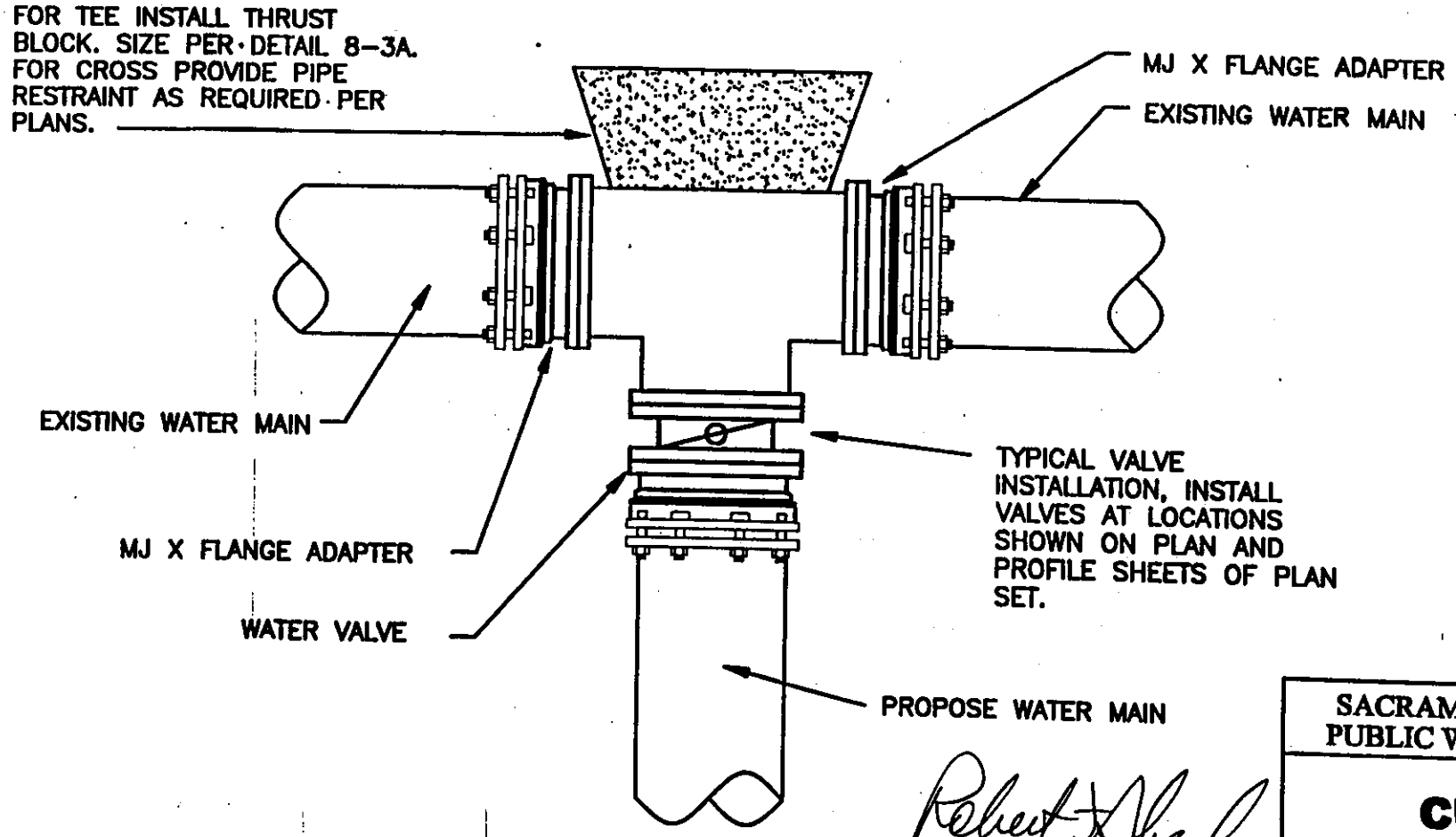
SACRAMENTO COUNTY PUBLIC WORKS AGENCY

COMBINATION AIR / VACUUM VALVE

SCALE: NONE
DATE: 3/99

8-14

NOTES:
1. TEE AND MJ X FLANGE ADAPTER SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE ENCASEMENT
2. DIG SUMP UNDER CUT IN LOCATION AND PUMP TO PUMP ALL WATER FROM EXISTING MAIN AWAY FROM CUT IN LOCATION. DO NO ALLOW ANY WATER TO ENTER EXISTING PIPE. ADHERE CHLORINE TABLETS TO TEE OR CROSS, THE NUMBER OF TABLETS SHALL BE IN ACCORDANCE OF THE COUNTY CONSTRUCTION STANDARDS. SPRAY EXISTING PIPE, ALL FITTINGS AND VALVES WITH A SOLUTION OF SUPER CHLORINATED WATER JUST PRIOR TO INSTALLATION.
3. PROVIDE RESTRAINT OF PIPE JOIINT AS REQUIRED BY PLANS AND 8-3B.



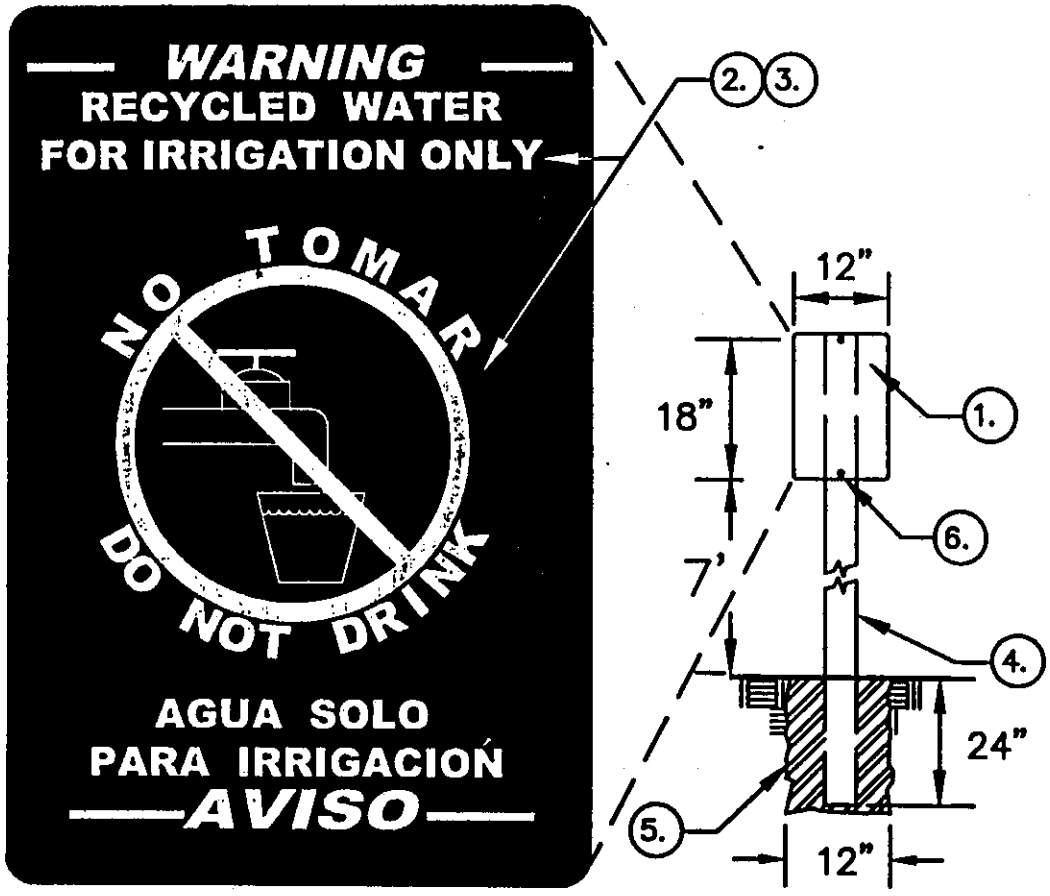
Robert K. Shenk
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

CUT IN

SCALE: NONE
DATE: 3/98

8-15



SIGN, LETTER HEIGHTS, & SYMBOL SIZE SHOWN ARE IN REQUIRED PROPORTIONS

NOTES:

1. 12"x 18" ALUMINUM SHEET ALLOY 6061–T6 0.080" GAUGE, ROUNDED CORNERS (1" RADIUS).
2. LETTER HEIGHT & SYMBOL SIZE SHALL BE PROPORTIONAL TO SIGN SIZE.
3. LETTER & SYMBOL SHALL BE WHITE IN COLOR. THE BACKGROUND SHALL BE PURPLE (PANTONE 241) IN COLOR.
4. 4"x4" POST. SHALL BE REDWOOD OR TREATED DOUGLAS FIR(STATE OF CALIF. SPEC. NO. 56–2.02B).
5. FOOTING SHALL BE 24" IN DEPTH WITH COMPACTED EARTH IN 4" LIFTS OR CONCRETE.
6. 5/16"ø x 4–1/2" ZINC PLATED STEEL BOLT WITH VANDAL PROOF NUTS.

ALL SIGNS SHALL CONFORM TO THE LATEST COUNTY OF SACRAMENTO STANDARD CONSTRUCTION SPECIFICATIONS SECTIONS SS104–03 AND SS104–04. A DIRECT OR PRESSURE SENSITIVE DECAL INK SCREENING PROCESS REQUIRED.

3" x 4–1/2" PRESSURE SENSITIVE DECALS ARE REQUIRED FOR IRRIGATION CONTROLLERS AND OTHER ABOVE GROUND FACILITIES REQUIRING A WARNING SIGN. WHEN CONDITIONS AND/OR FACILITY CHARACTERISTICS RENDER THESE SPECIFICATIONS INAPPROPRIATE, ALTERNATIVE SIGNING MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE SACRAMENTO COUNTY WATER MAINTENANCE DISTRICT.

Robert K. Thomas
DIRECTOR

SACRAMENTO COUNTY
PUBLIC WORKS AGENCY

NONPOTABLE RECYCLED WATER WARNING SIGN

SCALE: NONE
DATE: 3/98

8-16

APPENDIX D

SACRAMENTO COUNTY WATER AGENCY APPLICATION FOR RECYCLED WATER SERVICE

APPENDIX D

SACRAMENTO COUNTY WATER AGENCY
APPLICATION FOR RECYCLED WATER SERVICE

The customer completes the following: (Please print or type)

Property or Development Name: _____

Customer Name: _____

Relationship to property: _____

Mailing address: _____

Telephone number: _____ Office _____Residence

Project/site name: _____

Project/site address: _____

Property owner(s): _____

Mailing address: _____

Telephone number: _____ Office _____Residence

Recycled Water Supervisor:

Name: _____

Address: _____

24-hour contact telephone number: _____

Legal description of property:

_____

_____

1. Type of use (check each use):

__Landscape irrigation	__Construction use	__Impoundments
__Commercial use	__Groundwater recharge	__Other
__Industrial use	__Wildlife habitat	
__Agricultural use	__Recreational	

2. Brief description of use(s):_____

---

3. Total irrigated area: _____acres Types of plant material: _____

Site topography (slope of land): _____

Site soil types (sand, silt, etc): _____

Application For Recycled Water Service (Cont.)

4. Estimated demand: Total quantity: _____HCF/yr

Max. at POC: _____GPM (Total)

Min. pressure: _____psi

Hours/Day _____

Days/Week: _____

5. Number of service connections: _____ Number of meters requested: _____

Size of meters: _____

6. This is a: _____ new _____ converted system.

7. Current irrigation source (if any): _____

8. If a new system, how are pipes to be identified:

_____Color-coded _____Stenciled _____Tape wrap _____ Other

8. Are there special construction requirements? _____Yes _____No

If yes, explain: _____

9. Date desired to initiate service: _____

10. Duration of service (temporary, interim, construction use, permanent): _____

11. Additional information: (include special conditions affecting service):

_____

Please include the following items:

a) Items to Be Submitted with the Initial Application:
   i) Location and vicinity map showing the demarcation of the recycled water use area
   ii) Attachment of a properly notarized affidavit
   iii) Check or money order for required fees:

b) Items to Be Submitted Subsequent to The Approval of The Application:
   i) Drawing of the project area which shall include and show:
      - Location and vicinity map
      - Demarcation of the recycled water use area
      - Specific potable water use areas
      - Location of service connections
      - Size of service connection
      - Main line locations
      - Gate valve locations
      - Specific recycled water use areas
      - Specific potable water use areas
      - Sign locations

Application For Recycled Water Service (Cont.)

I, the customer, have read and understand the County's Rules and Regulations for Recycled Water Use and Distribution and agree to restrict recycled water use for the purposes described in this application. I agree to use recycled water in accordance with these Rules and Regulations and all other applicable documents. I understand that recycled water may not be compatible with certain types of vegetation because of its chemical composition. I agree that the County will not be liable for damages that may occur to vegetation of for damages which may occur due to uses of recycled water for purposes not included in this application.

Customer's signature: _____ Date: _____

(The County completes the following)

STATUS OF APPLICATION:

__Approved
__Sent to State Health Department for approval
__The customer needs to submit required fees
__The customer needs to supply additional information
__The customer denied recycled water service
__Returned to the applicant

Comments: _____
_____

12. Service connection(s) size approved? _____Yes _____No

    If not, why? _____

    Service location approved? _____Yes _____No

    If not, why? _____

13. Use(s) approved? _____Yes _____No Comments: _____

---

14. Can the County provide requested recycled water service with existing facilities? _____Yes _____No

    If not, what are the constraints? _____

---

15. Is recycled water main extension required? _____Yes _____No

    Comments: _____

---

16. Will this system be initially connected to the potable water system? _____Yes _____No

17. Describe level and method of backflow protection:

    _____
    _____

Reviewed by: _____ Date: _____

Title: _____

APPENDIX E

SACRAMENTO COUNTY WATER AGENCY CHECKLIST/ACTION REQUEST FORM FOR OBTAINING RECYCLED WATER SERVICE

APPENDIX E

SACRAMENTO COUNTY WATER AGENCY CHECKLIST/ACTION REQUEST FORM FOR OBTAINING RECYCLED WATER SERVICE

To: _____

Requested by: _____ Signed: _____

Project Name: _____ Date: _____

Specific Action Requested: _____

_____

Date Completed		
____	1.	SCWA determines if area in question is currently, or will be, served with recycled water.
____	2.	The customer submits a completed application to SCWA.
____	3.	SCWA reviews the application and when complete, submits to County EMD.
____	4.	If application approved by EMD, customer to submit complete irrigation plans to SCWA.
____	5.	If approved by SCWA, irrigation plans and URP are submitted to EMD.
____	6.	If approved by EMD, copy of approved application, irrigation plans and URP are submitted to DHS prior to construction.
____	7.	DHS approves the detailed irrigation plans and URP for recycled water service.
____	8.	The customer constructs facilities with inspection by the SCWA and/or EMD.
____	9.	The customer submits Record Drawings to the SCWA.
____	10.	SCWA provides copy of Record Drawings to EMD and DHS.
____	11.	Upon customer's request SCWA performs final inspection and operational testing.
____	12.	SCWA to verify customer's onsite supervisor has received proper training and certification.
____	13.	If final inspection passes, SCWA requests EMD (DHS) for approval to begin service.
____	14.	The SCWA grants final approval for service.
____	15.	SCWA issues a Recycled Water Service Permit.
____	16.	The customer initiates recycled water service.
____	17.	SCWA confirms service to EMD and DHS.

HOW TO USE THIS FORM:

This form is to be used by the customer, SRCSD, SCWA, County EMD and State Department of Health Services to request specific action or items needed to complete the process for obtaining recycled water service. Complete each step in the sequence shown. Make sure the form is dated and signed. This checklist keeps all entities informed of the application process progress and the steps remaining to provide recycled water service.

APPENDIX F

SACRAMENTO COUNTY WATER AGENCY STATUS APPLICATION FOR RECYCLED WATER SERVICE

APPENDIX F

SACRAMENTO COUNTY WATER AGENCY
STATUS OF APPLICATION FOR RECYCLED WATER SERVICE

To: _____

Date: _____

We received your application for recycled water service for the project(s) listed below. The application has been reviewed by our engineers in accordance with the County's Rules and Regulations for Recycled Water Use and Distribution and the ability of our system to supply you with the quantity of recycled water you have requested. The status of application is shown below. If you have any question please contact _____ (review engineer) at _____ (phone #).

Project name: _____

Application reviewed on: _____

Status:

__ Your application has been approved by the County.

__ Your application has been sent to the State Health Department for further review.

__ Your application is incomplete, and we request additional information. (See comments).

__ We require payment of fees before review can be completed.

__ Your application has been returned. (See comments).

__ Your application for recycled water service has been denied. (See comments).

Comments: _____

APPENDIX G

SACRAMENTO COUNTY WATER AGENCY PERMIT FOR RECYCLED WATER SERVICE

APPENDIX G

SACRAMENTO COUNTY WATER AGENCY
PERMIT FOR RECYCLED WATER SERVICE

Customer Account # : _____

Customer Name: _____ Contact:_____

Relationship to property: _____

Mailing address: _____

Project/site name: _____

Project/site address: _____

Property owner(s): _____

Mailing address: _____

Telephone number: _____ Office _____Residence

Recycled Water Supervisor:_____

Date of Certification: _____

24-hour contact telephone number: _____

Approved use(s): 1._____

2._____

3._____

Approved use area(s): 1._____

2._____

3._____

Permit For Recycled Water Service (Cont.)

1. Total irrigated area: _____acres

2. Recycled water demand:

Meter Account	Meter Size	Min Pres. (psi)	Max. Flow (GPM)	Area Served (HCF/Yr)	Yearly Consump.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
Totals:				_____	_____

3. This is a: _____NEW _____CONVERTED system.

4. Method of recycled water pipe identification:

____Color –coded ____Stenciled ____None (converted)

____Colored tape wrap ____Other

5. Recycled water service initiated on: _____

6. This is a: ___Permanent ___Temporary ___Interim ___Construction recycled water service to stop on: _____

7. Rate charged for service: _____$/HCF plus applicable charges as follows:

_____

_____

8. Special requirements/conditions: _____

_____

_____

Permit For Recycled Water Service (Cont.)

Final Inspection By The County:

I have inspected the recycled water system governed by this permit and attest that the construction and operation of this system are in accordance with the County's Rules and Regulations for Recycled Water Use and Distribution.

Inspector: _____ Date: _____

Title: _____

Customer Agreement:

I have reviewed the County's Rules and Regulations for Recycled Water Use and Distribution, and agree to operate this recycled water service in accordance with all provisions of this permit and all applicable documents. I agree to be responsible for training and supervising all personnel under my control who will be involved in operating the recycled water system.

I agree that no changes to the recycled water system will be made without issuance of an amended permit. I am aware of any/all fines and penalties to be assessed for any/all violations of these Rules and Regulations for Recycled Water Use and Distribution.

Customer's signature: _____ Date: _____

APPENDIX H

CUSTOMER EMERGENCY RESPONSE PLAN PROCEDURES

APPENDIX H

CUSTOMER EMERGENCY RESPONSE PLAN PROCEDURES

In the event it is determined that a violation of these Rules and Regulations has occurred, the customer shall immediately notify SCWA. It shall be the responsibility of the customer to initiate action that will correct the conditions having caused the violation. If, in the opinion of SCWA the violation constitutes and immediate danger to the public health, then Service shall be terminated immediately by shutting off the meter and locking it. Service shall be resumed only after the violation has been corrected to the satisfaction of SCWA.

If the violation is determined to be of lesser degree, then a timetable for completing the corrections shall be negotiated with SCWA by the customer. Corrections not being made in accordance with the timetable shall also result in the termination of Service by shutting off the meter and locking it.

If a cross connection is detected during the annual cross connection control test, or at any other time a backflow incident occurs or is suspected, the following procedures will be implemented immediately:

1. Shut down the recycled supply into the facility immediately.
2. Post notification of potential cross-connection and restrict access to potable water.
3. Notify SCWA, SRCSD, State DHS and County EMD by telephone immediately.
4. Investigate the cause or location of the cross connection and eliminate the cross connection if found.
5. Collect potable water samples and perform bacteriological analyses and TDS. The bacteriological analyses are to be performed by a State of California approved testing laboratory.
6. Conduct a cross connection control test following the procedures in the initial cross connection control test.
7. Superchlorinate the potable water system and maintain a chlorine residual of at least 50 mg/L for 24 hours.
8. Flush the system after 24 hours; collect water samples and perform bacteriological analyses.
9. If the bacteriological samples indicate negative results, obtain approval from SCWA, County EMD and State DHS before placing the systems back in service.

APPENDIX I

EXAMPLE CROSS-CONNECTION TEST PROCEDURE

APPENDIX I

CROSS-CONNECTION CONTROL TEST METHODOLOGY

As part of the statewide requirements for the use of recycled water, each reuse site must pass a cross-connection test. The following briefly describes the methodology, activities and procedures to conduct the required testing for each site. Prior to any testing, the cross-connection control specialist for the Sacramento County Water Agency (SCWA) will notify the State Health Department and the County Environmental Management Department (EMD) of the proposed cross-connection test. The notification will take place a minimum of one (1) week before the actual test date and will include the time and location for the proposed testing. Upon completion of testing, the cross-connection control specialist will submit a written report to the County EMD summarizing the results of the testing. The report will be submitted within two (2) weeks after the testing occurs. The report will include copies of the actual recorder charts from the pressure recorders if used during the testing. The following describes the cross-connection testing activities.

1. PRE-TEST MEETING

A pre-test meeting will take place with the designated site supervisor of the site to discuss the general cross-connection testing procedures and to schedule the actual cross-connection testing. A date and time for the testing will be agreed upon and questions and concerns will be addressed.

2. EVALUATE SPECIFIC SITE REQUIREMENTS

Site specific requirements and constraints, if any, for interruption of potable water will be determined. For sites where an interruption of the potable water supply is unacceptable specific site requirements will be evaluated. Each site will be evaluated on a case-by-case basis to determine if a temporary water supply is required or if alternative facilities could be utilized.

3. POTABLE WATER SYSTEM TEST

This phase of the cross connection test requires shutdown of the potable water system. The test duration shall be as directed by the County EMD with a typical test lasting from 12 hours to 24 hours but no test shall be for less than 4 hours. An example procedure for this phase of the test is as follows:

Attach a pressure recorder to the number four-test cock of the backflow device on the potable water system. The potable water system will then be depressurized at the backflow device using the upstream shut-off valve. Open the number one test cock. This will release any water that leaks past the closed shut-off valve and not affect the pressure recorder. The still pressurized irrigation system control valves are to be operated and irrigation system operation is to be observed during this

phase of the test. In lieu of a pressure recorder, each fixture on the potable water system can be operated to verify the potable system is depressurized.

4. IRRIGATION SYSTEM TEST

The test procedure is then reversed and the irrigation system shall be shut-down for 24 hours, described as follows:

A pressure recorder is to be connected to the irrigation system. This can be accomplished by a connection to the irrigation backflow assembly similar to the Potable Water Test. The irrigation system is to be depressurized while the potable water system remains pressurized. A complete drain down of the irrigation system is not required. The irrigation meter should be locked after it is depressurize to prevent any unauthorized turn-on of the meter. The irrigation system is to remain shut-down for 24 hours while the potable water system is operated normally. While the system is depressurized the master control panel for the irrigation system is to operate the control valves through their normal irrigation cycle. In lieu of a pressure recorder, each fixture on the irrigation system can be operated to verify the system is depressurized.

5. OVERSPRAY AND COVERAGE TEST

Part of the cross connection testing requirements includes an overspray and coverage test of the irrigation system to ensure that to the system is functioning properly, operating efficiently and that overspray and ponding are minimized. The overspray and coverage tests are normally conducted after the site is connected to the recycled water system. This is primarily due to variation in potable and recycled water system pressures.

6. TEST REPORT

Upon successful completion of the cross-connection testing the cross-connection control specialist for the SCWA shall make a written report to the County EMD. The report will include photocopies of the pressure recorder charts if used, description of the testing activities including time of events and initial and final pressure reading, any unusual incidents that occurred and a recommendation that the site has passed the required testing and should be given final approval to use recycled water. If the testing fails, only a verbal notification will be made to the County EMD describing the possible reason for the failure, what action will be taken to remedy the situation and that another test will be required.